



## Full wwPDB EM Validation Report ⓘ

Mar 22, 2026 – 09:10 PM UTC

PDB ID : 5AA0 / pdb\_00005aa0  
EMDB ID : EMD-6397  
Title : Complex of Thermophilus thermophilus ribosome (A-and P-site tRNA) bound to BipA-GDPCP  
Authors : Kumar, V.; Chen, Y.; Ahmed, T.; Tan, J.; Ero, R.; Bhushan, S.; Gao, Y.-G.  
Deposited on : 2015-07-23  
Resolution : 5.00 Å(reported)  
Based on initial model : 4V4Y

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>  
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

EMDB validation analysis : 0.0.1.dev132  
Mogul : 2022.3.0, CSD as543be (2022)  
MolProbity : 4-5-2 with Phenix2.0  
Buster-report : wwPDB partial adaption of 1.1.7 (2018)  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
EM percentile statistics : **NOT EXECUTED**  
MapQ : **FAILED**  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.49

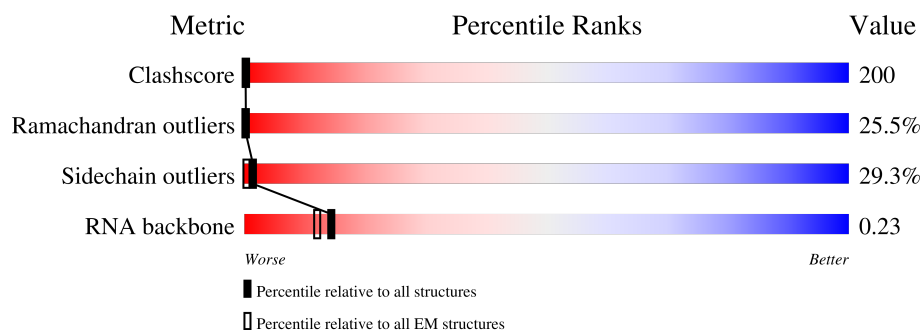
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 5.00 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



| Metric                | Whole archive<br>(#Entries) | EM structures<br>(#Entries) |
|-----------------------|-----------------------------|-----------------------------|
| Clashscore            | 229148                      | 23984                       |
| Ramachandran outliers | 224038                      | 23583                       |
| Sidechain outliers    | 223484                      | 23102                       |
| RNA backbone          | 8273                        | 3508                        |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ .

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1   | AA    | 2889   |                  |
| 2   | AB    | 123    |                  |
| 3   | AC    | 228    |                  |
| 4   | AD    | 272    |                  |
| 5   | AE    | 206    |                  |
| 6   | AF    | 208    |                  |
| 7   | AG    | 182    |                  |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 8   | AH    | 174    |                  |
| 9   | AK    | 139    |                  |
| 10  | AL    | 122    |                  |
| 11  | AM    | 145    |                  |
| 12  | AN    | 136    |                  |
| 13  | AO    | 117    |                  |
| 14  | AP    | 110    |                  |
| 15  | AQ    | 117    |                  |
| 16  | AR    | 117    |                  |
| 17  | AS    | 101    |                  |
| 18  | AT    | 110    |                  |
| 19  | AU    | 94     |                  |
| 20  | AV    | 110    |                  |
| 21  | AW    | 180    |                  |
| 22  | AX    | 85     |                  |
| 23  | AY    | 67     |                  |
| 24  | AZ    | 59     |                  |
| 25  | Aa    | 71     |                  |
| 26  | Ab    | 57     |                  |
| 27  | Ac    | 49     |                  |
| 28  | Ad    | 49     |                  |
| 29  | Ae    | 64     |                  |
| 30  | Af    | 37     |                  |
| 31  | AI    | 153    |                  |
| 32  | AJ    | 134    |                  |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 33  | Ag    | 128    |                  |
| 34  | BA    | 1515   |                  |
| 35  | BF    | 234    |                  |
| 36  | BG    | 206    |                  |
| 37  | BH    | 208    |                  |
| 38  | BI    | 150    |                  |
| 39  | BJ    | 101    |                  |
| 40  | BK    | 155    |                  |
| 41  | BL    | 138    |                  |
| 42  | BM    | 127    |                  |
| 43  | BN    | 98     |                  |
| 44  | BO    | 119    |                  |
| 45  | BP    | 124    |                  |
| 46  | BQ    | 114    |                  |
| 47  | BR    | 60     |                  |
| 48  | BS    | 88     |                  |
| 49  | BT    | 83     |                  |
| 50  | BU    | 104    |                  |
| 51  | BV    | 73     |                  |
| 52  | BW    | 80     |                  |
| 53  | BX    | 99     |                  |
| 54  | BY    | 24     |                  |
| 55  | BC    | 76     |                  |
| 56  | BD    | 75     |                  |
| 56  | BE    | 75     |                  |

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| Mol | Chain | Length | Quality of chain                                                                   |
|-----|-------|--------|------------------------------------------------------------------------------------|
| 57  | BZ    | 605    |  |

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

| Mol | Type | Chain | Res  | Chirality | Geometry | Clashes | Electron density |
|-----|------|-------|------|-----------|----------|---------|------------------|
| 59  | 8AN  | AA    | 3002 | -         | -        | X       | -                |
| 59  | 8AN  | AA    | 3003 | -         | -        | X       | -                |
| 60  | GCP  | BZ    | 701  | -         | -        | X       | -                |

## 2 Entry composition

There are 60 unique types of molecules in this entry. The entry contains 155482 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a RNA chain called 23S ribosomal RNA.

| Mol | Chain | Residues | Atoms |       |       |       |      | AltConf | Trace |
|-----|-------|----------|-------|-------|-------|-------|------|---------|-------|
| 1   | AA    | 2889     | Total | C     | N     | O     | P    | 0       | 0     |
|     |       |          | 62218 | 27691 | 11629 | 20009 | 2889 |         |       |

There are 23 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment  | Reference   |
|-------|---------|----------|--------|----------|-------------|
| AA    | ?       | -        | C      | deletion | GB 37223181 |
| AA    | ?       | -        | G      | deletion | GB 37223181 |
| AA    | ?       | -        | C      | deletion | GB 37223181 |
| AA    | ?       | -        | A      | deletion | GB 37223181 |
| AA    | ?       | -        | A      | deletion | GB 37223181 |
| AA    | ?       | -        | G      | deletion | GB 37223181 |
| AA    | ?       | -        | C      | deletion | GB 37223181 |
| AA    | ?       | -        | G      | deletion | GB 37223181 |
| AA    | ?       | -        | G      | deletion | GB 37223181 |
| AA    | ?       | -        | G      | deletion | GB 37223181 |
| AA    | ?       | -        | C      | deletion | GB 37223181 |
| AA    | ?       | -        | C      | deletion | GB 37223181 |
| AA    | ?       | -        | G      | deletion | GB 37223181 |
| AA    | ?       | -        | C      | deletion | GB 37223181 |
| AA    | ?       | -        | G      | deletion | GB 37223181 |
| AA    | ?       | -        | C      | deletion | GB 37223181 |
| AA    | ?       | -        | A      | deletion | GB 37223181 |
| AA    | ?       | -        | C      | deletion | GB 37223181 |
| AA    | ?       | -        | G      | deletion | GB 37223181 |
| AA    | ?       | -        | C      | deletion | GB 37223181 |
| AA    | ?       | -        | G      | deletion | GB 37223181 |
| AA    | ?       | -        | G      | deletion | GB 37223181 |
| AA    | ?       | -        | C      | deletion | GB 37223181 |
| AA    | ?       | -        | C      | deletion | GB 37223181 |
| AA    | 1134    | G        | UNK    | conflict | GB 37223181 |

- Molecule 2 is a RNA chain called 5S ribosomal RNA.

| Mol | Chain | Residues | Atoms |      |     |     |     | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|-----|---------|-------|
| 2   | AB    | 123      | Total | C    | N   | O   | P   | 0       | 0     |
|     |       |          | 2641  | 1175 | 488 | 855 | 123 |         |       |

- Molecule 3 is a protein called 50S ribosomal protein L1.

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 3   | AC    | 228      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 1742  | 1102 | 318 | 319 | 3 |         |       |

- Molecule 4 is a protein called 50S ribosomal protein L2.

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 4   | AD    | 272      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2124  | 1339 | 424 | 358 | 3 |         |       |

- Molecule 5 is a protein called 50S ribosomal protein L3.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 5   | AE    | 206      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1578  | 997 | 302 | 273 | 6 |         |       |

- Molecule 6 is a protein called 50S ribosomal protein L4.

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 6   | AF    | 208      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 1625  | 1034 | 303 | 286 | 2 |         |       |

- Molecule 7 is a protein called 50S ribosomal protein L5.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 7   | AG    | 182      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1482  | 947 | 269 | 261 | 5 |         |       |

- Molecule 8 is a protein called 50S ribosomal protein L6.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 8   | AH    | 174      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1328  | 844 | 248 | 235 | 1 |         |       |

- Molecule 9 is a protein called 50S ribosomal protein L13.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 9   | AK    | 139      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1113  | 717 | 207 | 186 | 3 |         |       |

- Molecule 10 is a protein called 50S ribosomal protein L14.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 10  | AL    | 122      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 932   | 587 | 171 | 170 | 4 |         |       |

- Molecule 11 is a protein called 50S ribosomal protein L15.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 11  | AM    | 145      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1106  | 688 | 226 | 190 | 2 |         |       |

- Molecule 12 is a protein called 50S ribosomal protein L16.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 12  | AN    | 136      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1080  | 688 | 204 | 183 | 5 |         |       |

- Molecule 13 is a protein called 50S ribosomal protein L17.

| Mol | Chain | Residues | Atoms |     |     |     | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|-------|
| 13  | AO    | 117      | Total | C   | N   | O   | 0       | 0     |
|     |       |          | 960   | 599 | 202 | 159 |         |       |

- Molecule 14 is a protein called 50S ribosomal protein L18.

| Mol | Chain | Residues | Atoms |     |     |     | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|-------|
| 14  | AP    | 110      | Total | C   | N   | O   | 0       | 0     |
|     |       |          | 877   | 553 | 175 | 149 |         |       |

- Molecule 15 is a protein called 50S ribosomal protein L19.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 15  | AQ    | 117      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 976   | 614 | 197 | 164 | 1 |         |       |

- Molecule 16 is a protein called 50S ribosomal protein L20.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 16  | AR    | 117      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 964   | 610 | 202 | 151 | 1 |         |       |

- Molecule 17 is a protein called 50S ribosomal protein L21.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 17  | AS    | 101      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 779   | 501 | 142 | 135 | 1 |         |       |

- Molecule 18 is a protein called 50S ribosomal protein L22.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 18  | AT    | 110      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 876   | 552 | 171 | 151 | 2 |         |       |

- Molecule 19 is a protein called 50S ribosomal protein L23.

| Mol | Chain | Residues | Atoms |     |     |     | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|-------|
| 19  | AU    | 94       | Total | C   | N   | O   | 0       | 0     |
|     |       |          | 742   | 483 | 133 | 126 |         |       |

- Molecule 20 is a protein called 50S ribosomal protein L24.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 20  | AV    | 110      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 844   | 539 | 158 | 141 | 6 |         |       |

- Molecule 21 is a protein called 50S ribosomal protein L25.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 21  | AW    | 180      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1435  | 916 | 256 | 260 | 3 |         |       |

- Molecule 22 is a protein called 50S ribosomal protein L27.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 22  | AX    | 85       | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 670   | 415 | 141 | 112 | 2 |         |       |

- Molecule 23 is a protein called 50S ribosomal protein L29.

| Mol | Chain | Residues | Atoms |     |     |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|-------|
| 23  | AY    | 67       | Total | C   | N   | O  | S | 0       | 0     |
|     |       |          | 567   | 350 | 116 | 99 | 2 |         |       |

- Molecule 24 is a protein called 50S ribosomal protein L30.

| Mol | Chain | Residues | Atoms |     |    |    | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|-------|
| 24  | AZ    | 59       | Total | C   | N  | O  | 0       | 0     |
|     |       |          | 469   | 298 | 90 | 81 |         |       |

- Molecule 25 is a protein called 50S ribosomal protein L31.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 25  | Aa    | 71       | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 581   | 364 | 108 | 104 | 5 |         |       |

- Molecule 26 is a protein called 50S ribosomal protein L32.

| Mol | Chain | Residues | Atoms |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 26  | Ab    | 57       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 445   | 279 | 87 | 74 | 5 |         |       |

- Molecule 27 is a protein called 50S ribosomal protein L33.

| Mol | Chain | Residues | Atoms |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 27  | Ac    | 49       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 426   | 265 | 87 | 70 | 4 |         |       |

- Molecule 28 is a protein called 50S ribosomal protein L34.

| Mol | Chain | Residues | Atoms |     |     |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|-------|
| 28  | Ad    | 49       | Total | C   | N   | O  | S | 0       | 0     |
|     |       |          | 430   | 263 | 108 | 57 | 2 |         |       |

- Molecule 29 is a protein called 50S ribosomal protein L35.

| Mol | Chain | Residues | Atoms |     |     |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|-------|
| 29  | Ae    | 64       | Total | C   | N   | O  | S | 0       | 0     |
|     |       |          | 515   | 331 | 102 | 79 | 3 |         |       |

- Molecule 30 is a protein called 50S ribosomal protein L36.

| Mol | Chain | Residues | Atoms |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 30  | Af    | 37       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 307   | 188 | 68 | 47 | 4 |         |       |

- Molecule 31 is a protein called 50S ribosomal protein L10.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 31  | AI    | 153      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 752   | 446 | 153 | 153 |   |         |       |

- Molecule 32 is a protein called 50S ribosomal protein L11.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 32  | AJ    | 134      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 993   | 632 | 175 | 181 | 5 |         |       |

- Molecule 33 is a protein called Unknown peptide.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 33  | Ag    | 128      | Total | C   | N   | O   | S | 0       | 5     |
|     |       |          | 620   | 369 | 128 | 123 |   |         |       |

- Molecule 34 is a RNA chain called 16S ribosomal RNA.

| Mol | Chain | Residues | Atoms |       |      |       |      | AltConf | Trace |
|-----|-------|----------|-------|-------|------|-------|------|---------|-------|
| 34  | BA    | 1515     | Total | C     | N    | O     | P    | 0       | 0     |
|     |       |          | 32554 | 14490 | 6022 | 10527 | 1515 |         |       |

- Molecule 35 is a protein called 30S ribosomal protein S2.

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 35  | BF    | 234      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 1900  | 1213 | 341 | 341 | 5 |         |       |

- Molecule 36 is a protein called 30S ribosomal protein S3.

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 36  | BG    | 206      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 1612  | 1016 | 314 | 281 | 1 |         |       |

- Molecule 37 is a protein called 30S ribosomal protein S4.

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 37  | BH    | 208      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 1703  | 1066 | 339 | 291 | 7 |         |       |

- Molecule 38 is a protein called 30S ribosomal protein S5.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 38  | BI    | 150      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1146  | 724 | 217 | 201 | 4 |         |       |

- Molecule 39 is a protein called 30S ribosomal protein S6.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 39  | BJ    | 101      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 843   | 531 | 155 | 154 | 3 |         |       |

- Molecule 40 is a protein called 30S ribosomal protein S7.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 40  | BK    | 155      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1257  | 781 | 252 | 218 | 6 |         |       |

- Molecule 41 is a protein called 30S ribosomal protein S8.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 41  | BL    | 138      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1116  | 705 | 215 | 193 | 3 |         |       |

- Molecule 42 is a protein called 30S ribosomal protein S9.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 42  | BM    | 127      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1010  | 639 | 197 | 174 |   |         |       |

- Molecule 43 is a protein called 30S ribosomal protein S10.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 43  | BN    | 98       | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 794   | 499 | 156 | 138 | 1 |         |       |

- Molecule 44 is a protein called 30S ribosomal protein S11.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 44  | BO    | 119      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 885   | 549 | 168 | 165 | 3 |         |       |

- Molecule 45 is a protein called 30S ribosomal protein S12.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 45  | BP    | 124      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 970   | 611 | 195 | 163 | 1 |         |       |

- Molecule 46 is a protein called 30S ribosomal protein S13.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 46  | BQ    | 114      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 914   | 565 | 189 | 158 | 2 |         |       |

- Molecule 47 is a protein called 30S ribosomal protein S14 type Z.

| Mol | Chain | Residues | Atoms |     |     |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|-------|
| 47  | BR    | 60       | Total | C   | N   | O  | S | 0       | 0     |
|     |       |          | 492   | 312 | 104 | 72 | 4 |         |       |

- Molecule 48 is a protein called 30S ribosomal protein S15.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 48  | BS    | 88       | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 734   | 459 | 147 | 126 | 2 |         |       |

- Molecule 49 is a protein called 30S ribosomal protein S16.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 49  | BT    | 83       | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 700   | 443 | 139 | 117 | 1 |         |       |

- Molecule 50 is a protein called 30S ribosomal protein S17.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 50  | BU    | 104      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 857   | 547 | 161 | 147 | 2 |         |       |

There is a discrepancy between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment  | Reference  |
|-------|---------|----------|--------|----------|------------|
| BU    | 96      | GLN      | GLU    | conflict | UNP Q5SHP7 |

- Molecule 51 is a protein called 30S ribosomal protein S18.

| Mol | Chain | Residues | Atoms |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---------|-------|
| 51  | BV    | 73       | Total | C   | N   | O  | 0       | 0     |
|     |       |          | 597   | 380 | 118 | 99 |         |       |

- Molecule 52 is a protein called 30S ribosomal protein S19.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 52  | BW    | 80       | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 647   | 414 | 119 | 112 | 2 |         |       |

- Molecule 53 is a protein called 30S ribosomal protein S20.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 53  | BX    | 99       | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 763   | 470 | 162 | 129 | 2 |         |       |

- Molecule 54 is a protein called 30S ribosomal protein Thx.

| Mol | Chain | Residues | Atoms |     |    |    | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|-------|
| 54  | BY    | 24       | Total | C   | N  | O  | 0       | 0     |
|     |       |          | 208   | 128 | 50 | 30 |         |       |

- Molecule 55 is a RNA chain called tRNA chain 1.

| Mol | Chain | Residues | Atoms |     |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|----|---------|-------|
| 55  | BC    | 76       | Total | C   | N   | O   | P  | 0       | 0     |
|     |       |          | 1619  | 723 | 290 | 531 | 75 |         |       |

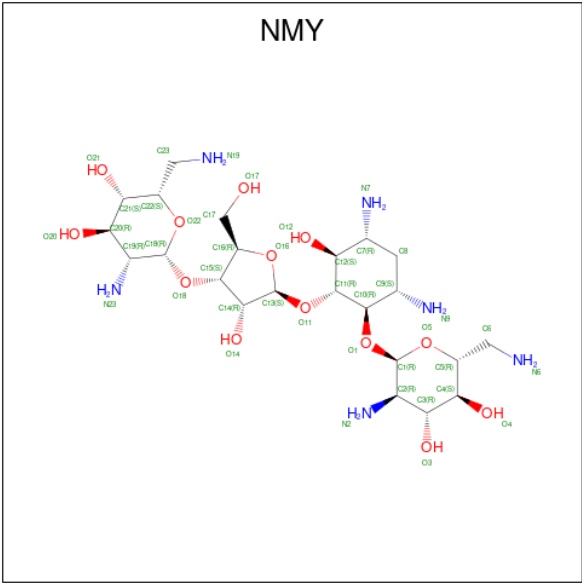
- Molecule 56 is a RNA chain called tRNA chain 2.

| Mol | Chain | Residues | Atoms |     |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|----|---------|-------|
| 56  | BD    | 75       | Total | C   | N   | O   | P  | 0       | 0     |
|     |       |          | 1597  | 713 | 285 | 525 | 74 |         |       |
| 56  | BE    | 75       | Total | C   | N   | O   | P  | 0       | 0     |
|     |       |          | 1597  | 713 | 285 | 525 | 74 |         |       |

- Molecule 57 is a protein called GTP-binding protein.

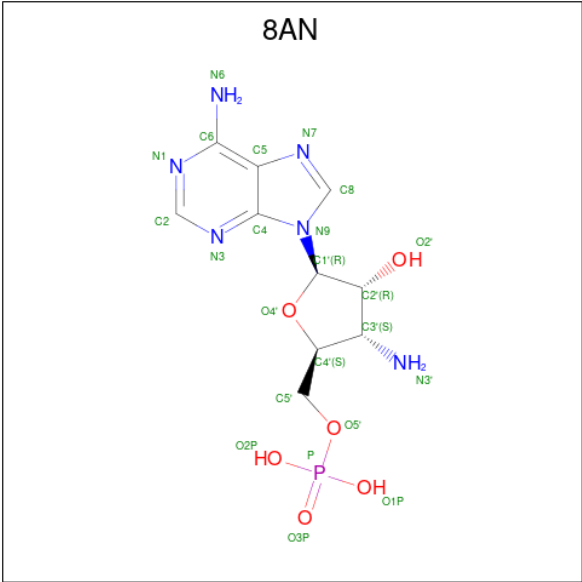
| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 57  | BZ    | 605      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4610  | 2902 | 807 | 883 | 18 |         |       |

- Molecule 58 is NEOMYCIN (CCD ID: NMY) (formula: C<sub>23</sub>H<sub>46</sub>N<sub>6</sub>O<sub>13</sub>).



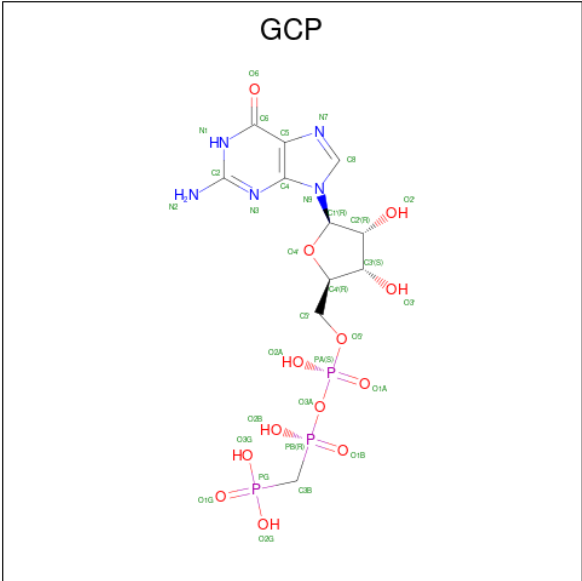
| Mol | Chain | Residues | Atoms |    |   |    | AltConf |
|-----|-------|----------|-------|----|---|----|---------|
| 58  | AA    | 1        | Total | C  | N | O  | 0       |
|     |       |          | 42    | 23 | 6 | 13 |         |
| 58  | BA    | 1        | Total | C  | N | O  | 0       |
|     |       |          | 42    | 23 | 6 | 13 |         |

- Molecule 59 is 3'-amino-3'-deoxyadenosine 5'-(dihydrogen phosphate) (CCD ID: 8AN) (formula: C<sub>10</sub>H<sub>15</sub>N<sub>6</sub>O<sub>6</sub>P).



| Mol | Chain | Residues | Atoms |    |   |   |   | AltConf |
|-----|-------|----------|-------|----|---|---|---|---------|
| 59  | AA    | 1        | Total | C  | N | O | P | 0       |
|     |       |          | 22    | 10 | 6 | 5 | 1 |         |
| 59  | AA    | 1        | Total | C  | N | O | P | 0       |
|     |       |          | 22    | 10 | 6 | 5 | 1 |         |

- Molecule 60 is PHOSPHOMETHYLPHOSPHONIC ACID GUANYLATE ESTER (CCD ID: GCP) (formula: C<sub>11</sub>H<sub>18</sub>N<sub>5</sub>O<sub>13</sub>P<sub>3</sub>).

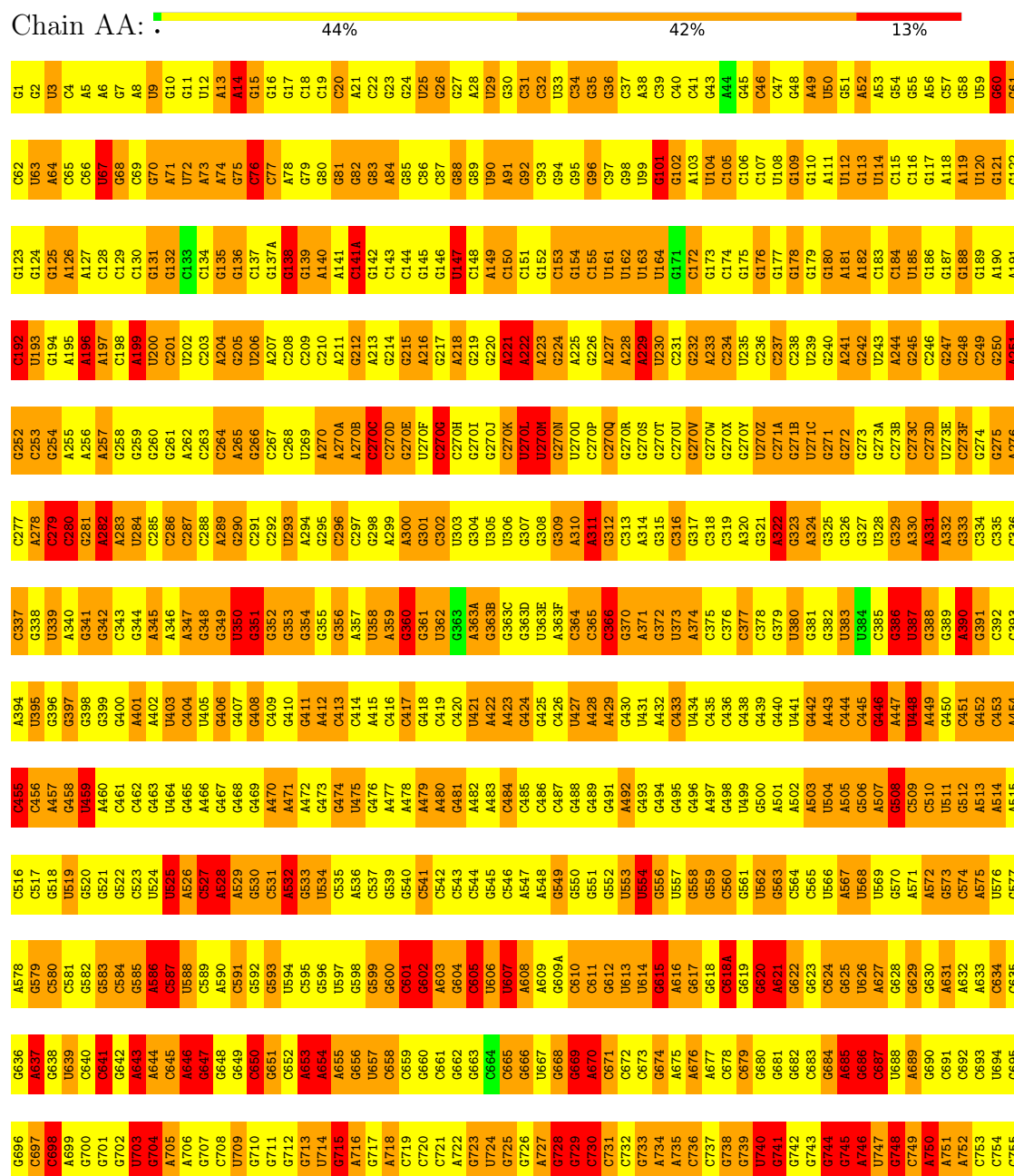


| Mol | Chain | Residues | Atoms |    |   |    |   | AltConf |
|-----|-------|----------|-------|----|---|----|---|---------|
| 60  | BZ    | 1        | Total | C  | N | O  | P | 0       |
|     |       |          | 32    | 11 | 5 | 13 | 3 |         |

### 3 Residue-property plots

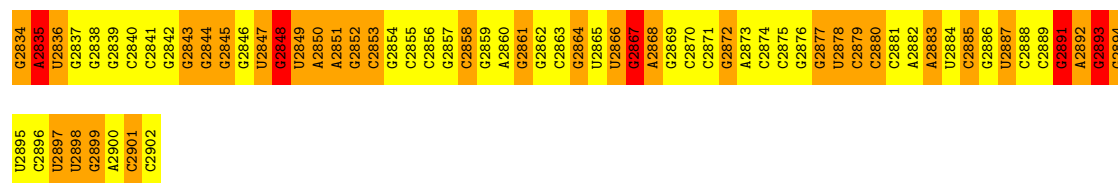
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

#### • Molecule 1: 23S ribosomal RNA



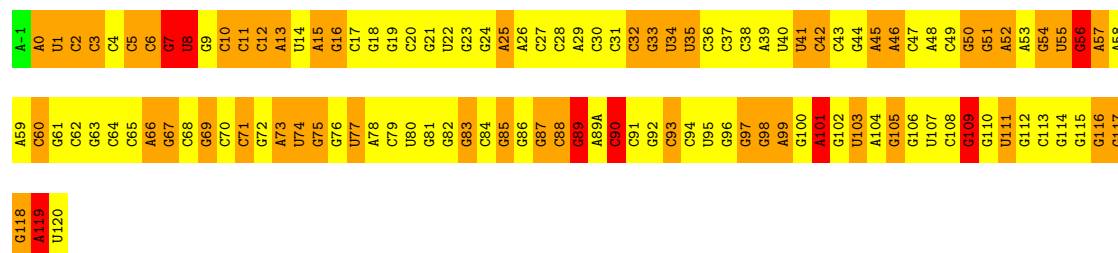
|       |       |        |        |       |        |       |       |       |       |       |       |       |       |      |      |      |
|-------|-------|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|
| G1726 | C1657 | C1598  | G1538  | A1477 | G1418  | G1358 | G1298 | G1288 | A1177 | G1117 | A1057 | G997  | G938  | G876 | C816 | C756 |
| U1727 | C1658 | C1599  | G1539  | G1478 | A1419  | A1389 | G1299 | G1289 | C1178 | C1118 | G1058 | C998  | G939  | U877 | C817 | U757 |
| G1728 | C1659 | C1600  | G1540  | G1479 | U1420  | A1360 | U1300 | U1240 | C1179 | C1119 | G1059 | U999  | G940  | A878 | G818 | C758 |
| A1729 | C1660 | G1601  | U1541  | G1480 | G1421  | G1361 | A1301 | A1241 | C1180 | G1120 | U1060 | A1000 | A941  | A879 | A819 | G759 |
| G1730 | G1661 | U1602  | G1542  | U1482 | G1423  | C1362 | A1302 | G1242 | C1181 | G1121 | U1061 | A1001 | G942  | G880 | A820 | G760 |
| U1731 | C1662 | A1603  | A1543  | G1483 | G1424  | C1363 | G1303 | G1243 | A1182 | G1122 | G1062 | G1002 | U943  | G881 | A821 | A761 |
| A1732 | C1663 | G1604  | G1544  | G1484 | G1425  | G1364 | C1304 | G1244 | G1183 | G1123 | G1063 | G1003 | G944  | G882 | U822 | U762 |
| G1733 | A1664 | C1605  | A1545  | G1485 | G1426  | A1365 | C1305 | G1245 | G1184 | G1124 | C1064 | C1004 | A945  | G883 | G823 | G763 |
| C1734 | G1666 | G1606  | A1546A | A1486 | A1427  | A1366 | C1306 | G1246 | C1185 | G1125 | U1065 | C1005 | G946  | G884 | A824 | A764 |
| G1735 | G1667 | C1607  | C1546  | G1487 | A1428  | G1367 | A1307 | A1247 | G1186 | A1127 | U1066 | C1006 | G947  | C885 | G825 | G765 |
| C1741 | A1668 | A1608  | C1547  | G1488 | C1428  | G1368 | A1308 | G1248 | G1187 | A1128 | U1067 | C1007 | G948  | C886 | U826 | C766 |
| G1742 | A1669 | A1609  | C1548  | U1489 | G1429  | G1369 | G1309 | U1249 | U1188 | A1129 | G1068 | C1008 | C949  | A887 | U827 | U767 |
| G1743 | A1669 | A1610  | C1549  | A1490 | C1430  | C1370 | G1310 | G1250 | U1189 | A1129 | U1069 | A1009 | G950  | C888 | U828 | G768 |
| G1746 | C1670 | C1611  | C1550  | G1491 | U1431  | G1371 | G1311 | C1251 | G1190 | U1130 | A1070 | A1010 | C951  | C889 | A829 | G769 |
| G1747 | U1671 | C1612  | C1551  | G1492 | C1432  | A1372 | U1312 | G1252 | G1191 | G1131 | G1071 | G1011 | G952  | A890 | G830 | G770 |
| G1748 | C1672 | G1613  | G1552  | C1493 | A1433  | A1373 | U1313 | G1253 | G1192 | A1132 | C1072 | U1012 | A953  | G892 | G831 | G771 |
| A1749 | A1673 | A1614  | A1553  | A1494 | A1434  | G1374 | C1314 | C1254 | G1193 | U1133 | A1073 | C1013 | G954  | G893 | G832 | G772 |
| G1750 | G1674 | A1615  | A1554  | A1495 | G1435  | C1375 | C1315 | U1255 | A1194 | G1134 | G1074 | U1014 | C955  | C894 | U833 | G773 |
| C1751 | C1675 | A1616  | G1555  | A1496 | G1436  | C1376 | U1316 | G1256 | G1195 | C1135 | C1075 | G1015 | G956  | U895 | C834 | A774 |
| G1752 | A1676 | U1677  | C1556  | U1497 | A1437  | G1377 | A1317 | C1257 | G1196 | G1136 | C1076 | G1016 | A957  | A896 | A835 | G775 |
| G1753 | A1677 | A1618  | C1557  | U1498 | U1438  | A1378 | C1318 | C1258 | G1197 | U1137 | A1077 | G1017 | U958  | C897 | G836 | G776 |
| C1754 | C1678 | G1619  | A1558  | C1499 | A1439  | A1379 | G1319 | G1259 | U1198 | G1138 | U1078 | C1018 | A959  | C898 | C837 | A777 |
| A1755 | U1679 | G1620  | G1559  | G1500 | G1440  | G1380 | C1320 | G1260 | U1199 | G1139 | C1079 | U1019 | A960  | A899 | C838 | G778 |
| G1756 | U1680 | U1621  | G1560  | C1501 | G1441  | G1381 | A1321 | C1261 | C1200 | U1140 | C1080 | A1020 | C961  | A900 | U839 | U779 |
| U1757 | G1681 | G1622  | G1561  | C1502 | G1442  | G1382 | A1322 | A1262 | C1201 | U1141 | U1081 | A1021 | G962  | A901 | C840 | G780 |
| G1758 | G1682 | G1623  | A1562  | U1503 | G1443  | C1383 | U1323 | U1263 | C1202 | U1142 | U1082 | G1022 | U963  | C902 | A841 | A781 |
| A1759 | C1683 | G1624  | G1563  | C1504 | A1444  | A1384 | G1324 | G1264 | G1203 | U1143 | U1083 | U1023 | C964  | C903 | G842 | A782 |
| A1760 | C1684 | C1625  | A1564  | C1505 | A1444A | A1385 | G1325 | A1265 | A1204 | A1143 | A1084 | G1024 | C965  | C904 | G843 | A783 |
| C1761 | G1685 | G1626  | C1565  | C1506 | G1445  | C1386 | U1326 | G1266 | U1205 | G1144 | A1085 | G1025 | G966  | U905 | G844 | A784 |
| A1762 | C1686 | G1627  | A1566  | A1507 | G1446  | C1387 | C1327 | U1267 | G1206 | C1145 | A1086 | U1026 | C967  | G906 | G845 | G785 |
| G1763 | G1687 | G1628  | A1567  | A1508 | G1447  | G1388 | G1328 | A1268 | C1207 | C1146 | G1087 | A1027 | G968  | U907 | C846 | G786 |
| G1764 | U1688 | U1629  | G1568  | C1509 | G1448  | G1389 | U1329 | A1269 | C1208 | C1147 | A1088 | A1028 | U969  | C908 | U847 | U787 |
| C1765 | A1689 | G1630  | A1569  | A1510 | A1449  | U1390 | C1330 | C1270 | G1209 | A1148 | G1089 | A1029 | C970  | A909 | U848 | A788 |
| U1766 | A1690 | C1630A | A1570  | A1511 | G1449A | U1391 | A1331 | G1271 | A1210 | G1149 | U1090 | G1030 | C971  | A910 | A849 | A789 |
| C1767 | G1691 | A1631  | A1571  | G1512 | C1450  | A1392 | G1332 | U1272 | U1211 | C1150 | G1091 | G1031 | G972  | A911 | C850 | C790 |
| G1768 | U1692 | A1632  | A1572  | C1513 | C1451  | A1393 | C1333 | A1273 | G1212 | G1151 | C1092 | A1032 | G973  | C912 | U851 | G791 |
| G1769 | U1693 | G1633  | G1573  | U1514 | A1453  | U1394 | G1334 | A1274 | A1213 | C1152 | G1093 | U1033 | G974  | U913 | G852 | G792 |
| G1770 | C1694 | A1634  | C1574  | G1515 | U1454  | A1395 | U1335 | A1275 | A1214 | C1153 | U1094 | G1034 | C974A | C914 | G853 | A793 |
| C1771 | G1695 | G1635  | C1575  | U1516 | G1455  | U1396 | A1336 | A1276 | G1215 | A1154 | A1095 | U1035 | G975  | C915 | G854 | G794 |
| G1772 | G1696 | C1636  | U1576  | G1517 | G1456  | U1397 | G1337 | G1277 | G1216 | A1155 | A1096 | G1036 | C976  | G916 | G855 | C795 |
| A1773 | C1697 | A1637  | C1577  | C1518 | A1457  | C1398 | G1338 | A1278 | C1217 | A1156 | U1097 | G1037 | G977  | A917 | C856 | C796 |
| C1774 | A1698 | C1638  | U1578  | G1519 | C1458  | C1399 | G1339 | G1279 | G1157 | G1157 | A1098 | C1038 | G978  | A918 | C857 | C797 |
| U1775 | G1699 | U1639  | A1579  | U1520 | G1459  | G1400 | U1340 | G1280 | C1220 | U1158 | C1099 | G1039 | G979  | G919 | U858 | G798 |
| G1776 | A1700 | C1640  | A1580  | G1521 | A1460  | G1401 | U1341 | G1281 | C1221 | U1159 | G1100 | C1040 | A980  | G920 | G859 | G799 |
| U1777 | A1701 | A1641  | G1581  | G1522 | G1461  | C1402 | A1342 | U1282 | C1222 | G1160 | U1101 | C1041 | A981  | G921 | U860 | A800 |
| U1778 | G1702 | G1642  | C1582  | U1523 | C1462  | C1403 | G1343 | G1283 | C1223 | G1161 | C1102 | G1042 | C982  | U922 | A861 | G801 |
| U1779 | G1703 | G1643  | A1583  | G1524 | C1463  | G1404 | G1344 | G1284 | C1224 | G1162 | A1103 | C1043 | C983  | C923 | G862 | A802 |
| A1780 | G1704 | C1644  | C1585  | G1525 | G1464  | U1405 | C1345 | G1285 | G1163 | G1163 | C1104 | G1044 | A984  | C924 | A863 | A803 |
| G1781 | G1705 | G1645  | A1586  | G1526 | G1465  | U1406 | G1346 | G1286 | G1226 | G1164 | U1105 | A1045 | C985  | C925 | G864 | A804 |
| C1782 | U1706 | C1646  | A1587  | G1527 | G1466  | C1407 | G1347 | A1287 | A1227 | U1165 | G1106 | A1046 | C986  | A926 | C865 | G805 |
| A1783 | G1707 | C1588  | C1588  | G1528 | C1467  | C1408 | G1348 | U1288 | G1228 | C1166 | G1107 | G1047 | G987  | G928 | A866 | C806 |
| U1784 | U1708 | C1648  | A1589  | A1529 | C1468  | C1409 | A1349 | U1289 | G1229 | U1167 | U1108 | A1048 | A988  | G929 | C867 | U807 |
| A1785 | C1709 | G1649  | U1590  | G1530 | A1469  | G1410 | C1350 | C1290 | C1230 | G1168 | C1109 | C1049 | A989  | U930 | U868 | G808 |
| A1786 | C1710 | G1650  | G1591  | C1531 | G1470  | C1411 | C1351 | C1291 | G1169 | G1170 | A1110 | A1050 | A990  | G931 | G869 | G809 |
| A1787 | C1711 | G1651  | C1592  | G1532 | A1471  | A1412 | U1352 | U1292 | G1232 | G1171 | A1111 | G1051 | C991  | G932 | A870 | U810 |
| C1788 | G1712 | A1652  | G1593  | C1533 | A1472  | G1413 | A1353 | C1293 | G1233 | G1172 | A1112 | C1052 | C992  | A933 | U871 | U811 |
| A1789 | U1716 | G1653  | G1594  | G1534 | G1473  | G1414 | A1354 | U1294 | U1234 | G1173 | U1113 | C1053 | G993  | G934 | A872 | C812 |
| C1790 | A1791 | A1654  | G1595  | U1535 | C1474  | U1415 | G1355 | C1295 | G1235 | U1174 | G1114 | A1054 | C994  | C935 | G873 | U813 |
| G1791 | G1717 | A1655  | A1596  | A1536 | G1475  | G1416 | G1356 | G1296 | G1236 | U1175 | G1115 | G1055 | C995  | C936 | G874 | C814 |
| G1792 | G1725 | C1656  | A1597  | C1537 | C1476  | C1417 | U1357 | C1297 | A1237 | G1176 | C1116 | G1056 | A996  | U937 | G875 | C815 |

|       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C2771 | U2712  | C2652 | G2592 | G2532 | G2472 | A2412 | A2352 | C2292 | U2232 | G2162 | U2102 | A2042 | C1982 | G1922 | A1853 | C1793 |
| C2772 | A2712A | U2653 | U2593 | A2533 | U2473 | G2413 | G2353 | C2293 | U2233 | C2163 | C2103 | C2043 | C1983 | U1923 | A1854 | U1794 |
| C2773 | A2713  | A2654 | C2594 | A2534 | C2474 | G2414 | G2354 | C2294 | G2234 | C2164 | G2104 | C2044 | G1984 | C1924 | G1855 | U1795 |
| C2774 | G2714  | G2655 | G2595 | G2535 | C2475 | G2415 | G2355 | C2295 | G2235 | G2165 | G2105 | G2045 | G1985 | C1925 | G1856 | U1796 |
| A2775 | C2715  | G2656 | U2596 | G2536 | A2476 | C2416 | G2356 | C2296 | G2236 | U2166 | G2106 | G2046 | A1986 | U1926 | G1857 | C1797 |
| A2776 | C2716  | A2657 | G2597 | U2537 | C2477 | C2417 | U2357 | C2297 | G2237 | U2167 | G2107 | U2047 | G1987 | A1927 | G1858 | U1798 |
| C2777 | G2717  | C2658 | A2598 | C2538 | A2478 | A2418 | G2358 | A2298 | G2238 | G2168 | C2108 | G2048 | C1988 | A1928 | A1859 | G1799 |
| A2778 | G2718  | G2659 | C2599 | C2539 | A2479 | U2419 | C2359 | G2299 | G2239 | A2169 | U2109 | G2049 | G1989 | A1929 | G1860 | C1800 |
| U2779 | G2719  | A2660 | A2600 | C2540 | C2480 | U2420 | A2360 | G2300 | C2240 | A2170 | G2110 | C2050 | C1990 | G1930 | G1861 | G1801 |
| G2780 | U2720  | C2601 | G2601 | A2541 | G2481 | G2421 | A2361 | C2301 | A2241 | U2171 | G2111 | A2051 | U1991 | U1931 | G1862 | A1802 |
| A2781 | A2721  | G2662 | A2602 | G2542 | G2482 | A2422 | G2362 | G2302 | G2242 | U2172 | G2112 | G2052 | G1992 | U1932 | G1863 | A1803 |
| G2782 | G2722  | G2663 | G2603 | G2543 | G2483 | U2423 | G2363 | G2303 | U2243 | A2173 | U2113 | G2053 | U1993 | G1933 | U1864 | A1804 |
| G2783 | C2723  | G2664 | U2604 | G2544 | G2484 | G2424 | G2364 | G2304 | U2244 | C2174 | A2114 | A2054 | C1994 | C1934 | G1865 | U1805 |
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| U2786 | U2726  | C2667 | G2607 | U2547 | G2487 | C2427 | G2367 | G2307 | G2247 | C2177 | A2117 | A2057 | G1997 | U1937 | A1872 | U1808 |
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| C2789 | G2729  | A2670 | C2610 | G2550 | G2490 | A2430 | G2370 | A2310 | G2250 | U2180 | G2120 | C2060 | G2000 | U1940 | C1880 | G1811 |
| A2790 | C2730  | A2671 | U2611 | C2551 | U2491 | U2431 | G2371 | A2311 | G2251 | G2181 | G2121 | G2061 | A2001 | C1941 | C1881 | A1812 |
| C2791 | G2731  | G2672 | C2612 | U2552 | U2492 | A2432 | G2372 | C2312 | G2252 | C2182 | U2122 | A2062 | G2002 | C1942 | C1882 | G1813 |
| G2792 | G2732  | G2673 | U2613 | G2553 | U2493 | A2433 | G2373 | C2313 | G2253 | C2183 | G2123 | G2063 | G2003 | U1943 | G1883 | A1814 |
| G2793 | A2733  | G2674 | A2614 | U2554 | U2494 | A2434 | C2374 | C2314 | G2254 | C2184 | G2124 | C2064 | G2004 | U1944 | A1884 | A1815 |
| C2794 | A2734  | A2675 | U2615 | U2555 | G2495 | A2435 | G2375 | G2315 | G2255 | C2185 | G2125 | C2065 | A2005 | G1945 | A1885 | G1816 |
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| C2798 | A2738  | C2678 | G2618 | C2558 | C2498 | U2438 | A2378 | G2318 | G2258 | C2188 | C2128 | U2068 | C2008 | G1948 | G1888 | A1819 |
| A2799 | G2739  | A2679 | C2619 | C2559 | C2499 | A2439 | G2379 | A2319 | G2259 | U2189 | C2129 | G2069 | G2009 | G1949 | A1889 | U1820 |
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| U2806 | C2745  | G2686 | C2626 | C2566 | U2506 | A2446 | C2386 | G2326 | A2266 | C2196 | G2136 | U2076 | U2016 | U1956 | G1896 | C1827 |
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| C2811 | A2748  | U2689 | A2629 | G2569 | G2509 | U2449 | G2389 | G2329 | A2269 | A2199 | C2139 | U2079 | A2019 | G1959 | G1899 | C1830 |
| G2812 | A2749  | C2690 | G2630 | G2570 | C2510 | A2450 | U2390 | G2330 | G2270 | C2205 | C2140 | G2080 | A2020 | A1960 | A1900 | G1831 |
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| A2819 | U2756  | G2697 | U2637 | A2577 | C2517 | U2457 | G2397 | G2337 | G2277 | A2212 | G2148 | G2087 | G2027 | C1967 | G1907 | C1838 |
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| A2821 | G2758  | C2699 | A2639 | C2579 | U2519 | A2459 | G2399 | G2339 | G2279 | G2216 | U2150 | G2090 | G2029 | A1969 | C1909 | G1840 |
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| C2824 | G2761  | U2702 | G2642 | G2582 | U2522 | U2462 | C2402 | C2342 | G2282 | G2219 | G2153 | U2093 | G2032 | A1972 | A1912 | C1843 |
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| A2826 | G2763  | C2704 | G2644 | U2584 | G2524 | C2464 | C2404 | U2344 | G2284 | A2224 | G2155 | C2095 | U2034 | C1974 | G1914 | G1845 |
| C2827 | A2764  | A2705 | G2645 | U2585 | G2525 | C2465 | G2405 | G2345 | C2285 | A2225 | G2156 | C2096 | G2035 | U1975 | U1915 | G1846 |
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| C2829 | G2766  | G2707 | U2647 | A2587 | C2527 | G2467 | G2407 | C2347 | A2287 | C2227 | G2157 | C2097 | G2037 | U1977 | U1917 | A1848 |
| G2830 | C2767  | G2708 | C2648 | G2588 | U2528 | G2468 | U2408 | U2348 | A2288 | G2228 | A2158 | U2098 | G2038 | A1978 | G1849 | G1849 |
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| U2832 | C2769  | U2830 | U2650 | A2590 | G2530 | G2470 | G2410 | C2350 | G2290 | G2230 | G2160 | G2100 | C2040 | G1980 | U1851 | G1851 |
| C2833 | G2770  | A2831 | C2651 | C2591 | A2531 | C2471 | A2411 | G2351 | U2291 | C2231 | C2161 | G2101 | U2041 | A1981 | G1921 | C1852 |



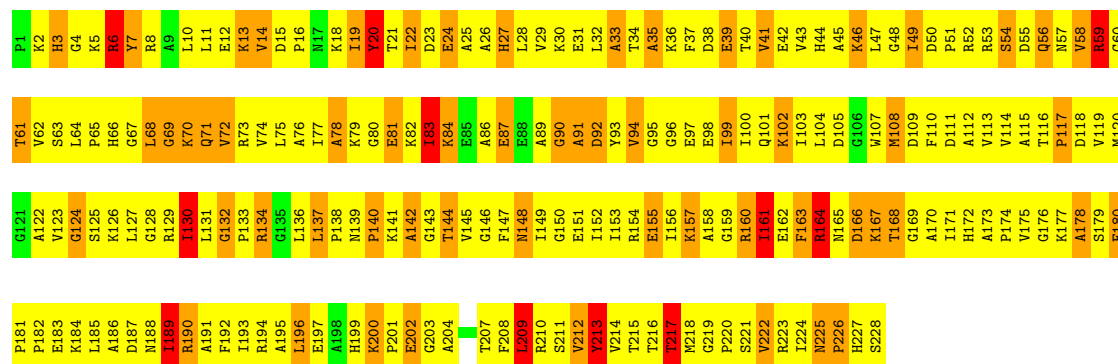
• Molecule 2: 5S ribosomal RNA

Chain AB: . 52% 41% 7%



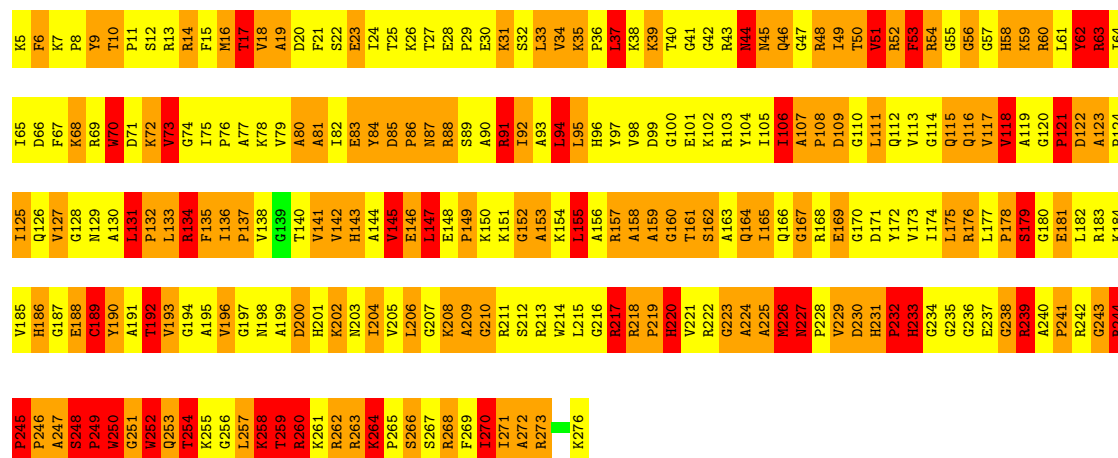
• Molecule 3: 50S ribosomal protein L1

Chain AC: . 5% 64% 26% 5%



• Molecule 4: 50S ribosomal protein L2

Chain AD: . 44% 40% 15%

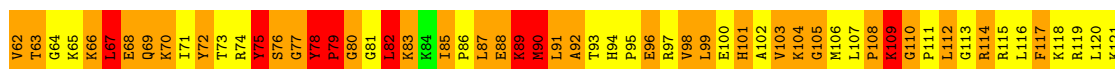
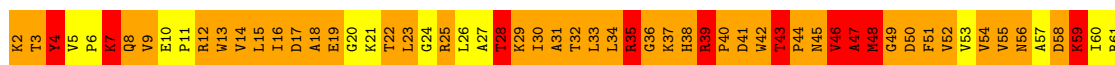






• Molecule 9: 50S ribosomal protein L13

Chain AK: . 32% 52% 16%



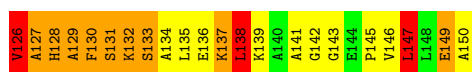
• Molecule 10: 50S ribosomal protein L14

Chain AL: . 28% 51% 20%



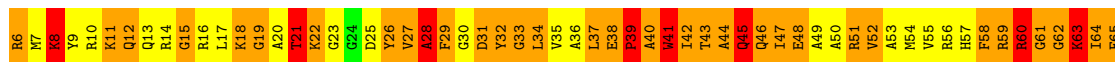
• Molecule 11: 50S ribosomal protein L15

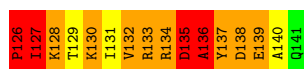
Chain AM: . 36% 45% 15%



• Molecule 12: 50S ribosomal protein L16

Chain AN: . 29% 49% 21%





- Molecule 13: 50S ribosomal protein L17

Chain AO: . 52% 30% 16%



- Molecule 14: 50S ribosomal protein L18

Chain AP: . 39% 48% 11%



- Molecule 15: 50S ribosomal protein L19

Chain AQ: . 30% 50% 20%



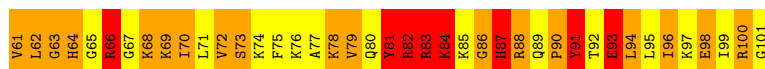
- Molecule 16: 50S ribosomal protein L20

Chain AR: . 44% 41% 14%

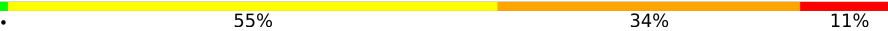


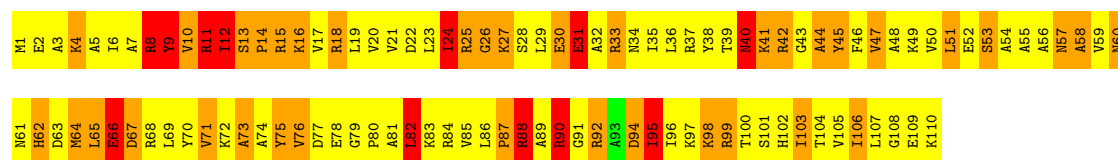
- Molecule 17: 50S ribosomal protein L21

Chain AS: . 43% 36% 21%

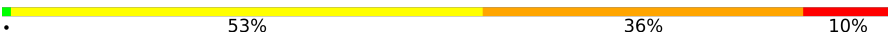


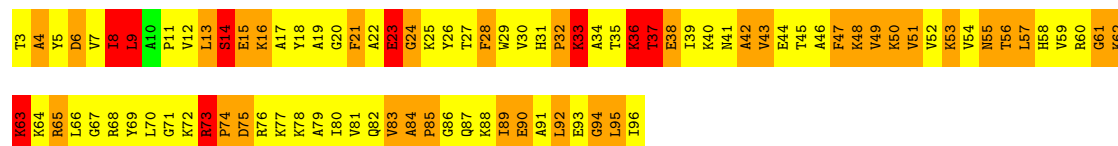
- Molecule 18: 50S ribosomal protein L22

Chain AT: 



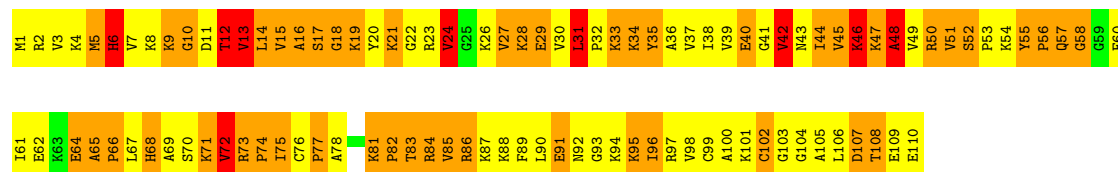
• Molecule 19: 50S ribosomal protein L23

Chain AU: 



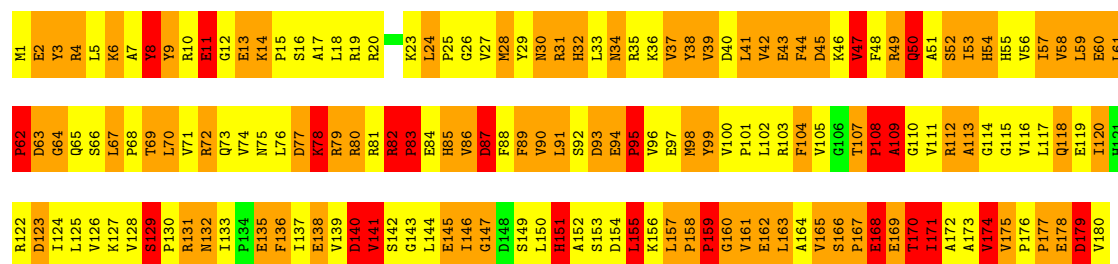
• Molecule 20: 50S ribosomal protein L24

Chain AV: 

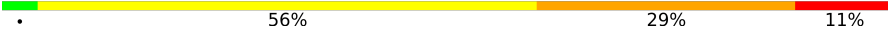


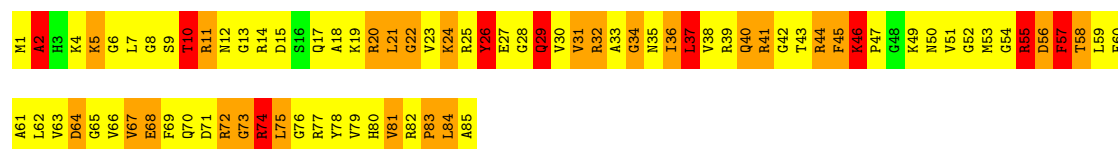
• Molecule 21: 50S ribosomal protein L25

Chain AW: 



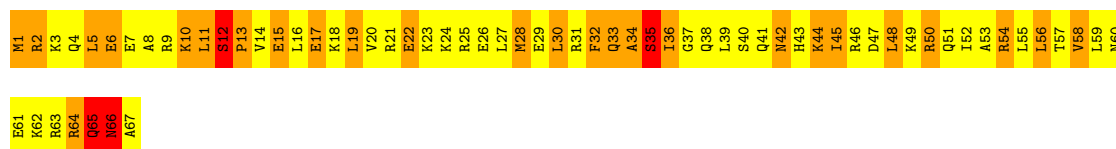
• Molecule 22: 50S ribosomal protein L27

Chain AX: 



• Molecule 23: 50S ribosomal protein L29

Chain AY: 



- Molecule 24: 50S ribosomal protein L30

Chain AZ: . 39% 46% 12%



- Molecule 25: 50S ribosomal protein L31

Chain Aa: . 20% 55% 24%



- Molecule 26: 50S ribosomal protein L32

Chain Ab: . 28% 51% 19%



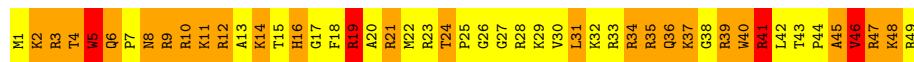
- Molecule 27: 50S ribosomal protein L33

Chain Ac: . 16% 55% 27%



- Molecule 28: 50S ribosomal protein L34

Chain Ad: 45% 47% 8%



- Molecule 29: 50S ribosomal protein L35

Chain Ae: 34% 48% 17%



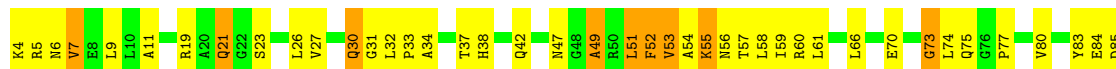
- Molecule 30: 50S ribosomal protein L36

Chain Af: 5% 54% 30% 11%



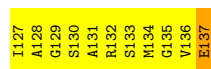
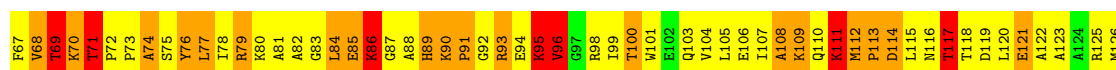
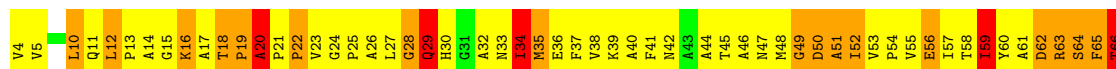
• Molecule 31: 50S ribosomal protein L10

Chain Ai: 42% 46% 11%



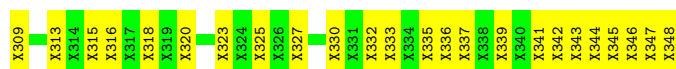
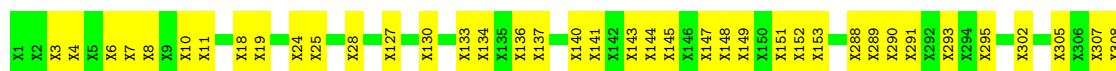
• Molecule 32: 50S ribosomal protein L11

Chain Aj: 7% 57% 28% 9%



• Molecule 33: Unknown peptide

Chain Ag: 51% 49%



• Molecule 34: 16S ribosomal RNA

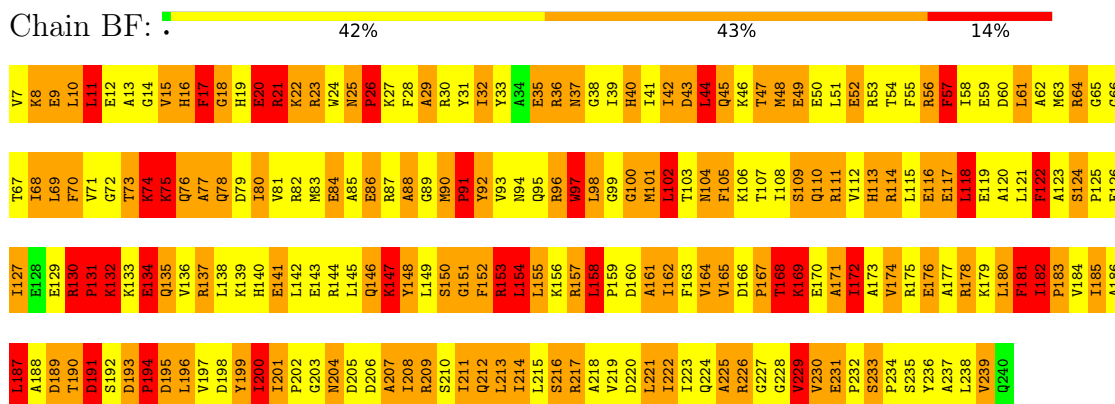
Chain Ba: 57% 33% 9%



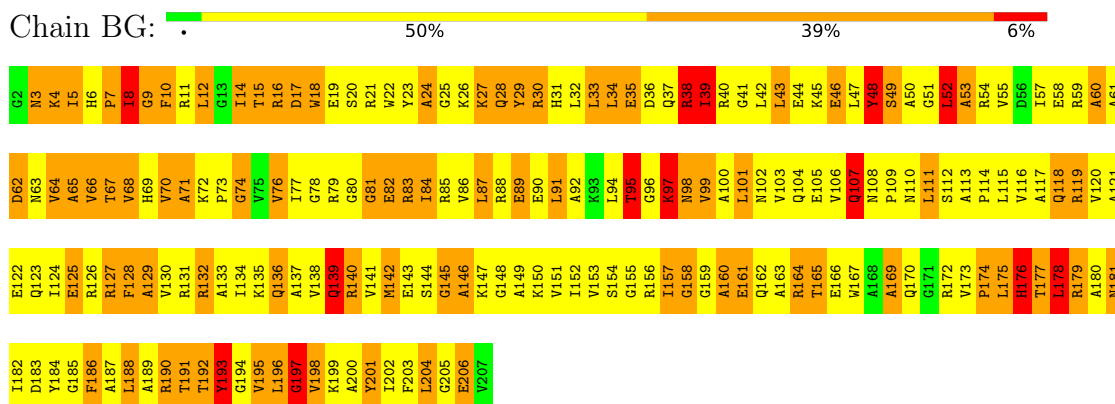
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| A1225 | G1164 | G1104 | A1044 | G989   | G929 | G669 | G803 | U743 | G683 | C623 | A563 | C503 | A431 | G371 | C311 | C251 | C186E |
| C1226 | C1165 | A1105 | C1045 | C990   | C930 | U870 | U804 | C744 | A684 | C624 | C564 | C504 | A432 | C372 | C312 | U252 | C186F |
| A1227 | A1166 | G1106 | A1046 | U991   | C931 | U871 | C805 | C745 | G885 | G825 | U565 | G505 | A433 | A374 | A313 | U253 | C187  |
| C1228 | A1167 | C1107 | G1047 | U992   | C932 | A872 | U806 | A746 | U686 | U626 | G566 | G506 | U434 | G375 | G314 | G254 | U188  |
| A1229 | A1168 | G1108 | U1048 | G993   | G933 | A873 | A807 | C747 | A687 | G627 | G567 | C507 | C436 | U376 | G315 | U255 | U189  |
| C1230 | A1169 | C1109 | U1049 | G994   | C934 | G874 | C808 | C748 | G688 | G628 | G568 | C508 | C437 | G377 | G316 | U256 | G190  |
| G1231 | C1170 | A1110 | G1050 | C995   | A935 | G875 | G809 | C749 | C689 | G629 | C569 | A509 | U437 | G377 | G317 | G257 | G191A |
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| A1236 | G1175 | C1114 | C1054 | U999   | G940 | C880 | A814 | C754 | A694 | G634 | A574 | C514 | C443 | A382 | C322 | A262 | U191F |
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| A1239 | A1179 | C1118 | G1058 | G1002  | U943 | C883 | C817 | U757 | U697 | U637 | G577 | G517 | G447 | U387 | G326 | G266 | C194  |
| U1240 | A1180 | C1119 | C1059 | G1003  | G944 | U884 | G818 | G758 | G698 | G638 | C578 | C518 | A448 | A327 | G327 | C267 | A195  |
| G1241 | G1181 | U1120 | C1060 | A1004  | G945 | G885 | A819 | A759 | C599 | G639 | G579 | C519 | A449 | A328 | G328 | C268 | A196  |
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| U1247 | G1187 | G1010 | C1066 | G1010  | G951 | U891 | G825 | G765 | U705 | C645 | G585 | C525 | A454 | C334 | G334 | C273 | G203  |
| A1248 | G1188 | G1127 | A1067 | G1011  | U952 | C892 | C826 | A766 | A706 | U646 | C586 | G526 | C455 | C335 | G335 | A274 | U208  |
| G1249 | A1189 | C1012 | G1068 | U1012  | G953 | C893 | U827 | A767 | C707 | C647 | G587 | G527 | C456 | C336 | G336 | G275 | U209  |
| A1250 | G1190 | G1013 | C1069 | G1013  | G954 | C894 | A828 | A768 | C708 | A648 | G588 | C528 | C457 | C337 | G337 | G276 | U210  |
| A1251 | A1191 | U1130 | U1070 | U1014  | U955 | G895 | G829 | G769 | G709 | G649 | C589 | G529 | C458 | A397 | C337 | C277 | G216  |
| C1252 | C1192 | A1015 | C1071 | A1015  | U956 | C896 | G830 | C770 | G650 | G710 | C590 | G530 | G464 | C398 | G338 | C278 | G217  |
| G1253 | G1193 | G1016 | U1072 | A1016  | U957 | C897 | U831 | G771 | G651 | U651 | U591 | U531 | A465 | C399 | G339 | A279 | C218  |
| C1254 | U1194 | G1017 | C1073 | G1017  | A958 | G898 | C832 | U772 | A712 | U652 | G592 | A532 | C466 | C400 | U340 | C280 | G219  |
| G1255 | G1195 | C1018 | U1074 | C1018  | A959 | C899 | U833 | G773 | G653 | G713 | G593 | A533 | G467 | C401 | C341 | G281 | G220  |
| A1256 | U1196 | U1135 | C1075 | C1019  | U960 | A900 | C834 | G774 | G714 | G654 | G594 | U534 | A468 | C402 | C342 | A282 | G221  |
| U1257 | G1197 | U1136 | C1076 | U1020  | U961 | A901 | U835 | G775 | A715 | A655 | G595 | A535 | G474 | C403 | U343 | C283 | U222  |
| G1258 | G1198 | C1137 | U1077 | G1021  | G962 | G902 | G836 | G776 | C717 | G656 | C596 | G536 | G475 | C404 | A344 | G284 | U223  |
| C1259 | U1199 | G1138 | U1078 | G1022  | G963 | G903 | G837 | A777 | G718 | G657 | U597 | G537 | G476 | U405 | C345 | G285 | C224  |
| C1260 | C1200 | G1139 | U1079 | G1023  | A964 | C904 | G838 | G778 | G719 | G658 | U598 | G538 | G477 | C406 | G346 | G286 | G225  |
| A1261 | A1201 | C1140 | A1080 | G1024  | A965 | U905 | U841 | G779 | C719 | U659 | C599 | A539 | A478 | G407 | G347 | U287 | G226  |
| C1262 | G1202 | C1141 | G1081 | U1025  | G966 | G906 | C842 | A780 | C720 | G660 | C600 | G540 | C479 | A408 | G348 | A288 | G227  |
| C1263 | C1203 | G1142 | G1082 | G1026  | C967 | A907 | U843 | A781 | G721 | G661 | C601 | G541 | U480 | C409 | A349 | G289 | A228  |
| G1264 | A1204 | G1143 | U1083 | C1027  | A968 | A908 | C848 | A782 | A722 | G662 | A602 | G542 | C481 | G410 | G350 | C290 | U229  |
| G1265 | U1205 | G1144 | G1084 | C1028  | A969 | A909 | C849 | C783 | U723 | A663 | U603 | C543 | A482 | C411 | C351 | G291 | G230  |
| C1266 | G1206 | C1145 | U1085 | C1028A | C970 | C910 | U850 | C784 | G724 | G664 | G604 | G544 | C483 | A412 | C352 | G292 | G231  |
| C1267 | G1207 | A1146 | U1086 | C1028B | G971 | U911 | G851 | G785 | G725 | A665 | U605 | C545 | G484 | G413 | A353 | G293 | G232  |
| A1268 | C1208 | C1147 | G1087 | G1029  | C972 | C912 | G852 | G786 | C726 | G666 | G606 | G546 | G485 | A414 | G354 | U294 | C233  |
| C1269 | C1209 | U1148 | G1088 | C1030  | G973 | A913 | G853 | A787 | G727 | G667 | A607 | A547 | U486 | A415 | C355 | C295 | C234  |
| C1270 | U1210 | G1031 | G1089 | A1031  | A974 | A914 | G854 | U788 | A728 | G668 | A608 | G548 | A487 | C416 | G356 | U296 | C235  |
| G1271 | C1211 | U1150 | U1090 | A1032  | A975 | A915 | G855 | U789 | A729 | U669 | A609 | C549 | C488 | C417 | G357 | G297 | G236  |
| C1272 | U1212 | A1151 | U1091 | G1032A | G976 | G916 | C856 | A790 | G730 | G670 | G610 | G550 | C489 | C418 | U358 | A298 | C237  |
| G1273 | A1213 | A1152 | A1092 | G1032B | A977 | G917 | C857 | G791 | G731 | G671 | A611 | U551 | G490 | C419 | U359 | G299 | G238  |
| G1274 | C1214 | C1153 | A1093 | G1033  | C978 | A918 | G858 | A792 | C732 | U672 | C612 | U552 | G491 | U420 | A360 | A300 | G239  |
| A1275 | G1215 | G1154 | G1094 | G1034  | C979 | A919 | A859 | U793 | A733 | G673 | C613 | A553 | G492 | U421 | G361 | G301 | C241  |
| G1276 | G1216 | G1155 | U1095 | A1035  | C980 | U920 | A860 | A794 | G734 | G674 | A614 | C554 | G493 | C422 | G362 | G302 | C242  |
| C1277 | C1217 | U1156 | C1096 | G1037  | U981 | U921 | G861 | C795 | C735 | A675 | C615 | C555 | U494 | G423 | A363 | A303 | A243  |
| U1278 | C1218 | A1157 | C1097 | C1037  | U982 | G922 | C862 | C796 | G676 | A676 | G616 | C556 | A495 | G424 | A364 | U304 | U244  |
| A1279 | U1219 | C1158 | G1098 | C1038  | A983 | A923 | U863 | G797 | A737 | U677 | G617 | G557 | A496 | G425 | U365 | G305 | A245  |
| G1280 | U1220 | U1159 | G1099 | C1039  | C984 | C924 | A864 | C798 | C738 | U678 | C618 | G558 | U497 | G426 | G366 | G306 | A246  |
| U1281 | G1221 | G1160 | C1100 | U1040  | C985 | G925 | A865 | G799 | C739 | C679 | U619 | A559 | A498 | U427 | U367 | C307 | G247  |
| C1282 | G1222 | C1161 | A1101 | A1041  | A986 | G926 | C866 | U740 | C680 | G580 | C620 | U560 | C501 | U428 | U368 | C308 | C248  |
| C1283 | C1223 | G1042 | A1102 | G987   | G927 | G967 | U801 | G741 | C681 | C681 | A621 | U561 | G502 | U429 | U369 | G309 | U249  |
| C1284 | G1224 | C1163 | C1103 | C1043  | G988 | G928 | C868 | A802 | G742 | G682 | A622 | C562 | G502 | A430 | C370 | G310 | A250  |

|       |        |       |       |       |
|-------|--------|-------|-------|-------|
| G1285 | G1345  | G1404 | G1469 | G1529 |
| A1286 | A1346  | G1405 | G1470 | G1530 |
| A1287 | G1347  | U1406 | G1471 | A1531 |
| A1288 | U1348  | G1407 | U1472 | U1532 |
| A1289 | A1349  | A1408 | A1473 | A1533 |
| G1290 | A1350  | A1409 | G1474 | A1534 |
| G1291 | U1351  | G1410 | G1475 | C1535 |
| U1292 | C1352  | G1411 | G1476 | C1536 |
| G1293 | U1353  | G1412 | C1477 | U1537 |
| G1294 | C1354  | A1413 | G1478 | C1538 |
| G1295 | G1355  | A1414 | C1479 | C1539 |
| G1296 | G1356  | G1415 | G1480 | U1540 |
| C1297 | A1357  | G1416 | U1481 | U1541 |
| C1298 | U1358  | G1417 | G1482 | U1542 |
| A1299 | C1359  | A1418 | A1483 |       |
| G1300 | A1360  | G1419 | A1484 |       |
| U1301 | G1361  | G1420 | U1485 |       |
| U1302 | C1362  | G1421 | G1486 |       |
| C1303 | C1362A | G1422 | G1487 |       |
| G1304 | A1363  | G1423 | G1488 |       |
| G1305 | U1364  | G1424 | G1489 |       |
| A1306 | G1365  | U1425 | C1490 |       |
| U1307 | C1366  | U1426 | G1491 |       |
| U1308 | C1367  | U1427 | A1492 |       |
| G1309 | G1368  | A1428 | A1493 |       |
| G1310 | C1369  | G1429 | G1494 |       |
| G1311 | G1370  | U1430 | U1495 |       |
| G1312 | G1371  | C1431 | A1496 |       |
| U1313 | U1372  | G1432 | G1497 |       |
| C1314 | G1373  | A1433 | U1498 |       |
| U1315 | A1374  | U1434 | A1499 |       |
| G1316 | U1375  | G1435 | A1500 |       |
| C1317 | U1376  | U1436 | C1501 |       |
| A1318 | A1377  | G1437 | A1502 |       |
| A1319 | C1378  | G1438 | A1503 |       |
| C1320 | G1379  | C1439 | G1504 |       |
| C1321 | U1380  | G1440 | G1505 |       |
| C1322 | U1381  | G1441 | U1506 |       |
| G1323 | C1382  | G1442 | A1507 |       |
| A1324 | C1383  | G1443 | G1508 |       |
| C1325 | C1384  | A1446 | C1509 |       |
| C1326 | G1385  | G1447 | U1510 |       |
| C1327 | G1386  | U1448 | G1511 |       |
| C1328 | G1387  | G1449 | U1512 |       |
| A1329 | C1388  | U1450 | A1513 |       |
| U1330 | C1389  | A1451 | C1514 |       |
| G1331 | C1390  | C1452 | C1515 |       |
| A1332 | U1391  | G1453 | G1516 |       |
| A1333 | G1392  | G1454 | G1517 |       |
| G1334 | U1393  | G1455 | A1518 |       |
| C1335 | C1394  | G1456 | A1519 |       |
| C1336 | C1395  | A1460 | G1520 |       |
| G1337 | A1396  | G1461 | G1521 |       |
| G1338 | C1397  | G1462 | U1522 |       |
| A1339 | A1398  | G1463 | G1523 |       |
| C1389 | C1399  | G1464 | C1524 |       |
| U1341 | C1400  | G1465 | G1525 |       |
| C1342 | G1401  | G1466 | G1526 |       |
| G1343 | C1402  | G1467 | C1527 |       |
| C1344 | C1403  | A1468 | U1528 |       |

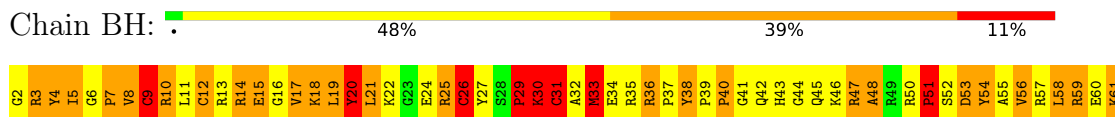
• Molecule 35: 30S ribosomal protein S2

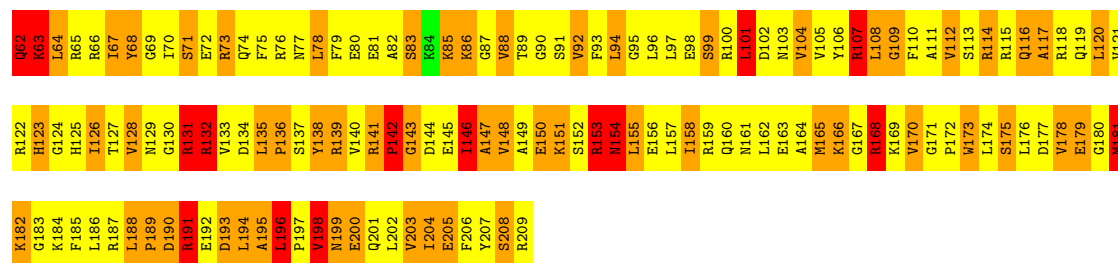


• Molecule 36: 30S ribosomal protein S3



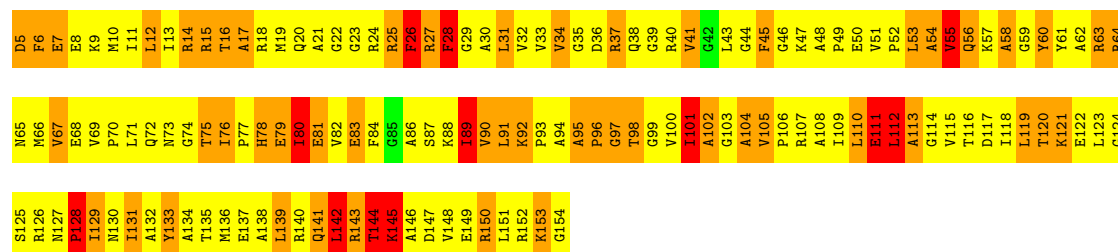
• Molecule 37: 30S ribosomal protein S4





• Molecule 38: 30S ribosomal protein S5

Chain BI: . 56% 35% 8%



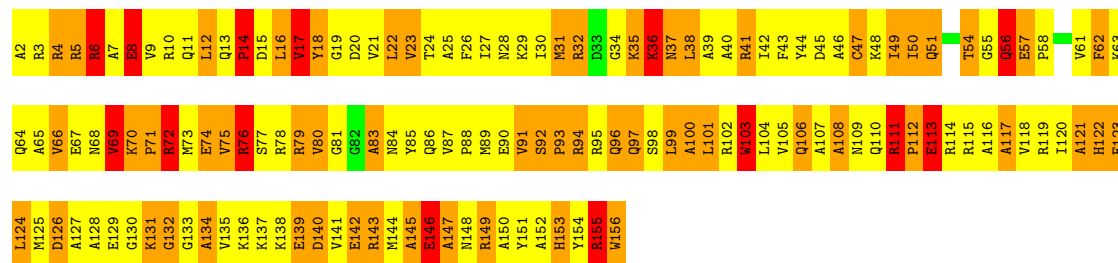
• Molecule 39: 30S ribosomal protein S6

Chain BJ: . 50% 40% 8%



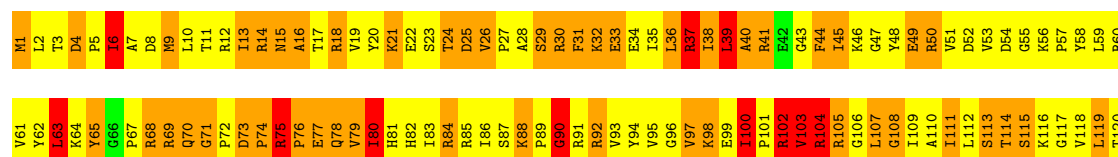
• Molecule 40: 30S ribosomal protein S7

Chain BK: . 50% 37% 9%



• Molecule 41: 30S ribosomal protein S8

Chain BL: . 50% 39% 9%



D121  
R122  
E123  
A124  
R125  
K126  
L127  
G128  
V129  
G130  
G131  
E132  
L133  
I134  
C135  
E136  
V137  
W138

- Molecule 42: 30S ribosomal protein S9

Chain BM: . 56% 35% 6%

E2  
Q3  
Y4  
Y5  
Y6  
G6  
T7  
G8  
R9  
R10  
K11  
E12  
A13  
V14  
A15  
R16  
V17  
F18  
F19  
L19  
R20  
P21  
G22  
G23  
G24  
K25  
V26  
T27  
V28  
N29  
G30  
Q31  
Q32  
D32  
F33  
R34  
E35  
Y36  
L37  
Q38  
G39  
L40  
V41  
R42  
A43  
V44  
A45  
A46  
L47  
E48  
P49  
L50  
R51  
A52  
V53  
D54  
A55  
G56  
H57  
H58  
F59  
D60  
A61

Y62  
I63  
T64  
V65  
R66  
G67  
G68  
G69  
K70  
S71  
G72  
Q73  
I74  
D75  
A76  
I77  
K78  
L79  
G80  
I81  
A82  
R83  
A84  
L85  
V86  
Q87  
Y88  
N89  
P90  
Q91  
Y92  
R93  
A94  
K95  
L96  
K97  
P98  
L99  
G100  
F101  
R102  
T103  
R104  
D105  
A106  
R107  
V108  
V109  
E110  
R111  
K112  
K113  
Y114  
G115  
K116  
H117  
K118  
A119  
R120  
D121

A122  
F123  
Q124  
Y125  
S126  
K127  
R128

- Molecule 43: 30S ribosomal protein S10

Chain BN: . 48% 44% 6%

K3  
I4  
R5  
I6  
K7  
L8  
R9  
G10  
F11  
D12  
H13  
H14  
T15  
L16  
D17  
A18  
S19  
A20  
Q21  
K22  
I23  
V24  
E25  
A26  
A27  
R28  
D29  
S30  
G31  
A32  
Q33  
V34  
S35  
G36  
P37  
I38  
P39  
L40  
P41  
T42  
R43  
V44  
R45  
R46  
F47  
T48  
V49  
I50  
G51  
P52  
P53  
F54  
K55  
H56  
K57  
D58  
S59  
R60  
E61  
H62

F63  
E64  
L65  
R66  
T67  
H68  
N69  
R70  
L71  
V72  
D73  
I74  
I75  
N76  
P77  
N78  
R79  
T81  
I82  
E83  
Q84  
L85  
M86  
T87  
L88  
D89  
L90  
P91  
T92  
G93  
Y94  
E95  
I96  
E97  
I98  
K99  
T100

- Molecule 44: 30S ribosomal protein S11

Chain BO: . 55% 41% .

K11  
R12  
Q13  
I14  
R15  
A16  
S16  
G17  
R18  
A19  
Y20  
I21  
H22  
A23  
S24  
Y25  
N26  
T27  
G28  
I29  
V30  
T31  
I32  
T33  
D34  
P35  
D36  
G37  
N38  
P39  
I40  
T41  
H42  
S43  
S44  
G45  
G46  
V47  
I48  
G49  
Y50  
K51  
G52  
S53  
R54  
K55  
G56  
P58  
C119  
A60  
A61  
Q62  
L63  
A64  
A65  
L66  
D67  
A68  
S129  
K70

K71  
A72  
M73  
A74  
Y75  
G76  
M77  
Q78  
S79  
V80  
D81  
I82  
V83  
V84  
R85  
G86  
T87  
G88  
A89  
G90  
R91  
E92  
Q93  
A94  
I95  
R96  
A97  
L98  
Q99  
A100  
S101  
G102  
L103  
Q104  
V105  
G106  
S107  
I108  
V109  
D110  
D111  
T112  
P113  
V114  
P115  
H116  
G118  
R120  
P121  
K122  
K123  
K124  
F125  
R126  
K127  
A128  
S129

- Molecule 45: 30S ribosomal protein S12

Chain BP: . 39% 48% 9%

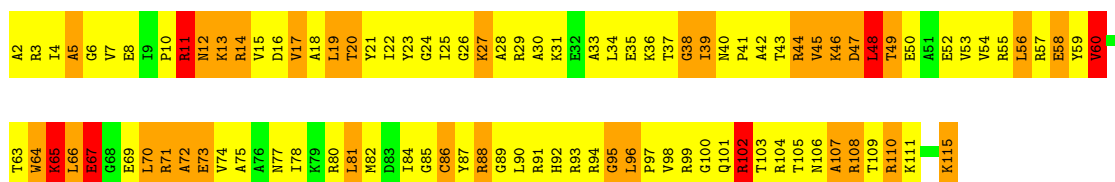
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T6  
I7  
N8  
Q9  
L10  
V11  
R12  
K13  
G14  
R15  
E16  
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K20  
K21  
S22  
K23  
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A26  
L27  
K28  
G29  
A30  
P31  
F32  
R33  
R34  
G35  
V36  
C37  
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R41  
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V43  
T44  
P45  
K46  
A47  
P48  
M49  
S50  
A51  
L52  
R53  
K54  
V55  
A56  
K57  
V58  
R59  
L60  
T61  
S62  
G63  
Y64

E65  
V66  
T67  
A68  
Y69  
I70  
P71  
G72  
E73  
H75  
N76  
L77  
Q78  
E79  
H80  
S81  
V82  
V83  
L84  
R85  
R86  
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G88  
R89  
Y90  
K91  
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K114  
K115  
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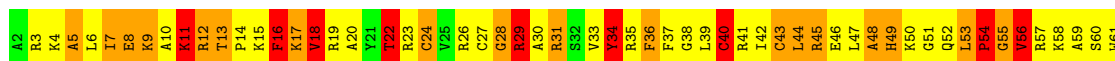
- Molecule 46: 30S ribosomal protein S13

Chain BQ: 11% 56% 28% 5%



- Molecule 47: 30S ribosomal protein S14 type Z

Chain BR: 7% 48% 30% 15%



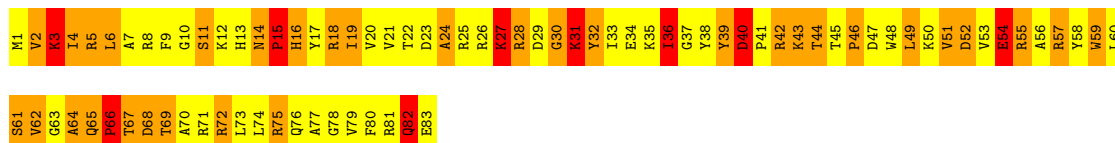
- Molecule 48: 30S ribosomal protein S15

Chain BS: 59% 33% 6%



- Molecule 49: 30S ribosomal protein S16

Chain BT: 49% 40% 11%



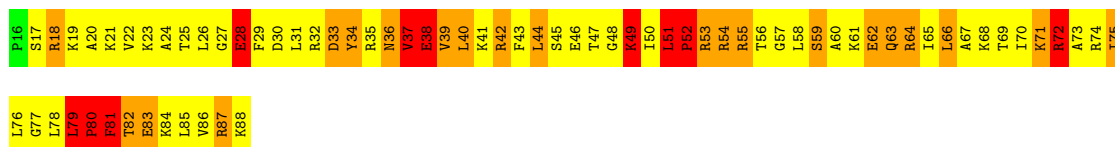
- Molecule 50: 30S ribosomal protein S17

Chain BU: 44% 43% 9%

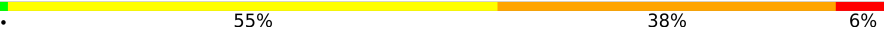


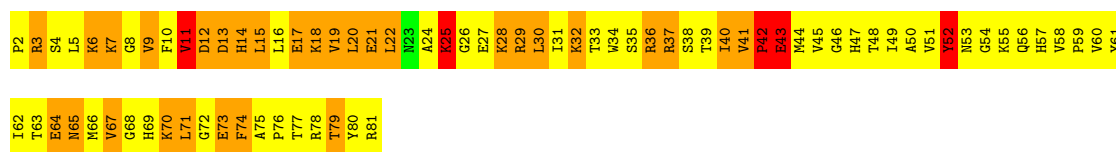
- Molecule 51: 30S ribosomal protein S18

Chain BV: 56% 29% 14%

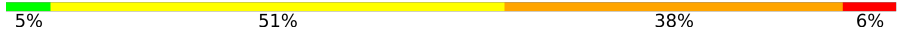


- Molecule 52: 30S ribosomal protein S19

Chain BW: 



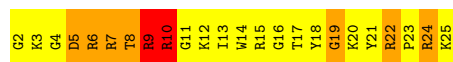
• Molecule 53: 30S ribosomal protein S20

Chain BX: 



• Molecule 54: 30S ribosomal protein Thx

Chain BY: 

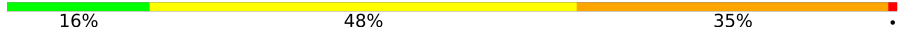


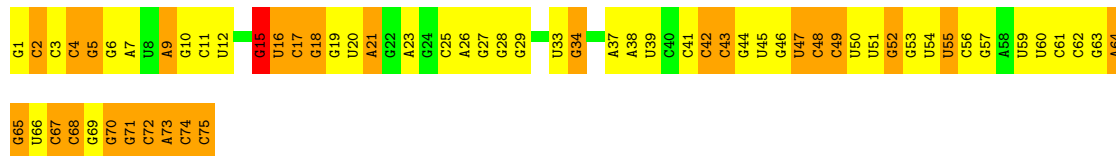
• Molecule 55: tRNA chain 1

Chain BC: 

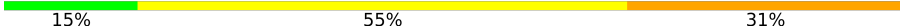


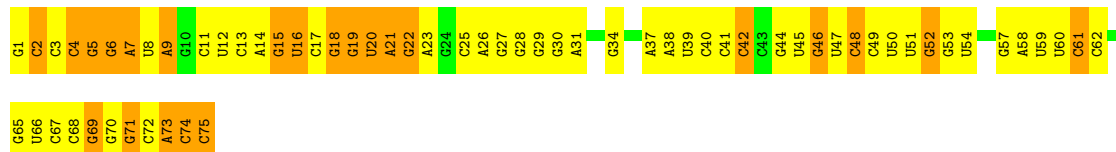
• Molecule 56: tRNA chain 2

Chain BD: 

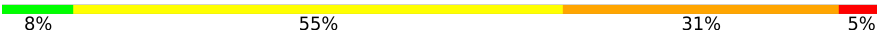


• Molecule 56: tRNA chain 2

Chain BE: 



• Molecule 57: GTP-binding protein

Chain BZ:  8% 55% 31% 5%

|     |      |      |      |      |      |      |      |
|-----|------|------|------|------|------|------|------|
| M1  | M183 | E243 | P305 | E371 | D432 | Q493 | E553 |
| L2  | T184 | G244 | T306 | N372 | G433 | G494 | A554 |
| E3  | P185 | K245 | V307 | M373 | R434 | K495 | V555 |
| K4  | L186 | T246 | S308 | R374 | G435 | A496 | V556 |
| L5  | D187 | R247 | M309 | E375 | V436 | V497 | L557 |
| R6  | Q188 | N248 | F310 | E376 | R437 | A498 | V558 |
| N7  | D189 | A249 | F311 | G377 | R438 | F499 | P559 |
| I8  | K129 | K250 | C312 | F378 | L439 | A500 | P560 |
| A9  | V130 | V251 | V313 | E379 | D440 | L501 | P561 |
| I10 | R131 | V191 | N314 | L380 | Y441 | F502 | M562 |
| I11 | R132 | H192 | T315 | A381 | G442 | G503 | M563 |
| T12 | V73  | K252 | S316 | V382 | I443 | L504 | T564 |
| A12 | D74  | V254 | S317 | S383 | P444 | Q505 | L565 |
| H13 | T75  | L255 | P317 | R384 | S445 | D506 | L566 |
| V14 | P76  | G256 | F318 | P385 | R446 | R507 | E566 |
| D15 | G77  | H257 | C319 | K386 | G447 | G508 | Q567 |
| H16 | H78  | L258 | G320 | V387 | D448 | K509 | A568 |
| G17 | A79  | G259 | L448 | V388 | I449 | L510 | L569 |
| K18 | D80  | L260 | E322 | I388 | G450 | F511 | E570 |
| T19 | F81  | E261 | G323 | F389 | F451 | L512 | F571 |
| T20 | G82  | R262 | K324 | R390 | R452 | G513 | I572 |
| L21 | G83  | T265 | F325 | E391 | R453 | H514 | D573 |
| V22 | E84  | D266 | V326 | I392 | S453 | H515 | D574 |
| D23 | V85  | T267 | T327 | D393 | E454 | G515 | D575 |
| K24 | E86  | L268 | S328 | G394 | F455 | A516 | E576 |
| L25 | R87  | A269 | R329 | R395 | M456 | E517 | L577 |
| L26 | V88  | E269 | Q330 | K396 | T457 | V518 | V578 |
| Q27 | M89  | G270 | I331 | Q397 | M458 | Y519 | E579 |
| S28 | S90  | A271 | L332 | E398 | T459 | E520 | V580 |
| R29 | M91  | D272 | D333 | P399 | S460 | G521 | T581 |
| G30 | S92  | L273 | E401 | Y400 | G461 | Q522 | P582 |
| T31 | D93  | V274 | E338 | E402 | T462 | I523 | T583 |
| F32 | S94  | Y214 | L339 | M402 | G463 | I524 | S584 |
| D33 | V95  | D156 | V340 | V403 | L464 | G525 | L585 |
| S34 | L96  | E156 | H341 | T404 | L465 | I526 | R586 |
| R35 | L97  | Q157 | N342 | L405 | Y466 | H527 | I587 |
| A36 | V98  | L158 | V343 | D406 | S467 | S528 | R588 |
| E37 | V99  | D159 | A344 | Y407 | T468 | R529 | K589 |
| T38 | D100 | F160 | L345 | E408 | F469 | S530 | R590 |
| Q39 | A101 | F161 | R346 | E409 | S470 | N531 | H591 |
| E40 | F102 | I162 | E351 | Q410 | H471 | D532 | L592 |
| R41 | G104 | V163 | D352 | H411 | Y472 | L533 | T593 |
| V42 | P105 | A165 | A353 | G413 | D473 | T534 | V535 |
| M43 | P106 | S166 | D354 | S414 | D474 | V536 | N536 |
| D44 | P107 | A167 | A355 | Y415 | R476 | C537 | R597 |
| L48 | Q108 | L168 | V288 | M416 | P477 | L538 | R598 |
| L49 | T109 | M169 | C289 | Q417 | G480 | T539 | R599 |
| K50 | R110 | K230 | T291 | A418 | G481 | G540 | N601 |
| E51 | F111 | I171 | Q292 | L419 | Q482 | K541 | R602 |
| R52 | V112 | G172 | N293 | G360 | R483 | K542 | A603 |
| G53 | T113 | G173 | E295 | G362 | T544 | L543 | P604 |
| I54 | K114 | L174 | A296 | E363 | Q484 | T545 | K605 |
| T55 | K115 | D175 | A296 | L364 | M485 | M546 |      |
| L56 | A116 | H176 | Q236 | H365 | G486 | R547 |      |
| L57 | F117 | V237 | V237 | L426 | L487 | V487 |      |
| A58 | A118 | D178 | L300 | T238 | L488 | A548 |      |
| K59 | Y119 | M179 | S301 | S367 | I489 | S549 |      |
| N60 | G120 | I240 | V302 | V368 | M429 | G550 |      |
| T61 | L121 | E181 | D303 | L369 | N430 | A551 |      |
| A62 | K122 | D182 | S242 | I370 | G492 | D552 |      |

## 4 Experimental information

| Property                             | Value                   | Source    |
|--------------------------------------|-------------------------|-----------|
| EM reconstruction method             | SINGLE PARTICLE         | Depositor |
| Imposed symmetry                     | POINT, C1               | Depositor |
| Number of particles used             | 77127                   | Depositor |
| Resolution determination method      | Not provided            |           |
| CTF correction method                | CTFFIND3                | Depositor |
| Microscope                           | FEI TECNAI F20          | Depositor |
| Voltage (kV)                         | 200                     | Depositor |
| Electron dose ( $e^-/\text{\AA}^2$ ) | 20                      | Depositor |
| Minimum defocus (nm)                 | 1500                    | Depositor |
| Maximum defocus (nm)                 | 4000                    | Depositor |
| Magnification                        | 73684                   | Depositor |
| Image detector                       | FEI FALCON II (4k x 4k) | Depositor |

## 5 Model quality ⓘ

### 5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: 8AN, GCP, NMY

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Chain | Bond lengths |                 | Bond angles |                   |
|-----|-------|--------------|-----------------|-------------|-------------------|
|     |       | RMSZ         | $\# Z  > 5$     | RMSZ        | $\# Z  > 5$       |
| 1   | AA    | 0.69         | 17/69678 (0.0%) | 1.05        | 364/108758 (0.3%) |
| 2   | AB    | 0.56         | 0/2954          | 0.95        | 5/4606 (0.1%)     |
| 3   | AC    | 0.79         | 0/1772          | 1.35        | 32/2383 (1.3%)    |
| 4   | AD    | 0.97         | 1/2174 (0.0%)   | 1.76        | 56/2927 (1.9%)    |
| 5   | AE    | 1.06         | 5/1611 (0.3%)   | 1.66        | 43/2171 (2.0%)    |
| 6   | AF    | 0.83         | 0/1660          | 1.51        | 35/2247 (1.6%)    |
| 7   | AG    | 0.83         | 1/1507 (0.1%)   | 1.53        | 34/2027 (1.7%)    |
| 8   | AH    | 0.82         | 2/1354 (0.1%)   | 1.48        | 28/1831 (1.5%)    |
| 9   | AK    | 1.03         | 1/1140 (0.1%)   | 1.64        | 30/1537 (2.0%)    |
| 10  | AL    | 1.23         | 3/942 (0.3%)    | 1.97        | 48/1268 (3.8%)    |
| 11  | AM    | 1.00         | 2/1123 (0.2%)   | 1.63        | 33/1493 (2.2%)    |
| 12  | AN    | 0.99         | 0/1100          | 1.76        | 35/1470 (2.4%)    |
| 13  | AO    | 0.98         | 1/974 (0.1%)    | 1.60        | 27/1302 (2.1%)    |
| 14  | AP    | 1.00         | 0/887           | 1.66        | 28/1180 (2.4%)    |
| 15  | AQ    | 1.14         | 2/990 (0.2%)    | 1.85        | 35/1325 (2.6%)    |
| 16  | AR    | 1.03         | 1/982 (0.1%)    | 1.50        | 21/1306 (1.6%)    |
| 17  | AS    | 1.16         | 2/790 (0.3%)    | 1.93        | 32/1057 (3.0%)    |
| 18  | AT    | 0.89         | 1/886 (0.1%)    | 1.52        | 17/1189 (1.4%)    |
| 19  | AU    | 0.77         | 0/756           | 1.38        | 16/1015 (1.6%)    |
| 20  | AV    | 0.75         | 0/857           | 1.57        | 21/1142 (1.8%)    |
| 21  | AW    | 0.92         | 1/1467 (0.1%)   | 1.78        | 53/1992 (2.7%)    |
| 22  | AX    | 0.86         | 0/679           | 1.59        | 20/902 (2.2%)     |
| 23  | AY    | 0.83         | 0/569           | 1.31        | 8/751 (1.1%)      |
| 24  | AZ    | 0.86         | 1/474 (0.2%)    | 1.62        | 13/635 (2.0%)     |
| 25  | Aa    | 1.10         | 0/594           | 1.85        | 26/795 (3.3%)     |
| 26  | Ab    | 1.03         | 2/459 (0.4%)    | 1.76        | 20/621 (3.2%)     |
| 27  | Ac    | 1.10         | 0/433           | 1.88        | 15/576 (2.6%)     |
| 28  | Ad    | 0.97         | 0/438           | 1.35        | 4/575 (0.7%)      |
| 29  | Ae    | 0.83         | 0/523           | 1.62        | 18/690 (2.6%)     |
| 30  | Af    | 0.81         | 0/310           | 1.56        | 6/407 (1.5%)      |
| 31  | AI    | 0.67         | 1/751 (0.1%)    | 1.20        | 6/1042 (0.6%)     |
| 32  | AJ    | 0.56         | 1/1012 (0.1%)   | 0.91        | 4/1373 (0.3%)     |

| Mol | Chain | Bond lengths |                  | Bond angles |                    |
|-----|-------|--------------|------------------|-------------|--------------------|
|     |       | RMSZ         | # Z  >5          | RMSZ        | # Z  >5            |
| 34  | BA    | 0.65         | 3/36437 (0.0%)   | 0.99        | 134/56865 (0.2%)   |
| 35  | BF    | 0.87         | 1/1935 (0.1%)    | 1.50        | 38/2609 (1.5%)     |
| 36  | BG    | 0.70         | 0/1636           | 1.33        | 21/2205 (1.0%)     |
| 37  | BH    | 0.89         | 3/1733 (0.2%)    | 1.42        | 27/2318 (1.2%)     |
| 38  | BI    | 0.86         | 0/1162           | 1.48        | 22/1564 (1.4%)     |
| 39  | BJ    | 0.85         | 0/856            | 1.28        | 7/1154 (0.6%)      |
| 40  | BK    | 0.77         | 0/1276           | 1.37        | 21/1709 (1.2%)     |
| 41  | BL    | 0.85         | 0/1136           | 1.34        | 13/1527 (0.9%)     |
| 42  | BM    | 0.75         | 0/1029           | 1.16        | 9/1379 (0.7%)      |
| 43  | BN    | 0.70         | 0/807            | 1.33        | 10/1085 (0.9%)     |
| 44  | BO    | 0.85         | 0/900            | 1.58        | 22/1213 (1.8%)     |
| 45  | BP    | 0.78         | 0/986            | 1.49        | 21/1320 (1.6%)     |
| 46  | BQ    | 0.36         | 0/924            | 0.68        | 0/1238             |
| 47  | BR    | 0.72         | 0/501            | 1.34        | 8/664 (1.2%)       |
| 48  | BS    | 0.83         | 0/745            | 1.33        | 9/992 (0.9%)       |
| 49  | BT    | 0.87         | 0/716            | 1.35        | 12/963 (1.2%)      |
| 50  | BU    | 0.99         | 1/870 (0.1%)     | 1.51        | 20/1159 (1.7%)     |
| 51  | BV    | 0.79         | 0/603            | 1.61        | 13/799 (1.6%)      |
| 52  | BW    | 0.63         | 1/661 (0.2%)     | 1.31        | 4/890 (0.4%)       |
| 53  | BX    | 0.94         | 0/765            | 1.27        | 8/1007 (0.8%)      |
| 54  | BY    | 0.57         | 0/212            | 1.26        | 3/277 (1.1%)       |
| 55  | BC    | 0.42         | 0/1809           | 0.64        | 0/2819             |
| 56  | BD    | 0.44         | 0/1784           | 0.66        | 2/2780 (0.1%)      |
| 56  | BE    | 0.38         | 0/1784           | 0.65        | 0/2780             |
| 57  | BZ    | 0.39         | 1/4678 (0.0%)    | 0.74        | 5/6310 (0.1%)      |
| All | All   | 0.73         | 55/167791 (0.0%) | 1.16        | 1562/250219 (0.6%) |

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1   | AA    | 0                   | 432                 |
| 2   | AB    | 0                   | 17                  |
| 3   | AC    | 0                   | 1                   |
| 5   | AE    | 0                   | 1                   |
| 6   | AF    | 0                   | 1                   |
| 9   | AK    | 0                   | 1                   |
| 12  | AN    | 0                   | 1                   |
| 15  | AQ    | 0                   | 1                   |
| 17  | AS    | 0                   | 1                   |

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| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 25  | Aa    | 0                   | 1                   |
| 26  | Ab    | 0                   | 1                   |
| 31  | AI    | 0                   | 2                   |
| 34  | BA    | 0                   | 170                 |
| 37  | BH    | 0                   | 1                   |
| 39  | BJ    | 0                   | 1                   |
| 44  | BO    | 0                   | 1                   |
| 47  | BR    | 0                   | 1                   |
| All | All   | 0                   | 634                 |

All (55) bond length outliers are listed below:

| Mol | Chain | Res  | Type | Atoms | Z      | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|-------|--------|-------------|----------|
| 1   | AA    | 1060 | U    | O3'-P | -64.22 | 0.64        | 1.61     |
| 34  | BA    | 1317 | C    | O3'-P | -56.08 | 0.77        | 1.61     |
| 1   | AA    | 1203 | G    | O3'-P | -27.80 | 1.19        | 1.61     |
| 34  | BA    | 1167 | A    | O3'-P | 16.69  | 1.86        | 1.61     |
| 31  | AI    | 153  | LEU  | C-N   | -15.30 | 1.11        | 1.33     |
| 37  | BH    | 146  | ILE  | CA-CB | -13.49 | 1.45        | 1.55     |
| 1   | AA    | 2500 | U    | O3'-P | -12.04 | 1.43        | 1.61     |
| 1   | AA    | 2448 | A    | O3'-P | -11.53 | 1.43        | 1.61     |
| 1   | AA    | 1240 | U    | O3'-P | -10.77 | 1.45        | 1.61     |
| 1   | AA    | 2756 | U    | O3'-P | 10.70  | 1.77        | 1.61     |
| 10  | AL    | 98   | VAL  | CA-C  | 8.63   | 1.60        | 1.52     |
| 50  | BU    | 21   | VAL  | CA-CB | -8.51  | 1.42        | 1.55     |
| 4   | AD    | 245  | PRO  | CA-C  | 7.91   | 1.59        | 1.52     |
| 1   | AA    | 1202 | C    | O3'-P | -7.83  | 1.49        | 1.61     |
| 1   | AA    | 2499 | C    | O3'-P | 7.53   | 1.72        | 1.61     |
| 1   | AA    | 2500 | U    | C4-O4 | 7.42   | 1.38        | 1.23     |
| 37  | BH    | 12   | CYS  | CA-CB | 7.31   | 1.65        | 1.53     |
| 1   | AA    | 2755 | C    | O3'-P | 7.13   | 1.71        | 1.61     |
| 5   | AE    | 135  | HIS  | CA-C  | 6.96   | 1.62        | 1.52     |
| 1   | AA    | 607  | U    | N3-C4 | -6.48  | 1.25        | 1.38     |
| 17  | AS    | 61   | VAL  | CA-C  | -6.41  | 1.44        | 1.52     |
| 10  | AL    | 98   | VAL  | CA-CB | 6.41   | 1.62        | 1.53     |
| 1   | AA    | 2447 | G    | O3'-P | -6.25  | 1.51        | 1.61     |
| 9   | AK    | 46   | VAL  | CA-CB | 6.06   | 1.62        | 1.54     |
| 1   | AA    | 1204 | A    | O3'-P | 6.01   | 1.70        | 1.61     |
| 8   | AH    | 11   | VAL  | CA-CB | 5.97   | 1.61        | 1.54     |
| 5   | AE    | 25   | VAL  | CA-CB | -5.83  | 1.47        | 1.54     |
| 26  | Ab    | 11   | THR  | CA-CB | 5.82   | 1.63        | 1.53     |
| 18  | AT    | 96   | ILE  | CA-CB | -5.74  | 1.46        | 1.55     |

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| Mol | Chain | Res  | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|---------|-------|-------------|----------|
| 1   | AA    | 621  | A    | C6-N6   | 5.66  | 1.45        | 1.33     |
| 11  | AM    | 71   | VAL  | CA-CB   | 5.62  | 1.61        | 1.54     |
| 1   | AA    | 2448 | A    | C5'-C4' | 5.59  | 1.59        | 1.51     |
| 52  | BW    | 2    | PRO  | CA-C    | 5.58  | 1.64        | 1.52     |
| 21  | AW    | 39   | VAL  | CA-CB   | 5.57  | 1.60        | 1.53     |
| 34  | BA    | 579  | G    | C3'-O3' | 5.49  | 1.50        | 1.42     |
| 5   | AE    | 135  | HIS  | CA-CB   | 5.47  | 1.62        | 1.53     |
| 26  | Ab    | 11   | THR  | N-CA    | 5.43  | 1.53        | 1.46     |
| 15  | AQ    | 66   | VAL  | CA-CB   | -5.42 | 1.47        | 1.54     |
| 1   | AA    | 2195 | C    | C3'-O3' | 5.40  | 1.50        | 1.42     |
| 13  | AO    | 36   | THR  | CA-CB   | 5.40  | 1.59        | 1.54     |
| 16  | AR    | 89   | GLU  | CA-C    | 5.37  | 1.58        | 1.52     |
| 37  | BH    | 12   | CYS  | N-CA    | 5.36  | 1.52        | 1.46     |
| 11  | AM    | 71   | VAL  | CA-C    | 5.33  | 1.58        | 1.52     |
| 7   | AG    | 149  | VAL  | CA-CB   | 5.32  | 1.61        | 1.54     |
| 8   | AH    | 17   | VAL  | CA-CB   | 5.30  | 1.60        | 1.53     |
| 24  | AZ    | 13   | ILE  | CA-CB   | 5.29  | 1.61        | 1.54     |
| 5   | AE    | 198  | VAL  | CA-CB   | -5.23 | 1.46        | 1.55     |
| 15  | AQ    | 34   | VAL  | CA-CB   | -5.22 | 1.47        | 1.54     |
| 17  | AS    | 81   | TYR  | CB-CG   | 5.17  | 1.63        | 1.51     |
| 35  | BF    | 214  | ILE  | CA-CB   | -5.15 | 1.48        | 1.54     |
| 10  | AL    | 83   | ALA  | CA-CB   | -5.14 | 1.45        | 1.53     |
| 5   | AE    | 135  | HIS  | N-CA    | 5.14  | 1.52        | 1.46     |
| 1   | AA    | 1993 | U    | N1-C2   | 5.12  | 1.48        | 1.38     |
| 57  | BZ    | 558  | VAL  | C-N     | 5.04  | 1.39        | 1.33     |
| 32  | AJ    | 71   | THR  | C-N     | 5.01  | 1.39        | 1.33     |

All (1562) bond angle outliers are listed below:

| Mol | Chain | Res  | Type | Atoms       | Z      | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|--------|-------------|----------|
| 34  | BA    | 1317 | C    | P-O3'-C3'   | -39.35 | 61.17       | 120.20   |
| 34  | BA    | 1317 | C    | O3'-P-O5'   | 38.74  | 162.11      | 104.00   |
| 1   | AA    | 1060 | U    | O3'-P-O5'   | 36.33  | 158.49      | 104.00   |
| 1   | AA    | 2448 | A    | C5'-C4'-O4' | -21.84 | 76.34       | 109.10   |
| 1   | AA    | 1203 | G    | P-O3'-C3'   | 21.81  | 152.91      | 120.20   |
| 34  | BA    | 1064 | G    | N1-C2-N2    | -21.50 | 51.71       | 116.20   |
| 36  | BG    | 48   | TYR  | N-CA-C      | -21.23 | 86.12       | 113.72   |
| 31  | AI    | 153  | LEU  | O-C-N       | -18.85 | 97.50       | 122.19   |
| 34  | BA    | 1317 | C    | OP2-P-O3'   | -18.16 | 53.51       | 108.00   |
| 15  | AQ    | 66   | VAL  | N-CA-C      | -17.84 | 82.43       | 108.12   |
| 1   | AA    | 1060 | U    | OP1-P-O3'   | -17.80 | 54.60       | 108.00   |
| 52  | BW    | 2    | PRO  | O-C-N       | 16.60  | 149.56      | 123.00   |

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| Mol | Chain | Res  | Type | Atoms      | Z      | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|--------|-------------|----------|
| 17  | AS    | 49   | THR  | CA-C-N     | 16.49  | 140.46      | 119.84   |
| 17  | AS    | 49   | THR  | C-N-CA     | 16.49  | 140.46      | 119.84   |
| 14  | AP    | 63   | THR  | N-CA-C     | -16.48 | 93.09       | 112.87   |
| 27  | Ac    | 24   | GLU  | N-CA-C     | 16.27  | 136.18      | 113.56   |
| 15  | AQ    | 29   | ARG  | N-CA-C     | -15.91 | 85.76       | 110.42   |
| 12  | AN    | 125  | LEU  | CA-C-N     | -15.87 | 100.00      | 119.84   |
| 12  | AN    | 125  | LEU  | C-N-CA     | -15.87 | 100.00      | 119.84   |
| 4   | AD    | 63   | ARG  | N-CA-C     | 15.28  | 133.09      | 110.48   |
| 52  | BW    | 2    | PRO  | CA-C-O     | -14.75 | 74.74       | 119.00   |
| 21  | AW    | 52   | SER  | N-CA-C     | -14.74 | 93.18       | 112.34   |
| 34  | BA    | 973  | G    | O3'-P-O5'  | 14.60  | 125.89      | 104.00   |
| 4   | AD    | 250  | TRP  | N-CA-C     | 14.07  | 128.68      | 110.53   |
| 7   | AG    | 95   | ARG  | N-CA-C     | 14.01  | 131.25      | 112.90   |
| 10  | AL    | 98   | VAL  | N-CA-C     | 13.81  | 120.99      | 106.21   |
| 21  | AW    | 39   | VAL  | N-CA-C     | 13.70  | 126.48      | 108.12   |
| 9   | AK    | 49   | GLY  | N-CA-C     | -13.45 | 99.08       | 115.08   |
| 34  | BA    | 1064 | G    | N3-C2-N2   | 13.45  | 160.24      | 119.90   |
| 14  | AP    | 65   | VAL  | N-CA-C     | -13.43 | 95.31       | 110.62   |
| 31  | AI    | 153  | LEU  | CA-C-N     | 13.31  | 147.50      | 121.41   |
| 31  | AI    | 153  | LEU  | C-N-CA     | 13.31  | 147.50      | 121.41   |
| 13  | AO    | 38   | VAL  | CA-C-N     | -13.26 | 106.16      | 119.56   |
| 13  | AO    | 38   | VAL  | C-N-CA     | -13.26 | 106.16      | 119.56   |
| 4   | AD    | 260  | ARG  | N-CA-C     | -13.15 | 97.00       | 111.07   |
| 51  | BV    | 51   | LEU  | CA-C-N     | 13.00  | 136.09      | 119.84   |
| 51  | BV    | 51   | LEU  | C-N-CA     | 13.00  | 136.09      | 119.84   |
| 8   | AH    | 165  | ALA  | N-CA-C     | -12.97 | 95.88       | 112.23   |
| 4   | AD    | 80   | ALA  | N-CA-C     | -12.72 | 97.49       | 111.36   |
| 1   | AA    | 1203 | G    | O3'-P-O5'  | 12.72  | 123.08      | 104.00   |
| 4   | AD    | 220  | HIS  | N-CA-C     | 12.66  | 124.40      | 108.45   |
| 1   | AA    | 1204 | A    | N9-C1'-C2' | 12.65  | 132.97      | 114.00   |
| 4   | AD    | 159  | ALA  | N-CA-C     | -12.58 | 98.17       | 113.15   |
| 4   | AD    | 248  | SER  | CA-C-N     | 12.44  | 135.38      | 119.84   |
| 4   | AD    | 248  | SER  | C-N-CA     | 12.44  | 135.38      | 119.84   |
| 4   | AD    | 19   | ALA  | N-CA-C     | -12.31 | 99.06       | 113.21   |
| 44  | BO    | 126  | ARG  | N-CA-C     | -12.23 | 98.49       | 113.41   |
| 17  | AS    | 98   | GLU  | N-CA-C     | 12.13  | 128.03      | 109.96   |
| 5   | AE    | 5    | LEU  | N-CA-C     | 12.08  | 127.44      | 109.07   |
| 17  | AS    | 94   | LEU  | N-CA-C     | -12.05 | 92.45       | 110.28   |
| 40  | BK    | 132  | GLY  | N-CA-C     | 11.98  | 127.02      | 111.09   |
| 4   | AD    | 45   | ASN  | N-CA-C     | -11.65 | 91.41       | 110.17   |
| 9   | AK    | 104  | LYS  | N-CA-C     | -11.56 | 97.23       | 111.11   |
| 4   | AD    | 131  | LEU  | N-CA-C     | 11.56  | 118.62      | 108.22   |

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| Mol | Chain | Res  | Type | Atoms      | Z      | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|--------|-------------|----------|
| 37  | BH    | 19   | LEU  | N-CA-C     | -11.54 | 94.04       | 111.81   |
| 26  | Ab    | 13   | LYS  | N-CA-C     | -11.43 | 92.51       | 111.37   |
| 21  | AW    | 61   | LEU  | CA-C-N     | 11.42  | 134.12      | 119.84   |
| 21  | AW    | 61   | LEU  | C-N-CA     | 11.42  | 134.12      | 119.84   |
| 10  | AL    | 74   | GLY  | N-CA-C     | -11.39 | 92.15       | 112.54   |
| 4   | AD    | 51   | VAL  | N-CA-C     | 11.23  | 123.69      | 107.75   |
| 11  | AM    | 71   | VAL  | CA-C-N     | 11.23  | 133.87      | 119.84   |
| 11  | AM    | 71   | VAL  | C-N-CA     | 11.23  | 133.87      | 119.84   |
| 37  | BH    | 26   | CYS  | N-CA-C     | -11.22 | 99.62       | 113.20   |
| 18  | AT    | 76   | VAL  | N-CA-C     | 11.17  | 124.82      | 108.96   |
| 1   | AA    | 2459 | A    | N9-C1'-C2' | 11.14  | 128.71      | 112.00   |
| 25  | Aa    | 31   | ILE  | N-CA-C     | 11.04  | 124.96      | 107.73   |
| 5   | AE    | 195  | LEU  | N-CA-C     | 11.03  | 126.82      | 109.07   |
| 16  | AR    | 28   | ARG  | N-CA-C     | -11.01 | 100.05      | 113.15   |
| 14  | AP    | 62   | LYS  | N-CA-C     | 10.96  | 126.06      | 109.62   |
| 1   | AA    | 1060 | U    | OP2-P-O3'  | -10.95 | 75.14       | 108.00   |
| 13  | AO    | 69   | ASP  | N-CA-C     | 10.91  | 125.11      | 111.69   |
| 7   | AG    | 47   | LYS  | N-CA-C     | 10.91  | 124.40      | 110.33   |
| 9   | AK    | 124  | ALA  | N-CA-C     | -10.81 | 100.32      | 113.19   |
| 27  | Ac    | 39   | TYR  | N-CA-C     | 10.81  | 133.82      | 110.80   |
| 35  | BF    | 132  | LYS  | N-CA-C     | -10.77 | 99.33       | 111.71   |
| 1   | AA    | 1240 | U    | O3'-P-O5'  | 10.73  | 120.09      | 104.00   |
| 35  | BF    | 214  | ILE  | N-CA-C     | 10.69  | 120.58      | 110.53   |
| 1   | AA    | 2501 | C    | O3'-P-O5'  | 10.68  | 120.01      | 104.00   |
| 20  | AV    | 50   | ARG  | N-CA-C     | -10.67 | 99.80       | 112.92   |
| 20  | AV    | 5    | MET  | N-CA-C     | 10.63  | 122.27      | 108.34   |
| 34  | BA    | 974  | A    | O3'-P-O5'  | 10.59  | 119.89      | 104.00   |
| 20  | AV    | 12   | THR  | N-CA-C     | 10.59  | 123.79      | 108.86   |
| 18  | AT    | 62   | HIS  | N-CA-C     | -10.58 | 99.11       | 113.18   |
| 4   | AD    | 245  | PRO  | N-CA-C     | 10.56  | 123.58      | 110.70   |
| 1   | AA    | 2384 | G    | N9-C1'-C2' | 10.54  | 129.81      | 114.00   |
| 51  | BV    | 79   | LEU  | CA-C-N     | 10.53  | 133.00      | 119.84   |
| 51  | BV    | 79   | LEU  | C-N-CA     | 10.53  | 133.00      | 119.84   |
| 45  | BP    | 29   | GLY  | N-CA-C     | -10.53 | 101.47      | 113.79   |
| 6   | AF    | 198  | ALA  | N-CA-C     | -10.51 | 99.52       | 110.97   |
| 10  | AL    | 94   | ARG  | N-CA-C     | 10.50  | 123.21      | 110.19   |
| 40  | BK    | 100  | ALA  | N-CA-C     | -10.44 | 99.70       | 111.71   |
| 4   | AD    | 272  | ALA  | N-CA-C     | 10.44  | 127.58      | 108.58   |
| 16  | AR    | 104  | GLN  | N-CA-C     | -10.42 | 99.61       | 110.97   |
| 37  | BH    | 10   | ARG  | N-CA-C     | -10.36 | 99.99       | 111.28   |
| 44  | BO    | 112  | THR  | CA-C-N     | 10.33  | 132.76      | 119.84   |
| 44  | BO    | 112  | THR  | C-N-CA     | 10.33  | 132.76      | 119.84   |

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| Mol | Chain | Res  | Type | Atoms       | Z      | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|--------|-------------|----------|
| 15  | AQ    | 14   | TYR  | N-CA-C      | 10.32  | 122.28      | 111.14   |
| 38  | BI    | 111  | GLU  | N-CA-C      | -10.28 | 100.08      | 111.28   |
| 12  | AN    | 82   | ARG  | N-CA-C      | -10.26 | 93.61       | 109.52   |
| 5   | AE    | 65   | GLY  | N-CA-C      | -10.23 | 100.35      | 112.83   |
| 17  | AS    | 12   | TYR  | N-CA-C      | 10.21  | 124.93      | 109.41   |
| 25  | Aa    | 69   | LYS  | N-CA-C      | -10.21 | 100.14      | 111.07   |
| 10  | AL    | 100  | GLY  | CA-C-N      | 10.20  | 132.59      | 119.84   |
| 10  | AL    | 100  | GLY  | C-N-CA      | 10.20  | 132.59      | 119.84   |
| 21  | AW    | 6    | LYS  | N-CA-C      | 10.15  | 123.73      | 110.43   |
| 45  | BP    | 119  | LYS  | N-CA-C      | -10.13 | 96.21       | 110.50   |
| 27  | Ac    | 22   | ALA  | N-CA-C      | 10.10  | 125.93      | 113.50   |
| 21  | AW    | 82   | ARG  | CA-C-N      | -10.05 | 107.28      | 119.84   |
| 21  | AW    | 82   | ARG  | C-N-CA      | -10.05 | 107.28      | 119.84   |
| 10  | AL    | 6    | THR  | N-CA-C      | 10.00  | 125.85      | 108.75   |
| 37  | BH    | 33   | MET  | N-CA-C      | -9.97  | 100.24      | 111.71   |
| 22  | AX    | 26   | TYR  | N-CA-C      | 9.95   | 124.87      | 110.24   |
| 50  | BU    | 77   | VAL  | N-CA-C      | -9.93  | 103.86      | 111.90   |
| 26  | Ab    | 41   | PRO  | N-CA-C      | -9.91  | 98.61       | 110.70   |
| 15  | AQ    | 64   | ARG  | N-CA-C      | 9.90   | 122.58      | 110.41   |
| 9   | AK    | 56   | ASN  | N-CA-C      | -9.85  | 100.25      | 112.47   |
| 21  | AW    | 171  | ILE  | N-CA-C      | -9.84  | 100.28      | 111.00   |
| 14  | AP    | 13   | ARG  | N-CA-C      | -9.84  | 99.16       | 111.75   |
| 15  | AQ    | 60   | THR  | N-CA-C      | -9.84  | 93.75       | 109.59   |
| 1   | AA    | 1666 | G    | C2'-C3'-O3' | -9.83  | 98.96       | 113.70   |
| 51  | BV    | 53   | ARG  | N-CA-C      | -9.82  | 99.44       | 111.33   |
| 13  | AO    | 48   | VAL  | N-CA-C      | -9.82  | 97.62       | 111.17   |
| 48  | BS    | 37   | ASN  | N-CA-C      | 9.80   | 121.66      | 110.97   |
| 7   | AG    | 67   | LYS  | CA-C-N      | 9.79   | 132.08      | 119.84   |
| 7   | AG    | 67   | LYS  | C-N-CA      | 9.79   | 132.08      | 119.84   |
| 11  | AM    | 65   | ARG  | N-CA-C      | 9.74   | 121.62      | 107.88   |
| 18  | AT    | 57   | ASN  | N-CA-C      | -9.69  | 99.49       | 111.11   |
| 1   | AA    | 2460 | U    | N1-C1'-C2'  | 9.68   | 126.53      | 112.00   |
| 1   | AA    | 2522 | U    | N1-C1'-C2'  | 9.68   | 126.52      | 112.00   |
| 1   | AA    | 2581 | G    | N9-C1'-C2'  | 9.66   | 126.50      | 112.00   |
| 6   | AF    | 41   | LEU  | N-CA-C      | -9.62  | 100.79      | 111.28   |
| 4   | AD    | 251  | GLY  | N-CA-C      | -9.60  | 94.07       | 111.25   |
| 43  | BN    | 62   | HIS  | N-CA-C      | 9.59   | 123.26      | 108.96   |
| 43  | BN    | 32   | ALA  | N-CA-C      | -9.59  | 100.89      | 112.59   |
| 9   | AK    | 139  | GLU  | N-CA-C      | 9.58   | 123.08      | 108.52   |
| 23  | AY    | 10   | LYS  | N-CA-C      | 9.55   | 122.67      | 111.02   |
| 24  | AZ    | 10   | LYS  | N-CA-C      | 9.55   | 123.85      | 108.76   |
| 1   | AA    | 1625 | C    | N1-C1'-C2'  | 9.54   | 126.31      | 112.00   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 16  | AR    | 11   | ARG  | N-CA-C      | -9.51 | 99.70       | 111.11   |
| 37  | BH    | 20   | TYR  | N-CA-C      | -9.51 | 99.58       | 111.75   |
| 20  | AV    | 13   | VAL  | N-CA-C      | 9.51  | 122.67      | 109.55   |
| 25  | Aa    | 37   | SER  | N-CA-C      | 9.50  | 120.79      | 108.24   |
| 10  | AL    | 40   | VAL  | N-CA-C      | 9.47  | 122.27      | 108.53   |
| 1   | AA    | 2491 | U    | O4'-C1'-C2' | -9.47 | 98.13       | 107.60   |
| 24  | AZ    | 54   | VAL  | N-CA-C      | 9.46  | 121.76      | 108.23   |
| 21  | AW    | 151  | HIS  | N-CA-C      | 9.46  | 120.40      | 108.19   |
| 6   | AF    | 179  | GLU  | N-CA-C      | -9.46 | 100.33      | 113.20   |
| 49  | BT    | 16   | HIS  | N-CA-C      | -9.46 | 96.88       | 110.59   |
| 54  | BY    | 16   | GLY  | N-CA-C      | -9.41 | 102.16      | 115.43   |
| 21  | AW    | 77   | ASP  | N-CA-C      | 9.40  | 130.83      | 110.80   |
| 54  | BY    | 5    | ASP  | N-CA-C      | -9.40 | 100.91      | 112.38   |
| 11  | AM    | 7    | ARG  | CA-C-N      | 9.40  | 131.59      | 119.84   |
| 11  | AM    | 7    | ARG  | C-N-CA      | 9.40  | 131.59      | 119.84   |
| 4   | AD    | 16   | MET  | N-CA-C      | -9.38 | 92.19       | 108.52   |
| 44  | BO    | 47   | VAL  | N-CA-C      | -9.37 | 100.79      | 111.00   |
| 34  | BA    | 1317 | C    | OP1-P-O3'   | -9.37 | 79.90       | 108.00   |
| 29  | Ae    | 59   | LYS  | N-CA-C      | -9.36 | 100.77      | 110.97   |
| 4   | AD    | 94   | LEU  | N-CA-C      | -9.32 | 94.14       | 108.96   |
| 40  | BK    | 57   | GLU  | N-CA-C      | 9.24  | 122.84      | 110.08   |
| 1   | AA    | 2490 | G    | N9-C1'-C2'  | 9.24  | 127.86      | 114.00   |
| 43  | BN    | 4    | ILE  | N-CA-C      | 9.23  | 121.03      | 108.11   |
| 28  | Ad    | 45   | ALA  | N-CA-C      | -9.22 | 101.93      | 113.55   |
| 6   | AF    | 173  | VAL  | N-CA-C      | 9.22  | 122.45      | 108.71   |
| 6   | AF    | 162  | LEU  | N-CA-C      | -9.18 | 100.67      | 112.23   |
| 21  | AW    | 87   | ASP  | N-CA-C      | 9.18  | 123.48      | 108.52   |
| 27  | Ac    | 26   | ASN  | N-CA-C      | 9.18  | 130.34      | 110.80   |
| 3   | AC    | 189  | ILE  | N-CA-C      | -9.14 | 100.76      | 110.36   |
| 37  | BH    | 132  | ARG  | N-CA-C      | 9.14  | 122.03      | 108.14   |
| 49  | BT    | 46   | PRO  | N-CA-C      | -9.12 | 102.47      | 113.86   |
| 13  | AO    | 102  | GLU  | N-CA-C      | 9.09  | 120.25      | 108.34   |
| 25  | Aa    | 47   | GLN  | N-CA-C      | 9.09  | 124.12      | 108.76   |
| 17  | AS    | 50   | PRO  | N-CA-C      | 9.09  | 131.19      | 112.47   |
| 34  | BA    | 484  | G    | C2'-C3'-O3' | 9.09  | 123.13      | 109.50   |
| 20  | AV    | 51   | VAL  | N-CA-C      | -9.08 | 102.00      | 110.53   |
| 45  | BP    | 86   | ARG  | N-CA-C      | -9.08 | 101.75      | 112.92   |
| 50  | BU    | 91   | ARG  | N-CA-C      | -9.05 | 101.30      | 111.71   |
| 39  | BJ    | 19   | LEU  | N-CA-C      | -9.04 | 100.25      | 111.11   |
| 44  | BO    | 65   | ALA  | N-CA-C      | -9.03 | 100.01      | 111.02   |
| 1   | AA    | 1938 | A    | N9-C1'-C2'  | 9.02  | 127.54      | 114.00   |
| 1   | AA    | 1951 | U    | N1-C1'-C2'  | 8.99  | 125.49      | 112.00   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 5   | AE    | 176  | ILE  | CA-C-N      | 8.99  | 129.17      | 119.28   |
| 5   | AE    | 176  | ILE  | C-N-CA      | 8.99  | 129.17      | 119.28   |
| 5   | AE    | 184  | VAL  | N-CA-C      | 8.99  | 121.83      | 113.20   |
| 38  | BI    | 101  | ILE  | N-CA-C      | 8.98  | 120.77      | 106.32   |
| 1   | AA    | 686  | G    | C2'-C3'-O3' | -8.95 | 100.28      | 113.70   |
| 50  | BU    | 61   | GLU  | N-CA-C      | -8.95 | 96.63       | 109.96   |
| 1   | AA    | 2448 | A    | O5'-C5'-C4' | -8.94 | 98.29       | 111.70   |
| 12  | AN    | 8    | LYS  | N-CA-C      | -8.91 | 100.36      | 112.03   |
| 10  | AL    | 44   | LYS  | N-CA-C      | -8.90 | 101.32      | 112.72   |
| 35  | BF    | 216  | SER  | N-CA-C      | -8.89 | 101.28      | 110.97   |
| 4   | AD    | 135  | PHE  | N-CA-C      | -8.89 | 102.99      | 113.21   |
| 19  | AU    | 94   | GLY  | N-CA-C      | -8.89 | 101.89      | 112.64   |
| 21  | AW    | 32   | HIS  | N-CA-C      | 8.88  | 123.48      | 112.47   |
| 18  | AT    | 24   | ILE  | N-CA-C      | 8.87  | 122.18      | 111.09   |
| 34  | BA    | 372  | C    | C2'-C3'-O3' | 8.87  | 122.80      | 109.50   |
| 1   | AA    | 1313 | U    | N1-C1'-C2'  | 8.83  | 125.25      | 112.00   |
| 43  | BN    | 23   | ILE  | N-CA-C      | 8.83  | 119.64      | 110.72   |
| 37  | BH    | 62   | GLN  | N-CA-C      | 8.83  | 120.59      | 110.97   |
| 15  | AQ    | 17   | THR  | N-CA-C      | -8.82 | 98.88       | 110.53   |
| 35  | BF    | 90   | MET  | CA-C-N      | 8.79  | 130.83      | 119.84   |
| 35  | BF    | 90   | MET  | C-N-CA      | 8.79  | 130.83      | 119.84   |
| 20  | AV    | 9    | LYS  | N-CA-C      | -8.79 | 101.70      | 111.28   |
| 35  | BF    | 146  | GLN  | N-CA-C      | -8.78 | 101.28      | 111.03   |
| 17  | AS    | 87   | HIS  | N-CA-C      | 8.78  | 121.24      | 108.86   |
| 1   | AA    | 2491 | U    | C2'-C3'-O3' | 8.77  | 126.86      | 113.70   |
| 17  | AS    | 96   | ILE  | N-CA-C      | 8.77  | 122.20      | 108.87   |
| 7   | AG    | 75   | LYS  | N-CA-C      | -8.76 | 102.54      | 113.23   |
| 34  | BA    | 1004 | A    | C2'-C3'-O3' | 8.75  | 122.63      | 109.50   |
| 4   | AD    | 49   | ILE  | N-CA-C      | -8.74 | 91.16       | 109.34   |
| 5   | AE    | 141  | ILE  | N-CA-C      | 8.71  | 127.46      | 109.34   |
| 37  | BH    | 205  | GLU  | N-CA-C      | -8.70 | 101.49      | 110.97   |
| 7   | AG    | 77   | ILE  | N-CA-C      | -8.70 | 100.18      | 111.05   |
| 13  | AO    | 31   | HIS  | N-CA-C      | 8.67  | 124.09      | 113.17   |
| 24  | AZ    | 38   | GLU  | N-CA-C      | -8.64 | 96.70       | 109.15   |
| 12  | AN    | 44   | ALA  | N-CA-C      | -8.63 | 100.75      | 111.11   |
| 24  | AZ    | 15   | TYR  | N-CA-C      | 8.61  | 115.88      | 108.13   |
| 11  | AM    | 51   | PHE  | N-CA-C      | -8.60 | 100.52      | 111.02   |
| 5   | AE    | 114  | ALA  | N-CA-C      | 8.59  | 122.40      | 109.25   |
| 16  | AR    | 16   | LYS  | N-CA-C      | -8.59 | 100.54      | 111.02   |
| 38  | BI    | 110  | LEU  | N-CA-C      | 8.59  | 120.73      | 111.36   |
| 11  | AM    | 105  | LEU  | N-CA-C      | 8.56  | 122.51      | 107.61   |
| 38  | BI    | 83   | GLU  | N-CA-C      | -8.56 | 94.62       | 108.41   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 12  | AN    | 114  | ALA  | N-CA-C      | -8.56 | 100.84      | 111.11   |
| 1   | AA    | 1992 | G    | N9-C1'-C2'  | 8.55  | 126.82      | 114.00   |
| 3   | AC    | 6    | ARG  | N-CA-C      | -8.54 | 102.29      | 112.89   |
| 6   | AF    | 60   | SER  | N-CA-C      | -8.53 | 95.30       | 109.46   |
| 21  | AW    | 8    | TYR  | N-CA-C      | -8.53 | 100.99      | 111.40   |
| 25  | Aa    | 32   | TYR  | N-CA-C      | 8.51  | 128.93      | 110.80   |
| 35  | BF    | 164  | VAL  | N-CA-C      | 8.51  | 121.62      | 108.44   |
| 34  | BA    | 173  | U    | P-O3'-C3'   | 8.49  | 132.93      | 120.20   |
| 49  | BT    | 40   | ASP  | CA-C-N      | 8.49  | 128.13      | 119.56   |
| 49  | BT    | 40   | ASP  | C-N-CA      | 8.49  | 128.13      | 119.56   |
| 12  | AN    | 76   | LYS  | N-CA-C      | -8.48 | 102.49      | 112.92   |
| 34  | BA    | 314  | C    | C2'-C3'-O3' | -8.48 | 100.97      | 113.70   |
| 29  | Ae    | 6    | THR  | N-CA-C      | -8.45 | 93.20       | 108.58   |
| 34  | BA    | 974  | A    | N9-C1'-C2'  | 8.44  | 126.67      | 114.00   |
| 11  | AM    | 30   | THR  | N-CA-C      | 8.44  | 128.78      | 110.80   |
| 45  | BP    | 120  | TYR  | N-CA-C      | -8.43 | 100.36      | 111.74   |
| 10  | AL    | 117  | LEU  | N-CA-C      | 8.42  | 120.15      | 110.97   |
| 27  | Ac    | 42   | TRP  | N-CA-C      | -8.42 | 102.91      | 113.02   |
| 48  | BS    | 53   | HIS  | N-CA-C      | -8.40 | 100.77      | 111.02   |
| 25  | Aa    | 40   | HIS  | CA-C-N      | 8.39  | 130.32      | 119.84   |
| 25  | Aa    | 40   | HIS  | C-N-CA      | 8.39  | 130.32      | 119.84   |
| 40  | BK    | 76   | ARG  | N-CA-C      | -8.34 | 96.53       | 108.96   |
| 1   | AA    | 1498 | C    | N1-C1'-C2'  | 8.33  | 124.50      | 112.00   |
| 45  | BP    | 58   | VAL  | N-CA-C      | 8.31  | 121.33      | 108.44   |
| 34  | BA    | 172  | A    | OP1-P-O3'   | 8.31  | 132.92      | 108.00   |
| 9   | AK    | 51   | PHE  | N-CA-C      | -8.29 | 93.97       | 108.23   |
| 22  | AX    | 44   | ARG  | N-CA-C      | -8.29 | 103.15      | 113.18   |
| 1   | AA    | 775  | G    | N9-C1'-C2'  | 8.29  | 124.43      | 112.00   |
| 40  | BK    | 145  | ALA  | N-CA-C      | -8.27 | 99.10       | 110.35   |
| 44  | BO    | 103  | LEU  | N-CA-C      | -8.26 | 102.22      | 112.47   |
| 15  | AQ    | 43   | GLN  | N-CA-C      | -8.24 | 94.11       | 108.20   |
| 1   | AA    | 2446 | G    | P-O3'-C3'   | 8.23  | 132.55      | 120.20   |
| 34  | BA    | 172  | A    | O3'-P-O5'   | -8.22 | 91.67       | 104.00   |
| 8   | AH    | 111  | HIS  | N-CA-C      | 8.21  | 127.96      | 109.81   |
| 12  | AN    | 113  | GLN  | N-CA-C      | -8.21 | 102.27      | 111.14   |
| 35  | BF    | 43   | ASP  | N-CA-C      | 8.20  | 123.00      | 109.06   |
| 1   | AA    | 2501 | C    | P-O3'-C3'   | -8.19 | 107.91      | 120.20   |
| 22  | AX    | 11   | ARG  | N-CA-C      | 8.19  | 123.19      | 108.69   |
| 15  | AQ    | 57   | PHE  | N-CA-C      | 8.19  | 126.23      | 107.48   |
| 1   | AA    | 2032 | G    | N9-C1'-C2'  | 8.19  | 126.28      | 114.00   |
| 1   | AA    | 801  | G    | N9-C1'-C2'  | 8.18  | 126.27      | 114.00   |
| 19  | AU    | 21   | PHE  | N-CA-C      | -8.13 | 101.35      | 111.11   |

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| Mol | Chain | Res    | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|--------|------|-------------|-------|-------------|----------|
| 1   | AA    | 2591   | C    | C4'-C3'-O3' | -8.13 | 100.80      | 113.00   |
| 34  | BA    | 793    | U    | N1-C1'-C2'  | 8.12  | 126.18      | 114.00   |
| 47  | BR    | 40     | CYS  | N-CA-C      | -8.11 | 98.48       | 110.48   |
| 14  | AP    | 88     | ASP  | N-CA-C      | 8.10  | 118.58      | 107.73   |
| 6   | AF    | 79     | GLY  | N-CA-C      | -8.10 | 93.99       | 113.18   |
| 10  | AL    | 15     | GLY  | N-CA-C      | -8.10 | 93.99       | 113.18   |
| 27  | Ac    | 37     | ARG  | N-CA-C      | 8.09  | 128.04      | 110.80   |
| 47  | BR    | 53     | LEU  | CA-C-N      | 8.08  | 129.94      | 119.84   |
| 47  | BR    | 53     | LEU  | C-N-CA      | 8.08  | 129.94      | 119.84   |
| 44  | BO    | 80     | VAL  | N-CA-C      | 8.08  | 119.03      | 107.88   |
| 9   | AK    | 82     | LEU  | N-CA-C      | -8.08 | 103.51      | 112.72   |
| 5   | AE    | 158    | GLY  | N-CA-C      | 8.06  | 127.69      | 112.62   |
| 12  | AN    | 83     | MET  | N-CA-C      | 8.05  | 122.37      | 109.24   |
| 11  | AM    | 40     | SER  | N-CA-C      | 8.05  | 121.67      | 112.57   |
| 17  | AS    | 27     | ALA  | N-CA-C      | -8.05 | 103.18      | 113.16   |
| 1   | AA    | 974(A) | C    | N1-C1'-C2'  | 8.05  | 126.07      | 114.00   |
| 1   | AA    | 776    | G    | N9-C1'-C2'  | 8.04  | 126.06      | 114.00   |
| 4   | AD    | 193    | VAL  | N-CA-C      | 8.03  | 119.33      | 109.30   |
| 16  | AR    | 68     | ALA  | N-CA-C      | 8.03  | 119.66      | 111.07   |
| 12  | AN    | 72     | LYS  | CA-C-N      | 8.01  | 129.85      | 119.84   |
| 12  | AN    | 72     | LYS  | C-N-CA      | 8.01  | 129.85      | 119.84   |
| 10  | AL    | 23     | ARG  | N-CA-C      | 8.00  | 119.11      | 108.07   |
| 34  | BA    | 1528   | U    | N1-C1'-C2'  | 7.99  | 125.98      | 114.00   |
| 7   | AG    | 100    | TRP  | N-CA-C      | 7.98  | 119.98      | 111.28   |
| 35  | BF    | 187    | LEU  | N-CA-C      | -7.98 | 97.24       | 109.85   |
| 21  | AW    | 2      | GLU  | N-CA-C      | 7.97  | 121.02      | 109.14   |
| 21  | AW    | 69     | THR  | N-CA-C      | 7.97  | 121.18      | 109.07   |
| 7   | AG    | 101    | ILE  | N-CA-C      | -7.96 | 101.10      | 111.05   |
| 8   | AH    | 83     | TYR  | N-CA-C      | 7.96  | 122.94      | 107.98   |
| 10  | AL    | 18     | LYS  | N-CA-C      | 7.94  | 122.74      | 108.69   |
| 1   | AA    | 1800   | C    | N1-C1'-C2'  | -7.93 | 100.11      | 112.00   |
| 17  | AS    | 83     | ARG  | N-CA-C      | 7.92  | 120.62      | 108.42   |
| 45  | BP    | 75     | HIS  | N-CA-C      | 7.92  | 119.16      | 108.23   |
| 1   | AA    | 2035   | G    | N9-C1'-C2'  | 7.92  | 123.88      | 112.00   |
| 41  | BL    | 75     | ARG  | CA-C-N      | 7.92  | 129.74      | 119.84   |
| 41  | BL    | 75     | ARG  | C-N-CA      | 7.92  | 129.74      | 119.84   |
| 9   | AK    | 75     | TYR  | N-CA-C      | -7.92 | 98.31       | 111.37   |
| 15  | AQ    | 85     | LYS  | N-CA-C      | 7.89  | 122.66      | 110.20   |
| 13  | AO    | 3      | HIS  | N-CA-C      | 7.88  | 122.66      | 110.20   |
| 37  | BH    | 9      | CYS  | N-CA-C      | -7.88 | 103.41      | 112.87   |
| 10  | AL    | 108    | GLU  | N-CA-C      | -7.88 | 101.66      | 111.75   |
| 3   | AC    | 139    | ASN  | CA-C-N      | 7.86  | 129.66      | 119.84   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 3   | AC    | 139  | ASN  | C-N-CA      | 7.86  | 129.66      | 119.84   |
| 5   | AE    | 136  | ARG  | N-CA-C      | 7.86  | 122.27      | 109.85   |
| 41  | BL    | 16   | ALA  | N-CA-C      | -7.86 | 101.82      | 111.33   |
| 44  | BO    | 58   | PRO  | N-CA-C      | -7.86 | 103.62      | 113.84   |
| 1   | AA    | 331  | A    | C2'-C3'-O3' | 7.85  | 121.28      | 109.50   |
| 3   | AC    | 213  | TYR  | N-CA-C      | 7.85  | 119.93      | 108.86   |
| 17  | AS    | 70   | ILE  | N-CA-C      | -7.85 | 98.53       | 109.21   |
| 38  | BI    | 76   | ILE  | CA-C-N      | 7.85  | 129.65      | 119.84   |
| 38  | BI    | 76   | ILE  | C-N-CA      | 7.85  | 129.65      | 119.84   |
| 44  | BO    | 29   | ILE  | N-CA-C      | 7.85  | 121.52      | 108.81   |
| 9   | AK    | 117  | PHE  | N-CA-C      | -7.83 | 101.85      | 111.33   |
| 1   | AA    | 1477 | A    | C2'-C3'-O3' | -7.83 | 101.95      | 113.70   |
| 1   | AA    | 2491 | U    | O4'-C4'-C3' | -7.83 | 96.17       | 104.00   |
| 8   | AH    | 111  | HIS  | CA-C-N      | -7.81 | 110.07      | 119.84   |
| 8   | AH    | 111  | HIS  | C-N-CA      | -7.81 | 110.07      | 119.84   |
| 1   | AA    | 2755 | C    | OP1-P-O3'   | -7.81 | 84.57       | 108.00   |
| 35  | BF    | 30   | ARG  | N-CA-C      | 7.81  | 121.75      | 111.75   |
| 4   | AD    | 60   | ARG  | N-CA-C      | 7.79  | 121.16      | 107.61   |
| 39  | BJ    | 93   | SER  | N-CA-C      | 7.78  | 122.74      | 108.58   |
| 1   | AA    | 2587 | A    | N9-C1'-C2'  | 7.77  | 123.65      | 112.00   |
| 15  | AQ    | 49   | VAL  | N-CA-C      | -7.76 | 97.09       | 108.89   |
| 1   | AA    | 199  | A    | N9-C1'-C2'  | 7.76  | 125.64      | 114.00   |
| 30  | Af    | 15   | LYS  | N-CA-C      | 7.75  | 122.09      | 109.76   |
| 3   | AC    | 33   | ALA  | N-CA-C      | 7.74  | 121.11      | 108.26   |
| 13  | AO    | 67   | LEU  | N-CA-C      | -7.74 | 102.79      | 111.07   |
| 8   | AH    | 35   | VAL  | CA-C-N      | 7.73  | 127.77      | 119.89   |
| 8   | AH    | 35   | VAL  | C-N-CA      | 7.73  | 127.77      | 119.89   |
| 12  | AN    | 28   | ALA  | N-CA-C      | -7.73 | 94.34       | 110.80   |
| 21  | AW    | 140  | ASP  | N-CA-C      | 7.72  | 120.81      | 109.07   |
| 13  | AO    | 116  | LEU  | N-CA-C      | -7.72 | 98.38       | 109.96   |
| 50  | BU    | 62   | SER  | N-CA-C      | 7.72  | 120.39      | 108.12   |
| 34  | BA    | 173  | U    | O3'-P-O5'   | -7.71 | 92.43       | 104.00   |
| 38  | BI    | 14   | ARG  | N-CA-C      | 7.71  | 121.48      | 109.07   |
| 29  | Ae    | 35   | GLN  | N-CA-C      | -7.70 | 94.40       | 110.80   |
| 5   | AE    | 25   | VAL  | CB-CA-C     | -7.70 | 100.37      | 110.84   |
| 35  | BF    | 182  | ILE  | CA-C-N      | 7.70  | 129.46      | 119.84   |
| 35  | BF    | 182  | ILE  | C-N-CA      | 7.70  | 129.46      | 119.84   |
| 36  | BG    | 107  | GLN  | N-CA-C      | 7.69  | 122.98      | 112.90   |
| 1   | AA    | 280  | C    | N1-C1'-C2'  | 7.69  | 125.53      | 114.00   |
| 40  | BK    | 147  | ALA  | N-CA-C      | -7.69 | 102.03      | 111.33   |
| 39  | BJ    | 89   | MET  | N-CA-C      | 7.68  | 120.94      | 108.34   |
| 28  | Ad    | 16   | HIS  | N-CA-C      | 7.68  | 121.43      | 109.07   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 45  | BP    | 59   | ARG  | N-CA-C      | -7.68 | 96.89       | 109.40   |
| 4   | AD    | 227  | ASN  | CA-C-N      | 7.67  | 129.42      | 119.84   |
| 4   | AD    | 227  | ASN  | C-N-CA      | 7.67  | 129.42      | 119.84   |
| 3   | AC    | 3    | HIS  | N-CA-C      | 7.66  | 121.06      | 109.41   |
| 5   | AE    | 132  | HIS  | N-CA-C      | -7.66 | 98.82       | 110.70   |
| 3   | AC    | 24   | GLU  | N-CA-C      | -7.66 | 101.68      | 111.02   |
| 4   | AD    | 48   | ARG  | N-CA-C      | 7.66  | 122.34      | 113.38   |
| 6   | AF    | 73   | ALA  | N-CA-C      | 7.65  | 121.29      | 110.50   |
| 21  | AW    | 107  | THR  | CA-C-N      | 7.65  | 129.41      | 119.84   |
| 21  | AW    | 107  | THR  | C-N-CA      | 7.65  | 129.41      | 119.84   |
| 29  | Ae    | 17   | THR  | N-CA-C      | -7.64 | 96.06       | 108.52   |
| 1   | AA    | 774  | A    | C2'-C3'-O3' | 7.64  | 120.96      | 109.50   |
| 1   | AA    | 184  | C    | N1-C1'-C2'  | 7.64  | 123.46      | 112.00   |
| 1   | AA    | 2491 | U    | C4'-C3'-O3' | 7.64  | 124.46      | 113.00   |
| 48  | BS    | 66   | LEU  | N-CA-C      | -7.63 | 101.71      | 111.02   |
| 26  | Ab    | 27   | PRO  | CA-C-N      | 7.62  | 131.66      | 120.46   |
| 26  | Ab    | 27   | PRO  | C-N-CA      | 7.62  | 131.66      | 120.46   |
| 49  | BT    | 31   | LYS  | N-CA-C      | -7.62 | 100.50      | 110.33   |
| 4   | AD    | 192  | THR  | N-CA-C      | -7.61 | 97.66       | 109.76   |
| 1   | AA    | 2458 | G    | C4'-C3'-O3' | -7.61 | 101.59      | 113.00   |
| 10  | AL    | 118  | ALA  | CA-C-N      | -7.61 | 110.33      | 119.84   |
| 10  | AL    | 118  | ALA  | C-N-CA      | -7.61 | 110.33      | 119.84   |
| 21  | AW    | 112  | ARG  | N-CA-C      | -7.61 | 103.88      | 113.01   |
| 50  | BU    | 84   | LEU  | N-CA-C      | -7.60 | 101.99      | 111.11   |
| 37  | BH    | 12   | CYS  | N-CA-C      | -7.59 | 98.92       | 111.37   |
| 12  | AN    | 33   | GLY  | N-CA-C      | 7.59  | 124.22      | 110.71   |
| 15  | AQ    | 76   | PHE  | CA-C-N      | 7.58  | 129.32      | 119.84   |
| 15  | AQ    | 76   | PHE  | C-N-CA      | 7.58  | 129.32      | 119.84   |
| 10  | AL    | 102  | VAL  | N-CA-C      | 7.57  | 125.09      | 109.34   |
| 7   | AG    | 72   | ARG  | N-CA-C      | 7.56  | 119.90      | 109.54   |
| 10  | AL    | 61   | VAL  | N-CA-C      | 7.56  | 125.06      | 109.34   |
| 1   | AA    | 1240 | U    | P-O3'-C3'   | 7.55  | 131.53      | 120.20   |
| 16  | AR    | 61   | TRP  | N-CA-C      | -7.53 | 102.76      | 110.97   |
| 1   | AA    | 2756 | U    | N1-C1'-C2'  | 7.53  | 125.30      | 114.00   |
| 14  | AP    | 83   | LYS  | N-CA-C      | 7.51  | 120.67      | 108.34   |
| 44  | BO    | 44   | SER  | N-CA-C      | 7.50  | 118.46      | 107.88   |
| 10  | AL    | 4    | PRO  | N-CA-C      | -7.49 | 97.03       | 112.47   |
| 11  | AM    | 132  | LYS  | N-CA-C      | -7.49 | 103.19      | 111.36   |
| 1   | AA    | 2815 | C    | C3'-C2'-O2' | 7.49  | 121.93      | 110.70   |
| 8   | AH    | 130  | ARG  | N-CA-C      | -7.49 | 97.03       | 109.24   |
| 1   | AA    | 1604 | C    | N1-C1'-C2'  | 7.49  | 123.23      | 112.00   |
| 10  | AL    | 73   | ASP  | N-CA-C      | -7.45 | 101.68      | 111.74   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 50  | BU    | 58   | GLU  | N-CA-C      | 7.45  | 121.62      | 109.85   |
| 53  | BX    | 71   | THR  | N-CA-C      | -7.45 | 104.17      | 113.55   |
| 8   | AH    | 121  | ILE  | N-CA-C      | 7.44  | 118.09      | 108.12   |
| 4   | AD    | 218  | ARG  | N-CA-C      | 7.44  | 119.02      | 109.65   |
| 10  | AL    | 32   | TYR  | N-CA-C      | 7.43  | 121.20      | 107.60   |
| 6   | AF    | 157  | VAL  | N-CA-C      | 7.41  | 118.74      | 107.77   |
| 20  | AV    | 68   | HIS  | N-CA-C      | -7.41 | 101.98      | 113.02   |
| 1   | AA    | 2492 | U    | C2'-C3'-O3' | -7.40 | 102.60      | 113.70   |
| 44  | BO    | 38   | ASN  | CA-C-N      | -7.39 | 110.60      | 119.84   |
| 44  | BO    | 38   | ASN  | C-N-CA      | -7.39 | 110.60      | 119.84   |
| 48  | BS    | 31   | LEU  | N-CA-C      | 7.39  | 119.02      | 110.97   |
| 1   | AA    | 669  | G    | C2'-C3'-O3' | -7.39 | 102.62      | 113.70   |
| 6   | AF    | 32   | LEU  | N-CA-C      | -7.39 | 102.83      | 111.03   |
| 10  | AL    | 41   | ALA  | N-CA-C      | 7.37  | 119.34      | 108.14   |
| 9   | AK    | 36   | GLY  | N-CA-C      | -7.36 | 95.74       | 113.18   |
| 1   | AA    | 1130 | U    | C2'-C3'-O3' | 7.35  | 120.52      | 109.50   |
| 11  | AM    | 62   | LEU  | CA-C-N      | 7.34  | 129.02      | 119.84   |
| 11  | AM    | 62   | LEU  | C-N-CA      | 7.34  | 129.02      | 119.84   |
| 12  | AN    | 15   | GLY  | N-CA-C      | 7.33  | 121.85      | 111.14   |
| 1   | AA    | 554  | U    | N1-C1'-C2'  | 7.33  | 123.00      | 112.00   |
| 25  | Aa    | 65   | ASP  | N-CA-C      | -7.33 | 102.46      | 111.33   |
| 36  | BG    | 132  | ARG  | N-CA-C      | -7.33 | 102.08      | 111.02   |
| 36  | BG    | 111  | LEU  | N-CA-C      | -7.33 | 104.15      | 113.23   |
| 28  | Ad    | 9    | ARG  | N-CA-C      | -7.30 | 99.39       | 111.37   |
| 11  | AM    | 80   | TYR  | N-CA-C      | -7.30 | 103.26      | 111.07   |
| 1   | AA    | 911  | A    | N9-C1'-C2'  | 7.30  | 122.95      | 112.00   |
| 17  | AS    | 63   | GLY  | N-CA-C      | -7.30 | 95.88       | 113.18   |
| 31  | AI    | 152  | VAL  | N-CA-C      | -7.29 | 106.20      | 113.20   |
| 6   | AF    | 15   | SER  | N-CA-C      | 7.28  | 117.85      | 108.24   |
| 5   | AE    | 6    | GLY  | N-CA-C      | -7.28 | 95.92       | 113.18   |
| 38  | BI    | 80   | ILE  | N-CA-C      | 7.28  | 119.72      | 108.44   |
| 1   | AA    | 527  | C    | N1-C1'-C2'  | 7.27  | 122.91      | 112.00   |
| 9   | AK    | 125  | GLY  | N-CA-C      | -7.27 | 97.50       | 112.34   |
| 11  | AM    | 129  | ALA  | N-CA-C      | 7.27  | 121.16      | 108.52   |
| 12  | AN    | 111  | GLU  | N-CA-C      | 7.26  | 126.27      | 110.80   |
| 12  | AN    | 71   | ASP  | N-CA-C      | 7.25  | 126.25      | 110.80   |
| 17  | AS    | 88   | ARG  | N-CA-C      | 7.25  | 121.65      | 109.76   |
| 34  | BA    | 451  | A    | N9-C1'-C2'  | 7.24  | 124.86      | 114.00   |
| 5   | AE    | 175  | VAL  | N-CA-C      | 7.23  | 118.28      | 107.80   |
| 21  | AW    | 136  | PHE  | N-CA-C      | 7.22  | 119.30      | 107.23   |
| 34  | BA    | 1225 | A    | C2'-C3'-O3' | -7.21 | 102.88      | 113.70   |
| 36  | BG    | 118  | GLN  | N-CA-C      | -7.21 | 102.60      | 111.33   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 26  | Ab    | 28   | PRO  | CA-C-N      | 7.21  | 131.06      | 120.90   |
| 26  | Ab    | 28   | PRO  | C-N-CA      | 7.21  | 131.06      | 120.90   |
| 1   | AA    | 865  | C    | N1-C1'-C2'  | 7.20  | 122.79      | 112.00   |
| 1   | AA    | 387  | U    | N1-C1'-C2'  | 7.19  | 122.78      | 112.00   |
| 18  | AT    | 95   | ILE  | N-CA-C      | 7.19  | 120.11      | 108.97   |
| 5   | AE    | 69   | LYS  | N-CA-C      | -7.18 | 104.12      | 113.17   |
| 45  | BP    | 84   | LEU  | N-CA-C      | 7.17  | 119.07      | 108.60   |
| 11  | AM    | 133  | SER  | N-CA-C      | -7.16 | 102.66      | 111.33   |
| 20  | AV    | 31   | LEU  | CA-C-N      | -7.16 | 110.89      | 119.84   |
| 20  | AV    | 31   | LEU  | C-N-CA      | -7.16 | 110.89      | 119.84   |
| 29  | Ae    | 49   | VAL  | CB-CA-C     | -7.16 | 100.51      | 110.96   |
| 34  | BA    | 1285 | A    | C2'-C3'-O3' | 7.16  | 120.23      | 109.50   |
| 17  | AS    | 56   | SER  | N-CA-C      | 7.13  | 126.00      | 110.80   |
| 1   | AA    | 615  | G    | N9-C1'-C2'  | 7.13  | 122.69      | 112.00   |
| 34  | BA    | 1123 | A    | N9-C1'-C2'  | 7.12  | 122.67      | 112.00   |
| 34  | BA    | 397  | A    | C4'-C3'-O3' | -7.11 | 102.33      | 113.00   |
| 34  | BA    | 813  | U    | N1-C1'-C2'  | 7.11  | 122.66      | 112.00   |
| 1   | AA    | 2498 | C    | C5'-C4'-C3' | -7.09 | 105.37      | 116.00   |
| 50  | BU    | 9    | VAL  | N-CA-C      | 7.09  | 118.34      | 107.99   |
| 15  | AQ    | 59   | THR  | CA-C-N      | 7.09  | 133.21      | 122.93   |
| 15  | AQ    | 59   | THR  | C-N-CA      | 7.09  | 133.21      | 122.93   |
| 34  | BA    | 1279 | A    | N9-C1'-C2'  | 7.08  | 122.62      | 112.00   |
| 1   | AA    | 1635 | G    | C5'-C4'-C3' | -7.08 | 105.38      | 116.00   |
| 1   | AA    | 2779 | U    | N1-C1'-C2'  | -7.08 | 101.39      | 112.00   |
| 5   | AE    | 91   | VAL  | N-CA-C      | 7.08  | 118.13      | 111.48   |
| 24  | AZ    | 37   | LEU  | N-CA-C      | 7.08  | 120.30      | 108.20   |
| 49  | BT    | 3    | LYS  | N-CA-C      | 7.07  | 120.19      | 109.23   |
| 24  | AZ    | 20   | LYS  | N-CA-C      | -7.07 | 102.78      | 111.33   |
| 12  | AN    | 135  | ASP  | N-CA-C      | 7.07  | 124.21      | 113.61   |
| 1   | AA    | 1329 | U    | C4'-C3'-O3' | -7.06 | 102.41      | 113.00   |
| 1   | AA    | 2158 | A    | C2'-C3'-O3' | 7.06  | 120.09      | 109.50   |
| 1   | AA    | 1428 | C    | C2'-C3'-O3' | 7.06  | 120.09      | 109.50   |
| 1   | AA    | 1791 | A    | C2'-C3'-O3' | -7.05 | 103.13      | 113.70   |
| 5   | AE    | 174  | ASP  | N-CA-C      | 7.05  | 120.16      | 109.23   |
| 34  | BA    | 115  | G    | C2'-C3'-O3' | 7.04  | 120.06      | 109.50   |
| 34  | BA    | 397  | A    | N9-C1'-C2'  | 7.04  | 122.56      | 112.00   |
| 22  | AX    | 37   | LEU  | N-CA-C      | 7.03  | 121.55      | 112.12   |
| 25  | Aa    | 52   | THR  | N-CA-C      | 7.03  | 125.78      | 110.80   |
| 44  | BO    | 127  | LYS  | N-CA-C      | -7.03 | 104.83      | 113.19   |
| 7   | AG    | 56   | ALA  | N-CA-C      | -7.02 | 102.84      | 111.33   |
| 14  | AP    | 23   | ARG  | N-CA-C      | 7.01  | 125.74      | 110.80   |
| 10  | AL    | 47   | ILE  | CA-C-N      | -7.01 | 112.74      | 119.89   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 10  | AL    | 47   | ILE  | C-N-CA      | -7.01 | 112.74      | 119.89   |
| 34  | BA    | 1377 | A    | C2'-C3'-O3' | 7.01  | 120.02      | 109.50   |
| 35  | BF    | 86   | GLU  | N-CA-C      | -7.01 | 102.85      | 111.33   |
| 1   | AA    | 1143 | A    | N9-C1'-C2'  | 7.00  | 122.50      | 112.00   |
| 16  | AR    | 114  | LYS  | N-CA-C      | -7.00 | 102.70      | 111.11   |
| 7   | AG    | 139  | LEU  | N-CA-C      | -7.00 | 103.68      | 113.20   |
| 7   | AG    | 144  | ILE  | N-CA-C      | 7.00  | 123.89      | 109.34   |
| 1   | AA    | 2336 | A    | N9-C1'-C2'  | 6.99  | 122.48      | 112.00   |
| 1   | AA    | 1667 | G    | C5'-C4'-C3' | 6.98  | 126.48      | 116.00   |
| 22  | AX    | 45   | PHE  | N-CA-C      | 6.98  | 119.79      | 108.41   |
| 1   | AA    | 1955 | U    | N1-C1'-C2'  | 6.98  | 122.47      | 112.00   |
| 17  | AS    | 91   | TYR  | N-CA-C      | 6.96  | 119.92      | 108.99   |
| 21  | AW    | 166  | SER  | N-CA-C      | 6.96  | 116.33      | 108.25   |
| 36  | BG    | 68   | VAL  | N-CA-C      | -6.96 | 98.45       | 109.17   |
| 29  | Ae    | 51   | ALA  | N-CA-C      | -6.96 | 97.05       | 108.67   |
| 22  | AX    | 72   | ARG  | N-CA-C      | -6.96 | 102.02      | 111.55   |
| 1   | AA    | 2320 | A    | N9-C1'-C2'  | 6.95  | 122.43      | 112.00   |
| 1   | AA    | 1179 | C    | C2'-C3'-O3' | 6.94  | 119.91      | 109.50   |
| 1   | AA    | 2615 | U    | C2'-C3'-O3' | -6.94 | 103.29      | 113.70   |
| 11  | AM    | 88   | LEU  | N-CA-C      | 6.94  | 125.58      | 110.80   |
| 1   | AA    | 1815 | A    | N9-C1'-C2'  | 6.93  | 122.40      | 112.00   |
| 51  | BV    | 44   | LEU  | N-CA-C      | 6.93  | 119.86      | 111.82   |
| 12  | AN    | 87   | LYS  | N-CA-C      | -6.93 | 103.93      | 113.56   |
| 34  | BA    | 727  | G    | N9-C1'-C2'  | -6.93 | 101.61      | 112.00   |
| 25  | Aa    | 13   | ARG  | N-CA-C      | 6.93  | 125.56      | 110.80   |
| 10  | AL    | 58   | VAL  | N-CA-C      | -6.92 | 98.61       | 108.65   |
| 41  | BL    | 134  | ILE  | CB-CA-C     | -6.92 | 99.94       | 111.29   |
| 11  | AM    | 138  | LEU  | N-CA-C      | -6.92 | 103.35      | 111.03   |
| 34  | BA    | 119  | A    | C2'-C3'-O3' | 6.92  | 119.88      | 109.50   |
| 1   | AA    | 730  | C    | N1-C1'-C2'  | 6.91  | 124.37      | 114.00   |
| 1   | AA    | 725  | G    | N9-C1'-C2'  | 6.91  | 122.36      | 112.00   |
| 26  | Ab    | 34   | PRO  | N-CA-C      | -6.91 | 104.86      | 113.84   |
| 44  | BO    | 108  | ILE  | N-CA-C      | 6.90  | 118.25      | 108.17   |
| 34  | BA    | 243  | A    | C2'-C3'-O3' | 6.90  | 119.85      | 109.50   |
| 1   | AA    | 2051 | A    | N9-C1'-C2'  | 6.90  | 124.35      | 114.00   |
| 1   | AA    | 2756 | U    | P-O3'-C3'   | 6.90  | 130.55      | 120.20   |
| 21  | AW    | 4    | ARG  | N-CA-C      | 6.90  | 117.35      | 108.24   |
| 26  | Ab    | 6    | VAL  | CA-C-N      | 6.90  | 128.46      | 119.84   |
| 26  | Ab    | 6    | VAL  | C-N-CA      | 6.90  | 128.46      | 119.84   |
| 21  | AW    | 157  | LEU  | CA-C-N      | 6.89  | 127.48      | 120.38   |
| 21  | AW    | 157  | LEU  | C-N-CA      | 6.89  | 127.48      | 120.38   |
| 5   | AE    | 166  | THR  | N-CA-C      | 6.88  | 119.40      | 109.14   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1   | AA    | 2196 | C    | N1-C1'-C2'  | 6.88  | 122.32      | 112.00   |
| 1   | AA    | 2447 | G    | C2'-C3'-O3' | 6.87  | 119.81      | 109.50   |
| 4   | AD    | 44   | ASN  | N-CA-C      | -6.87 | 96.17       | 110.80   |
| 36  | BG    | 161  | GLU  | N-CA-C      | -6.87 | 102.96      | 111.75   |
| 10  | AL    | 13   | ASN  | N-CA-C      | -6.86 | 104.89      | 112.72   |
| 17  | AS    | 66   | ARG  | N-CA-C      | 6.85  | 125.40      | 110.80   |
| 29  | Ae    | 60   | LEU  | N-CA-C      | 6.85  | 118.44      | 110.97   |
| 36  | BG    | 128  | PHE  | N-CA-C      | 6.84  | 117.53      | 107.88   |
| 45  | BP    | 44   | THR  | CA-C-N      | 6.84  | 128.39      | 119.84   |
| 45  | BP    | 44   | THR  | C-N-CA      | 6.84  | 128.39      | 119.84   |
| 36  | BG    | 60   | ALA  | N-CA-C      | -6.84 | 104.14      | 113.30   |
| 1   | AA    | 390  | A    | C2'-C3'-O3' | -6.83 | 103.46      | 113.70   |
| 37  | BH    | 189  | PRO  | N-CA-C      | -6.83 | 101.57      | 111.33   |
| 35  | BF    | 233  | SER  | N-CA-C      | 6.82  | 114.14      | 108.07   |
| 15  | AQ    | 63   | VAL  | N-CA-C      | -6.82 | 97.09       | 107.73   |
| 1   | AA    | 138  | G    | N9-C1'-C2'  | -6.82 | 101.77      | 112.00   |
| 3   | AC    | 83   | ILE  | N-CA-C      | -6.82 | 103.20      | 110.36   |
| 43  | BN    | 29   | ARG  | N-CA-C      | -6.82 | 102.37      | 110.41   |
| 29  | Ae    | 40   | GLU  | N-CA-C      | -6.81 | 103.78      | 111.07   |
| 1   | AA    | 828  | U    | N1-C1'-C2'  | 6.81  | 122.21      | 112.00   |
| 34  | BA    | 1100 | C    | N1-C1'-C2'  | 6.81  | 122.21      | 112.00   |
| 51  | BV    | 52   | PRO  | N-CA-C      | 6.79  | 126.47      | 112.47   |
| 1   | AA    | 101  | G    | N9-C1'-C2'  | 6.78  | 122.17      | 112.00   |
| 6   | AF    | 44   | ARG  | N-CA-C      | -6.78 | 103.58      | 110.97   |
| 10  | AL    | 120  | GLU  | N-CA-C      | 6.77  | 125.22      | 110.80   |
| 34  | BA    | 792  | A    | N9-C1'-C2'  | 6.77  | 124.16      | 114.00   |
| 1   | AA    | 1674 | G    | C2'-C3'-O3' | -6.77 | 103.55      | 113.70   |
| 11  | AM    | 136  | GLU  | N-CA-C      | 6.76  | 118.34      | 110.97   |
| 1   | AA    | 2597 | G    | C4'-C3'-O3' | -6.75 | 102.88      | 113.00   |
| 34  | BA    | 1298 | C    | N1-C1'-C2'  | 6.75  | 122.12      | 112.00   |
| 1   | AA    | 776  | G    | C2'-C3'-O3' | 6.73  | 119.60      | 109.50   |
| 50  | BU    | 104  | LYS  | N-CA-C      | 6.73  | 125.14      | 110.80   |
| 1   | AA    | 745  | G    | N9-C1'-C2'  | 6.73  | 122.09      | 112.00   |
| 34  | BA    | 1049 | U    | C2'-C3'-O3' | 6.73  | 123.80      | 113.70   |
| 1   | AA    | 1986 | A    | C4'-C3'-O3' | -6.72 | 102.92      | 113.00   |
| 14  | AP    | 111  | GLU  | N-CA-C      | 6.72  | 120.68      | 111.54   |
| 1   | AA    | 685  | A    | C2'-C3'-O3' | 6.72  | 119.57      | 109.50   |
| 1   | AA    | 2060 | A    | C4'-C3'-O3' | -6.72 | 102.92      | 113.00   |
| 5   | AE    | 77   | ILE  | N-CA-C      | 6.71  | 118.02      | 108.42   |
| 4   | AD    | 223  | GLY  | N-CA-C      | 6.70  | 121.12      | 112.54   |
| 1   | AA    | 1980 | G    | C2'-C3'-O3' | 6.70  | 119.55      | 109.50   |
| 20  | AV    | 46   | LYS  | N-CA-C      | 6.70  | 125.08      | 110.80   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 36  | BG    | 154  | SER  | N-CA-C      | 6.70  | 120.08      | 108.76   |
| 53  | BX    | 79   | ARG  | N-CA-C      | -6.69 | 103.08      | 111.11   |
| 16  | AR    | 76   | TYR  | N-CA-C      | 6.69  | 119.56      | 111.40   |
| 2   | AB    | 119  | A    | N9-C1'-C2'  | -6.69 | 101.97      | 112.00   |
| 34  | BA    | 913  | A    | C2'-C3'-O3' | 6.69  | 119.53      | 109.50   |
| 3   | AC    | 168  | THR  | N-CA-C      | 6.68  | 121.04      | 113.02   |
| 1   | AA    | 676  | A    | N9-C1'-C2'  | 6.68  | 122.02      | 112.00   |
| 13  | AO    | 77   | ARG  | N-CA-C      | -6.68 | 103.92      | 111.14   |
| 36  | BG    | 193  | TYR  | N-CA-C      | -6.68 | 104.94      | 113.23   |
| 12  | AN    | 104  | PHE  | N-CA-C      | 6.68  | 119.81      | 107.99   |
| 1   | AA    | 2076 | U    | N1-C1'-C2'  | 6.68  | 124.01      | 114.00   |
| 15  | AQ    | 45   | PHE  | N-CA-C      | -6.68 | 96.58       | 110.80   |
| 24  | AZ    | 58   | VAL  | N-CA-C      | 6.68  | 116.85      | 107.37   |
| 1   | AA    | 1363 | C    | N1-C1'-C2'  | -6.67 | 102.00      | 112.00   |
| 51  | BV    | 18   | ARG  | N-CA-C      | 6.67  | 119.33      | 107.80   |
| 7   | AG    | 42   | GLY  | N-CA-C      | 6.66  | 128.97      | 113.18   |
| 23  | AY    | 11   | LEU  | N-CA-C      | 6.66  | 118.61      | 110.41   |
| 45  | BP    | 13   | LYS  | N-CA-C      | 6.66  | 121.64      | 112.04   |
| 14  | AP    | 99   | LYS  | N-CA-C      | -6.66 | 103.27      | 111.33   |
| 27  | Ac    | 35   | GLU  | N-CA-C      | 6.66  | 120.75      | 112.03   |
| 21  | AW    | 157  | LEU  | N-CA-C      | 6.66  | 118.04      | 109.72   |
| 1   | AA    | 2198 | A    | N9-C1'-C2'  | 6.65  | 121.98      | 112.00   |
| 5   | AE    | 127  | ASP  | N-CA-C      | 6.65  | 119.56      | 108.13   |
| 5   | AE    | 147  | PRO  | N-CA-C      | -6.65 | 98.77       | 112.47   |
| 5   | AE    | 146  | THR  | N-CA-C      | -6.64 | 95.13       | 109.81   |
| 7   | AG    | 121  | ASN  | N-CA-C      | 6.64  | 118.47      | 109.24   |
| 1   | AA    | 562  | U    | N1-C1'-C2'  | 6.63  | 121.95      | 112.00   |
| 4   | AD    | 70   | TRP  | N-CA-C      | -6.63 | 96.67       | 110.80   |
| 37  | BH    | 146  | ILE  | CB-CA-C     | -6.63 | 105.51      | 111.74   |
| 1   | AA    | 196  | A    | N9-C1'-C2'  | 6.63  | 123.94      | 114.00   |
| 42  | BM    | 35   | GLU  | N-CA-C      | -6.63 | 101.42      | 111.56   |
| 1   | AA    | 229  | A    | C2'-C3'-O3' | -6.62 | 103.76      | 113.70   |
| 53  | BX    | 66   | ALA  | N-CA-C      | -6.62 | 103.76      | 110.97   |
| 42  | BM    | 112  | LYS  | N-CA-C      | -6.61 | 99.43       | 109.95   |
| 21  | AW    | 39   | VAL  | CB-CA-C     | -6.61 | 104.14      | 111.35   |
| 26  | Ab    | 28   | PRO  | N-CA-C      | 6.61  | 121.05      | 110.21   |
| 50  | BU    | 19   | VAL  | N-CA-C      | 6.60  | 117.81      | 108.17   |
| 1   | AA    | 1324 | G    | N9-C1'-C2'  | 6.60  | 121.90      | 112.00   |
| 21  | AW    | 179  | ASP  | N-CA-C      | 6.60  | 124.86      | 110.80   |
| 22  | AX    | 46   | LYS  | CA-C-N      | 6.60  | 128.09      | 119.84   |
| 22  | AX    | 46   | LYS  | C-N-CA      | 6.60  | 128.09      | 119.84   |
| 1   | AA    | 740  | U    | C1'-C2'-O2' | -6.59 | 101.91      | 111.80   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 49  | BT    | 68   | ASP  | N-CA-C      | -6.59 | 103.71      | 111.03   |
| 21  | AW    | 98   | MET  | N-CA-C      | 6.58  | 119.54      | 108.02   |
| 40  | BK    | 8    | GLU  | N-CA-C      | 6.58  | 124.81      | 110.80   |
| 35  | BF    | 57   | PHE  | N-CA-C      | -6.57 | 104.04      | 111.07   |
| 1   | AA    | 2496 | C    | C2'-C3'-O3' | -6.57 | 103.85      | 113.70   |
| 24  | AZ    | 40   | THR  | CA-C-N      | -6.56 | 111.86      | 119.47   |
| 24  | AZ    | 40   | THR  | C-N-CA      | -6.56 | 111.86      | 119.47   |
| 25  | Aa    | 5    | ILE  | CB-CA-C     | -6.56 | 100.53      | 111.29   |
| 29  | Ae    | 54   | GLU  | N-CA-C      | -6.56 | 103.15      | 112.13   |
| 1   | AA    | 1784 | A    | C3'-C2'-O2' | 6.55  | 124.43      | 114.60   |
| 8   | AH    | 23   | ARG  | CA-C-N      | -6.55 | 113.91      | 122.37   |
| 8   | AH    | 23   | ARG  | C-N-CA      | -6.55 | 113.91      | 122.37   |
| 15  | AQ    | 57   | PHE  | CB-CA-C     | -6.55 | 101.81      | 111.77   |
| 3   | AC    | 94   | VAL  | N-CA-C      | 6.55  | 118.15      | 108.45   |
| 40  | BK    | 36   | LYS  | N-CA-C      | -6.55 | 103.40      | 111.33   |
| 1   | AA    | 2092 | U    | N1-C1'-C2'  | 6.54  | 121.81      | 112.00   |
| 1   | AA    | 2717 | G    | C4'-C3'-O3' | -6.54 | 103.19      | 113.00   |
| 4   | AD    | 190  | TYR  | N-CA-C      | 6.54  | 118.70      | 108.96   |
| 22  | AX    | 24   | LYS  | N-CA-C      | 6.53  | 121.08      | 111.87   |
| 1   | AA    | 1204 | A    | C2'-C3'-O3' | 6.53  | 119.29      | 109.50   |
| 13  | AO    | 40   | LYS  | N-CA-C      | -6.53 | 100.60      | 111.37   |
| 1   | AA    | 741  | G    | C5'-C4'-C3' | 6.52  | 125.79      | 116.00   |
| 21  | AW    | 38   | TYR  | CA-C-N      | 6.52  | 132.65      | 121.63   |
| 21  | AW    | 38   | TYR  | C-N-CA      | 6.52  | 132.65      | 121.63   |
| 31  | AI    | 145  | PRO  | N-CA-CB     | 6.51  | 110.42      | 103.52   |
| 30  | Af    | 8    | LYS  | N-CA-C      | -6.50 | 100.76      | 110.06   |
| 5   | AE    | 79   | ARG  | N-CA-C      | 6.50  | 119.60      | 109.52   |
| 12  | AN    | 60   | ARG  | N-CA-C      | 6.50  | 120.62      | 111.52   |
| 50  | BU    | 7    | THR  | N-CA-C      | 6.50  | 119.59      | 109.52   |
| 39  | BJ    | 25   | ILE  | N-CA-C      | -6.50 | 103.54      | 110.36   |
| 1   | AA    | 2597 | G    | N9-C1'-C2'  | 6.49  | 121.74      | 112.00   |
| 4   | AD    | 14   | ARG  | N-CA-C      | 6.49  | 119.97      | 107.44   |
| 11  | AM    | 42   | SER  | N-CA-C      | 6.49  | 124.63      | 110.80   |
| 8   | AH    | 142  | GLY  | N-CA-C      | -6.49 | 104.92      | 112.83   |
| 1   | AA    | 2482 | G    | C3'-C2'-O2' | 6.49  | 120.43      | 110.70   |
| 45  | BP    | 55   | VAL  | N-CA-C      | 6.48  | 116.81      | 108.12   |
| 37  | BH    | 203  | VAL  | N-CA-C      | 6.47  | 116.63      | 110.42   |
| 1   | AA    | 2614 | A    | C4'-C3'-O3' | -6.46 | 103.30      | 113.00   |
| 36  | BG    | 86   | VAL  | N-CA-C      | -6.46 | 102.98      | 111.05   |
| 7   | AG    | 48   | GLU  | N-CA-C      | -6.45 | 97.06       | 110.80   |
| 13  | AO    | 11   | ASN  | N-CA-C      | 6.45  | 118.98      | 109.69   |
| 3   | AC    | 19   | ILE  | N-CA-C      | -6.45 | 106.45      | 112.83   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 13  | AO    | 98   | LEU  | N-CA-C      | 6.45  | 120.08      | 108.48   |
| 1   | AA    | 1559 | G    | O4'-C1'-C2' | -6.44 | 101.16      | 107.60   |
| 38  | BI    | 90   | VAL  | N-CA-C      | 6.44  | 117.57      | 108.17   |
| 49  | BT    | 42   | ARG  | N-CA-C      | -6.44 | 104.91      | 112.89   |
| 1   | AA    | 1791 | A    | N9-C1'-C2'  | 6.43  | 121.65      | 112.00   |
| 50  | BU    | 56   | VAL  | N-CA-C      | -6.43 | 99.32       | 108.58   |
| 1   | AA    | 1992 | G    | C2'-C3'-O3' | 6.43  | 119.14      | 109.50   |
| 48  | BS    | 28   | GLN  | N-CA-C      | -6.43 | 100.76      | 111.37   |
| 4   | AD    | 147  | LEU  | N-CA-C      | -6.42 | 101.28      | 110.59   |
| 7   | AG    | 2    | PRO  | N-CA-C      | -6.42 | 105.69      | 113.98   |
| 14  | AP    | 84   | GLN  | N-CA-C      | 6.42  | 117.98      | 108.60   |
| 34  | BA    | 1133 | G    | N9-C1'-C2'  | -6.42 | 102.37      | 112.00   |
| 1   | AA    | 2267 | A    | C2'-C3'-O3' | -6.42 | 104.07      | 113.70   |
| 52  | BW    | 2    | PRO  | N-CA-C      | 6.42  | 128.15      | 112.10   |
| 27  | Ac    | 36   | LEU  | CA-C-N      | 6.41  | 133.79      | 121.54   |
| 27  | Ac    | 36   | LEU  | C-N-CA      | 6.41  | 133.79      | 121.54   |
| 1   | AA    | 2681 | C    | N1-C1'-C2'  | 6.41  | 121.62      | 112.00   |
| 37  | BH    | 30   | LYS  | N-CA-C      | 6.41  | 124.46      | 110.80   |
| 29  | Ae    | 16   | ILE  | N-CA-C      | 6.41  | 117.71      | 108.48   |
| 25  | Aa    | 30   | GLU  | N-CA-C      | -6.41 | 97.16       | 110.80   |
| 14  | AP    | 90   | GLY  | CA-C-N      | -6.39 | 113.59      | 121.00   |
| 14  | AP    | 90   | GLY  | C-N-CA      | -6.39 | 113.59      | 121.00   |
| 16  | AR    | 102  | GLU  | CA-C-N      | 6.39  | 127.83      | 119.84   |
| 16  | AR    | 102  | GLU  | C-N-CA      | 6.39  | 127.83      | 119.84   |
| 1   | AA    | 2614 | A    | N9-C1'-C2'  | 6.39  | 121.58      | 112.00   |
| 21  | AW    | 147  | GLY  | N-CA-C      | -6.38 | 98.06       | 113.18   |
| 34  | BA    | 397  | A    | C5'-C4'-C3' | -6.38 | 106.43      | 116.00   |
| 34  | BA    | 594  | G    | C2'-C3'-O3' | -6.38 | 104.13      | 113.70   |
| 40  | BK    | 75   | VAL  | N-CA-C      | 6.37  | 119.48      | 108.90   |
| 21  | AW    | 135  | GLU  | N-CA-C      | -6.37 | 105.37      | 113.01   |
| 26  | Ab    | 31   | VAL  | CA-C-N      | -6.37 | 111.88      | 119.84   |
| 26  | Ab    | 31   | VAL  | C-N-CA      | -6.37 | 111.88      | 119.84   |
| 10  | AL    | 100  | GLY  | N-CA-C      | 6.37  | 125.33      | 112.34   |
| 1   | AA    | 650  | C    | N1-C1'-C2'  | 6.36  | 121.55      | 112.00   |
| 35  | BF    | 65   | GLY  | N-CA-C      | -6.36 | 106.11      | 115.72   |
| 34  | BA    | 80   | G    | N9-C1'-C2'  | 6.36  | 121.53      | 112.00   |
| 12  | AN    | 21   | THR  | N-CA-C      | 6.35  | 124.33      | 110.80   |
| 17  | AS    | 40   | LEU  | N-CA-C      | -6.35 | 97.27       | 110.80   |
| 4   | AD    | 132  | PRO  | N-CA-C      | -6.35 | 101.22      | 111.19   |
| 15  | AQ    | 72   | VAL  | N-CA-C      | -6.35 | 96.13       | 109.34   |
| 13  | AO    | 105  | ARG  | N-CA-C      | 6.35  | 118.06      | 110.19   |
| 34  | BA    | 562  | C    | C2'-C3'-O3' | -6.35 | 104.18      | 113.70   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 34  | BA    | 563  | A    | N9-C1'-C2'  | 6.34  | 123.51      | 114.00   |
| 1   | AA    | 2422 | A    | N9-C1'-C2'  | 6.33  | 123.50      | 114.00   |
| 22  | AX    | 66   | VAL  | N-CA-C      | -6.33 | 100.60      | 109.21   |
| 25  | Aa    | 16   | CYS  | N-CA-C      | 6.33  | 116.81      | 107.88   |
| 24  | AZ    | 57   | GLU  | N-CA-C      | 6.33  | 119.82      | 109.06   |
| 34  | BA    | 1239 | A    | C2'-C3'-O3' | -6.33 | 104.21      | 113.70   |
| 42  | BM    | 84   | ALA  | N-CA-C      | -6.33 | 103.52      | 111.11   |
| 1   | AA    | 829  | A    | C2'-C3'-O3' | -6.33 | 100.01      | 109.50   |
| 1   | AA    | 1203 | G    | OP2-P-O3'   | -6.32 | 89.03       | 108.00   |
| 17  | AS    | 86   | GLY  | N-CA-C      | 6.32  | 122.86      | 111.03   |
| 12  | AN    | 123  | HIS  | N-CA-C      | -6.32 | 97.34       | 110.80   |
| 18  | AT    | 8    | ARG  | N-CA-C      | 6.32  | 124.25      | 110.80   |
| 15  | AQ    | 23   | ARG  | CA-C-N      | 6.31  | 127.73      | 119.84   |
| 15  | AQ    | 23   | ARG  | C-N-CA      | 6.31  | 127.73      | 119.84   |
| 1   | AA    | 1947 | C    | C5'-C4'-C3' | -6.31 | 106.54      | 116.00   |
| 8   | AH    | 73   | ALA  | N-CA-C      | -6.30 | 103.70      | 111.33   |
| 44  | BO    | 31   | THR  | N-CA-C      | 6.30  | 118.89      | 108.99   |
| 1   | AA    | 2428 | G    | C2'-C3'-O3' | -6.30 | 104.25      | 113.70   |
| 25  | Aa    | 43   | TYR  | N-CA-C      | 6.30  | 119.97      | 109.95   |
| 1   | AA    | 446  | G    | N9-C1'-C2'  | 6.30  | 121.44      | 112.00   |
| 1   | AA    | 1127 | A    | C4'-C3'-O3' | 6.30  | 122.45      | 113.00   |
| 21  | AW    | 34   | ASN  | N-CA-C      | 6.30  | 119.75      | 109.24   |
| 1   | AA    | 1608 | A    | C4'-C3'-O3' | 6.29  | 118.84      | 109.40   |
| 6   | AF    | 50   | SER  | N-CA-C      | -6.29 | 100.97      | 110.28   |
| 42  | BM    | 59   | PHE  | N-CA-C      | 6.29  | 119.65      | 109.40   |
| 1   | AA    | 1128 | A    | C5'-C4'-C3' | 6.28  | 125.43      | 116.00   |
| 19  | AU    | 75   | ASP  | N-CA-C      | 6.28  | 118.65      | 108.41   |
| 7   | AG    | 68   | PRO  | N-CA-C      | 6.28  | 125.40      | 112.47   |
| 1   | AA    | 2602 | A    | C2'-C3'-O3' | 6.28  | 118.91      | 109.50   |
| 22  | AX    | 75   | LEU  | N-CA-C      | -6.28 | 103.72      | 111.75   |
| 6   | AF    | 13   | SER  | N-CA-C      | -6.27 | 95.95       | 109.81   |
| 22  | AX    | 57   | PHE  | N-CA-C      | -6.26 | 102.60      | 111.56   |
| 12  | AN    | 136  | ALA  | CA-C-N      | 6.26  | 133.50      | 121.54   |
| 12  | AN    | 136  | ALA  | C-N-CA      | 6.26  | 133.50      | 121.54   |
| 23  | AY    | 2    | ARG  | N-CA-C      | -6.26 | 103.74      | 111.75   |
| 7   | AG    | 142  | PRO  | N-CA-C      | -6.26 | 99.58       | 112.47   |
| 37  | BH    | 204  | ILE  | CB-CA-C     | -6.26 | 103.69      | 112.14   |
| 35  | BF    | 113  | HIS  | N-CA-C      | -6.25 | 104.38      | 111.07   |
| 35  | BF    | 100  | GLY  | N-CA-C      | -6.25 | 107.28      | 115.47   |
| 45  | BP    | 67   | THR  | N-CA-C      | 6.25  | 119.65      | 109.59   |
| 1   | AA    | 687  | C    | N1-C1'-C2'  | 6.25  | 121.37      | 112.00   |
| 34  | BA    | 1139 | G    | N9-C1'-C2'  | 6.25  | 121.37      | 112.00   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 41  | BL    | 80   | ILE  | N-CA-C      | -6.25 | 96.34       | 109.34   |
| 14  | AP    | 42   | ASP  | N-CA-C      | -6.25 | 101.04      | 110.28   |
| 14  | AP    | 18   | ILE  | N-CA-C      | 6.24  | 116.72      | 110.23   |
| 18  | AT    | 11   | ARG  | N-CA-C      | 6.24  | 124.09      | 110.80   |
| 20  | AV    | 55   | TYR  | CA-C-N      | 6.24  | 127.63      | 119.84   |
| 20  | AV    | 55   | TYR  | C-N-CA      | 6.24  | 127.63      | 119.84   |
| 7   | AG    | 59   | GLU  | N-CA-C      | 6.23  | 118.62      | 111.02   |
| 9   | AK    | 130  | HIS  | N-CA-C      | -6.23 | 104.49      | 111.28   |
| 1   | AA    | 2517 | C    | N1-C1'-C2'  | 6.22  | 121.34      | 112.00   |
| 45  | BP    | 50   | SER  | N-CA-C      | 6.22  | 119.28      | 108.76   |
| 5   | AE    | 138  | PRO  | N-CA-C      | 6.22  | 120.61      | 111.03   |
| 8   | AH    | 29   | PRO  | N-CA-C      | -6.22 | 105.88      | 114.27   |
| 19  | AU    | 9    | LEU  | N-CA-C      | 6.21  | 116.76      | 108.38   |
| 44  | BO    | 63   | LEU  | N-CA-C      | 6.21  | 118.59      | 111.02   |
| 1   | AA    | 1348 | G    | C4'-C3'-O3' | -6.20 | 103.70      | 113.00   |
| 50  | BU    | 75   | ARG  | N-CA-C      | 6.20  | 117.97      | 108.42   |
| 1   | AA    | 1941 | C    | O4'-C4'-C3' | -6.20 | 97.80       | 104.00   |
| 1   | AA    | 621  | A    | N9-C1'-C2'  | -6.20 | 102.71      | 112.00   |
| 34  | BA    | 209  | U    | N1-C1'-C2'  | 6.19  | 121.29      | 112.00   |
| 9   | AK    | 43   | THR  | N-CA-C      | 6.19  | 123.50      | 109.81   |
| 25  | Aa    | 70   | GLY  | N-CA-C      | -6.19 | 105.15      | 112.64   |
| 7   | AG    | 103  | LEU  | N-CA-C      | -6.18 | 101.17      | 111.37   |
| 14  | AP    | 53   | SER  | N-CA-C      | -6.18 | 100.89      | 110.10   |
| 10  | AL    | 114  | ILE  | N-CA-C      | -6.18 | 103.87      | 110.36   |
| 35  | BF    | 38   | GLY  | N-CA-C      | 6.18  | 121.83      | 114.48   |
| 8   | AH    | 131  | VAL  | O-C-N       | 6.17  | 130.29      | 122.57   |
| 38  | BI    | 89   | ILE  | N-CA-C      | 6.17  | 116.75      | 108.11   |
| 49  | BT    | 19   | ILE  | N-CA-C      | -6.17 | 97.50       | 106.88   |
| 30  | Af    | 17   | ILE  | N-CA-C      | 6.17  | 117.18      | 108.36   |
| 34  | BA    | 1054 | C    | O4'-C4'-C3' | -6.17 | 97.83       | 104.00   |
| 1   | AA    | 2346 | A    | C2'-C3'-O3' | -6.16 | 104.46      | 113.70   |
| 3   | AC    | 13   | LYS  | N-CA-C      | -6.16 | 103.72      | 111.11   |
| 9   | AK    | 77   | GLY  | N-CA-C      | -6.16 | 98.58       | 113.18   |
| 36  | BG    | 38   | ARG  | N-CA-C      | -6.16 | 103.88      | 111.33   |
| 1   | AA    | 602  | G    | N9-C1'-C2'  | 6.16  | 121.23      | 112.00   |
| 23  | AY    | 28   | MET  | N-CA-C      | -6.15 | 103.52      | 111.02   |
| 34  | BA    | 535  | A    | C4'-C3'-O3' | 6.15  | 118.62      | 109.40   |
| 35  | BF    | 168  | THR  | N-CA-C      | -6.15 | 97.71       | 110.80   |
| 41  | BL    | 100  | ILE  | N-CA-C      | -6.15 | 95.61       | 108.88   |
| 1   | AA    | 1247 | A    | C2'-C3'-O3' | 6.14  | 118.72      | 109.50   |
| 18  | AT    | 31   | GLU  | N-CA-C      | 6.14  | 117.67      | 110.97   |
| 42  | BM    | 50   | LEU  | N-CA-C      | -6.14 | 104.51      | 112.68   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1   | AA    | 2458 | G    | N9-C1'-C2'  | 6.14  | 121.21      | 112.00   |
| 6   | AF    | 8    | GLN  | N-CA-C      | 6.14  | 118.19      | 108.79   |
| 1   | AA    | 791  | C    | N1-C1'-C2'  | 6.14  | 121.21      | 112.00   |
| 38  | BI    | 28   | PHE  | N-CA-C      | 6.14  | 118.50      | 109.24   |
| 2   | AB    | 56   | G    | C4'-C3'-O3' | -6.13 | 103.80      | 113.00   |
| 38  | BI    | 92   | LYS  | N-CA-C      | -6.13 | 98.74       | 109.48   |
| 38  | BI    | 54   | ALA  | N-CA-C      | -6.13 | 103.91      | 111.33   |
| 51  | BV    | 39   | VAL  | CB-CA-C     | -6.13 | 104.03      | 111.88   |
| 10  | AL    | 76   | ALA  | N-CA-C      | 6.13  | 117.55      | 108.60   |
| 35  | BF    | 213  | LEU  | N-CA-C      | -6.13 | 103.54      | 111.02   |
| 9   | AK    | 39   | ARG  | N-CA-C      | -6.13 | 101.64      | 110.40   |
| 1   | AA    | 1791 | A    | C4'-C3'-O3' | -6.12 | 103.82      | 113.00   |
| 1   | AA    | 2025 | C    | C2'-C3'-O3' | -6.12 | 104.52      | 113.70   |
| 34  | BA    | 367  | U    | N1-C1'-C2'  | 6.12  | 123.18      | 114.00   |
| 34  | BA    | 723  | U    | N1-C1'-C2'  | 6.12  | 121.18      | 112.00   |
| 23  | AY    | 62   | LYS  | N-CA-C      | 6.12  | 117.64      | 110.97   |
| 21  | AW    | 178  | GLU  | N-CA-C      | -6.12 | 103.19      | 110.41   |
| 24  | AZ    | 27   | GLY  | N-CA-C      | -6.11 | 98.69       | 113.18   |
| 37  | BH    | 123  | HIS  | N-CA-C      | 6.11  | 120.46      | 113.19   |
| 8   | AH    | 7    | LEU  | CA-C-N      | 6.11  | 127.48      | 119.84   |
| 8   | AH    | 7    | LEU  | C-N-CA      | 6.11  | 127.48      | 119.84   |
| 15  | AQ    | 56   | GLY  | CA-C-O      | -6.11 | 114.66      | 120.64   |
| 17  | AS    | 60   | GLU  | CA-C-N      | -6.11 | 114.51      | 122.51   |
| 17  | AS    | 60   | GLU  | C-N-CA      | -6.11 | 114.51      | 122.51   |
| 18  | AT    | 53   | SER  | N-CA-C      | -6.11 | 104.54      | 111.07   |
| 34  | BA    | 1124 | G    | N9-C1'-C2'  | 6.11  | 121.16      | 112.00   |
| 50  | BU    | 42   | TYR  | N-CA-C      | -6.11 | 100.14      | 108.38   |
| 20  | AV    | 52   | SER  | N-CA-C      | -6.10 | 96.32       | 109.81   |
| 4   | AD    | 35   | LYS  | N-CA-C      | 6.10  | 123.30      | 109.81   |
| 1   | AA    | 846  | C    | C2'-C3'-O3' | 6.10  | 118.65      | 109.50   |
| 10  | AL    | 67   | LYS  | N-CA-C      | 6.10  | 123.79      | 110.80   |
| 1   | AA    | 1785 | A    | N9-C1'-C2'  | 6.10  | 121.14      | 112.00   |
| 3   | AC    | 7    | TYR  | N-CA-C      | -6.09 | 104.42      | 112.34   |
| 40  | BK    | 117  | ALA  | N-CA-C      | -6.08 | 104.65      | 111.28   |
| 54  | BY    | 19   | GLY  | N-CA-C      | 6.08  | 122.05      | 110.86   |
| 9   | AK    | 99   | LEU  | N-CA-C      | -6.06 | 103.83      | 111.11   |
| 1   | AA    | 2602 | A    | N9-C1'-C2'  | 6.06  | 123.09      | 114.00   |
| 21  | AW    | 109  | ALA  | N-CA-C      | -6.06 | 97.90       | 110.80   |
| 34  | BA    | 530  | G    | C5'-C4'-O4' | -6.06 | 100.72      | 109.80   |
| 53  | BX    | 94   | ALA  | N-CA-C      | -6.05 | 103.34      | 111.87   |
| 1   | AA    | 1966 | A    | C3'-C2'-O2' | 6.04  | 119.77      | 110.70   |
| 11  | AM    | 96   | THR  | CA-C-N      | -6.04 | 112.28      | 119.84   |

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| Mol | Chain | Res    | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|--------|------|-------------|-------|-------------|----------|
| 11  | AM    | 96     | THR  | C-N-CA      | -6.04 | 112.28      | 119.84   |
| 26  | Ab    | 22     | HIS  | N-CA-C      | -6.04 | 104.01      | 111.75   |
| 16  | AR    | 109    | LEU  | N-CA-C      | -6.04 | 97.93       | 110.80   |
| 43  | BN    | 68     | HIS  | N-CA-C      | -6.04 | 99.81       | 109.96   |
| 1   | AA    | 2867   | G    | N9-C1'-C2'  | 6.03  | 121.04      | 112.00   |
| 11  | AM    | 86     | LYS  | N-CA-C      | 6.03  | 123.64      | 110.80   |
| 34  | BA    | 31     | G    | C2'-C3'-O3' | -6.03 | 104.66      | 113.70   |
| 1   | AA    | 1699   | G    | N9-C1'-C2'  | 6.02  | 123.04      | 114.00   |
| 42  | BM    | 110    | GLU  | N-CA-C      | 6.01  | 123.61      | 110.80   |
| 1   | AA    | 1544   | C    | N1-C1'-C2'  | 6.01  | 121.01      | 112.00   |
| 1   | AA    | 620    | G    | N9-C1'-C2'  | 6.01  | 123.01      | 114.00   |
| 1   | AA    | 1416   | G    | N9-C1'-C2'  | 6.01  | 121.01      | 112.00   |
| 19  | AU    | 23     | GLU  | N-CA-C      | 6.00  | 122.47      | 114.12   |
| 21  | AW    | 91     | LEU  | N-CA-C      | 6.00  | 119.83      | 110.17   |
| 3   | AC    | 91     | ALA  | N-CA-C      | 6.00  | 120.04      | 109.96   |
| 5   | AE    | 192    | ASN  | N-CA-C      | -6.00 | 99.18       | 108.42   |
| 38  | BI    | 58     | ALA  | N-CA-C      | -6.00 | 101.47      | 111.37   |
| 1   | AA    | 1455   | G    | N9-C1'-C2'  | -6.00 | 103.01      | 112.00   |
| 13  | AO    | 113    | LEU  | N-CA-C      | -6.00 | 100.03      | 109.50   |
| 11  | AM    | 45     | LEU  | N-CA-C      | 5.99  | 118.33      | 111.02   |
| 1   | AA    | 2761   | G    | C5'-C4'-C3' | 5.99  | 124.99      | 116.00   |
| 10  | AL    | 68     | GLU  | N-CA-C      | -5.99 | 96.61       | 107.75   |
| 35  | BF    | 134    | GLU  | N-CA-C      | -5.99 | 104.08      | 111.33   |
| 1   | AA    | 1240   | U    | OP2-P-O3'   | -5.99 | 90.04       | 108.00   |
| 1   | AA    | 1694   | C    | N1-C1'-C2'  | 5.99  | 122.98      | 114.00   |
| 34  | BA    | 1053   | G    | C2'-C3'-O3' | -5.99 | 104.72      | 113.70   |
| 1   | AA    | 270(M) | U    | C2'-C3'-O3' | -5.98 | 100.53      | 109.50   |
| 14  | AP    | 85     | VAL  | N-CA-C      | 5.98  | 116.90      | 108.17   |
| 21  | AW    | 138    | GLU  | N-CA-C      | 5.98  | 118.05      | 109.14   |
| 21  | AW    | 72     | ARG  | N-CA-C      | -5.97 | 105.82      | 114.12   |
| 34  | BA    | 60     | A    | C2'-C3'-O3' | 5.97  | 118.45      | 109.50   |
| 18  | AT    | 82     | LEU  | N-CA-C      | -5.97 | 100.27      | 109.76   |
| 1   | AA    | 2472   | G    | C5'-C4'-C3' | -5.96 | 107.05      | 116.00   |
| 19  | AU    | 42     | ALA  | N-CA-C      | -5.96 | 103.96      | 111.11   |
| 7   | AG    | 10     | LYS  | N-CA-C      | 5.96  | 117.44      | 111.07   |
| 29  | Ae    | 12     | LYS  | N-CA-C      | -5.96 | 98.12       | 110.80   |
| 7   | AG    | 46     | ALA  | N-CA-C      | -5.95 | 105.16      | 113.37   |
| 9   | AK    | 96     | GLU  | N-CA-C      | -5.95 | 104.13      | 111.33   |
| 36  | BG    | 17     | ASP  | N-CA-C      | 5.95  | 118.12      | 109.07   |
| 12  | AN    | 128    | LYS  | N-CA-C      | -5.95 | 100.14      | 109.25   |
| 2   | AB    | 50     | G    | C4'-C3'-O3' | 5.95  | 121.93      | 113.00   |
| 38  | BI    | 144    | THR  | N-CA-C      | 5.95  | 123.47      | 110.80   |

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| Mol | Chain | Res    | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|--------|------|-------------|-------|-------------|----------|
| 5   | AE    | 196    | VAL  | N-CA-C      | 5.95  | 116.73      | 108.23   |
| 7   | AG    | 98     | ARG  | N-CA-C      | -5.95 | 101.55      | 111.37   |
| 7   | AG    | 84     | LYS  | N-CA-C      | 5.94  | 123.46      | 110.80   |
| 48  | BS    | 80     | ALA  | N-CA-C      | -5.94 | 103.77      | 111.02   |
| 1   | AA    | 532    | A    | N9-C1'-C2'  | 5.94  | 120.91      | 112.00   |
| 1   | AA    | 1312   | U    | C3'-C2'-O2' | 5.94  | 119.61      | 110.70   |
| 13  | AO    | 10     | LEU  | N-CA-C      | 5.94  | 117.99      | 109.14   |
| 34  | BA    | 88     | C    | N1-C1'-C2'  | 5.93  | 120.90      | 112.00   |
| 4   | AD    | 264    | LYS  | N-CA-C      | 5.93  | 122.92      | 109.81   |
| 34  | BA    | 530    | G    | C2'-C3'-O3' | -5.93 | 104.80      | 113.70   |
| 1   | AA    | 270(L) | U    | C2'-C3'-O3' | 5.93  | 118.39      | 109.50   |
| 1   | AA    | 280    | C    | C2'-C3'-O3' | 5.92  | 118.39      | 109.50   |
| 44  | BO    | 91     | ARG  | N-CA-C      | -5.92 | 104.18      | 111.75   |
| 1   | AA    | 698    | C    | N1-C1'-C2'  | 5.91  | 120.87      | 112.00   |
| 1   | AA    | 2501   | C    | OP2-P-O3'   | -5.91 | 90.26       | 108.00   |
| 3   | AC    | 134    | ARG  | N-CA-C      | -5.91 | 106.20      | 113.41   |
| 21  | AW    | 37     | VAL  | N-CA-C      | -5.91 | 99.90       | 108.89   |
| 1   | AA    | 1828   | G    | C2'-C3'-O3' | 5.91  | 118.37      | 109.50   |
| 51  | BV    | 66     | LEU  | N-CA-C      | -5.91 | 104.75      | 111.07   |
| 22  | AX    | 71     | ASP  | N-CA-C      | -5.91 | 100.90      | 109.59   |
| 38  | BI    | 17     | ALA  | N-CA-C      | 5.91  | 118.83      | 110.50   |
| 44  | BO    | 73     | MET  | N-CA-C      | -5.91 | 104.75      | 111.07   |
| 7   | AG    | 60     | LEU  | N-CA-C      | -5.91 | 104.18      | 111.33   |
| 34  | BA    | 575    | G    | N9-C1'-C2'  | 5.90  | 120.86      | 112.00   |
| 34  | BA    | 965    | A    | C2'-C3'-O3' | 5.90  | 118.36      | 109.50   |
| 1   | AA    | 1005   | C    | N1-C1'-C2'  | 5.89  | 120.84      | 112.00   |
| 3   | AC    | 87     | GLU  | N-CA-C      | -5.89 | 103.83      | 111.02   |
| 10  | AL    | 60     | ALA  | CA-C-N      | 5.89  | 132.58      | 121.97   |
| 10  | AL    | 60     | ALA  | C-N-CA      | 5.89  | 132.58      | 121.97   |
| 41  | BL    | 114    | THR  | N-CA-C      | -5.89 | 101.46      | 109.95   |
| 1   | AA    | 2249   | U    | N1-C1'-C2'  | 5.89  | 120.84      | 112.00   |
| 5   | AE    | 200    | GLU  | N-CA-C      | 5.89  | 118.50      | 108.02   |
| 15  | AQ    | 31     | SER  | N-CA-C      | 5.88  | 118.22      | 108.99   |
| 4   | AD    | 161    | THR  | N-CA-C      | -5.88 | 99.23       | 108.63   |
| 26  | Ab    | 57     | VAL  | N-CA-C      | 5.88  | 116.83      | 108.42   |
| 57  | BZ    | 558    | VAL  | CA-C-N      | -5.88 | 114.33      | 120.38   |
| 57  | BZ    | 558    | VAL  | C-N-CA      | -5.88 | 114.33      | 120.38   |
| 18  | AT    | 99     | ARG  | N-CA-C      | 5.87  | 117.61      | 109.15   |
| 1   | AA    | 2073   | C    | C4'-C3'-O3' | -5.87 | 104.19      | 113.00   |
| 10  | AL    | 22     | ILE  | N-CA-C      | -5.87 | 97.13       | 109.34   |
| 27  | Ac    | 23     | THR  | N-CA-C      | 5.87  | 123.30      | 110.80   |
| 18  | AT    | 13     | SER  | CA-C-N      | 5.86  | 127.17      | 119.84   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 18  | AT    | 13   | SER  | C-N-CA      | 5.86  | 127.17      | 119.84   |
| 24  | AZ    | 58   | VAL  | CB-CA-C     | -5.86 | 105.59      | 111.80   |
| 34  | BA    | 1167 | A    | P-O3'-C3'   | 5.86  | 128.99      | 120.20   |
| 19  | AU    | 61   | GLY  | N-CA-C      | 5.85  | 121.97      | 111.62   |
| 1   | AA    | 2243 | U    | N1-C1'-C2'  | 5.85  | 120.77      | 112.00   |
| 4   | AD    | 141  | VAL  | N-CA-C      | 5.85  | 117.17      | 108.46   |
| 12  | AN    | 105  | GLU  | N-CA-C      | 5.84  | 117.92      | 108.34   |
| 1   | AA    | 2116 | G    | C2'-C3'-O3' | -5.83 | 104.95      | 113.70   |
| 57  | BZ    | 559  | PRO  | CA-C-N      | -5.83 | 113.94      | 119.89   |
| 57  | BZ    | 559  | PRO  | C-N-CA      | -5.83 | 113.94      | 119.89   |
| 1   | AA    | 1510 | A    | N9-C1'-C2'  | 5.83  | 120.74      | 112.00   |
| 11  | AM    | 23   | PRO  | N-CA-C      | 5.83  | 124.48      | 112.47   |
| 1   | AA    | 2195 | C    | N1-C1'-C2'  | 5.82  | 120.73      | 112.00   |
| 32  | AJ    | 71   | THR  | CA-C-N      | -5.82 | 114.38      | 120.38   |
| 32  | AJ    | 71   | THR  | C-N-CA      | -5.82 | 114.38      | 120.38   |
| 12  | AN    | 63   | LYS  | N-CA-C      | 5.82  | 123.19      | 110.80   |
| 4   | AD    | 137  | PRO  | N-CA-C      | -5.82 | 100.48      | 112.47   |
| 1   | AA    | 2447 | G    | N9-C1'-C2'  | 5.82  | 122.72      | 114.00   |
| 51  | BV    | 33   | ASP  | N-CA-C      | 5.82  | 115.18      | 108.49   |
| 4   | AD    | 239  | ARG  | N-CA-C      | 5.81  | 123.18      | 110.80   |
| 5   | AE    | 194  | GLY  | CA-C-N      | -5.81 | 114.98      | 123.00   |
| 5   | AE    | 194  | GLY  | C-N-CA      | -5.81 | 114.98      | 123.00   |
| 22  | AX    | 22   | GLY  | N-CA-C      | 5.81  | 121.45      | 112.45   |
| 37  | BH    | 188  | LEU  | CA-C-N      | -5.81 | 113.61      | 120.11   |
| 37  | BH    | 188  | LEU  | C-N-CA      | -5.81 | 113.61      | 120.11   |
| 1   | AA    | 762  | U    | N1-C1'-C2'  | 5.80  | 122.71      | 114.00   |
| 6   | AF    | 47   | GLY  | N-CA-C      | 5.80  | 126.94      | 113.18   |
| 16  | AR    | 52   | ARG  | N-CA-C      | 5.80  | 120.36      | 113.28   |
| 47  | BR    | 18   | VAL  | N-CA-C      | 5.80  | 121.41      | 109.34   |
| 12  | AN    | 38   | GLU  | CA-C-N      | -5.80 | 112.59      | 119.84   |
| 12  | AN    | 38   | GLU  | C-N-CA      | -5.80 | 112.59      | 119.84   |
| 14  | AP    | 92   | TYR  | N-CA-C      | 5.80  | 116.06      | 107.88   |
| 35  | BF    | 117  | GLU  | N-CA-C      | -5.80 | 104.96      | 111.28   |
| 34  | BA    | 305  | G    | C2'-C3'-O3' | 5.80  | 118.20      | 109.50   |
| 34  | BA    | 1148 | U    | N1-C1'-C2'  | 5.79  | 120.69      | 112.00   |
| 48  | BS    | 74   | ASP  | CA-C-N      | 5.79  | 126.67      | 120.47   |
| 48  | BS    | 74   | ASP  | C-N-CA      | 5.79  | 126.67      | 120.47   |
| 49  | BT    | 5    | ARG  | N-CA-C      | -5.79 | 101.15      | 108.45   |
| 40  | BK    | 16   | LEU  | N-CA-C      | -5.79 | 104.38      | 112.25   |
| 11  | AM    | 96   | THR  | N-CA-C      | 5.79  | 122.60      | 109.81   |
| 4   | AD    | 189  | CYS  | CA-C-N      | -5.79 | 112.38      | 121.87   |
| 4   | AD    | 189  | CYS  | C-N-CA      | -5.79 | 112.38      | 121.87   |

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| Mol | Chain | Res     | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|---------|------|-------------|-------|-------------|----------|
| 45  | BP    | 16      | GLU  | N-CA-C      | 5.79  | 123.12      | 110.80   |
| 8   | AH    | 110     | SER  | N-CA-C      | -5.77 | 98.50       | 110.80   |
| 1   | AA    | 508     | G    | C4'-C3'-O3' | 5.77  | 118.06      | 109.40   |
| 1   | AA    | 858     | U    | C2'-C3'-O3' | -5.77 | 105.04      | 113.70   |
| 1   | AA    | 1477    | A    | N9-C1'-C2'  | 5.77  | 120.66      | 112.00   |
| 34  | BA    | 423     | G    | N9-C1'-C2'  | 5.77  | 120.66      | 112.00   |
| 34  | BA    | 197     | A    | P-O3'-C3'   | -5.76 | 111.56      | 120.20   |
| 32  | AJ    | 20      | ALA  | CA-C-N      | -5.76 | 114.45      | 120.38   |
| 32  | AJ    | 20      | ALA  | C-N-CA      | -5.76 | 114.45      | 120.38   |
| 1   | AA    | 1706    | U    | N1-C1'-C2'  | 5.75  | 120.63      | 112.00   |
| 1   | AA    | 647     | G    | N9-C1'-C2'  | 5.75  | 120.62      | 112.00   |
| 34  | BA    | 47      | C    | N1-C1'-C2'  | 5.75  | 122.62      | 114.00   |
| 37  | BH    | 26      | CYS  | CA-C-N      | 5.75  | 131.25      | 122.23   |
| 37  | BH    | 26      | CYS  | C-N-CA      | 5.75  | 131.25      | 122.23   |
| 1   | AA    | 2894    | G    | N9-C1'-C2'  | 5.75  | 120.62      | 112.00   |
| 34  | BA    | 531     | U    | N1-C1'-C2'  | 5.74  | 122.62      | 114.00   |
| 25  | Aa    | 19      | GLY  | N-CA-C      | -5.74 | 99.57       | 113.18   |
| 1   | AA    | 2061    | G    | N9-C1'-C2'  | 5.74  | 120.60      | 112.00   |
| 1   | AA    | 728     | G    | N9-C1'-C2'  | 5.73  | 120.60      | 112.00   |
| 3   | AC    | 157     | LYS  | N-CA-C      | 5.73  | 118.74      | 111.69   |
| 4   | AD    | 62      | TYR  | N-CA-C      | 5.73  | 123.00      | 110.80   |
| 6   | AF    | 95      | ARG  | N-CA-C      | 5.73  | 116.14      | 108.23   |
| 16  | AR    | 50      | ARG  | N-CA-C      | -5.72 | 105.13      | 111.71   |
| 23  | AY    | 44      | LYS  | N-CA-C      | -5.72 | 104.40      | 111.33   |
| 52  | BW    | 22      | LEU  | N-CA-C      | -5.72 | 105.13      | 111.71   |
| 1   | AA    | 1444(A) | A    | N9-C1'-C2'  | 5.72  | 122.58      | 114.00   |
| 13  | AO    | 36      | THR  | N-CA-CB     | 5.72  | 115.34      | 109.51   |
| 1   | AA    | 2726    | U    | C2'-C3'-O3' | 5.72  | 118.08      | 109.50   |
| 27  | Ac    | 38      | LYS  | CA-C-N      | 5.72  | 132.46      | 121.54   |
| 27  | Ac    | 38      | LYS  | C-N-CA      | 5.72  | 132.46      | 121.54   |
| 34  | BA    | 13      | U    | N1-C1'-C2'  | 5.72  | 120.57      | 112.00   |
| 34  | BA    | 559     | A    | C2'-C3'-O3' | 5.72  | 118.07      | 109.50   |
| 1   | AA    | 746     | A    | N9-C1'-C2'  | -5.71 | 105.43      | 114.00   |
| 1   | AA    | 1566    | A    | C4'-C3'-O3' | -5.71 | 100.83      | 109.40   |
| 1   | AA    | 2500    | U    | O3'-P-O5'   | -5.71 | 95.44       | 104.00   |
| 1   | AA    | 150     | C    | N1-C1'-C2'  | 5.70  | 120.56      | 112.00   |
| 22  | AX    | 5       | LYS  | CB-CA-C     | -5.70 | 109.00      | 115.79   |
| 1   | AA    | 36      | G    | C4'-C3'-O3' | -5.70 | 104.45      | 113.00   |
| 1   | AA    | 1429    | G    | N9-C1'-C2'  | 5.70  | 120.55      | 112.00   |
| 34  | BA    | 1305    | G    | C4'-C3'-O3' | -5.70 | 104.45      | 113.00   |
| 12  | AN    | 94      | VAL  | N-CA-C      | 5.70  | 121.19      | 109.34   |
| 53  | BX    | 72      | LEU  | N-CA-C      | -5.70 | 100.85      | 109.85   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 34  | BA    | 47   | C    | C2'-C3'-O3' | 5.70  | 118.05      | 109.50   |
| 1   | AA    | 2833 | G    | C2'-C3'-O3' | -5.70 | 105.16      | 113.70   |
| 21  | AW    | 99   | TYR  | N-CA-C      | -5.69 | 101.68      | 109.71   |
| 22  | AX    | 2    | ALA  | N-CA-C      | 5.69  | 122.92      | 110.80   |
| 1   | AA    | 2778 | A    | C4'-C3'-O3' | 5.69  | 117.93      | 109.40   |
| 3   | AC    | 124  | GLY  | N-CA-C      | 5.68  | 119.55      | 112.73   |
| 5   | AE    | 73   | GLU  | CA-C-N      | 5.68  | 126.94      | 119.84   |
| 5   | AE    | 73   | GLU  | C-N-CA      | 5.68  | 126.94      | 119.84   |
| 9   | AK    | 89   | LYS  | N-CA-C      | -5.68 | 105.09      | 111.28   |
| 1   | AA    | 738  | G    | C2'-C3'-O3' | -5.68 | 105.18      | 113.70   |
| 1   | AA    | 1247 | A    | N9-C1'-C2'  | 5.68  | 122.52      | 114.00   |
| 1   | AA    | 1199 | U    | N1-C1'-C2'  | 5.68  | 120.52      | 112.00   |
| 6   | AF    | 83   | PHE  | N-CA-C      | 5.68  | 116.87      | 107.73   |
| 26  | Ab    | 36   | CYS  | CA-CB-SG    | 5.68  | 127.45      | 114.40   |
| 38  | BI    | 120  | THR  | N-CA-C      | 5.67  | 117.70      | 109.07   |
| 36  | BG    | 71   | ALA  | N-CA-C      | -5.67 | 104.23      | 113.19   |
| 15  | AQ    | 15   | VAL  | CB-CA-C     | -5.67 | 104.39      | 112.22   |
| 35  | BF    | 225  | ALA  | N-CA-C      | -5.67 | 105.18      | 111.36   |
| 13  | AO    | 65   | LEU  | CA-C-N      | -5.67 | 111.51      | 120.47   |
| 13  | AO    | 65   | LEU  | C-N-CA      | -5.67 | 111.51      | 120.47   |
| 1   | AA    | 962  | G    | N9-C1'-C2'  | 5.67  | 120.50      | 112.00   |
| 6   | AF    | 122  | LYS  | N-CA-C      | 5.67  | 117.65      | 108.41   |
| 1   | AA    | 2041 | U    | C4'-C3'-O3' | -5.66 | 104.50      | 113.00   |
| 6   | AF    | 42   | ALA  | N-CA-C      | 5.66  | 117.93      | 111.02   |
| 25  | Aa    | 41   | PRO  | N-CA-C      | 5.66  | 124.13      | 112.47   |
| 1   | AA    | 750  | A    | C4'-C3'-O3' | -5.66 | 104.51      | 113.00   |
| 5   | AE    | 43   | GLY  | N-CA-C      | -5.66 | 99.77       | 113.18   |
| 12  | AN    | 39   | PRO  | N-CA-C      | 5.66  | 124.13      | 112.47   |
| 40  | BK    | 49   | ILE  | CB-CA-C     | -5.66 | 104.64      | 111.88   |
| 19  | AU    | 84   | ALA  | CA-C-N      | 5.65  | 126.91      | 119.84   |
| 19  | AU    | 84   | ALA  | C-N-CA      | 5.65  | 126.91      | 119.84   |
| 9   | AK    | 134  | ARG  | CA-C-N      | 5.65  | 126.90      | 119.84   |
| 9   | AK    | 134  | ARG  | C-N-CA      | 5.65  | 126.90      | 119.84   |
| 5   | AE    | 39   | PRO  | N-CA-C      | -5.65 | 106.50      | 113.84   |
| 20  | AV    | 52   | SER  | CA-C-N      | -5.65 | 114.14      | 119.90   |
| 20  | AV    | 52   | SER  | C-N-CA      | -5.65 | 114.14      | 119.90   |
| 19  | AU    | 56   | THR  | N-CA-C      | 5.64  | 117.98      | 109.23   |
| 1   | AA    | 748  | G    | C2'-C3'-O3' | -5.64 | 105.24      | 113.70   |
| 44  | BO    | 24   | SER  | N-CA-C      | -5.64 | 101.23      | 109.63   |
| 27  | Ac    | 31   | PRO  | N-CA-C      | 5.64  | 124.08      | 112.47   |
| 22  | AX    | 31   | VAL  | N-CA-C      | 5.63  | 116.24      | 107.28   |
| 22  | AX    | 74   | ARG  | N-CA-C      | 5.63  | 122.80      | 110.80   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 23  | AY    | 65   | GLN  | N-CA-C      | -5.63 | 104.35      | 111.11   |
| 45  | BP    | 47   | LYS  | CA-C-N      | -5.63 | 112.80      | 119.84   |
| 45  | BP    | 47   | LYS  | C-N-CA      | -5.63 | 112.80      | 119.84   |
| 1   | AA    | 2577 | A    | C2'-C3'-O3' | -5.63 | 105.25      | 113.70   |
| 7   | AG    | 176  | LEU  | N-CA-C      | 5.63  | 118.35      | 111.82   |
| 25  | Aa    | 57   | GLU  | N-CA-C      | 5.62  | 117.55      | 108.32   |
| 1   | AA    | 602  | G    | C4'-C3'-O3' | -5.62 | 104.56      | 113.00   |
| 45  | BP    | 69   | TYR  | N-CA-C      | 5.62  | 119.08      | 110.20   |
| 1   | AA    | 805  | G    | C2'-C3'-O3' | -5.62 | 105.27      | 113.70   |
| 4   | AD    | 68   | LYS  | N-CA-C      | 5.62  | 117.55      | 108.34   |
| 3   | AC    | 142  | ALA  | N-CA-C      | -5.62 | 103.59      | 110.61   |
| 5   | AE    | 24   | THR  | N-CA-C      | 5.61  | 117.87      | 107.99   |
| 1   | AA    | 279  | C    | N1-C1'-C2'  | 5.61  | 120.42      | 112.00   |
| 18  | AT    | 9    | TYR  | N-CA-C      | 5.61  | 122.75      | 110.80   |
| 12  | AN    | 101  | ARG  | N-CA-C      | 5.61  | 119.20      | 110.17   |
| 1   | AA    | 1128 | A    | C2'-C3'-O3' | -5.61 | 105.29      | 113.70   |
| 10  | AL    | 87   | ILE  | N-CA-C      | -5.61 | 100.32      | 108.17   |
| 14  | AP    | 19   | LYS  | N-CA-C      | -5.61 | 104.38      | 111.11   |
| 15  | AQ    | 16   | ARG  | N-CA-C      | -5.61 | 99.00       | 109.32   |
| 21  | AW    | 38   | TYR  | N-CA-C      | 5.61  | 118.54      | 109.40   |
| 1   | AA    | 2525 | G    | C2'-C3'-O3' | -5.61 | 105.29      | 113.70   |
| 49  | BT    | 49   | LEU  | N-CA-C      | 5.61  | 116.92      | 108.46   |
| 1   | AA    | 2425 | A    | N9-C1'-C2'  | 5.60  | 120.40      | 112.00   |
| 35  | BF    | 231  | GLU  | N-CA-C      | 5.60  | 118.42      | 110.24   |
| 1   | AA    | 2373 | G    | N9-C1'-C2'  | 5.60  | 120.40      | 112.00   |
| 10  | AL    | 40   | VAL  | CB-CA-C     | -5.60 | 102.30      | 110.81   |
| 34  | BA    | 172  | A    | OP2-P-O3'   | -5.60 | 91.21       | 108.00   |
| 1   | AA    | 2490 | G    | C1'-C2'-O2' | -5.60 | 103.41      | 111.80   |
| 1   | AA    | 980  | A    | C4'-C3'-O3' | -5.59 | 104.61      | 113.00   |
| 1   | AA    | 1204 | A    | C5'-C4'-C3' | 5.59  | 123.59      | 115.20   |
| 34  | BA    | 813  | U    | C4'-C3'-O3' | -5.59 | 104.61      | 113.00   |
| 1   | AA    | 222  | A    | N9-C1'-C2'  | 5.59  | 120.38      | 112.00   |
| 1   | AA    | 2726 | U    | N1-C1'-C2'  | 5.59  | 122.38      | 114.00   |
| 14  | AP    | 107  | GLU  | N-CA-C      | -5.58 | 105.10      | 111.07   |
| 15  | AQ    | 12   | SER  | N-CA-C      | -5.58 | 102.16      | 111.37   |
| 25  | Aa    | 12   | ALA  | N-CA-C      | 5.58  | 122.69      | 110.80   |
| 34  | BA    | 251  | G    | C2'-C3'-O3' | -5.58 | 105.33      | 113.70   |
| 1   | AA    | 1008 | C    | N1-C1'-C2'  | 5.58  | 120.37      | 112.00   |
| 3   | AC    | 98   | GLU  | N-CA-C      | -5.58 | 104.83      | 111.69   |
| 1   | AA    | 1776 | G    | N9-C1'-C2'  | 5.57  | 120.36      | 112.00   |
| 21  | AW    | 67   | LEU  | N-CA-C      | 5.57  | 117.25      | 108.55   |
| 34  | BA    | 572  | A    | C4'-C3'-O3' | -5.57 | 104.64      | 113.00   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 29  | Ae    | 30   | ARG  | N-CA-C      | 5.57  | 122.67      | 110.80   |
| 34  | BA    | 5    | U    | C2'-C3'-O3' | 5.57  | 117.86      | 109.50   |
| 14  | AP    | 51   | ALA  | N-CA-C      | 5.57  | 122.66      | 110.80   |
| 6   | AF    | 21   | ALA  | N-CA-C      | -5.57 | 98.94       | 110.80   |
| 42  | BM    | 74   | ILE  | CB-CA-C     | -5.57 | 104.58      | 111.70   |
| 1   | AA    | 1941 | C    | C2'-C3'-O3' | -5.57 | 105.35      | 113.70   |
| 36  | BG    | 8    | ILE  | N-CA-C      | -5.56 | 106.39      | 111.67   |
| 34  | BA    | 748  | C    | O4'-C1'-C2' | -5.56 | 102.04      | 107.60   |
| 45  | BP    | 25   | PRO  | N-CA-C      | -5.56 | 103.94      | 113.12   |
| 1   | AA    | 1205 | U    | C1'-O4'-C4' | -5.56 | 104.34      | 109.90   |
| 6   | AF    | 20   | LEU  | N-CA-C      | 5.56  | 117.63      | 109.24   |
| 4   | AD    | 136  | ILE  | CA-C-N      | -5.56 | 112.89      | 119.84   |
| 4   | AD    | 136  | ILE  | C-N-CA      | -5.56 | 112.89      | 119.84   |
| 9   | AK    | 80   | GLY  | N-CA-C      | -5.56 | 100.01      | 113.18   |
| 35  | BF    | 90   | MET  | N-CA-C      | 5.56  | 119.84      | 107.95   |
| 29  | Ae    | 16   | ILE  | CB-CA-C     | -5.55 | 102.34      | 110.62   |
| 50  | BU    | 22   | LEU  | N-CA-C      | 5.55  | 118.14      | 108.76   |
| 34  | BA    | 875  | C    | C4'-C3'-O3' | -5.55 | 104.67      | 113.00   |
| 1   | AA    | 1635 | G    | C2'-C3'-O3' | 5.55  | 122.02      | 113.70   |
| 1   | AA    | 2774 | C    | C4'-C3'-O3' | -5.54 | 104.68      | 113.00   |
| 15  | AQ    | 101  | PHE  | N-CA-C      | -5.54 | 105.60      | 112.47   |
| 35  | BF    | 200  | ILE  | N-CA-C      | 5.54  | 120.87      | 109.34   |
| 36  | BG    | 175  | LEU  | N-CA-C      | -5.54 | 105.33      | 111.71   |
| 37  | BH    | 63   | LYS  | N-CA-C      | -5.54 | 105.24      | 111.28   |
| 21  | AW    | 39   | VAL  | CA-C-N      | -5.54 | 114.26      | 122.41   |
| 21  | AW    | 39   | VAL  | C-N-CA      | -5.54 | 114.26      | 122.41   |
| 50  | BU    | 59   | ILE  | CB-CA-C     | -5.54 | 101.83      | 110.69   |
| 1   | AA    | 2566 | A    | N9-C1'-C2'  | 5.54  | 120.31      | 112.00   |
| 4   | AD    | 50   | THR  | CA-C-N      | -5.54 | 115.91      | 122.11   |
| 4   | AD    | 50   | THR  | C-N-CA      | -5.54 | 115.91      | 122.11   |
| 13  | AO    | 28   | LEU  | N-CA-C      | -5.54 | 104.93      | 110.97   |
| 16  | AR    | 100  | VAL  | CB-CA-C     | -5.54 | 102.21      | 111.29   |
| 34  | BA    | 871  | U    | C4'-C3'-O3' | 5.54  | 117.70      | 109.40   |
| 44  | BO    | 71   | LYS  | N-CA-C      | -5.54 | 104.94      | 110.97   |
| 11  | AM    | 77   | ARG  | N-CA-C      | 5.53  | 120.89      | 109.11   |
| 21  | AW    | 174  | VAL  | N-CA-C      | 5.53  | 116.55      | 108.53   |
| 34  | BA    | 818  | G    | N9-C1'-C2'  | 5.52  | 122.28      | 114.00   |
| 1   | AA    | 745  | G    | O4'-C4'-C3' | 5.52  | 109.52      | 104.00   |
| 4   | AD    | 85   | ASP  | CA-C-N      | 5.52  | 126.74      | 119.84   |
| 4   | AD    | 85   | ASP  | C-N-CA      | 5.52  | 126.74      | 119.84   |
| 11  | AM    | 72   | PRO  | N-CA-C      | 5.52  | 123.84      | 112.47   |
| 34  | BA    | 394  | G    | N9-C1'-C2'  | 5.52  | 120.28      | 112.00   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 34  | BA    | 1054 | C    | N1-C1'-C2'  | -5.52 | 103.72      | 112.00   |
| 1   | AA    | 1585 | C    | C2'-C3'-O3' | -5.52 | 101.22      | 109.50   |
| 9   | AK    | 133  | GLN  | N-CA-C      | -5.52 | 98.92       | 108.52   |
| 38  | BI    | 145  | LYS  | N-CA-C      | -5.52 | 104.69      | 111.75   |
| 1   | AA    | 1022 | G    | C1'-C2'-O2' | -5.51 | 103.53      | 111.80   |
| 1   | AA    | 689  | A    | C4'-C3'-O3' | -5.51 | 104.73      | 113.00   |
| 44  | BO    | 112  | THR  | N-CA-C      | -5.51 | 100.99      | 112.40   |
| 21  | AW    | 9    | TYR  | N-CA-C      | -5.51 | 103.11      | 110.55   |
| 34  | BA    | 1395 | C    | N1-C1'-C2'  | 5.51  | 120.27      | 112.00   |
| 45  | BP    | 37   | CYS  | N-CA-C      | 5.51  | 117.99      | 110.55   |
| 47  | BR    | 11   | LYS  | N-CA-C      | -5.51 | 106.64      | 113.19   |
| 7   | AG    | 76   | SER  | N-CA-C      | 5.51  | 122.53      | 110.80   |
| 34  | BA    | 1392 | G    | C4'-C3'-O3' | -5.50 | 104.74      | 113.00   |
| 1   | AA    | 2027 | G    | C5'-C4'-C3' | 5.50  | 124.26      | 116.00   |
| 21  | AW    | 158  | PRO  | CA-C-N      | 5.50  | 126.72      | 119.84   |
| 21  | AW    | 158  | PRO  | C-N-CA      | 5.50  | 126.72      | 119.84   |
| 22  | AX    | 10   | THR  | N-CA-C      | -5.50 | 99.08       | 110.80   |
| 43  | BN    | 44   | VAL  | N-CA-C      | 5.50  | 116.40      | 108.48   |
| 1   | AA    | 1800 | C    | O4'-C4'-C3' | -5.50 | 98.50       | 104.00   |
| 31  | AI    | 151  | GLY  | N-CA-C      | -5.50 | 106.23      | 115.80   |
| 1   | AA    | 558  | G    | C2'-C3'-O3' | -5.50 | 105.46      | 113.70   |
| 1   | AA    | 2590 | A    | C3'-C2'-O2' | 5.50  | 118.94      | 110.70   |
| 19  | AU    | 59   | VAL  | N-CA-C      | 5.50  | 115.80      | 108.27   |
| 1   | AA    | 1675 | C    | N1-C1'-C2'  | 5.49  | 120.24      | 112.00   |
| 1   | AA    | 2724 | C    | C2'-C3'-O3' | -5.49 | 105.46      | 113.70   |
| 4   | AD    | 244  | ARG  | CA-C-N      | 5.49  | 126.04      | 120.38   |
| 4   | AD    | 244  | ARG  | C-N-CA      | 5.49  | 126.04      | 120.38   |
| 13  | AO    | 55   | ALA  | N-CA-C      | -5.49 | 102.31      | 111.37   |
| 1   | AA    | 1189 | A    | N9-C1'-C2'  | -5.49 | 103.77      | 112.00   |
| 1   | AA    | 788  | A    | C2'-C3'-O3' | 5.49  | 117.73      | 109.50   |
| 34  | BA    | 518  | C    | C2'-C3'-O3' | 5.49  | 117.73      | 109.50   |
| 40  | BK    | 69   | VAL  | N-CA-C      | 5.49  | 117.95      | 111.09   |
| 1   | AA    | 311  | A    | N9-C1'-C2'  | 5.49  | 120.23      | 112.00   |
| 50  | BU    | 43   | LEU  | N-CA-C      | -5.49 | 100.73      | 109.07   |
| 50  | BU    | 46   | ASP  | CA-C-N      | 5.49  | 126.70      | 119.84   |
| 50  | BU    | 46   | ASP  | C-N-CA      | 5.49  | 126.70      | 119.84   |
| 1   | AA    | 2445 | G    | N9-C1'-C2'  | 5.48  | 120.23      | 112.00   |
| 9   | AK    | 47   | ALA  | N-CA-C      | -5.48 | 99.12       | 110.80   |
| 1   | AA    | 1300 | U    | C2'-C3'-O3' | 5.48  | 117.72      | 109.50   |
| 39  | BJ    | 99   | ALA  | N-CA-C      | -5.48 | 101.92      | 110.42   |
| 34  | BA    | 1063 | C    | C2'-C3'-O3' | -5.48 | 105.48      | 113.70   |
| 19  | AU    | 37   | THR  | N-CA-C      | -5.47 | 105.42      | 111.71   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1   | AA    | 1663 | C    | C2'-C3'-O3' | -5.47 | 105.50      | 113.70   |
| 9   | AK    | 101  | HIS  | CA-C-N      | -5.47 | 113.44      | 120.65   |
| 9   | AK    | 101  | HIS  | C-N-CA      | -5.47 | 113.44      | 120.65   |
| 10  | AL    | 6    | THR  | CA-C-N      | 5.46  | 131.08      | 122.34   |
| 10  | AL    | 6    | THR  | C-N-CA      | 5.46  | 131.08      | 122.34   |
| 44  | BO    | 85   | ARG  | N-CA-C      | 5.46  | 118.67      | 107.69   |
| 1   | AA    | 60   | G    | C2'-C3'-O3' | 5.46  | 117.69      | 109.50   |
| 4   | AD    | 162  | SER  | N-CA-C      | 5.46  | 122.43      | 110.80   |
| 34  | BA    | 764  | C    | C2'-C3'-O3' | -5.46 | 105.51      | 113.70   |
| 1   | AA    | 823  | G    | C2'-C3'-O3' | -5.46 | 105.51      | 113.70   |
| 3   | AC    | 27   | HIS  | N-CA-C      | 5.46  | 116.92      | 110.97   |
| 1   | AA    | 785  | G    | C3'-C2'-O2' | 5.45  | 118.88      | 110.70   |
| 10  | AL    | 57   | VAL  | N-CA-C      | -5.45 | 98.00       | 109.34   |
| 16  | AR    | 101  | ARG  | N-CA-C      | 5.45  | 117.22      | 111.28   |
| 10  | AL    | 90   | GLN  | N-CA-C      | -5.45 | 99.19       | 110.80   |
| 15  | AQ    | 45   | PHE  | CA-C-N      | -5.45 | 114.50      | 122.19   |
| 15  | AQ    | 45   | PHE  | C-N-CA      | -5.45 | 114.50      | 122.19   |
| 1   | AA    | 763  | G    | O4'-C4'-C3' | -5.45 | 98.55       | 104.00   |
| 1   | AA    | 2491 | U    | C3'-C2'-C1' | -5.45 | 95.85       | 101.30   |
| 34  | BA    | 481  | G    | C2'-C3'-O3' | -5.45 | 105.53      | 113.70   |
| 13  | AO    | 111  | LEU  | N-CA-C      | 5.44  | 118.14      | 109.65   |
| 1   | AA    | 1984 | G    | C2'-C3'-O3' | -5.43 | 105.55      | 113.70   |
| 2   | AB    | 56   | G    | C2'-C3'-O3' | 5.43  | 121.85      | 113.70   |
| 1   | AA    | 2091 | U    | C2'-C3'-O3' | -5.43 | 105.55      | 113.70   |
| 1   | AA    | 1956 | U    | C5'-C4'-C3' | -5.43 | 107.85      | 116.00   |
| 1   | AA    | 81   | G    | C2'-C3'-O3' | -5.43 | 105.56      | 113.70   |
| 1   | AA    | 2195 | C    | O4'-C4'-C3' | 5.43  | 109.43      | 104.00   |
| 26  | Ab    | 10   | LYS  | N-CA-C      | 5.43  | 122.36      | 110.80   |
| 37  | BH    | 158  | ILE  | N-CA-C      | -5.43 | 98.05       | 109.34   |
| 3   | AC    | 178  | ALA  | CA-C-N      | 5.42  | 132.79      | 121.94   |
| 3   | AC    | 178  | ALA  | C-N-CA      | 5.42  | 132.79      | 121.94   |
| 15  | AQ    | 53   | ARG  | N-CA-C      | 5.42  | 122.36      | 110.80   |
| 14  | AP    | 4    | LEU  | N-CA-C      | -5.42 | 104.81      | 111.75   |
| 53  | BX    | 12   | ALA  | N-CA-C      | -5.42 | 99.26       | 110.80   |
| 35  | BF    | 158  | LEU  | N-CA-C      | 5.42  | 121.78      | 109.81   |
| 26  | Ab    | 25   | LEU  | N-CA-C      | 5.41  | 117.57      | 107.99   |
| 1   | AA    | 1260 | G    | C4'-C3'-O3' | -5.41 | 104.88      | 113.00   |
| 1   | AA    | 1779 | U    | O4'-C1'-C2' | -5.41 | 102.19      | 107.60   |
| 11  | AM    | 63   | PRO  | N-CA-C      | 5.41  | 123.62      | 112.47   |
| 1   | AA    | 1266 | G    | C5'-C4'-C3' | 5.41  | 124.11      | 116.00   |
| 11  | AM    | 18   | ARG  | N-CA-C      | 5.41  | 118.95      | 111.71   |
| 1   | AA    | 1397 | U    | N1-C1'-C2'  | 5.41  | 120.11      | 112.00   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1   | AA    | 2497 | A    | C2'-C3'-O3' | -5.40 | 105.60      | 113.70   |
| 5   | AE    | 38   | THR  | N-CA-C      | -5.40 | 97.87       | 109.81   |
| 34  | BA    | 372  | C    | N1-C1'-C2'  | 5.40  | 122.10      | 114.00   |
| 6   | AF    | 139  | PHE  | N-CA-C      | -5.40 | 104.63      | 111.11   |
| 14  | AP    | 39   | ILE  | N-CA-C      | 5.40  | 117.08      | 108.87   |
| 35  | BF    | 18   | GLY  | N-CA-C      | 5.40  | 118.97      | 110.71   |
| 35  | BF    | 21   | ARG  | N-CA-C      | 5.40  | 118.45      | 110.46   |
| 1   | AA    | 2459 | A    | C4-N9-C1'   | 5.40  | 142.49      | 126.30   |
| 34  | BA    | 457  | C    | N1-C1'-C2'  | -5.40 | 103.91      | 112.00   |
| 1   | AA    | 2756 | U    | C4'-C3'-O3' | -5.39 | 101.31      | 109.40   |
| 35  | BF    | 231  | GLU  | CA-C-N      | 5.39  | 126.58      | 119.84   |
| 35  | BF    | 231  | GLU  | C-N-CA      | 5.39  | 126.58      | 119.84   |
| 1   | AA    | 1153 | C    | N1-C1'-C2'  | 5.39  | 120.08      | 112.00   |
| 41  | BL    | 68   | ARG  | N-CA-C      | -5.39 | 103.38      | 110.33   |
| 9   | AK    | 62   | VAL  | CB-CA-C     | -5.39 | 103.69      | 111.34   |
| 10  | AL    | 56   | ASP  | N-CA-CB     | -5.39 | 101.39      | 110.49   |
| 16  | AR    | 74   | LEU  | N-CA-C      | 5.38  | 117.15      | 108.32   |
| 38  | BI    | 97   | GLY  | N-CA-C      | -5.38 | 100.42      | 113.18   |
| 41  | BL    | 21   | LYS  | N-CA-C      | -5.38 | 101.70      | 110.20   |
| 39  | BJ    | 4    | TYR  | N-CA-C      | -5.38 | 101.24      | 109.41   |
| 43  | BN    | 66   | ARG  | N-CA-C      | 5.38  | 115.34      | 108.24   |
| 34  | BA    | 1399 | C    | C2'-C3'-O3' | 5.37  | 117.56      | 109.50   |
| 43  | BN    | 84   | GLN  | N-CA-C      | -5.37 | 105.95      | 112.88   |
| 10  | AL    | 7    | TYR  | N-CA-C      | -5.37 | 97.88       | 107.98   |
| 11  | AM    | 45   | LEU  | CA-CB-CG    | -5.37 | 97.50       | 116.30   |
| 13  | AO    | 52   | ILE  | N-CA-C      | -5.37 | 104.50      | 110.62   |
| 1   | AA    | 455  | C    | C2'-C3'-O3' | -5.37 | 105.65      | 113.70   |
| 1   | AA    | 653  | A    | N9-C1'-C2'  | 5.37  | 120.05      | 112.00   |
| 1   | AA    | 1775 | U    | C4'-C3'-O3' | -5.37 | 104.95      | 113.00   |
| 1   | AA    | 2510 | C    | N1-C1'-C2'  | -5.36 | 103.95      | 112.00   |
| 1   | AA    | 2448 | A    | P-O3'-C3'   | -5.36 | 112.16      | 120.20   |
| 6   | AF    | 59   | TYR  | N-CA-C      | 5.36  | 122.22      | 110.80   |
| 10  | AL    | 33   | ALA  | N-CA-C      | -5.36 | 99.38       | 110.80   |
| 34  | BA    | 993  | G    | N9-C1'-C2'  | 5.36  | 120.04      | 112.00   |
| 1   | AA    | 1554 | A    | C4'-C3'-O3' | -5.36 | 104.96      | 113.00   |
| 14  | AP    | 52   | SER  | N-CA-C      | 5.36  | 118.90      | 107.70   |
| 34  | BA    | 1280 | A    | C2'-C3'-O3' | -5.36 | 105.66      | 113.70   |
| 41  | BL    | 9    | MET  | N-CA-C      | -5.36 | 105.52      | 111.36   |
| 51  | BV    | 40   | LEU  | N-CA-C      | -5.36 | 105.13      | 110.97   |
| 1   | AA    | 2572 | A    | C2'-C3'-O3' | -5.36 | 105.67      | 113.70   |
| 1   | AA    | 1614 | A    | C2'-C3'-O3' | -5.35 | 105.67      | 113.70   |
| 3   | AC    | 209  | LEU  | N-CA-C      | -5.35 | 100.06      | 108.63   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 34  | BA    | 50   | A    | C2'-C3'-O3' | -5.35 | 105.67      | 113.70   |
| 1   | AA    | 279  | C    | C4'-C3'-O3' | -5.35 | 104.97      | 113.00   |
| 14  | AP    | 12   | PHE  | CA-C-N      | -5.35 | 112.57      | 120.38   |
| 14  | AP    | 12   | PHE  | C-N-CA      | -5.35 | 112.57      | 120.38   |
| 1   | AA    | 2402 | C    | N1-C1'-C2'  | 5.35  | 120.02      | 112.00   |
| 1   | AA    | 2766 | G    | C4'-C3'-O3' | -5.35 | 104.98      | 113.00   |
| 17  | AS    | 35   | LEU  | CA-C-N      | 5.35  | 126.53      | 119.84   |
| 17  | AS    | 35   | LEU  | C-N-CA      | 5.35  | 126.53      | 119.84   |
| 35  | BF    | 130  | ARG  | CA-C-N      | 5.35  | 126.53      | 119.84   |
| 35  | BF    | 130  | ARG  | C-N-CA      | 5.35  | 126.53      | 119.84   |
| 11  | AM    | 84   | ASN  | N-CA-C      | 5.35  | 122.19      | 110.80   |
| 1   | AA    | 1778 | U    | C2'-C3'-O3' | 5.35  | 121.72      | 113.70   |
| 1   | AA    | 2570 | G    | C4'-C3'-O3' | -5.34 | 104.99      | 113.00   |
| 1   | AA    | 1332 | G    | C2'-C3'-O3' | -5.34 | 105.69      | 113.70   |
| 1   | AA    | 2449 | U    | C4'-C3'-O3' | -5.34 | 104.99      | 113.00   |
| 34  | BA    | 1336 | C    | C2'-C3'-O3' | -5.34 | 105.69      | 113.70   |
| 1   | AA    | 948  | G    | C2'-C3'-O3' | -5.34 | 105.69      | 113.70   |
| 1   | AA    | 2835 | A    | N9-C1'-C2'  | 5.34  | 122.01      | 114.00   |
| 1   | AA    | 1537 | C    | N1-C1'-C2'  | -5.34 | 103.99      | 112.00   |
| 12  | AN    | 90   | VAL  | N-CA-C      | -5.34 | 100.78      | 108.89   |
| 34  | BA    | 1362 | C    | N1-C1'-C2'  | 5.34  | 120.01      | 112.00   |
| 17  | AS    | 4    | ILE  | N-CA-C      | 5.33  | 115.73      | 107.78   |
| 1   | AA    | 776  | G    | O4'-C1'-C2' | 5.33  | 111.13      | 105.80   |
| 34  | BA    | 973  | G    | OP1-P-O3'   | -5.33 | 92.00       | 108.00   |
| 1   | AA    | 1286 | A    | C2'-C3'-O3' | -5.33 | 105.70      | 113.70   |
| 3   | AC    | 68   | LEU  | N-CA-C      | 5.33  | 117.08      | 109.14   |
| 40  | BK    | 108  | ALA  | N-CA-C      | -5.33 | 105.37      | 111.07   |
| 1   | AA    | 2266 | A    | C1'-C2'-O2' | 5.33  | 116.39      | 108.40   |
| 48  | BS    | 4    | THR  | N-CA-C      | 5.33  | 117.61      | 109.62   |
| 1   | AA    | 36   | G    | N9-C1'-C2'  | 5.32  | 119.98      | 112.00   |
| 1   | AA    | 1060 | U    | P-O3'-C3'   | -5.32 | 112.22      | 120.20   |
| 6   | AF    | 77   | ASP  | N-CA-C      | 5.32  | 117.91      | 109.24   |
| 12  | AN    | 41   | TRP  | N-CA-C      | -5.32 | 102.65      | 110.52   |
| 41  | BL    | 113  | SER  | N-CA-C      | -5.32 | 99.85       | 108.52   |
| 3   | AC    | 130  | ILE  | N-CA-C      | 5.32  | 116.72      | 111.67   |
| 10  | AL    | 60   | ALA  | N-CA-C      | 5.32  | 118.12      | 109.24   |
| 34  | BA    | 397  | A    | C4-N9-C1'   | 5.32  | 142.25      | 126.30   |
| 42  | BM    | 12   | GLU  | N-CA-C      | 5.32  | 119.06      | 112.47   |
| 18  | AT    | 40   | ASN  | N-CA-C      | 5.31  | 117.54      | 110.53   |
| 20  | AV    | 6    | HIS  | CB-CA-C     | -5.31 | 107.76      | 114.40   |
| 34  | BA    | 641  | U    | N1-C1'-C2'  | 5.31  | 119.97      | 112.00   |
| 40  | BK    | 83   | ALA  | N-CA-C      | 5.31  | 116.52      | 108.07   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1   | AA    | 869  | G    | C5'-C4'-C3' | 5.31  | 123.97      | 116.00   |
| 1   | AA    | 1294 | U    | C5'-C4'-C3' | -5.31 | 108.04      | 116.00   |
| 1   | AA    | 1607 | C    | N1-C1'-C2'  | 5.31  | 119.96      | 112.00   |
| 1   | AA    | 2032 | G    | O4'-C1'-C2' | 5.30  | 111.10      | 105.80   |
| 19  | AU    | 62   | LYS  | N-CA-C      | 5.30  | 117.46      | 108.02   |
| 34  | BA    | 790  | A    | N9-C1'-C2'  | -5.30 | 104.05      | 112.00   |
| 5   | AE    | 152  | LYS  | N-CA-C      | 5.30  | 122.30      | 114.09   |
| 26  | Ab    | 27   | PRO  | N-CA-C      | 5.30  | 117.17      | 110.70   |
| 30  | Af    | 6    | SER  | CB-CA-C     | -5.30 | 110.02      | 117.23   |
| 40  | BK    | 62   | PHE  | N-CA-C      | -5.30 | 105.19      | 110.97   |
| 42  | BM    | 61   | ALA  | N-CA-C      | 5.30  | 117.37      | 107.99   |
| 5   | AE    | 81   | ILE  | CB-CA-C     | -5.29 | 102.61      | 111.29   |
| 50  | BU    | 41   | LYS  | N-CA-C      | -5.29 | 102.69      | 110.52   |
| 22  | AX    | 34   | GLY  | N-CA-C      | -5.29 | 107.21      | 114.67   |
| 1   | AA    | 1310 | G    | C4'-C3'-O3' | -5.29 | 105.07      | 113.00   |
| 34  | BA    | 769  | G    | N9-C1'-C2'  | 5.29  | 119.93      | 112.00   |
| 1   | AA    | 309  | G    | N9-C1'-C2'  | 5.29  | 119.93      | 112.00   |
| 1   | AA    | 1186 | G    | N9-C1'-C2'  | 5.29  | 119.93      | 112.00   |
| 13  | AO    | 108  | GLY  | N-CA-C      | -5.29 | 107.26      | 115.67   |
| 25  | Aa    | 9    | LEU  | N-CA-C      | 5.29  | 117.14      | 108.52   |
| 1   | AA    | 2553 | G    | C4'-C3'-O3' | -5.29 | 105.07      | 113.00   |
| 34  | BA    | 553  | A    | N9-C1'-C2'  | 5.29  | 119.93      | 112.00   |
| 1   | AA    | 1102 | C    | N1-C1'-C2'  | 5.28  | 119.92      | 112.00   |
| 1   | AA    | 1626 | G    | C5'-C4'-O4' | 5.28  | 117.02      | 109.10   |
| 11  | AM    | 46   | LYS  | N-CA-C      | 5.28  | 116.65      | 107.93   |
| 10  | AL    | 82   | ASN  | N-CA-C      | 5.28  | 116.54      | 108.52   |
| 36  | BG    | 197  | GLY  | N-CA-C      | 5.28  | 125.69      | 113.18   |
| 19  | AU    | 14   | SER  | N-CA-C      | 5.28  | 117.96      | 110.10   |
| 24  | AZ    | 29   | ARG  | N-CA-C      | -5.28 | 99.56       | 110.80   |
| 5   | AE    | 19   | ARG  | N-CA-C      | -5.27 | 103.07      | 110.35   |
| 14  | AP    | 22   | GLY  | CA-C-N      | 5.27  | 131.61      | 121.54   |
| 14  | AP    | 22   | GLY  | C-N-CA      | 5.27  | 131.61      | 121.54   |
| 1   | AA    | 586  | A    | C2'-C3'-O3' | -5.27 | 105.79      | 113.70   |
| 34  | BA    | 820  | U    | C4'-C3'-O3' | -5.27 | 105.09      | 113.00   |
| 29  | Ae    | 7    | HIS  | N-CA-C      | -5.27 | 99.57       | 110.80   |
| 36  | BG    | 9    | GLY  | N-CA-C      | -5.27 | 106.40      | 112.83   |
| 1   | AA    | 1888 | G    | N9-C1'-C2'  | 5.27  | 119.90      | 112.00   |
| 47  | BR    | 8    | GLU  | N-CA-C      | -5.27 | 107.23      | 113.97   |
| 1   | AA    | 2403 | C    | N1-C1'-C2'  | 5.27  | 119.90      | 112.00   |
| 13  | AO    | 47   | PHE  | N-CA-C      | 5.27  | 122.02      | 110.80   |
| 1   | AA    | 1275 | A    | C2'-C3'-O3' | -5.26 | 105.80      | 113.70   |
| 1   | AA    | 1022 | G    | N9-C1'-C2'  | 5.26  | 121.89      | 114.00   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1   | AA    | 2755 | C    | OP2-P-O3'   | 5.26  | 123.78      | 108.00   |
| 27  | Ac    | 11   | LEU  | N-CA-C      | 5.26  | 117.31      | 108.73   |
| 34  | BA    | 250  | A    | C2'-C3'-O3' | 5.26  | 117.39      | 109.50   |
| 8   | AH    | 35   | VAL  | CA-C-O      | 5.26  | 123.04      | 119.20   |
| 29  | Ae    | 43   | GLN  | N-CA-C      | 5.26  | 117.20      | 107.73   |
| 1   | AA    | 1698 | A    | N9-C1'-C2'  | 5.26  | 119.89      | 112.00   |
| 1   | AA    | 2571 | C    | C4'-C3'-O3' | -5.26 | 105.11      | 113.00   |
| 6   | AF    | 39   | TRP  | N-CA-C      | 5.26  | 117.43      | 111.02   |
| 1   | AA    | 2279 | G    | C3'-C2'-O2' | 5.25  | 118.58      | 110.70   |
| 34  | BA    | 969  | A    | C4'-C3'-O3' | -5.25 | 105.12      | 113.00   |
| 36  | BG    | 169  | ALA  | N-CA-C      | 5.25  | 116.82      | 108.79   |
| 1   | AA    | 2782 | G    | C5'-C4'-C3' | 5.25  | 123.87      | 116.00   |
| 34  | BA    | 566  | G    | C2'-C3'-O3' | -5.25 | 105.83      | 113.70   |
| 1   | AA    | 2079 | U    | C4'-C3'-O3' | -5.25 | 105.13      | 113.00   |
| 4   | AD    | 9    | TYR  | N-CA-C      | -5.25 | 99.89       | 108.76   |
| 34  | BA    | 689  | C    | C2'-C3'-O3' | -5.25 | 105.83      | 113.70   |
| 40  | BK    | 70   | LYS  | CA-C-N      | 5.25  | 126.40      | 119.84   |
| 40  | BK    | 70   | LYS  | C-N-CA      | 5.25  | 126.40      | 119.84   |
| 1   | AA    | 1818 | U    | C3'-C2'-O2' | 5.24  | 118.56      | 110.70   |
| 1   | AA    | 2259 | G    | N9-C1'-C2'  | -5.24 | 104.14      | 112.00   |
| 1   | AA    | 2848 | G    | C2'-C3'-O3' | 5.24  | 117.37      | 109.50   |
| 7   | AG    | 67   | LYS  | N-CA-C      | 5.24  | 121.40      | 109.81   |
| 29  | Ae    | 21   | LYS  | N-CA-C      | 5.24  | 115.97      | 108.74   |
| 1   | AA    | 1590 | U    | C2'-C3'-O3' | -5.24 | 105.84      | 113.70   |
| 1   | AA    | 746  | A    | C3'-C2'-O2' | 5.24  | 122.46      | 114.60   |
| 6   | AF    | 65   | TRP  | N-CA-C      | -5.24 | 102.02      | 109.62   |
| 15  | AQ    | 42   | ILE  | N-CA-C      | -5.24 | 98.95       | 106.55   |
| 25  | Aa    | 35   | VAL  | N-CA-C      | 5.24  | 117.59      | 108.95   |
| 56  | BD    | 15   | G    | C2'-C3'-O3' | 5.24  | 117.35      | 109.50   |
| 8   | AH    | 18   | GLU  | N-CA-C      | 5.23  | 117.14      | 109.24   |
| 8   | AH    | 82   | GLY  | N-CA-C      | -5.23 | 100.79      | 113.18   |
| 15  | AQ    | 18   | ASP  | N-CA-C      | -5.23 | 106.16      | 113.37   |
| 5   | AE    | 179  | GLU  | N-CA-C      | -5.22 | 99.67       | 110.80   |
| 9   | AK    | 41   | ASP  | CA-C-N      | 5.22  | 129.81      | 121.66   |
| 9   | AK    | 41   | ASP  | C-N-CA      | 5.22  | 129.81      | 121.66   |
| 40  | BK    | 66   | VAL  | CB-CA-C     | -5.22 | 105.01      | 111.70   |
| 21  | AW    | 132  | ASN  | N-CA-C      | 5.22  | 117.16      | 107.60   |
| 34  | BA    | 873  | A    | C4'-C3'-O3' | 5.22  | 117.23      | 109.40   |
| 8   | AH    | 167  | GLU  | CA-C-N      | 5.22  | 126.36      | 119.84   |
| 8   | AH    | 167  | GLU  | C-N-CA      | 5.22  | 126.36      | 119.84   |
| 25  | Aa    | 43   | TYR  | CA-CB-CG    | 5.22  | 123.29      | 113.90   |
| 28  | Ad    | 37   | LYS  | N-CA-C      | -5.22 | 105.59      | 111.28   |

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| Mol | Chain | Res     | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|---------|------|-------------|-------|-------------|----------|
| 50  | BU    | 21      | VAL  | N-CA-C      | 5.22  | 115.88      | 108.42   |
| 38  | BI    | 45      | PHE  | N-CA-C      | -5.21 | 99.29       | 108.20   |
| 1   | AA    | 1314    | C    | C5'-C4'-C3' | -5.21 | 108.19      | 116.00   |
| 34  | BA    | 751     | U    | C2'-C3'-O3' | -5.21 | 105.89      | 113.70   |
| 4   | AD    | 165     | ILE  | CB-CA-C     | -5.20 | 104.36      | 111.33   |
| 20  | AV    | 48      | ALA  | N-CA-C      | -5.20 | 99.72       | 110.80   |
| 23  | AY    | 5       | LEU  | N-CA-C      | -5.20 | 104.87      | 111.11   |
| 1   | AA    | 1626    | G    | N9-C1'-C2'  | 5.20  | 121.80      | 114.00   |
| 17  | AS    | 37      | VAL  | N-CA-C      | -5.20 | 100.83      | 108.11   |
| 47  | BR    | 16      | PHE  | N-CA-C      | -5.20 | 99.73       | 110.80   |
| 1   | AA    | 1936    | A    | N9-C1'-C2'  | 5.20  | 121.79      | 114.00   |
| 6   | AF    | 164     | ARG  | N-CA-C      | -5.20 | 105.31      | 110.97   |
| 21  | AW    | 155     | LEU  | N-CA-C      | 5.20  | 121.87      | 110.80   |
| 30  | Af    | 10      | ILE  | N-CA-C      | 5.19  | 120.14      | 109.34   |
| 39  | BJ    | 41      | GLU  | N-CA-C      | 5.19  | 121.86      | 110.80   |
| 6   | AF    | 66      | PRO  | N-CA-C      | -5.19 | 101.77      | 112.47   |
| 34  | BA    | 397     | A    | C8-N9-C1'   | -5.19 | 112.12      | 127.70   |
| 36  | BG    | 39      | ILE  | CB-CA-C     | -5.19 | 102.77      | 111.29   |
| 40  | BK    | 79      | ARG  | N-CA-C      | -5.19 | 98.84       | 108.24   |
| 1   | AA    | 1142(A) | A    | C5'-C4'-C3' | -5.19 | 108.22      | 116.00   |
| 1   | AA    | 2431    | U    | O4'-C4'-C3' | -5.19 | 98.81       | 104.00   |
| 8   | AH    | 89      | ILE  | CB-CA-C     | -5.18 | 103.98      | 111.34   |
| 37  | BH    | 164     | ALA  | N-CA-C      | -5.18 | 105.75      | 111.71   |
| 30  | Af    | 23      | VAL  | N-CA-C      | -5.18 | 98.56       | 109.34   |
| 15  | AQ    | 48      | ILE  | N-CA-C      | -5.18 | 100.87      | 108.85   |
| 1   | AA    | 2519    | U    | C2'-C3'-O3' | -5.18 | 105.93      | 113.70   |
| 1   | AA    | 459     | U    | C2'-C3'-O3' | -5.18 | 105.93      | 113.70   |
| 37  | BH    | 38      | TYR  | N-CA-C      | 5.18  | 121.25      | 109.81   |
| 43  | BN    | 90      | LEU  | N-CA-C      | 5.18  | 121.25      | 109.81   |
| 8   | AH    | 145     | ALA  | N-CA-C      | -5.17 | 104.71      | 111.02   |
| 34  | BA    | 1085    | U    | C2'-C3'-O3' | 5.17  | 117.25      | 109.50   |
| 1   | AA    | 1646    | C    | N1-C1'-C2'  | 5.17  | 119.75      | 112.00   |
| 1   | AA    | 2460    | U    | C4'-C3'-O3' | -5.17 | 105.25      | 113.00   |
| 21  | AW    | 158     | PRO  | N-CA-C      | 5.17  | 117.00      | 110.70   |
| 1   | AA    | 1315    | C    | C4'-C3'-O3' | -5.17 | 105.25      | 113.00   |
| 1   | AA    | 961     | C    | C2'-C3'-O3' | 5.16  | 117.24      | 109.50   |
| 5   | AE    | 117     | MET  | N-CA-C      | -5.16 | 99.81       | 110.80   |
| 26  | Ab    | 21      | SER  | CA-C-N      | -5.16 | 112.85      | 120.38   |
| 26  | Ab    | 21      | SER  | C-N-CA      | -5.16 | 112.85      | 120.38   |
| 1   | AA    | 637     | A    | N9-C1'-C2'  | 5.16  | 121.74      | 114.00   |
| 6   | AF    | 131     | GLY  | N-CA-C      | -5.16 | 100.96      | 113.18   |
| 13  | AO    | 73      | VAL  | N-CA-C      | 5.16  | 115.59      | 110.23   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 14  | AP    | 77   | ALA  | N-CA-C      | -5.16 | 105.57      | 111.14   |
| 1   | AA    | 941  | A    | N9-C1'-C2'  | 5.16  | 119.73      | 112.00   |
| 17  | AS    | 84   | LYS  | N-CA-C      | 5.16  | 121.78      | 110.80   |
| 1   | AA    | 1758 | G    | C4'-C3'-O3' | -5.15 | 105.27      | 113.00   |
| 1   | AA    | 1981 | A    | C2'-C3'-O3' | -5.15 | 105.97      | 113.70   |
| 1   | AA    | 587  | C    | C2'-C3'-O3' | 5.15  | 117.22      | 109.50   |
| 8   | AH    | 122  | THR  | N-CA-C      | -5.15 | 101.00      | 109.40   |
| 17  | AS    | 93   | GLU  | O-C-N       | -5.15 | 118.10      | 123.56   |
| 37  | BH    | 153  | ARG  | N-CA-C      | -5.15 | 99.83       | 110.80   |
| 3   | AC    | 217  | THR  | N-CA-C      | -5.15 | 99.84       | 110.80   |
| 34  | BA    | 1212 | U    | C4'-C3'-O3' | -5.15 | 105.28      | 113.00   |
| 34  | BA    | 1380 | U    | N1-C1'-C2'  | 5.15  | 119.72      | 112.00   |
| 53  | BX    | 63   | ILE  | N-CA-C      | -5.15 | 104.88      | 110.23   |
| 15  | AQ    | 52   | ILE  | N-CA-C      | 5.15  | 120.04      | 109.34   |
| 34  | BA    | 1054 | C    | C4'-C3'-O3' | 5.14  | 120.72      | 113.00   |
| 1   | AA    | 2497 | A    | C4'-C3'-O3' | 5.14  | 120.71      | 113.00   |
| 19  | AU    | 36   | LYS  | N-CA-C      | -5.14 | 105.75      | 111.36   |
| 34  | BA    | 327  | A    | C4'-C3'-O3' | 5.14  | 117.11      | 109.40   |
| 7   | AG    | 43   | LEU  | N-CA-C      | 5.14  | 121.75      | 110.80   |
| 34  | BA    | 568  | G    | N9-C1'-C2'  | 5.14  | 119.71      | 112.00   |
| 1   | AA    | 654  | A    | N9-C1'-C2'  | -5.14 | 104.29      | 112.00   |
| 1   | AA    | 1955 | U    | C2'-C3'-O3' | -5.13 | 106.00      | 113.70   |
| 1   | AA    | 2459 | A    | C8-N9-C1'   | -5.13 | 112.30      | 127.70   |
| 38  | BI    | 116  | THR  | N-CA-C      | -5.13 | 104.72      | 112.99   |
| 3   | AC    | 225  | ASN  | CA-C-N      | 5.13  | 126.25      | 119.84   |
| 3   | AC    | 225  | ASN  | C-N-CA      | 5.13  | 126.25      | 119.84   |
| 17  | AS    | 82   | ARG  | N-CA-C      | 5.13  | 121.73      | 110.80   |
| 6   | AF    | 82   | ILE  | N-CA-C      | 5.13  | 120.01      | 109.34   |
| 1   | AA    | 2287 | A    | C2'-C3'-O3' | -5.13 | 106.01      | 113.70   |
| 20  | AV    | 81   | LYS  | CA-C-N      | 5.13  | 126.25      | 119.84   |
| 20  | AV    | 81   | LYS  | C-N-CA      | 5.13  | 126.25      | 119.84   |
| 1   | AA    | 1792 | G    | N9-C1'-C2'  | -5.13 | 104.31      | 112.00   |
| 1   | AA    | 2144 | U    | N1-C1'-C2'  | 5.13  | 119.69      | 112.00   |
| 16  | AR    | 80   | ILE  | N-CA-C      | -5.13 | 105.33      | 110.30   |
| 20  | AV    | 56   | PRO  | N-CA-C      | 5.13  | 123.03      | 112.47   |
| 1   | AA    | 2440 | C    | C2'-C3'-O3' | -5.12 | 106.02      | 113.70   |
| 1   | AA    | 458  | G    | C4'-C3'-O3' | -5.12 | 105.32      | 113.00   |
| 34  | BA    | 20   | U    | N1-C1'-C2'  | 5.12  | 119.68      | 112.00   |
| 34  | BA    | 1064 | G    | N1-C2-N3    | -5.12 | 108.54      | 123.90   |
| 35  | BF    | 199  | TYR  | CA-C-N      | 5.12  | 131.18      | 121.97   |
| 35  | BF    | 199  | TYR  | C-N-CA      | 5.12  | 131.18      | 121.97   |
| 1   | AA    | 282  | A    | N9-C1'-C2'  | -5.12 | 104.33      | 112.00   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1   | AA    | 2608 | G    | N9-C1'-C2'  | 5.12  | 119.68      | 112.00   |
| 4   | AD    | 121  | PRO  | N-CA-C      | 5.12  | 123.01      | 112.47   |
| 6   | AF    | 26   | ALA  | N-CA-C      | -5.12 | 105.83      | 111.71   |
| 7   | AG    | 132  | ASN  | N-CA-C      | 5.11  | 121.69      | 110.80   |
| 27  | Ac    | 36   | LEU  | O-C-N       | 5.11  | 129.39      | 122.59   |
| 41  | BL    | 40   | ALA  | N-CA-C      | -5.11 | 105.62      | 111.14   |
| 1   | AA    | 1205 | U    | C5'-C4'-O4' | 5.11  | 117.47      | 109.80   |
| 1   | AA    | 1771 | C    | C4'-C3'-O3' | -5.11 | 105.33      | 113.00   |
| 1   | AA    | 301  | G    | C2'-C3'-O3' | -5.11 | 106.04      | 113.70   |
| 3   | AC    | 196  | LEU  | N-CA-C      | -5.11 | 105.40      | 110.97   |
| 16  | AR    | 8    | VAL  | N-CA-CB     | -5.11 | 102.81      | 111.23   |
| 25  | Aa    | 40   | HIS  | N-CA-C      | 5.11  | 121.09      | 109.81   |
| 1   | AA    | 1012 | U    | O4'-C4'-C3' | -5.10 | 98.90       | 104.00   |
| 1   | AA    | 1746 | G    | O4'-C4'-C3' | -5.10 | 98.90       | 104.00   |
| 15  | AQ    | 78   | LEU  | N-CA-C      | 5.10  | 117.72      | 108.69   |
| 38  | BI    | 55   | VAL  | N-CA-C      | 5.10  | 119.95      | 109.34   |
| 51  | BV    | 80   | PRO  | N-CA-C      | 5.10  | 122.98      | 112.47   |
| 18  | AT    | 88   | ARG  | N-CA-C      | 5.10  | 117.73      | 109.83   |
| 20  | AV    | 24   | VAL  | N-CA-C      | 5.10  | 119.95      | 109.34   |
| 34  | BA    | 1322 | C    | C2'-C3'-O3' | -5.10 | 101.85      | 109.50   |
| 1   | AA    | 1153 | C    | C5'-C4'-C3' | 5.10  | 123.65      | 116.00   |
| 1   | AA    | 1707 | G    | C4'-C3'-O3' | -5.09 | 105.36      | 113.00   |
| 34  | BA    | 1380 | U    | C4'-C3'-O3' | -5.09 | 105.36      | 113.00   |
| 1   | AA    | 2275 | C    | C4'-C3'-O3' | -5.09 | 101.76      | 109.40   |
| 5   | AE    | 15   | PHE  | N-CA-C      | -5.09 | 101.68      | 108.86   |
| 21  | AW    | 170  | THR  | N-CA-C      | 5.09  | 121.64      | 110.80   |
| 25  | Aa    | 56   | VAL  | N-CA-C      | 5.09  | 119.93      | 109.34   |
| 34  | BA    | 960  | U    | C2'-C3'-O3' | 5.09  | 121.33      | 113.70   |
| 2   | AB    | 7    | G    | C4'-C3'-O3' | -5.09 | 105.37      | 113.00   |
| 1   | AA    | 1183 | G    | C2'-C3'-O3' | 5.08  | 117.13      | 109.50   |
| 1   | AA    | 1379 | A    | N9-C1'-C2'  | 5.08  | 121.63      | 114.00   |
| 1   | AA    | 2488 | A    | C3'-C2'-O2' | 5.08  | 118.32      | 110.70   |
| 11  | AM    | 147  | LEU  | N-CA-C      | 5.08  | 116.18      | 107.28   |
| 17  | AS    | 15   | GLU  | CA-C-N      | -5.08 | 113.48      | 119.84   |
| 17  | AS    | 15   | GLU  | C-N-CA      | -5.08 | 113.48      | 119.84   |
| 17  | AS    | 93   | GLU  | CA-C-N      | -5.08 | 113.65      | 120.87   |
| 17  | AS    | 93   | GLU  | C-N-CA      | -5.08 | 113.65      | 120.87   |
| 34  | BA    | 779  | C    | C5'-C4'-C3' | -5.08 | 108.38      | 116.00   |
| 1   | AA    | 777  | A    | C5'-C4'-C3' | 5.08  | 123.62      | 116.00   |
| 10  | AL    | 79   | PHE  | N-CA-C      | -5.08 | 101.32      | 109.39   |
| 4   | AD    | 143  | HIS  | N-CA-C      | -5.07 | 100.93      | 107.73   |
| 7   | AG    | 37   | VAL  | N-CA-C      | 5.07  | 115.34      | 107.78   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1   | AA    | 1971 | A    | N9-C1'-C2'  | -5.07 | 104.39      | 112.00   |
| 1   | AA    | 2449 | U    | N1-C1'-C2'  | 5.07  | 119.60      | 112.00   |
| 1   | AA    | 703  | U    | C2'-C3'-O3' | -5.07 | 106.10      | 113.70   |
| 1   | AA    | 1726 | G    | N9-C1'-C2'  | 5.07  | 119.60      | 112.00   |
| 1   | AA    | 1359 | A    | N9-C1'-C2'  | -5.07 | 104.40      | 112.00   |
| 1   | AA    | 1992 | G    | C5'-C4'-C3' | 5.07  | 122.80      | 115.20   |
| 6   | AF    | 206  | ILE  | N-CA-C      | -5.07 | 104.84      | 110.62   |
| 34  | BA    | 982  | U    | C2'-C3'-O3' | -5.07 | 106.10      | 113.70   |
| 34  | BA    | 295  | C    | C2'-C3'-O3' | -5.06 | 106.10      | 113.70   |
| 1   | AA    | 2428 | G    | N9-C1'-C2'  | 5.06  | 119.59      | 112.00   |
| 9   | AK    | 70   | LYS  | N-CA-C      | 5.06  | 116.77      | 108.52   |
| 29  | Ae    | 25   | MET  | N-CA-C      | -5.06 | 103.26      | 110.35   |
| 34  | BA    | 346  | G    | N9-C1'-C2'  | 5.06  | 119.59      | 112.00   |
| 10  | AL    | 97   | ARG  | CA-C-N      | 5.06  | 126.41      | 121.65   |
| 10  | AL    | 97   | ARG  | C-N-CA      | 5.06  | 126.41      | 121.65   |
| 13  | AO    | 38   | VAL  | N-CA-C      | 5.06  | 119.81      | 108.88   |
| 1   | AA    | 1968 | G    | C2'-C3'-O3' | -5.06 | 106.11      | 113.70   |
| 34  | BA    | 388  | G    | N9-C1'-C2'  | 5.06  | 119.59      | 112.00   |
| 9   | AK    | 54   | VAL  | N-CA-C      | 5.06  | 115.99      | 108.46   |
| 6   | AF    | 146  | ALA  | N-CA-C      | -5.05 | 107.17      | 113.19   |
| 34  | BA    | 817  | C    | C2'-C3'-O3' | 5.05  | 117.08      | 109.50   |
| 35  | BF    | 17   | PHE  | N-CA-C      | 5.05  | 121.57      | 110.80   |
| 35  | BF    | 97   | TRP  | N-CA-C      | 5.05  | 121.56      | 110.80   |
| 1   | AA    | 147  | U    | N1-C1'-C2'  | 5.05  | 119.58      | 112.00   |
| 8   | AH    | 88   | LEU  | N-CA-C      | 5.05  | 116.86      | 108.02   |
| 34  | BA    | 651  | C    | N1-C1'-C2'  | 5.05  | 119.58      | 112.00   |
| 1   | AA    | 1650 | G    | C5'-C4'-C3' | -5.05 | 108.43      | 116.00   |
| 17  | AS    | 45   | THR  | N-CA-C      | 5.05  | 121.55      | 110.80   |
| 25  | Aa    | 45   | GLY  | N-CA-C      | 5.04  | 120.25      | 110.66   |
| 41  | BL    | 90   | GLY  | N-CA-C      | -5.04 | 101.23      | 113.18   |
| 7   | AG    | 169  | ALA  | CA-C-N      | 5.04  | 127.30      | 120.65   |
| 7   | AG    | 169  | ALA  | C-N-CA      | 5.04  | 127.30      | 120.65   |
| 16  | AR    | 86   | ALA  | N-CA-C      | 5.04  | 117.78      | 110.42   |
| 29  | Ae    | 34   | TRP  | N-CA-C      | 5.04  | 121.54      | 110.80   |
| 1   | AA    | 1460 | A    | C2'-C3'-O3' | -5.04 | 106.14      | 113.70   |
| 7   | AG    | 147  | ASP  | N-CA-C      | -5.04 | 104.43      | 110.88   |
| 12  | AN    | 91   | GLU  | N-CA-C      | 5.04  | 121.53      | 110.80   |
| 25  | Aa    | 20   | ASN  | N-CA-C      | 5.04  | 116.47      | 108.96   |
| 1   | AA    | 2596 | U    | N1-C1'-C2'  | -5.04 | 104.45      | 112.00   |
| 40  | BK    | 9    | VAL  | CB-CA-C     | -5.04 | 106.94      | 112.68   |
| 47  | BR    | 48   | ALA  | N-CA-C      | -5.04 | 105.68      | 111.07   |
| 1   | AA    | 2864 | G    | C4'-C3'-O3' | -5.03 | 105.45      | 113.00   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1   | AA    | 2893 | G    | C3'-C2'-O2' | 5.03  | 118.25      | 110.70   |
| 49  | BT    | 67   | THR  | N-CA-C      | -5.03 | 100.09      | 110.80   |
| 5   | AE    | 99   | GLY  | N-CA-C      | -5.03 | 107.16      | 114.90   |
| 45  | BP    | 83   | VAL  | N-CA-C      | -5.03 | 98.88       | 109.34   |
| 1   | AA    | 528  | A    | C2'-C3'-O3' | -5.03 | 106.16      | 113.70   |
| 1   | AA    | 1945 | G    | C4'-C3'-O3' | -5.03 | 105.46      | 113.00   |
| 1   | AA    | 2613 | U    | N1-C1'-C2'  | 5.03  | 121.54      | 114.00   |
| 34  | BA    | 820  | U    | N1-C1'-C2'  | 5.03  | 119.54      | 112.00   |
| 37  | BH    | 71   | SER  | N-CA-C      | 5.03  | 121.50      | 110.80   |
| 8   | AH    | 7    | LEU  | N-CA-C      | 5.02  | 120.91      | 109.81   |
| 1   | AA    | 930  | U    | C3'-C2'-O2' | 5.02  | 118.23      | 110.70   |
| 1   | AA    | 2717 | G    | C5'-C4'-C3' | -5.02 | 108.47      | 116.00   |
| 5   | AE    | 73   | GLU  | N-CA-C      | 5.02  | 117.78      | 108.94   |
| 34  | BA    | 817  | C    | C1'-C2'-O2' | -5.02 | 104.27      | 111.80   |
| 18  | AT    | 13   | SER  | N-CA-C      | 5.02  | 120.91      | 109.81   |
| 1   | AA    | 1746 | G    | C3'-C2'-O2' | 5.02  | 118.23      | 110.70   |
| 34  | BA    | 818  | G    | C5'-C4'-C3' | 5.02  | 122.73      | 115.20   |
| 6   | AF    | 173  | VAL  | CB-CA-C     | -5.02 | 103.91      | 110.98   |
| 16  | AR    | 31   | SER  | N-CA-C      | 5.02  | 121.48      | 110.80   |
| 1   | AA    | 827  | U    | C4'-C3'-O3' | -5.01 | 105.48      | 113.00   |
| 1   | AA    | 1691 | C    | C3'-C2'-O2' | 5.01  | 118.22      | 110.70   |
| 1   | AA    | 2572 | A    | N9-C1'-C2'  | 5.01  | 119.52      | 112.00   |
| 34  | BA    | 88   | C    | O4'-C1'-N1  | 5.01  | 116.02      | 108.50   |
| 34  | BA    | 1402 | C    | N1-C1'-C2'  | -5.01 | 104.48      | 112.00   |
| 1   | AA    | 729  | G    | N9-C1'-C2'  | 5.01  | 119.52      | 112.00   |
| 1   | AA    | 1138 | G    | C3'-C2'-O2' | 5.01  | 118.22      | 110.70   |
| 1   | AA    | 2459 | A    | C4'-C3'-O3' | -5.01 | 105.48      | 113.00   |
| 16  | AR    | 85   | LYS  | N-CA-C      | -5.01 | 100.13      | 110.80   |
| 19  | AU    | 41   | ASN  | N-CA-C      | 5.01  | 116.55      | 111.14   |
| 3   | AC    | 140  | PRO  | N-CA-C      | 5.01  | 122.78      | 112.47   |
| 21  | AW    | 11   | GLU  | N-CA-C      | 5.01  | 121.46      | 110.80   |
| 15  | AQ    | 100  | TYR  | N-CA-C      | 5.00  | 121.46      | 110.80   |
| 37  | BH    | 126  | ILE  | N-CA-C      | -5.00 | 100.70      | 108.81   |
| 56  | BD    | 15   | G    | C4'-C3'-O3' | 5.00  | 116.91      | 109.40   |
| 53  | BX    | 36   | LEU  | CA-CB-CG    | -5.00 | 98.79       | 116.30   |
| 34  | BA    | 960  | U    | N1-C1'-C2'  | 5.00  | 119.50      | 112.00   |
| 34  | BA    | 1393 | U    | N1-C1'-C2'  | -5.00 | 104.50      | 112.00   |
| 57  | BZ    | 196  | ALA  | C-N-CD      | -5.00 | 104.49      | 125.00   |

There are no chirality outliers.

All (634) planarity outliers are listed below:

| Mol | Chain | Res  | Type | Group     |
|-----|-------|------|------|-----------|
| 1   | AA    | 1000 | A    | Sidechain |
| 1   | AA    | 1012 | U    | Sidechain |
| 1   | AA    | 1018 | C    | Sidechain |
| 1   | AA    | 1020 | A    | Sidechain |
| 1   | AA    | 1022 | G    | Sidechain |
| 1   | AA    | 1024 | G    | Sidechain |
| 1   | AA    | 1026 | U    | Sidechain |
| 1   | AA    | 1092 | C    | Sidechain |
| 1   | AA    | 1099 | G    | Sidechain |
| 1   | AA    | 1101 | U    | Sidechain |
| 1   | AA    | 1102 | C    | Sidechain |
| 1   | AA    | 1104 | C    | Sidechain |
| 1   | AA    | 1113 | U    | Sidechain |
| 1   | AA    | 1116 | C    | Sidechain |
| 1   | AA    | 1133 | U    | Sidechain |
| 1   | AA    | 114  | U    | Sidechain |
| 1   | AA    | 1141 | U    | Sidechain |
| 1   | AA    | 1142 | U    | Sidechain |
| 1   | AA    | 1143 | A    | Sidechain |
| 1   | AA    | 1154 | G    | Sidechain |
| 1   | AA    | 1155 | A    | Sidechain |
| 1   | AA    | 1160 | G    | Sidechain |
| 1   | AA    | 1179 | C    | Sidechain |
| 1   | AA    | 1182 | A    | Sidechain |
| 1   | AA    | 1183 | G    | Sidechain |
| 1   | AA    | 1194 | A    | Sidechain |
| 1   | AA    | 1195 | G    | Sidechain |
| 1   | AA    | 1206 | G    | Sidechain |
| 1   | AA    | 1238 | G    | Sidechain |
| 1   | AA    | 1240 | U    | Sidechain |
| 1   | AA    | 1242 | A    | Sidechain |
| 1   | AA    | 1247 | A    | Sidechain |
| 1   | AA    | 1262 | A    | Sidechain |
| 1   | AA    | 1269 | A    | Sidechain |
| 1   | AA    | 1273 | U    | Sidechain |
| 1   | AA    | 1284 | A    | Sidechain |
| 1   | AA    | 1288 | U    | Sidechain |
| 1   | AA    | 1297 | C    | Sidechain |
| 1   | AA    | 1301 | A    | Sidechain |
| 1   | AA    | 1310 | G    | Sidechain |
| 1   | AA    | 135  | G    | Sidechain |
| 1   | AA    | 1357 | U    | Sidechain |
| 1   | AA    | 1359 | A    | Sidechain |

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| Mol | Chain | Res     | Type | Group     |
|-----|-------|---------|------|-----------|
| 1   | AA    | 1363    | C    | Sidechain |
| 1   | AA    | 1367    | A    | Sidechain |
| 1   | AA    | 1368    | G    | Sidechain |
| 1   | AA    | 1372    | U    | Sidechain |
| 1   | AA    | 1379    | A    | Sidechain |
| 1   | AA    | 138     | G    | Sidechain |
| 1   | AA    | 1384    | A    | Sidechain |
| 1   | AA    | 1392    | A    | Sidechain |
| 1   | AA    | 1393    | A    | Sidechain |
| 1   | AA    | 1397    | U    | Sidechain |
| 1   | AA    | 14      | A    | Sidechain |
| 1   | AA    | 1405    | U    | Sidechain |
| 1   | AA    | 141(A)  | C    | Sidechain |
| 1   | AA    | 1416    | G    | Sidechain |
| 1   | AA    | 1418    | G    | Sidechain |
| 1   | AA    | 1444(A) | A    | Sidechain |
| 1   | AA    | 1450    | C    | Sidechain |
| 1   | AA    | 1473    | G    | Sidechain |
| 1   | AA    | 1474    | C    | Sidechain |
| 1   | AA    | 1477    | A    | Sidechain |
| 1   | AA    | 1478    | G    | Sidechain |
| 1   | AA    | 1479    | G    | Sidechain |
| 1   | AA    | 1489    | U    | Sidechain |
| 1   | AA    | 1497    | U    | Sidechain |
| 1   | AA    | 1513    | C    | Sidechain |
| 1   | AA    | 1515    | C    | Sidechain |
| 1   | AA    | 1516    | U    | Sidechain |
| 1   | AA    | 1523    | U    | Sidechain |
| 1   | AA    | 1525    | G    | Sidechain |
| 1   | AA    | 1527    | G    | Sidechain |
| 1   | AA    | 1532    | C    | Sidechain |
| 1   | AA    | 1537    | C    | Sidechain |
| 1   | AA    | 1539    | G    | Sidechain |
| 1   | AA    | 1541    | U    | Sidechain |
| 1   | AA    | 1559    | G    | Sidechain |
| 1   | AA    | 1564    | C    | Sidechain |
| 1   | AA    | 1565    | C    | Sidechain |
| 1   | AA    | 1568    | G    | Sidechain |
| 1   | AA    | 1574    | C    | Sidechain |
| 1   | AA    | 1576    | U    | Sidechain |
| 1   | AA    | 1590    | U    | Sidechain |
| 1   | AA    | 1597    | A    | Sidechain |

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| Mol | Chain | Res  | Type | Group     |
|-----|-------|------|------|-----------|
| 1   | AA    | 1604 | C    | Sidechain |
| 1   | AA    | 1606 | G    | Sidechain |
| 1   | AA    | 1609 | A    | Sidechain |
| 1   | AA    | 1623 | G    | Sidechain |
| 1   | AA    | 1625 | C    | Sidechain |
| 1   | AA    | 1648 | C    | Sidechain |
| 1   | AA    | 1651 | G    | Sidechain |
| 1   | AA    | 1655 | A    | Sidechain |
| 1   | AA    | 1657 | C    | Sidechain |
| 1   | AA    | 1659 | U    | Sidechain |
| 1   | AA    | 1661 | G    | Sidechain |
| 1   | AA    | 1667 | G    | Sidechain |
| 1   | AA    | 1677 | A    | Sidechain |
| 1   | AA    | 1681 | G    | Sidechain |
| 1   | AA    | 1684 | C    | Sidechain |
| 1   | AA    | 1685 | C    | Sidechain |
| 1   | AA    | 1686 | C    | Sidechain |
| 1   | AA    | 1687 | G    | Sidechain |
| 1   | AA    | 1688 | U    | Sidechain |
| 1   | AA    | 1691 | C    | Sidechain |
| 1   | AA    | 1693 | U    | Sidechain |
| 1   | AA    | 1694 | C    | Sidechain |
| 1   | AA    | 1699 | G    | Sidechain |
| 1   | AA    | 1704 | G    | Sidechain |
| 1   | AA    | 1711 | C    | Sidechain |
| 1   | AA    | 1716 | U    | Sidechain |
| 1   | AA    | 1718 | G    | Sidechain |
| 1   | AA    | 1727 | U    | Sidechain |
| 1   | AA    | 1735 | C    | Sidechain |
| 1   | AA    | 1741 | C    | Sidechain |
| 1   | AA    | 1742 | C    | Sidechain |
| 1   | AA    | 1743 | G    | Sidechain |
| 1   | AA    | 176  | G    | Sidechain |
| 1   | AA    | 1766 | U    | Sidechain |
| 1   | AA    | 1768 | U    | Sidechain |
| 1   | AA    | 1774 | C    | Sidechain |
| 1   | AA    | 1775 | U    | Sidechain |
| 1   | AA    | 1776 | G    | Sidechain |
| 1   | AA    | 1777 | U    | Sidechain |
| 1   | AA    | 1778 | U    | Sidechain |
| 1   | AA    | 1779 | U    | Sidechain |
| 1   | AA    | 1780 | A    | Sidechain |

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| Mol | Chain | Res  | Type | Group     |
|-----|-------|------|------|-----------|
| 1   | AA    | 1783 | A    | Sidechain |
| 1   | AA    | 1786 | A    | Sidechain |
| 1   | AA    | 1790 | C    | Sidechain |
| 1   | AA    | 1791 | A    | Sidechain |
| 1   | AA    | 1794 | U    | Sidechain |
| 1   | AA    | 1798 | U    | Sidechain |
| 1   | AA    | 1800 | C    | Sidechain |
| 1   | AA    | 1808 | U    | Sidechain |
| 1   | AA    | 1809 | A    | Sidechain |
| 1   | AA    | 1810 | A    | Sidechain |
| 1   | AA    | 1815 | A    | Sidechain |
| 1   | AA    | 1822 | G    | Sidechain |
| 1   | AA    | 1831 | G    | Sidechain |
| 1   | AA    | 1843 | C    | Sidechain |
| 1   | AA    | 185  | U    | Sidechain |
| 1   | AA    | 188  | G    | Sidechain |
| 1   | AA    | 1902 | C    | Sidechain |
| 1   | AA    | 192  | C    | Sidechain |
| 1   | AA    | 1940 | U    | Sidechain |
| 1   | AA    | 1962 | C    | Sidechain |
| 1   | AA    | 1964 | G    | Sidechain |
| 1   | AA    | 1965 | C    | Sidechain |
| 1   | AA    | 1967 | C    | Sidechain |
| 1   | AA    | 1971 | A    | Sidechain |
| 1   | AA    | 1981 | A    | Sidechain |
| 1   | AA    | 1982 | C    | Sidechain |
| 1   | AA    | 1983 | C    | Sidechain |
| 1   | AA    | 1985 | G    | Sidechain |
| 1   | AA    | 1989 | G    | Sidechain |
| 1   | AA    | 199  | A    | Sidechain |
| 1   | AA    | 1998 | G    | Sidechain |
| 1   | AA    | 2017 | U    | Sidechain |
| 1   | AA    | 2021 | C    | Sidechain |
| 1   | AA    | 2026 | C    | Sidechain |
| 1   | AA    | 2033 | A    | Sidechain |
| 1   | AA    | 2042 | A    | Sidechain |
| 1   | AA    | 2048 | G    | Sidechain |
| 1   | AA    | 2049 | G    | Sidechain |
| 1   | AA    | 2051 | A    | Sidechain |
| 1   | AA    | 2061 | G    | Sidechain |
| 1   | AA    | 2068 | U    | Sidechain |
| 1   | AA    | 2075 | U    | Sidechain |

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| Mol | Chain | Res  | Type | Group     |
|-----|-------|------|------|-----------|
| 1   | AA    | 2076 | U    | Sidechain |
| 1   | AA    | 2089 | U    | Sidechain |
| 1   | AA    | 2094 | G    | Sidechain |
| 1   | AA    | 2095 | C    | Sidechain |
| 1   | AA    | 2096 | U    | Sidechain |
| 1   | AA    | 2098 | U    | Sidechain |
| 1   | AA    | 2103 | C    | Sidechain |
| 1   | AA    | 2119 | A    | Sidechain |
| 1   | AA    | 212  | G    | Sidechain |
| 1   | AA    | 2126 | A    | Sidechain |
| 1   | AA    | 2130 | U    | Sidechain |
| 1   | AA    | 2138 | C    | Sidechain |
| 1   | AA    | 2148 | G    | Sidechain |
| 1   | AA    | 2161 | C    | Sidechain |
| 1   | AA    | 2185 | C    | Sidechain |
| 1   | AA    | 2189 | U    | Sidechain |
| 1   | AA    | 2190 | G    | Sidechain |
| 1   | AA    | 2193 | G    | Sidechain |
| 1   | AA    | 2195 | C    | Sidechain |
| 1   | AA    | 221  | A    | Sidechain |
| 1   | AA    | 2215 | G    | Sidechain |
| 1   | AA    | 224  | G    | Sidechain |
| 1   | AA    | 2246 | G    | Sidechain |
| 1   | AA    | 2259 | G    | Sidechain |
| 1   | AA    | 2262 | U    | Sidechain |
| 1   | AA    | 2263 | C    | Sidechain |
| 1   | AA    | 2265 | U    | Sidechain |
| 1   | AA    | 2267 | A    | Sidechain |
| 1   | AA    | 2274 | A    | Sidechain |
| 1   | AA    | 2278 | A    | Sidechain |
| 1   | AA    | 2284 | C    | Sidechain |
| 1   | AA    | 2287 | A    | Sidechain |
| 1   | AA    | 2293 | C    | Sidechain |
| 1   | AA    | 2295 | C    | Sidechain |
| 1   | AA    | 2296 | U    | Sidechain |
| 1   | AA    | 2297 | C    | Sidechain |
| 1   | AA    | 2299 | G    | Sidechain |
| 1   | AA    | 2314 | C    | Sidechain |
| 1   | AA    | 2326 | C    | Sidechain |
| 1   | AA    | 2332 | U    | Sidechain |
| 1   | AA    | 2336 | A    | Sidechain |
| 1   | AA    | 2337 | G    | Sidechain |

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| Mol | Chain | Res  | Type | Group     |
|-----|-------|------|------|-----------|
| 1   | AA    | 2352 | A    | Sidechain |
| 1   | AA    | 2364 | C    | Sidechain |
| 1   | AA    | 237  | C    | Sidechain |
| 1   | AA    | 2384 | G    | Sidechain |
| 1   | AA    | 2395 | C    | Sidechain |
| 1   | AA    | 2399 | G    | Sidechain |
| 1   | AA    | 2406 | U    | Sidechain |
| 1   | AA    | 2408 | U    | Sidechain |
| 1   | AA    | 2413 | G    | Sidechain |
| 1   | AA    | 2422 | A    | Sidechain |
| 1   | AA    | 2423 | U    | Sidechain |
| 1   | AA    | 2425 | A    | Sidechain |
| 1   | AA    | 2427 | C    | Sidechain |
| 1   | AA    | 2431 | U    | Sidechain |
| 1   | AA    | 2432 | A    | Sidechain |
| 1   | AA    | 2433 | A    | Sidechain |
| 1   | AA    | 2434 | A    | Sidechain |
| 1   | AA    | 2435 | A    | Sidechain |
| 1   | AA    | 2436 | G    | Sidechain |
| 1   | AA    | 2439 | A    | Sidechain |
| 1   | AA    | 2444 | G    | Sidechain |
| 1   | AA    | 2449 | U    | Sidechain |
| 1   | AA    | 2450 | A    | Sidechain |
| 1   | AA    | 2458 | G    | Sidechain |
| 1   | AA    | 2467 | C    | Sidechain |
| 1   | AA    | 2471 | C    | Sidechain |
| 1   | AA    | 2480 | C    | Sidechain |
| 1   | AA    | 2483 | C    | Sidechain |
| 1   | AA    | 2486 | G    | Sidechain |
| 1   | AA    | 2490 | G    | Sidechain |
| 1   | AA    | 2491 | U    | Sidechain |
| 1   | AA    | 2493 | U    | Sidechain |
| 1   | AA    | 2498 | C    | Sidechain |
| 1   | AA    | 25   | U    | Sidechain |
| 1   | AA    | 2500 | U    | Sidechain |
| 1   | AA    | 2501 | C    | Sidechain |
| 1   | AA    | 2504 | U    | Sidechain |
| 1   | AA    | 2505 | G    | Sidechain |
| 1   | AA    | 2507 | C    | Sidechain |
| 1   | AA    | 2508 | G    | Sidechain |
| 1   | AA    | 251  | A    | Sidechain |
| 1   | AA    | 2510 | C    | Sidechain |

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| Mol | Chain | Res    | Type | Group     |
|-----|-------|--------|------|-----------|
| 1   | AA    | 2514   | U    | Sidechain |
| 1   | AA    | 2515   | C    | Sidechain |
| 1   | AA    | 2516   | G    | Sidechain |
| 1   | AA    | 2517   | C    | Sidechain |
| 1   | AA    | 2519   | U    | Sidechain |
| 1   | AA    | 2521   | C    | Sidechain |
| 1   | AA    | 2524   | G    | Sidechain |
| 1   | AA    | 2527   | C    | Sidechain |
| 1   | AA    | 2529   | G    | Sidechain |
| 1   | AA    | 253    | C    | Sidechain |
| 1   | AA    | 2530   | A    | Sidechain |
| 1   | AA    | 2537   | U    | Sidechain |
| 1   | AA    | 2540   | C    | Sidechain |
| 1   | AA    | 2555   | U    | Sidechain |
| 1   | AA    | 2560   | C    | Sidechain |
| 1   | AA    | 2568   | C    | Sidechain |
| 1   | AA    | 2569   | G    | Sidechain |
| 1   | AA    | 257    | A    | Sidechain |
| 1   | AA    | 2579   | C    | Sidechain |
| 1   | AA    | 2580   | U    | Sidechain |
| 1   | AA    | 2583   | G    | Sidechain |
| 1   | AA    | 2590   | A    | Sidechain |
| 1   | AA    | 2595   | G    | Sidechain |
| 1   | AA    | 2597   | G    | Sidechain |
| 1   | AA    | 2601   | C    | Sidechain |
| 1   | AA    | 2602   | A    | Sidechain |
| 1   | AA    | 2606   | C    | Sidechain |
| 1   | AA    | 2607   | G    | Sidechain |
| 1   | AA    | 2608   | G    | Sidechain |
| 1   | AA    | 2609   | U    | Sidechain |
| 1   | AA    | 2613   | U    | Sidechain |
| 1   | AA    | 2615   | U    | Sidechain |
| 1   | AA    | 2619   | C    | Sidechain |
| 1   | AA    | 2623   | G    | Sidechain |
| 1   | AA    | 2629   | A    | Sidechain |
| 1   | AA    | 2637   | U    | Sidechain |
| 1   | AA    | 2642   | G    | Sidechain |
| 1   | AA    | 2645   | G    | Sidechain |
| 1   | AA    | 2684   | U    | Sidechain |
| 1   | AA    | 2687   | U    | Sidechain |
| 1   | AA    | 2698   | U    | Sidechain |
| 1   | AA    | 270(C) | C    | Sidechain |

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| Mol | Chain | Res    | Type | Group     |
|-----|-------|--------|------|-----------|
| 1   | AA    | 270(D) | C    | Sidechain |
| 1   | AA    | 270(G) | C    | Sidechain |
| 1   | AA    | 270(Q) | C    | Sidechain |
| 1   | AA    | 2706   | G    | Sidechain |
| 1   | AA    | 2724   | C    | Sidechain |
| 1   | AA    | 2725   | A    | Sidechain |
| 1   | AA    | 273(C) | C    | Sidechain |
| 1   | AA    | 273(D) | C    | Sidechain |
| 1   | AA    | 2737   | G    | Sidechain |
| 1   | AA    | 2741   | A    | Sidechain |
| 1   | AA    | 2746   | U    | Sidechain |
| 1   | AA    | 2763   | G    | Sidechain |
| 1   | AA    | 2764   | A    | Sidechain |
| 1   | AA    | 2777   | G    | Sidechain |
| 1   | AA    | 2781   | A    | Sidechain |
| 1   | AA    | 2787   | C    | Sidechain |
| 1   | AA    | 280    | C    | Sidechain |
| 1   | AA    | 2816   | C    | Sidechain |
| 1   | AA    | 2817   | G    | Sidechain |
| 1   | AA    | 2825   | C    | Sidechain |
| 1   | AA    | 2853   | C    | Sidechain |
| 1   | AA    | 2867   | G    | Sidechain |
| 1   | AA    | 2885   | C    | Sidechain |
| 1   | AA    | 2887   | U    | Sidechain |
| 1   | AA    | 2891   | G    | Sidechain |
| 1   | AA    | 2897   | U    | Sidechain |
| 1   | AA    | 2898   | U    | Sidechain |
| 1   | AA    | 2901   | C    | Sidechain |
| 1   | AA    | 296    | C    | Sidechain |
| 1   | AA    | 3      | U    | Sidechain |
| 1   | AA    | 31     | C    | Sidechain |
| 1   | AA    | 32     | C    | Sidechain |
| 1   | AA    | 322    | A    | Sidechain |
| 1   | AA    | 337    | C    | Sidechain |
| 1   | AA    | 350    | U    | Sidechain |
| 1   | AA    | 351    | G    | Sidechain |
| 1   | AA    | 353    | G    | Sidechain |
| 1   | AA    | 358    | U    | Sidechain |
| 1   | AA    | 360    | G    | Sidechain |
| 1   | AA    | 362    | U    | Sidechain |
| 1   | AA    | 366    | C    | Sidechain |
| 1   | AA    | 380    | U    | Sidechain |

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| Mol | Chain | Res    | Type | Group     |
|-----|-------|--------|------|-----------|
| 1   | AA    | 383    | U    | Sidechain |
| 1   | AA    | 386    | G    | Sidechain |
| 1   | AA    | 417    | C    | Sidechain |
| 1   | AA    | 427    | U    | Sidechain |
| 1   | AA    | 433    | C    | Sidechain |
| 1   | AA    | 445    | C    | Sidechain |
| 1   | AA    | 446    | G    | Sidechain |
| 1   | AA    | 448    | U    | Sidechain |
| 1   | AA    | 459    | U    | Sidechain |
| 1   | AA    | 474    | G    | Sidechain |
| 1   | AA    | 511    | U    | Sidechain |
| 1   | AA    | 513    | A    | Sidechain |
| 1   | AA    | 514    | A    | Sidechain |
| 1   | AA    | 525    | U    | Sidechain |
| 1   | AA    | 534    | U    | Sidechain |
| 1   | AA    | 553    | U    | Sidechain |
| 1   | AA    | 584    | C    | Sidechain |
| 1   | AA    | 585    | G    | Sidechain |
| 1   | AA    | 601    | C    | Sidechain |
| 1   | AA    | 605    | C    | Sidechain |
| 1   | AA    | 606    | U    | Sidechain |
| 1   | AA    | 607    | U    | Sidechain |
| 1   | AA    | 608    | A    | Sidechain |
| 1   | AA    | 610    | C    | Sidechain |
| 1   | AA    | 611    | C    | Sidechain |
| 1   | AA    | 618(A) | C    | Sidechain |
| 1   | AA    | 621    | A    | Sidechain |
| 1   | AA    | 639    | U    | Sidechain |
| 1   | AA    | 641    | C    | Sidechain |
| 1   | AA    | 643    | A    | Sidechain |
| 1   | AA    | 646    | A    | Sidechain |
| 1   | AA    | 647    | G    | Sidechain |
| 1   | AA    | 650    | C    | Sidechain |
| 1   | AA    | 658    | C    | Sidechain |
| 1   | AA    | 67     | U    | Sidechain |
| 1   | AA    | 670    | A    | Sidechain |
| 1   | AA    | 679    | C    | Sidechain |
| 1   | AA    | 697    | C    | Sidechain |
| 1   | AA    | 703    | U    | Sidechain |
| 1   | AA    | 704    | G    | Sidechain |
| 1   | AA    | 709    | U    | Sidechain |
| 1   | AA    | 715    | G    | Sidechain |

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| Mol | Chain | Res | Type | Group     |
|-----|-------|-----|------|-----------|
| 1   | AA    | 724 | U    | Sidechain |
| 1   | AA    | 729 | G    | Sidechain |
| 1   | AA    | 730 | C    | Sidechain |
| 1   | AA    | 733 | G    | Sidechain |
| 1   | AA    | 744 | G    | Sidechain |
| 1   | AA    | 750 | A    | Sidechain |
| 1   | AA    | 758 | C    | Sidechain |
| 1   | AA    | 76  | C    | Sidechain |
| 1   | AA    | 762 | U    | Sidechain |
| 1   | AA    | 767 | U    | Sidechain |
| 1   | AA    | 774 | A    | Sidechain |
| 1   | AA    | 775 | G    | Sidechain |
| 1   | AA    | 776 | G    | Sidechain |
| 1   | AA    | 779 | U    | Sidechain |
| 1   | AA    | 786 | C    | Sidechain |
| 1   | AA    | 792 | G    | Sidechain |
| 1   | AA    | 795 | C    | Sidechain |
| 1   | AA    | 800 | A    | Sidechain |
| 1   | AA    | 801 | G    | Sidechain |
| 1   | AA    | 805 | G    | Sidechain |
| 1   | AA    | 807 | U    | Sidechain |
| 1   | AA    | 811 | U    | Sidechain |
| 1   | AA    | 821 | A    | Sidechain |
| 1   | AA    | 830 | G    | Sidechain |
| 1   | AA    | 832 | G    | Sidechain |
| 1   | AA    | 835 | A    | Sidechain |
| 1   | AA    | 843 | G    | Sidechain |
| 1   | AA    | 847 | U    | Sidechain |
| 1   | AA    | 848 | G    | Sidechain |
| 1   | AA    | 858 | U    | Sidechain |
| 1   | AA    | 860 | U    | Sidechain |
| 1   | AA    | 865 | C    | Sidechain |
| 1   | AA    | 9   | U    | Sidechain |
| 1   | AA    | 913 | U    | Sidechain |
| 1   | AA    | 915 | C    | Sidechain |
| 1   | AA    | 922 | U    | Sidechain |
| 1   | AA    | 924 | C    | Sidechain |
| 1   | AA    | 930 | U    | Sidechain |
| 1   | AA    | 931 | G    | Sidechain |
| 1   | AA    | 944 | G    | Sidechain |
| 1   | AA    | 946 | G    | Sidechain |
| 1   | AA    | 955 | C    | Sidechain |

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| Mol | Chain | Res     | Type | Group             |
|-----|-------|---------|------|-------------------|
| 1   | AA    | 965     | C    | Sidechain         |
| 1   | AA    | 969     | U    | Sidechain         |
| 1   | AA    | 971     | C    | Sidechain         |
| 1   | AA    | 972     | G    | Sidechain         |
| 1   | AA    | 974(A)  | C    | Sidechain         |
| 1   | AA    | 978     | G    | Sidechain         |
| 1   | AA    | 980     | A    | Sidechain         |
| 1   | AA    | 981     | A    | Sidechain         |
| 1   | AA    | 986     | C    | Sidechain         |
| 1   | AA    | 987     | G    | Sidechain         |
| 1   | AA    | 990     | A    | Sidechain         |
| 2   | AB    | 10      | C    | Sidechain         |
| 2   | AB    | 101     | A    | Sidechain         |
| 2   | AB    | 109     | G    | Sidechain         |
| 2   | AB    | 11      | C    | Sidechain         |
| 2   | AB    | 33      | G    | Sidechain         |
| 2   | AB    | 34      | U    | Sidechain         |
| 2   | AB    | 55      | U    | Sidechain         |
| 2   | AB    | 60      | C    | Sidechain         |
| 2   | AB    | 7       | G    | Sidechain         |
| 2   | AB    | 71      | C    | Sidechain         |
| 2   | AB    | 77      | U    | Sidechain         |
| 2   | AB    | 8       | U    | Sidechain         |
| 2   | AB    | 89      | G    | Sidechain         |
| 2   | AB    | 90      | C    | Sidechain         |
| 2   | AB    | 93      | C    | Sidechain         |
| 2   | AB    | 97      | G    | Sidechain         |
| 2   | AB    | 98      | G    | Sidechain         |
| 3   | AC    | 179     | SER  | Mainchain         |
| 5   | AE    | 151     | TYR  | Sidechain         |
| 6   | AF    | 7       | TYR  | Sidechain         |
| 31  | AI    | 153     | LEU  | Mainchain,Peptide |
| 9   | AK    | 4       | TYR  | Sidechain         |
| 12  | AN    | 93      | TYR  | Sidechain         |
| 15  | AQ    | 32      | TYR  | Sidechain         |
| 17  | AS    | 91      | TYR  | Sidechain         |
| 25  | Aa    | 32      | TYR  | Sidechain         |
| 26  | Ab    | 29      | THR  | Mainchain         |
| 34  | BA    | 1012    | U    | Sidechain         |
| 34  | BA    | 1027    | C    | Sidechain         |
| 34  | BA    | 1028(A) | C    | Sidechain         |
| 34  | BA    | 1037    | C    | Sidechain         |

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| Mol | Chain | Res  | Type | Group     |
|-----|-------|------|------|-----------|
| 34  | BA    | 1038 | C    | Sidechain |
| 34  | BA    | 1039 | C    | Sidechain |
| 34  | BA    | 1040 | U    | Sidechain |
| 34  | BA    | 1048 | G    | Sidechain |
| 34  | BA    | 1052 | U    | Sidechain |
| 34  | BA    | 1054 | C    | Sidechain |
| 34  | BA    | 1056 | U    | Sidechain |
| 34  | BA    | 1065 | U    | Sidechain |
| 34  | BA    | 1067 | A    | Sidechain |
| 34  | BA    | 1073 | U    | Sidechain |
| 34  | BA    | 1078 | U    | Sidechain |
| 34  | BA    | 1083 | U    | Sidechain |
| 34  | BA    | 1097 | C    | Sidechain |
| 34  | BA    | 1100 | C    | Sidechain |
| 34  | BA    | 1121 | U    | Sidechain |
| 34  | BA    | 1122 | U    | Sidechain |
| 34  | BA    | 1124 | G    | Sidechain |
| 34  | BA    | 1128 | C    | Sidechain |
| 34  | BA    | 1133 | G    | Sidechain |
| 34  | BA    | 1143 | G    | Sidechain |
| 34  | BA    | 115  | G    | Sidechain |
| 34  | BA    | 1150 | U    | Sidechain |
| 34  | BA    | 1195 | C    | Sidechain |
| 34  | BA    | 1199 | U    | Sidechain |
| 34  | BA    | 12   | U    | Sidechain |
| 34  | BA    | 1226 | C    | Sidechain |
| 34  | BA    | 1235 | U    | Sidechain |
| 34  | BA    | 124  | G    | Sidechain |
| 34  | BA    | 1246 | C    | Sidechain |
| 34  | BA    | 125  | U    | Sidechain |
| 34  | BA    | 1263 | C    | Sidechain |
| 34  | BA    | 1266 | G    | Sidechain |
| 34  | BA    | 1277 | C    | Sidechain |
| 34  | BA    | 1285 | A    | Sidechain |
| 34  | BA    | 129  | U    | Sidechain |
| 34  | BA    | 1298 | C    | Sidechain |
| 34  | BA    | 1302 | U    | Sidechain |
| 34  | BA    | 131  | C    | Sidechain |
| 34  | BA    | 1314 | C    | Sidechain |
| 34  | BA    | 132  | C    | Sidechain |
| 34  | BA    | 1327 | C    | Sidechain |
| 34  | BA    | 1328 | C    | Sidechain |

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| Mol | Chain | Res    | Type | Group     |
|-----|-------|--------|------|-----------|
| 34  | BA    | 1330   | U    | Sidechain |
| 34  | BA    | 134    | A    | Sidechain |
| 34  | BA    | 1347   | G    | Sidechain |
| 34  | BA    | 135    | C    | Sidechain |
| 34  | BA    | 1352   | C    | Sidechain |
| 34  | BA    | 1362   | C    | Sidechain |
| 34  | BA    | 1370   | G    | Sidechain |
| 34  | BA    | 1377   | A    | Sidechain |
| 34  | BA    | 138    | G    | Sidechain |
| 34  | BA    | 1402   | C    | Sidechain |
| 34  | BA    | 1404   | C    | Sidechain |
| 34  | BA    | 1405   | G    | Sidechain |
| 34  | BA    | 1422   | G    | Sidechain |
| 34  | BA    | 1427   | U    | Sidechain |
| 34  | BA    | 145    | G    | Sidechain |
| 34  | BA    | 146    | G    | Sidechain |
| 34  | BA    | 1472   | U    | Sidechain |
| 34  | BA    | 1477   | C    | Sidechain |
| 34  | BA    | 1481   | U    | Sidechain |
| 34  | BA    | 1541   | U    | Sidechain |
| 34  | BA    | 156    | G    | Sidechain |
| 34  | BA    | 158    | G    | Sidechain |
| 34  | BA    | 159    | G    | Sidechain |
| 34  | BA    | 17     | U    | Sidechain |
| 34  | BA    | 191(C) | G    | Sidechain |
| 34  | BA    | 191(D) | U    | Sidechain |
| 34  | BA    | 219    | C    | Sidechain |
| 34  | BA    | 225    | C    | Sidechain |
| 34  | BA    | 244    | U    | Sidechain |
| 34  | BA    | 253    | U    | Sidechain |
| 34  | BA    | 267    | C    | Sidechain |
| 34  | BA    | 274    | A    | Sidechain |
| 34  | BA    | 281    | G    | Sidechain |
| 34  | BA    | 285    | G    | Sidechain |
| 34  | BA    | 287    | U    | Sidechain |
| 34  | BA    | 295    | C    | Sidechain |
| 34  | BA    | 31     | G    | Sidechain |
| 34  | BA    | 332    | G    | Sidechain |
| 34  | BA    | 335    | C    | Sidechain |
| 34  | BA    | 348    | G    | Sidechain |
| 34  | BA    | 352    | C    | Sidechain |
| 34  | BA    | 367    | U    | Sidechain |

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| Mol | Chain | Res | Type | Group     |
|-----|-------|-----|------|-----------|
| 34  | BA    | 37  | U    | Sidechain |
| 34  | BA    | 375 | U    | Sidechain |
| 34  | BA    | 385 | C    | Sidechain |
| 34  | BA    | 395 | C    | Sidechain |
| 34  | BA    | 397 | A    | Sidechain |
| 34  | BA    | 398 | C    | Sidechain |
| 34  | BA    | 403 | C    | Sidechain |
| 34  | BA    | 412 | A    | Sidechain |
| 34  | BA    | 418 | C    | Sidechain |
| 34  | BA    | 430 | A    | Sidechain |
| 34  | BA    | 432 | A    | Sidechain |
| 34  | BA    | 45  | U    | Sidechain |
| 34  | BA    | 451 | A    | Sidechain |
| 34  | BA    | 47  | C    | Sidechain |
| 34  | BA    | 484 | G    | Sidechain |
| 34  | BA    | 501 | C    | Sidechain |
| 34  | BA    | 504 | C    | Sidechain |
| 34  | BA    | 518 | C    | Sidechain |
| 34  | BA    | 529 | G    | Sidechain |
| 34  | BA    | 531 | U    | Sidechain |
| 34  | BA    | 532 | A    | Sidechain |
| 34  | BA    | 54  | C    | Sidechain |
| 34  | BA    | 56  | U    | Sidechain |
| 34  | BA    | 560 | U    | Sidechain |
| 34  | BA    | 563 | A    | Sidechain |
| 34  | BA    | 575 | G    | Sidechain |
| 34  | BA    | 576 | G    | Sidechain |
| 34  | BA    | 579 | G    | Sidechain |
| 34  | BA    | 590 | C    | Sidechain |
| 34  | BA    | 591 | U    | Sidechain |
| 34  | BA    | 596 | C    | Sidechain |
| 34  | BA    | 610 | G    | Sidechain |
| 34  | BA    | 616 | G    | Sidechain |
| 34  | BA    | 63  | C    | Sidechain |
| 34  | BA    | 634 | C    | Sidechain |
| 34  | BA    | 644 | G    | Sidechain |
| 34  | BA    | 66  | G    | Sidechain |
| 34  | BA    | 661 | G    | Sidechain |
| 34  | BA    | 666 | G    | Sidechain |
| 34  | BA    | 672 | U    | Sidechain |
| 34  | BA    | 689 | C    | Sidechain |
| 34  | BA    | 690 | G    | Sidechain |

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| Mol | Chain | Res    | Type | Group     |
|-----|-------|--------|------|-----------|
| 34  | BA    | 717    | C    | Sidechain |
| 34  | BA    | 727    | G    | Sidechain |
| 34  | BA    | 729    | A    | Sidechain |
| 34  | BA    | 734    | G    | Sidechain |
| 34  | BA    | 739    | C    | Sidechain |
| 34  | BA    | 741    | G    | Sidechain |
| 34  | BA    | 75     | C    | Sidechain |
| 34  | BA    | 760    | G    | Sidechain |
| 34  | BA    | 763    | G    | Sidechain |
| 34  | BA    | 770    | C    | Sidechain |
| 34  | BA    | 779    | C    | Sidechain |
| 34  | BA    | 792    | A    | Sidechain |
| 34  | BA    | 808    | C    | Sidechain |
| 34  | BA    | 813    | U    | Sidechain |
| 34  | BA    | 817    | C    | Sidechain |
| 34  | BA    | 82     | U    | Sidechain |
| 34  | BA    | 834    | C    | Sidechain |
| 34  | BA    | 853    | G    | Sidechain |
| 34  | BA    | 862    | C    | Sidechain |
| 34  | BA    | 863    | U    | Sidechain |
| 34  | BA    | 875    | C    | Sidechain |
| 34  | BA    | 88     | C    | Sidechain |
| 34  | BA    | 883    | C    | Sidechain |
| 34  | BA    | 887    | G    | Sidechain |
| 34  | BA    | 895    | G    | Sidechain |
| 34  | BA    | 898    | G    | Sidechain |
| 34  | BA    | 901    | A    | Sidechain |
| 34  | BA    | 902    | G    | Sidechain |
| 34  | BA    | 904    | C    | Sidechain |
| 34  | BA    | 905    | U    | Sidechain |
| 34  | BA    | 911    | U    | Sidechain |
| 34  | BA    | 912    | C    | Sidechain |
| 34  | BA    | 923    | A    | Sidechain |
| 34  | BA    | 947    | G    | Sidechain |
| 34  | BA    | 955    | U    | Sidechain |
| 34  | BA    | 961    | U    | Sidechain |
| 34  | BA    | 974    | A    | Sidechain |
| 34  | BA    | 983    | A    | Sidechain |
| 34  | BA    | 989    | C    | Sidechain |
| 34  | BA    | 998(A) | C    | Sidechain |
| 37  | BH    | 54     | TYR  | Sidechain |
| 39  | BJ    | 4      | TYR  | Sidechain |

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| Mol | Chain | Res | Type | Group     |
|-----|-------|-----|------|-----------|
| 44  | BO    | 75  | TYR  | Sidechain |
| 47  | BR    | 34  | TYR  | Sidechain |

## 5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1   | AA    | 62218 | 0        | 31250    | 16555   | 0            |
| 2   | AB    | 2641  | 0        | 1337     | 611     | 0            |
| 3   | AC    | 1742  | 0        | 1779     | 1085    | 0            |
| 4   | AD    | 2124  | 0        | 2207     | 1519    | 0            |
| 5   | AE    | 1578  | 0        | 1647     | 1107    | 0            |
| 6   | AF    | 1625  | 0        | 1666     | 835     | 0            |
| 7   | AG    | 1482  | 0        | 1546     | 904     | 0            |
| 8   | AH    | 1328  | 0        | 1407     | 738     | 0            |
| 9   | AK    | 1113  | 0        | 1183     | 795     | 0            |
| 10  | AL    | 932   | 0        | 992      | 757     | 0            |
| 11  | AM    | 1106  | 0        | 1183     | 814     | 0            |
| 12  | AN    | 1080  | 0        | 1127     | 756     | 0            |
| 13  | AO    | 960   | 0        | 1021     | 619     | 0            |
| 14  | AP    | 877   | 0        | 938      | 530     | 0            |
| 15  | AQ    | 976   | 0        | 1031     | 671     | 0            |
| 16  | AR    | 964   | 0        | 1022     | 743     | 0            |
| 17  | AS    | 779   | 0        | 852      | 577     | 0            |
| 18  | AT    | 876   | 0        | 941      | 473     | 0            |
| 19  | AU    | 742   | 0        | 800      | 369     | 0            |
| 20  | AV    | 844   | 0        | 930      | 440     | 0            |
| 21  | AW    | 1435  | 0        | 1463     | 759     | 0            |
| 22  | AX    | 670   | 0        | 700      | 387     | 0            |
| 23  | AY    | 567   | 0        | 621      | 324     | 0            |
| 24  | AZ    | 469   | 0        | 518      | 328     | 0            |
| 25  | Aa    | 581   | 0        | 577      | 399     | 0            |
| 26  | Ab    | 445   | 0        | 459      | 289     | 0            |
| 27  | Ac    | 426   | 0        | 452      | 288     | 0            |
| 28  | Ad    | 430   | 0        | 480      | 284     | 0            |
| 29  | Ae    | 515   | 0        | 587      | 409     | 0            |
| 30  | Af    | 307   | 0        | 335      | 156     | 0            |
| 31  | AI    | 752   | 0        | 363      | 210     | 0            |

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| Mol | Chain | Non-H  | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|--------|----------|----------|---------|--------------|
| 32  | AJ    | 993    | 0        | 1019     | 756     | 0            |
| 33  | Ag    | 620    | 0        | 132      | 151     | 0            |
| 34  | BA    | 32554  | 0        | 16390    | 7469    | 0            |
| 35  | BF    | 1900   | 0        | 1951     | 1096    | 0            |
| 36  | BG    | 1612   | 0        | 1677     | 747     | 0            |
| 37  | BH    | 1703   | 0        | 1763     | 883     | 0            |
| 38  | BI    | 1146   | 0        | 1207     | 606     | 0            |
| 39  | BJ    | 843    | 0        | 857      | 410     | 0            |
| 40  | BK    | 1257   | 0        | 1296     | 587     | 0            |
| 41  | BL    | 1116   | 0        | 1177     | 740     | 0            |
| 42  | BM    | 1010   | 0        | 1035     | 516     | 0            |
| 43  | BN    | 794    | 0        | 840      | 381     | 0            |
| 44  | BO    | 885    | 0        | 904      | 480     | 0            |
| 45  | BP    | 970    | 0        | 1057     | 529     | 0            |
| 46  | BQ    | 914    | 0        | 954      | 650     | 0            |
| 47  | BR    | 492    | 0        | 529      | 288     | 0            |
| 48  | BS    | 734    | 0        | 771      | 363     | 0            |
| 49  | BT    | 700    | 0        | 720      | 359     | 0            |
| 50  | BU    | 857    | 0        | 930      | 472     | 0            |
| 51  | BV    | 597    | 0        | 666      | 390     | 0            |
| 52  | BW    | 647    | 0        | 653      | 545     | 0            |
| 53  | BX    | 763    | 0        | 857      | 418     | 0            |
| 54  | BY    | 208    | 0        | 221      | 91      | 0            |
| 55  | BC    | 1619   | 0        | 819      | 220     | 0            |
| 56  | BD    | 1597   | 0        | 802      | 301     | 0            |
| 56  | BE    | 1597   | 0        | 799      | 356     | 0            |
| 57  | BZ    | 4610   | 0        | 4492     | 2755    | 0            |
| 58  | AA    | 42     | 0        | 46       | 20      | 0            |
| 58  | BA    | 42     | 0        | 46       | 15      | 0            |
| 59  | AA    | 44     | 0        | 18       | 80      | 0            |
| 60  | BZ    | 32     | 0        | 14       | 39      | 0            |
| All | All   | 155482 | 0        | 106056   | 52024   | 0            |

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 200.

All (52024) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 32:AJ:112:MET:SD | 32:AJ:122:ALA:HB2 | 1.28                     | 1.70              |
| 3:AC:171:ILE:CD1 | 3:AC:192:PHE:CZ   | 1.75                     | 1.70              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1226:C:C4   | 46:BQ:104:ARG:HG3  | 1.16                     | 1.69              |
| 1:AA:716:A:C2     | 48:BS:44:LYS:HG3   | 1.30                     | 1.67              |
| 32:AJ:75:SER:HB3  | 32:AJ:130:SER:CB   | 1.24                     | 1.66              |
| 1:AA:2447:G:C8    | 1:AA:2500:U:H3'    | 1.23                     | 1.66              |
| 57:BZ:13:HIS:CD2  | 57:BZ:106:MET:HB2  | 1.31                     | 1.65              |
| 34:BA:1311:G:C6   | 34:BA:1327:C:C5    | 1.80                     | 1.65              |
| 46:BQ:20:THR:HG23 | 46:BQ:26:GLY:CA    | 1.16                     | 1.64              |
| 57:BZ:395:ARG:HG3 | 57:BZ:474:ASP:CB   | 1.22                     | 1.64              |
| 1:AA:2629:A:H3'   | 1:AA:2895:U:C6     | 1.12                     | 1.63              |
| 57:BZ:400:TYR:CB  | 57:BZ:442:VAL:HG12 | 1.29                     | 1.63              |
| 34:BA:1310:G:C6   | 34:BA:1327:C:C4    | 1.84                     | 1.63              |
| 34:BA:1318:A:H2'  | 52:BW:37:ARG:CB    | 1.23                     | 1.63              |
| 46:BQ:20:THR:CB   | 46:BQ:26:GLY:HA2   | 1.19                     | 1.63              |
| 46:BQ:4:ILE:CD1   | 46:BQ:57:ARG:HG3   | 1.18                     | 1.62              |
| 32:AJ:23:VAL:HG21 | 32:AJ:41:PHE:CE1   | 1.20                     | 1.62              |
| 57:BZ:502:PHE:CE2 | 57:BZ:555:VAL:CB   | 1.76                     | 1.61              |
| 1:AA:2178:C:H5''  | 3:AC:46:LYS:CG     | 1.19                     | 1.61              |
| 31:AI:140:GLY:CA  | 33:Ag:137:UNK:HA   | 1.19                     | 1.60              |
| 56:BE:21:A:N6     | 56:BE:46:G:C4      | 1.69                     | 1.60              |
| 46:BQ:16:ASP:CB   | 46:BQ:34:LEU:CD1   | 1.79                     | 1.60              |
| 46:BQ:22:ILE:HB   | 46:BQ:25:ILE:CD1   | 1.21                     | 1.60              |
| 1:AA:2532:G:H4'   | 1:AA:2657:A:C2     | 1.35                     | 1.59              |
| 34:BA:1318:A:C2'  | 52:BW:37:ARG:HB2   | 1.20                     | 1.59              |
| 1:AA:1075:C:H1'   | 32:AJ:90:LYS:CD    | 1.24                     | 1.58              |
| 1:AA:1080:C:C2    | 32:AJ:129:GLY:HA3  | 1.32                     | 1.58              |
| 1:AA:1080:C:H5''  | 32:AJ:128:ALA:CB   | 1.17                     | 1.58              |
| 57:BZ:172:ALA:HB2 | 57:BZ:179:MET:CE   | 1.20                     | 1.58              |
| 34:BA:1486:G:C5   | 34:BA:1487:G:C8    | 1.87                     | 1.58              |
| 57:BZ:172:ALA:CB  | 57:BZ:179:MET:HE3  | 1.21                     | 1.58              |
| 57:BZ:165:ALA:CB  | 57:BZ:171:ILE:HG22 | 1.31                     | 1.57              |
| 1:AA:2129:C:C4'   | 3:AC:6:ARG:HG2     | 1.17                     | 1.57              |
| 1:AA:2507:C:H1'   | 59:AA:3002:8AN:C4  | 1.25                     | 1.57              |
| 57:BZ:565:LEU:CA  | 57:BZ:566:GLU:HG2  | 1.15                     | 1.57              |
| 46:BQ:15:VAL:CB   | 46:BQ:34:LEU:HD23  | 1.31                     | 1.57              |
| 1:AA:2507:C:C6    | 59:AA:3002:8AN:H1' | 1.34                     | 1.57              |
| 1:AA:1202:C:C5    | 1:AA:1203:G:H1'    | 1.39                     | 1.56              |
| 34:BA:1125:U:C5'  | 43:BN:38:ILE:HD13  | 1.22                     | 1.56              |
| 46:BQ:16:ASP:CB   | 46:BQ:34:LEU:HD12  | 1.14                     | 1.56              |
| 32:AJ:75:SER:CB   | 32:AJ:130:SER:HB3  | 1.21                     | 1.56              |
| 46:BQ:5:ALA:HB1   | 46:BQ:67:GLU:CG    | 1.36                     | 1.56              |
| 34:BA:1319:A:C5'  | 52:BW:70:LYS:NZ    | 1.69                     | 1.56              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:BZ:405:LEU:CD1  | 57:BZ:464:LEU:N    | 1.68                     | 1.56              |
| 1:AA:1080:C:C4'    | 32:AJ:128:ALA:HB3  | 1.17                     | 1.56              |
| 34:BA:1225:A:H5'   | 52:BW:78:ARG:CD    | 1.23                     | 1.55              |
| 31:AI:53:VAL:C     | 31:AI:85:ASP:HA    | 1.25                     | 1.55              |
| 57:BZ:426:LEU:HD13 | 57:BZ:441:TYR:CE1  | 1.08                     | 1.55              |
| 56:BE:18:G:H21     | 56:BE:58:A:C5'     | 1.19                     | 1.55              |
| 1:AA:2122:U:H4'    | 3:AC:166:ASP:CB    | 1.15                     | 1.55              |
| 32:AJ:72:PRO:HG2   | 32:AJ:77:LEU:CG    | 1.14                     | 1.55              |
| 56:BE:1:G:H1'      | 56:BE:72:C:C2      | 1.39                     | 1.54              |
| 32:AJ:72:PRO:CB    | 32:AJ:77:LEU:HD23  | 1.36                     | 1.54              |
| 34:BA:1014:A:H1'   | 52:BW:34:TRP:CH2   | 1.35                     | 1.54              |
| 57:BZ:9:ALA:CB     | 57:BZ:73:VAL:CG2   | 1.76                     | 1.54              |
| 3:AC:156:ILE:CG1   | 3:AC:160:ARG:HG3   | 1.37                     | 1.54              |
| 52:BW:9:VAL:HG22   | 52:BW:42:PRO:CB    | 1.25                     | 1.54              |
| 57:BZ:9:ALA:CB     | 57:BZ:73:VAL:HG23  | 1.25                     | 1.54              |
| 1:AA:2:G:C5        | 1:AA:2902:C:C4     | 1.96                     | 1.54              |
| 57:BZ:491:ASN:CG   | 57:BZ:536:ASN:HB2  | 1.27                     | 1.54              |
| 57:BZ:565:LEU:HB2  | 57:BZ:566:GLU:CG   | 1.29                     | 1.54              |
| 57:BZ:379:GLU:CG   | 57:BZ:581:THR:HG22 | 1.34                     | 1.53              |
| 1:AA:1080:C:C5'    | 32:AJ:128:ALA:CB   | 1.81                     | 1.53              |
| 57:BZ:13:HIS:NE2   | 57:BZ:106:MET:CB   | 1.68                     | 1.53              |
| 57:BZ:13:HIS:CG    | 57:BZ:109:THR:HG23 | 1.37                     | 1.53              |
| 46:BQ:19:LEU:CD1   | 46:BQ:30:ALA:HA    | 1.35                     | 1.53              |
| 57:BZ:565:LEU:CB   | 57:BZ:566:GLU:HG2  | 1.12                     | 1.53              |
| 1:AA:1080:C:C5'    | 32:AJ:128:ALA:HB1  | 1.35                     | 1.53              |
| 32:AJ:23:VAL:C     | 32:AJ:35:MET:HE1   | 1.11                     | 1.53              |
| 46:BQ:20:THR:CG2   | 46:BQ:26:GLY:HA2   | 1.36                     | 1.52              |
| 46:BQ:15:VAL:HG21  | 46:BQ:39:ILE:CG1   | 1.11                     | 1.52              |
| 57:BZ:565:LEU:HB2  | 57:BZ:566:GLU:CD   | 1.27                     | 1.52              |
| 1:AA:2129:C:H4'    | 3:AC:6:ARG:CG      | 1.36                     | 1.52              |
| 1:AA:2124:G:H4'    | 3:AC:42:GLU:CD     | 1.23                     | 1.51              |
| 57:BZ:206:GLN:HG2  | 57:BZ:227:LYS:CB   | 1.37                     | 1.51              |
| 57:BZ:379:GLU:CD   | 57:BZ:581:THR:HG22 | 1.16                     | 1.51              |
| 34:BA:1454:G:H2'   | 34:BA:1455:G:C8    | 1.44                     | 1.51              |
| 32:AJ:27:LEU:HD21  | 32:AJ:57:ILE:C     | 1.33                     | 1.51              |
| 1:AA:6:A:N1        | 1:AA:2898:U:C5     | 1.76                     | 1.51              |
| 1:AA:1916:A:C6     | 34:BA:1409:C:H4'   | 1.46                     | 1.51              |
| 57:BZ:446:ARG:HG2  | 57:BZ:480:VAL:CG1  | 1.37                     | 1.51              |
| 57:BZ:491:ASN:ND2  | 57:BZ:536:ASN:CB   | 1.68                     | 1.51              |
| 57:BZ:422:ARG:NH1  | 57:BZ:480:VAL:HG22 | 1.20                     | 1.50              |
| 1:AA:2652:C:C5     | 1:AA:2669:G:N2     | 1.79                     | 1.50              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 46:BQ:19:LEU:HD11  | 46:BQ:30:ALA:CA    | 1.06                     | 1.50              |
| 57:BZ:206:GLN:CG   | 57:BZ:227:LYS:HB2  | 1.40                     | 1.50              |
| 31:AI:54:ALA:HB2   | 31:AI:84:GLU:C     | 1.18                     | 1.50              |
| 57:BZ:565:LEU:N    | 57:BZ:566:GLU:CG   | 1.75                     | 1.50              |
| 46:BQ:20:THR:CG2   | 46:BQ:26:GLY:CA    | 1.86                     | 1.50              |
| 57:BZ:379:GLU:CD   | 57:BZ:581:THR:CG2  | 1.79                     | 1.50              |
| 1:AA:2629:A:C3'    | 1:AA:2895:U:H6     | 1.17                     | 1.50              |
| 3:AC:171:ILE:HD13  | 3:AC:192:PHE:CE2   | 1.46                     | 1.49              |
| 3:AC:180:PHE:CE2   | 3:AC:184:LYS:HB2   | 1.48                     | 1.49              |
| 52:BW:9:VAL:CG2    | 52:BW:42:PRO:HB2   | 1.04                     | 1.49              |
| 52:BW:15:LEU:CD1   | 52:BW:71:LEU:HD11  | 1.43                     | 1.49              |
| 57:BZ:234:ASN:HD21 | 57:BZ:247:ARG:CB   | 1.22                     | 1.49              |
| 1:AA:1203:G:O6     | 1:AA:1240:U:C2     | 1.66                     | 1.48              |
| 1:AA:1051:G:C1'    | 1:AA:2752:C:H5'    | 1.36                     | 1.48              |
| 32:AJ:17:ALA:CB    | 32:AJ:42:ASN:N     | 1.74                     | 1.48              |
| 57:BZ:207:MET:CG   | 57:BZ:226:ILE:HD13 | 1.04                     | 1.48              |
| 1:AA:716:A:N3      | 48:BS:44:LYS:CG    | 1.77                     | 1.48              |
| 3:AC:46:LYS:HG3    | 3:AC:211:SER:CB    | 1.02                     | 1.48              |
| 3:AC:156:ILE:HG12  | 3:AC:160:ARG:CG    | 1.44                     | 1.47              |
| 32:AJ:72:PRO:CD    | 32:AJ:77:LEU:CD2   | 1.89                     | 1.47              |
| 34:BA:1158:C:C2'   | 35:BF:133:LYS:NZ   | 1.75                     | 1.47              |
| 57:BZ:11:ILE:CG2   | 57:BZ:112:VAL:HB   | 1.42                     | 1.47              |
| 57:BZ:426:LEU:CD1  | 57:BZ:441:TYR:CE1  | 1.91                     | 1.47              |
| 3:AC:43:VAL:CG2    | 3:AC:224:ILE:HD13  | 1.44                     | 1.47              |
| 57:BZ:227:LYS:C    | 57:BZ:267:LEU:CD1  | 1.88                     | 1.47              |
| 1:AA:2181:G:C5'    | 55:BC:17:C:H41     | 1.25                     | 1.47              |
| 32:AJ:17:ALA:CB    | 32:AJ:42:ASN:H     | 1.20                     | 1.46              |
| 57:BZ:82:GLY:HA3   | 57:BZ:361:ARG:CD   | 1.45                     | 1.46              |
| 1:AA:1051:G:C2'    | 1:AA:2752:C:H5'    | 1.31                     | 1.46              |
| 1:AA:2653:U:N3     | 1:AA:2668:G:N2     | 1.64                     | 1.46              |
| 34:BA:1312:G:C6    | 34:BA:1326:C:C4    | 2.04                     | 1.46              |
| 57:BZ:13:HIS:CD2   | 57:BZ:108:GLN:HG2  | 1.47                     | 1.46              |
| 57:BZ:405:LEU:CG   | 57:BZ:464:LEU:N    | 1.76                     | 1.46              |
| 3:AC:46:LYS:CG     | 3:AC:211:SER:CB    | 1.93                     | 1.46              |
| 57:BZ:15:ASP:HB2   | 57:BZ:16:HIS:CG    | 1.45                     | 1.46              |
| 57:BZ:395:ARG:CG   | 57:BZ:474:ASP:CB   | 1.94                     | 1.45              |
| 57:BZ:396:LYS:HB2  | 57:BZ:474:ASP:C    | 1.40                     | 1.45              |
| 1:AA:2471:C:C4'    | 57:BZ:529:ARG:HH22 | 0.95                     | 1.45              |
| 46:BQ:15:VAL:HB    | 46:BQ:34:LEU:CD2   | 0.99                     | 1.45              |
| 1:AA:2181:G:H5'    | 55:BC:17:C:N4      | 1.24                     | 1.45              |
| 1:AA:2507:C:C1'    | 59:AA:3002:8AN:N3  | 1.75                     | 1.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 3:AC:46:LYS:CG    | 3:AC:211:SER:HB3   | 1.45                     | 1.45              |
| 32:AJ:25:PRO:HG2  | 57:BZ:429:MET:SD   | 1.55                     | 1.45              |
| 52:BW:9:VAL:HG13  | 52:BW:41:VAL:C     | 1.36                     | 1.45              |
| 57:BZ:11:ILE:HG23 | 57:BZ:112:VAL:CB   | 1.47                     | 1.45              |
| 1:AA:2556:C:N3    | 57:BZ:546:MET:CE   | 1.78                     | 1.45              |
| 31:AI:54:ALA:CB   | 31:AI:83:TYR:C     | 1.90                     | 1.45              |
| 57:BZ:240:ILE:HB  | 57:BZ:286:ASP:CA   | 1.41                     | 1.45              |
| 55:BC:16:U:C4     | 55:BC:18:G:H3'     | 1.52                     | 1.44              |
| 57:BZ:15:ASP:HB2  | 57:BZ:16:HIS:ND1   | 1.30                     | 1.44              |
| 1:AA:1906:G:C8    | 1:AA:1929:G:C8     | 2.05                     | 1.44              |
| 3:AC:171:ILE:CD1  | 3:AC:192:PHE:HZ    | 1.15                     | 1.44              |
| 46:BQ:15:VAL:CB   | 46:BQ:34:LEU:CD2   | 1.86                     | 1.44              |
| 57:BZ:205:PHE:CZ  | 57:BZ:226:ILE:HD12 | 1.51                     | 1.44              |
| 57:BZ:207:MET:HG3 | 57:BZ:226:ILE:CD1  | 0.99                     | 1.44              |
| 1:AA:1637:A:C4'   | 1:AA:2711:A:O2'    | 1.66                     | 1.44              |
| 34:BA:1319:A:H5'' | 52:BW:70:LYS:NZ    | 1.24                     | 1.44              |
| 57:BZ:81:PHE:CG   | 57:BZ:365:HIS:CD2  | 2.03                     | 1.44              |
| 34:BA:958:A:H1'   | 52:BW:55:LYS:NZ    | 1.33                     | 1.44              |
| 57:BZ:6:ARG:HD2   | 57:BZ:194:VAL:CG1  | 1.48                     | 1.44              |
| 32:AJ:24:GLY:N    | 32:AJ:35:MET:CE    | 1.80                     | 1.43              |
| 32:AJ:75:SER:CB   | 32:AJ:130:SER:CB   | 1.83                     | 1.43              |
| 1:AA:2122:U:C4'   | 3:AC:166:ASP:HB2   | 1.47                     | 1.43              |
| 3:AC:45:ALA:HA    | 3:AC:213:TYR:CD1   | 1.54                     | 1.43              |
| 1:AA:2175:C:C2    | 3:AC:219:GLY:O     | 1.69                     | 1.43              |
| 46:BQ:20:THR:HA   | 46:BQ:26:GLY:N     | 1.27                     | 1.43              |
| 57:BZ:240:ILE:HB  | 57:BZ:286:ASP:CB   | 1.49                     | 1.43              |
| 57:BZ:400:TYR:HB3 | 57:BZ:442:VAL:CG1  | 1.46                     | 1.43              |
| 57:BZ:18:LYS:CB   | 60:BZ:701:GCP:O2B  | 1.66                     | 1.43              |
| 1:AA:716:A:N3     | 48:BS:44:LYS:HG3   | 1.14                     | 1.42              |
| 34:BA:1413:A:C2   | 34:BA:1487:G:N2    | 1.73                     | 1.42              |
| 46:BQ:15:VAL:CB   | 46:BQ:39:ILE:CD1   | 1.95                     | 1.42              |
| 1:AA:2181:G:C4    | 1:AA:2182:G:O6     | 1.70                     | 1.42              |
| 1:AA:2123:G:H4'   | 3:AC:172:HIS:ND1   | 1.30                     | 1.42              |
| 3:AC:163:PHE:CD1  | 3:AC:196:LEU:HD13  | 1.52                     | 1.42              |
| 46:BQ:5:ALA:CB    | 46:BQ:67:GLU:HG2   | 1.45                     | 1.42              |
| 57:BZ:312:CYS:CB  | 57:BZ:354:ASP:O    | 1.66                     | 1.42              |
| 1:AA:6:A:C2       | 1:AA:2898:U:C6     | 2.08                     | 1.42              |
| 57:BZ:14:VAL:N    | 57:BZ:108:GLN:HG3  | 1.34                     | 1.42              |
| 1:AA:2:G:C6       | 1:AA:2902:C:C4     | 2.06                     | 1.42              |
| 34:BA:1147:C:O2'  | 42:BM:5:TYR:CE1    | 1.71                     | 1.42              |
| 57:BZ:395:ARG:CG  | 57:BZ:474:ASP:HB2  | 1.47                     | 1.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 32:AJ:24:GLY:N    | 32:AJ:35:MET:HE1   | 1.11                     | 1.41              |
| 34:BA:1220:G:H21  | 52:BW:55:LYS:CA    | 1.31                     | 1.41              |
| 34:BA:1319:A:H5'  | 52:BW:70:LYS:CE    | 1.36                     | 1.41              |
| 57:BZ:6:ARG:CB    | 57:BZ:69:ARG:O     | 1.64                     | 1.41              |
| 57:BZ:565:LEU:CB  | 57:BZ:566:GLU:CG   | 1.86                     | 1.41              |
| 1:AA:2651:C:O2    | 1:AA:2670:A:C2     | 1.71                     | 1.41              |
| 32:AJ:25:PRO:CG   | 57:BZ:429:MET:SD   | 2.08                     | 1.41              |
| 33:Ag:25:UNK:CB   | 33:Ag:130:UNK:CB   | 1.98                     | 1.41              |
| 57:BZ:509:LYS:NZ  | 57:BZ:561:ILE:HD11 | 1.11                     | 1.41              |
| 1:AA:2252:G:C5    | 59:AA:3003:8AN:N1  | 1.88                     | 1.41              |
| 3:AC:156:ILE:CG1  | 3:AC:160:ARG:CG    | 1.97                     | 1.41              |
| 56:BD:7:A:C2      | 56:BD:67:C:N3      | 1.88                     | 1.41              |
| 46:BQ:10:PRO:O    | 46:BQ:45:VAL:CG1   | 1.67                     | 1.40              |
| 32:AJ:72:PRO:CD   | 32:AJ:77:LEU:HD23  | 1.49                     | 1.40              |
| 57:BZ:8:ILE:C     | 57:BZ:72:ILE:CB    | 1.90                     | 1.40              |
| 57:BZ:81:PHE:CD1  | 57:BZ:365:HIS:CD2  | 2.08                     | 1.40              |
| 57:BZ:81:PHE:CD1  | 57:BZ:365:HIS:HD2  | 1.39                     | 1.40              |
| 31:AI:140:GLY:CA  | 33:Ag:137:UNK:CA   | 1.98                     | 1.40              |
| 31:AI:54:ALA:HB1  | 31:AI:83:TYR:C     | 0.97                     | 1.39              |
| 46:BQ:10:PRO:CB   | 46:BQ:45:VAL:HG11  | 1.50                     | 1.39              |
| 56:BD:67:C:H5     | 56:BD:68:C:C4      | 1.37                     | 1.39              |
| 32:AJ:23:VAL:CG2  | 32:AJ:41:PHE:HE1   | 1.30                     | 1.39              |
| 1:AA:1069:A:N1    | 1:AA:1096:A:H5'    | 1.35                     | 1.39              |
| 1:AA:2791:C:N4    | 1:AA:2893:G:H8     | 1.21                     | 1.39              |
| 1:AA:2128:C:H5''  | 3:AC:35:ALA:CB     | 1.52                     | 1.39              |
| 1:AA:2531:A:C2    | 1:AA:2658:C:H1'    | 1.58                     | 1.39              |
| 34:BA:1226:C:N4   | 46:BQ:104:ARG:HG3  | 1.37                     | 1.39              |
| 1:AA:2129:C:H5''  | 3:AC:6:ARG:NE      | 1.37                     | 1.38              |
| 57:BZ:27:GLN:N    | 57:BZ:28:GLN:CB    | 1.86                     | 1.38              |
| 57:BZ:234:ASN:ND2 | 57:BZ:247:ARG:HB3  | 1.11                     | 1.38              |
| 1:AA:2175:C:OP1   | 3:AC:7:TYR:CG      | 1.76                     | 1.38              |
| 57:BZ:27:GLN:NE2  | 57:BZ:183:MET:SD   | 1.95                     | 1.38              |
| 1:AA:1059:G:N2    | 32:AJ:130:SER:HA   | 1.09                     | 1.38              |
| 34:BA:1311:G:H22  | 34:BA:1326:C:C1'   | 1.22                     | 1.38              |
| 46:BQ:15:VAL:CB   | 46:BQ:39:ILE:HD11  | 1.49                     | 1.38              |
| 57:BZ:497:VAL:HA  | 57:BZ:514:HIS:CE1  | 1.56                     | 1.38              |
| 31:AI:143:GLN:CB  | 33:Ag:141:UNK:CB   | 2.00                     | 1.38              |
| 34:BA:1317:C:O2'  | 34:BA:1318:A:C5'   | 1.69                     | 1.38              |
| 57:BZ:122:LYS:CE  | 57:BZ:156:GLU:HB2  | 1.53                     | 1.38              |
| 1:AA:6:A:N1       | 1:AA:2898:U:C6     | 1.90                     | 1.37              |
| 57:BZ:397:GLN:CA  | 57:BZ:473:ASP:N    | 1.85                     | 1.37              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 3:AC:171:ILE:HD11  | 3:AC:192:PHE:CZ   | 1.46                     | 1.37              |
| 34:BA:1486:G:C6    | 34:BA:1487:G:C8   | 1.92                     | 1.37              |
| 57:BZ:11:ILE:HG23  | 57:BZ:112:VAL:CG1 | 1.53                     | 1.37              |
| 57:BZ:565:LEU:N    | 57:BZ:566:GLU:HG3 | 1.30                     | 1.37              |
| 21:AW:27:VAL:HG23  | 21:AW:85:HIS:NE2  | 1.39                     | 1.37              |
| 34:BA:1126:U:OP1   | 34:BA:1280:A:C8   | 1.75                     | 1.37              |
| 57:BZ:163:VAL:HG22 | 57:BZ:173:GLY:C   | 1.47                     | 1.37              |
| 57:BZ:251:VAL:HG12 | 57:BZ:273:ILE:CA  | 0.98                     | 1.37              |
| 57:BZ:395:ARG:CD   | 57:BZ:474:ASP:CG  | 1.96                     | 1.37              |
| 1:AA:2123:G:C4'    | 3:AC:172:HIS:CG   | 1.84                     | 1.37              |
| 3:AC:44:HIS:C      | 3:AC:213:TYR:HD1  | 1.30                     | 1.37              |
| 57:BZ:312:CYS:CA   | 57:BZ:354:ASP:O   | 1.69                     | 1.37              |
| 1:AA:6:A:C2        | 1:AA:2897:U:C2    | 2.10                     | 1.36              |
| 1:AA:2181:G:N3     | 1:AA:2182:G:C6    | 1.91                     | 1.36              |
| 34:BA:1158:C:C2'   | 35:BF:133:LYS:HZ2 | 1.27                     | 1.36              |
| 34:BA:1486:G:C6    | 34:BA:1487:G:N7   | 1.71                     | 1.36              |
| 46:BQ:16:ASP:CG    | 46:BQ:34:LEU:CD1  | 1.96                     | 1.36              |
| 57:BZ:14:VAL:H     | 57:BZ:108:GLN:CG  | 1.38                     | 1.36              |
| 57:BZ:15:ASP:CB    | 57:BZ:16:HIS:ND1  | 1.86                     | 1.36              |
| 57:BZ:164:TYR:N    | 57:BZ:172:ALA:O   | 1.58                     | 1.36              |
| 3:AC:156:ILE:HA    | 3:AC:160:ARG:CB   | 1.52                     | 1.36              |
| 3:AC:180:PHE:CZ    | 3:AC:184:LYS:HD2  | 1.60                     | 1.36              |
| 56:BD:50:U:N3      | 56:BD:64:A:H2     | 1.18                     | 1.36              |
| 1:AA:1075:C:C1'    | 32:AJ:90:LYS:HD3  | 1.55                     | 1.36              |
| 1:AA:2181:G:C5'    | 55:BC:17:C:N4     | 1.83                     | 1.36              |
| 1:AA:2532:G:C4'    | 1:AA:2657:A:C2    | 2.08                     | 1.36              |
| 1:AA:2807:G:C4     | 1:AA:2808:U:H5    | 1.43                     | 1.36              |
| 32:AJ:37:PHE:CZ    | 32:AJ:63:ARG:HD3  | 1.58                     | 1.36              |
| 32:AJ:82:ALA:HA    | 32:AJ:99:ILE:CG2  | 1.54                     | 1.36              |
| 57:BZ:8:ILE:O      | 57:BZ:72:ILE:C    | 1.67                     | 1.36              |
| 57:BZ:407:VAL:O    | 57:BZ:436:ARG:CB  | 1.71                     | 1.36              |
| 3:AC:44:HIS:C      | 3:AC:213:TYR:CD1  | 2.03                     | 1.35              |
| 57:BZ:81:PHE:CB    | 57:BZ:365:HIS:CD2 | 2.09                     | 1.35              |
| 1:AA:2178:C:C5'    | 3:AC:46:LYS:CG    | 1.75                     | 1.35              |
| 31:AI:54:ALA:CB    | 31:AI:84:GLU:C    | 1.98                     | 1.35              |
| 32:AJ:17:ALA:CB    | 32:AJ:38:VAL:O    | 1.71                     | 1.35              |
| 34:BA:1225:A:C5'   | 52:BW:78:ARG:HD2  | 1.53                     | 1.35              |
| 46:BQ:13:LYS:N     | 46:BQ:44:ARG:O    | 1.58                     | 1.35              |
| 1:AA:2531:A:N3     | 1:AA:2658:C:C1'   | 1.90                     | 1.35              |
| 57:BZ:560:PRO:HB3  | 57:BZ:562:ARG:N   | 1.42                     | 1.35              |
| 1:AA:2596:U:H2'    | 4:AD:242:ARG:CZ   | 1.55                     | 1.35              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:AX:4:LYS:NZ     | 56:BE:75:C:C2'     | 1.90                     | 1.35              |
| 32:AJ:19:PRO:HG3   | 32:AJ:36:GLU:C     | 1.50                     | 1.35              |
| 34:BA:1226:C:C4    | 46:BQ:104:ARG:CG   | 2.10                     | 1.35              |
| 1:AA:1906:G:C8     | 1:AA:1929:G:N7     | 1.93                     | 1.34              |
| 1:AA:2152:G:C5'    | 3:AC:2:LYS:HB2     | 1.54                     | 1.34              |
| 57:BZ:141:VAL:CG2  | 57:BZ:164:TYR:OH   | 1.75                     | 1.34              |
| 1:AA:5:A:N1        | 1:AA:2899:G:C5     | 1.96                     | 1.34              |
| 34:BA:1413:A:N1    | 34:BA:1487:G:N2    | 1.73                     | 1.34              |
| 57:BZ:4:LYS:O      | 57:BZ:68:TYR:N     | 1.59                     | 1.34              |
| 3:AC:40:THR:O      | 3:AC:216:THR:HG22  | 1.18                     | 1.34              |
| 34:BA:1315:U:C2    | 34:BA:1361:G:O4'   | 1.78                     | 1.34              |
| 57:BZ:310:PHE:H    | 57:BZ:385:PRO:CD   | 1.41                     | 1.34              |
| 57:BZ:379:GLU:HG2  | 57:BZ:581:THR:CA   | 1.57                     | 1.34              |
| 57:BZ:509:LYS:NZ   | 57:BZ:561:ILE:CD1  | 1.89                     | 1.34              |
| 3:AC:66:HIS:CA     | 3:AC:67:GLY:N      | 1.75                     | 1.34              |
| 34:BA:949:A:C3'    | 46:BQ:102:ARG:HH12 | 1.36                     | 1.34              |
| 34:BA:1330:U:H5'   | 46:BQ:70:LEU:CD2   | 1.55                     | 1.34              |
| 1:AA:1050:A:H1'    | 1:AA:2752:C:C5     | 1.27                     | 1.33              |
| 31:AI:145:PRO:CA   | 33:Ag:133:UNK:CB   | 2.05                     | 1.33              |
| 45:BP:106:ASP:HA   | 57:BZ:329:ARG:CZ   | 1.58                     | 1.33              |
| 56:BD:4:C:H1'      | 56:BD:70:G:N2      | 1.42                     | 1.33              |
| 57:BZ:81:PHE:O     | 57:BZ:361:ARG:HG3  | 1.20                     | 1.33              |
| 1:AA:1047:G:H2'    | 1:AA:1110:G:C8     | 1.51                     | 1.33              |
| 1:AA:1910:G:N2     | 1:AA:1921:G:C8     | 1.96                     | 1.33              |
| 1:AA:2175:C:N1     | 3:AC:219:GLY:O     | 1.61                     | 1.33              |
| 1:AA:2459:A:N3     | 1:AA:2460:U:H1'    | 1.38                     | 1.33              |
| 34:BA:1454:G:OP2   | 53:BX:39:LYS:CD    | 1.76                     | 1.33              |
| 15:AQ:112:ARG:NH1  | 34:BA:1464:G:OP1   | 1.62                     | 1.33              |
| 33:Ag:8:UNK:N      | 33:Ag:147:UNK:CB   | 1.92                     | 1.33              |
| 57:BZ:18:LYS:HB2   | 60:BZ:701:GCP:PB   | 1.66                     | 1.33              |
| 57:BZ:204:PRO:HB2  | 57:BZ:290:ASP:CG   | 1.52                     | 1.33              |
| 1:AA:2:G:C5        | 1:AA:2902:C:N3     | 1.96                     | 1.33              |
| 1:AA:3:U:N3        | 1:AA:2900:A:C2     | 1.96                     | 1.33              |
| 57:BZ:380:LEU:HD12 | 57:BZ:580:VAL:CG2  | 1.57                     | 1.33              |
| 32:AJ:23:VAL:C     | 32:AJ:35:MET:CE    | 2.00                     | 1.32              |
| 33:Ag:289:UNK:O    | 33:Ag:343:UNK:HA   | 1.24                     | 1.32              |
| 57:BZ:227:LYS:C    | 57:BZ:267:LEU:HD11 | 1.50                     | 1.32              |
| 1:AA:1080:C:C4'    | 32:AJ:128:ALA:CB   | 2.01                     | 1.32              |
| 1:AA:2532:G:C3'    | 1:AA:2657:A:N1     | 1.92                     | 1.32              |
| 10:AL:97:ARG:NH2   | 10:AL:97:ARG:HB2   | 1.44                     | 1.32              |
| 15:AQ:112:ARG:NH2  | 34:BA:1465:C:OP2   | 1.58                     | 1.32              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:BZ:2:ILE:CG2    | 57:BZ:199:VAL:HG21 | 1.57                     | 1.32              |
| 1:AA:4:C:N3        | 1:AA:2899:G:N1     | 1.75                     | 1.32              |
| 1:AA:1906:G:N9     | 1:AA:1929:G:N7     | 1.75                     | 1.32              |
| 25:Aa:58:ARG:O     | 25:Aa:61:ARG:HB2   | 1.29                     | 1.32              |
| 32:AJ:72:PRO:HG2   | 32:AJ:77:LEU:CB    | 1.59                     | 1.32              |
| 1:AA:2175:C:OP1    | 3:AC:7:TYR:CB      | 1.77                     | 1.32              |
| 1:AA:2807:G:N2     | 1:AA:2892:A:N6     | 1.78                     | 1.32              |
| 34:BA:1414:U:C2    | 34:BA:1487:G:N2    | 1.92                     | 1.32              |
| 57:BZ:69:ARG:HH11  | 57:BZ:253:LYS:NZ   | 1.27                     | 1.32              |
| 3:AC:66:HIS:N      | 3:AC:158:ALA:O     | 1.61                     | 1.32              |
| 5:AE:92:THR:CA     | 5:AE:95:ILE:HB     | 1.59                     | 1.32              |
| 21:AW:27:VAL:HG23  | 21:AW:85:HIS:CE1   | 1.65                     | 1.32              |
| 57:BZ:10:ILE:CD1   | 57:BZ:21:LEU:HB3   | 1.60                     | 1.32              |
| 57:BZ:227:LYS:O    | 57:BZ:267:LEU:HD11 | 1.20                     | 1.32              |
| 3:AC:45:ALA:N      | 3:AC:213:TYR:HD1   | 1.28                     | 1.31              |
| 3:AC:180:PHE:HE2   | 3:AC:184:LYS:CB    | 1.43                     | 1.31              |
| 32:AJ:40:ALA:O     | 32:AJ:66:THR:CG2   | 1.76                     | 1.31              |
| 46:BQ:4:ILE:CD1    | 46:BQ:57:ARG:CG    | 2.06                     | 1.31              |
| 57:BZ:82:GLY:CA    | 57:BZ:361:ARG:HD2  | 1.57                     | 1.31              |
| 57:BZ:520:GLU:OE2  | 57:BZ:593:THR:HA   | 1.14                     | 1.31              |
| 57:BZ:526:ILE:HG12 | 57:BZ:571:PHE:CZ   | 1.64                     | 1.31              |
| 1:AA:152:G:O2'     | 1:AA:153:C:H5'     | 1.16                     | 1.31              |
| 1:AA:1959:G:C4'    | 34:BA:1418:A:H1'   | 1.60                     | 1.31              |
| 1:AA:2174:C:O2     | 3:AC:219:GLY:HA2   | 1.20                     | 1.31              |
| 25:Aa:43:TYR:HA    | 25:Aa:61:ARG:NH2   | 1.45                     | 1.31              |
| 32:AJ:25:PRO:CG    | 57:BZ:429:MET:CE   | 2.06                     | 1.31              |
| 32:AJ:104:VAL:CG1  | 32:AJ:127:ILE:CG1  | 2.07                     | 1.31              |
| 34:BA:1118:C:OP1   | 42:BM:103:THR:HG23 | 1.28                     | 1.31              |
| 34:BA:1318:A:H2'   | 52:BW:37:ARG:CA    | 1.58                     | 1.31              |
| 34:BA:1486:G:C4    | 34:BA:1487:G:C8    | 2.13                     | 1.31              |
| 46:BQ:15:VAL:CG1   | 46:BQ:39:ILE:HD11  | 1.58                     | 1.31              |
| 57:BZ:9:ALA:HB1    | 57:BZ:73:VAL:CG2   | 1.46                     | 1.31              |
| 57:BZ:165:ALA:CA   | 57:BZ:171:ILE:HG22 | 1.61                     | 1.31              |
| 57:BZ:491:ASN:ND2  | 57:BZ:535:VAL:O    | 1.60                     | 1.31              |
| 47:BR:16:PHE:CE1   | 52:BW:14:HIS:NE2   | 1.94                     | 1.31              |
| 57:BZ:311:PHE:O    | 57:BZ:355:ALA:CA   | 1.78                     | 1.31              |
| 33:Ag:309:UNK:CB   | 57:BZ:142:ASP:HA   | 1.59                     | 1.31              |
| 46:BQ:22:ILE:CB    | 46:BQ:25:ILE:HD12  | 1.59                     | 1.31              |
| 1:AA:1059:G:N2     | 32:AJ:130:SER:CA   | 1.93                     | 1.31              |
| 1:AA:2652:C:N3     | 1:AA:2670:A:C8     | 1.91                     | 1.31              |
| 3:AC:156:ILE:CA    | 3:AC:160:ARG:HB2   | 1.58                     | 1.31              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:AX:4:LYS:HZ2    | 56:BE:75:C:C2'     | 1.43                     | 1.31              |
| 34:BA:1315:U:O2    | 34:BA:1361:G:C1'   | 1.76                     | 1.31              |
| 46:BQ:16:ASP:H     | 46:BQ:34:LEU:CD1   | 1.42                     | 1.31              |
| 57:BZ:305:PRO:HG2  | 57:BZ:360:GLY:O    | 1.29                     | 1.31              |
| 57:BZ:502:PHE:CE1  | 57:BZ:556:VAL:O    | 1.83                     | 1.31              |
| 1:AA:879:G:O6      | 1:AA:897:C:C2'     | 1.77                     | 1.30              |
| 1:AA:1067:A:H5''   | 32:AJ:21:PRO:CG    | 1.61                     | 1.30              |
| 1:AA:1908:C:N4     | 58:AA:3001:NMY:H92 | 1.28                     | 1.30              |
| 1:AA:2651:C:N3     | 1:AA:2670:A:C6     | 1.99                     | 1.30              |
| 1:AA:2657:A:N7     | 1:AA:2664:G:N2     | 1.74                     | 1.30              |
| 3:AC:158:ALA:N     | 3:AC:159:GLY:N     | 1.77                     | 1.30              |
| 30:Af:19:ARG:O     | 30:Af:22:ARG:HB2   | 1.31                     | 1.30              |
| 34:BA:1220:G:H21   | 52:BW:55:LYS:CB    | 1.42                     | 1.30              |
| 34:BA:1308:U:H5'   | 46:BQ:110:ARG:NH1  | 1.40                     | 1.30              |
| 34:BA:1318:A:C1'   | 52:BW:35:SER:OG    | 1.77                     | 1.30              |
| 57:BZ:405:LEU:CG   | 57:BZ:463:GLY:C    | 2.02                     | 1.30              |
| 32:AJ:17:ALA:HA    | 32:AJ:41:PHE:CB    | 1.59                     | 1.30              |
| 34:BA:38:G:N2      | 34:BA:397:A:H5''   | 1.43                     | 1.30              |
| 56:BE:1:G:C1'      | 56:BE:72:C:N3      | 1.93                     | 1.30              |
| 56:BE:21:A:C6      | 56:BE:46:G:C4      | 2.18                     | 1.30              |
| 57:BZ:64:ILE:HD11  | 57:BZ:187:TYR:CB   | 1.59                     | 1.30              |
| 57:BZ:67:ASP:HB3   | 57:BZ:191:VAL:CG1  | 1.59                     | 1.30              |
| 57:BZ:204:PRO:HB2  | 57:BZ:290:ASP:OD1  | 1.13                     | 1.30              |
| 57:BZ:223:ILE:H    | 57:BZ:272:ASP:CB   | 1.39                     | 1.30              |
| 1:AA:1906:G:C5     | 1:AA:1929:G:C6     | 2.19                     | 1.30              |
| 6:AF:19:GLU:C      | 6:AF:20:LEU:HD23   | 1.55                     | 1.30              |
| 16:AR:44:ASN:O     | 16:AR:47:TYR:HB2   | 1.31                     | 1.30              |
| 22:AX:4:LYS:NZ     | 56:BE:75:C:H2'     | 0.98                     | 1.30              |
| 34:BA:949:A:C3'    | 46:BQ:102:ARG:NH1  | 1.88                     | 1.30              |
| 34:BA:1310:G:N1    | 34:BA:1327:C:C5    | 1.99                     | 1.30              |
| 57:BZ:8:ILE:C      | 57:BZ:72:ILE:HB    | 1.03                     | 1.30              |
| 57:BZ:382:VAL:HG23 | 57:BZ:578:VAL:CG2  | 1.59                     | 1.30              |
| 57:BZ:400:TYR:HE1  | 57:BZ:444:PRO:CD   | 1.44                     | 1.30              |
| 1:AA:1909:C:O2     | 1:AA:1922:G:N1     | 1.61                     | 1.30              |
| 10:AL:3:GLN:NE2    | 10:AL:33:ALA:HB3   | 1.45                     | 1.30              |
| 56:BD:5:G:C2       | 56:BD:69:G:C8      | 2.18                     | 1.30              |
| 57:BZ:27:GLN:N     | 57:BZ:28:GLN:HB3   | 0.98                     | 1.30              |
| 1:AA:1059:G:O2'    | 32:AJ:74:ALA:CA    | 1.68                     | 1.30              |
| 1:AA:2459:A:H2'    | 1:AA:2460:U:O4'    | 1.30                     | 1.30              |
| 34:BA:1014:A:H1'   | 52:BW:34:TRP:CZ3   | 1.64                     | 1.30              |
| 56:BE:18:G:N2      | 56:BE:58:A:C5'     | 1.94                     | 1.30              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 56:BE:18:G:OP2    | 56:BE:61:C:H5'     | 1.29                     | 1.30              |
| 57:BZ:67:ASP:CB   | 57:BZ:191:VAL:HG13 | 1.61                     | 1.30              |
| 57:BZ:564:THR:C   | 57:BZ:566:GLU:HG3  | 1.52                     | 1.30              |
| 12:AN:67:ARG:CZ   | 12:AN:103:MET:HB3  | 1.60                     | 1.29              |
| 34:BA:986:A:H5'   | 52:BW:55:LYS:NZ    | 1.28                     | 1.29              |
| 46:BQ:8:GLU:CB    | 46:BQ:22:ILE:HG12  | 1.60                     | 1.29              |
| 57:BZ:122:LYS:HZ1 | 57:BZ:156:GLU:CB   | 1.42                     | 1.29              |
| 5:AE:92:THR:HA    | 5:AE:95:ILE:CB     | 1.60                     | 1.29              |
| 57:BZ:165:ALA:HB1 | 57:BZ:171:ILE:CG2  | 1.62                     | 1.29              |
| 1:AA:1051:G:C1'   | 1:AA:2752:C:OP2    | 1.80                     | 1.29              |
| 1:AA:1059:G:O2'   | 32:AJ:74:ALA:N     | 1.65                     | 1.29              |
| 1:AA:1907:G:O6    | 58:AA:3001:NMY:H81 | 1.29                     | 1.29              |
| 32:AJ:40:ALA:CB   | 32:AJ:66:THR:OG1   | 1.81                     | 1.29              |
| 57:BZ:325:PHE:O   | 57:BZ:378:PHE:CD1  | 1.86                     | 1.29              |
| 1:AA:5:A:N6       | 1:AA:2898:U:O4     | 1.66                     | 1.29              |
| 32:AJ:104:VAL:CB  | 32:AJ:127:ILE:HD13 | 1.61                     | 1.29              |
| 46:BQ:37:THR:HB   | 46:BQ:56:LEU:CG    | 1.62                     | 1.29              |
| 57:BZ:240:ILE:CB  | 57:BZ:286:ASP:CB   | 2.08                     | 1.29              |
| 57:BZ:379:GLU:HG2 | 57:BZ:581:THR:CB   | 1.63                     | 1.29              |
| 1:AA:1080:C:O4'   | 32:AJ:129:GLY:N    | 1.63                     | 1.29              |
| 56:BD:47:U:O4     | 57:BZ:598:ARG:HD3  | 1.11                     | 1.29              |
| 57:BZ:236:GLN:CA  | 57:BZ:247:ARG:HA   | 1.62                     | 1.29              |
| 57:BZ:395:ARG:CB  | 57:BZ:474:ASP:HB2  | 1.62                     | 1.29              |
| 1:AA:1059:G:O2'   | 32:AJ:74:ALA:C     | 1.74                     | 1.28              |
| 1:AA:2252:G:N7    | 59:AA:3003:8AN:N1  | 1.81                     | 1.28              |
| 57:BZ:2:ILE:CG2   | 57:BZ:268:ALA:HB2  | 1.63                     | 1.28              |
| 1:AA:2178:C:C5'   | 3:AC:46:LYS:HG2    | 0.80                     | 1.28              |
| 1:AA:2178:C:O3'   | 3:AC:46:LYS:NZ     | 1.66                     | 1.28              |
| 1:AA:2631:G:C8    | 1:AA:2894:G:C8     | 2.21                     | 1.28              |
| 1:AA:2788:C:N3    | 1:AA:2789:C:C4     | 2.00                     | 1.28              |
| 34:BA:1117:G:C6   | 34:BA:1184:G:C6    | 2.21                     | 1.28              |
| 1:AA:2181:G:N2    | 1:AA:2182:G:H1     | 1.31                     | 1.28              |
| 3:AC:45:ALA:HA    | 3:AC:213:TYR:CE1   | 1.67                     | 1.28              |
| 1:AA:879:G:O6     | 1:AA:897:C:H2'     | 1.11                     | 1.28              |
| 3:AC:62:VAL:HG11  | 3:AC:192:PHE:N     | 1.48                     | 1.28              |
| 32:AJ:100:THR:OG1 | 32:AJ:103:GLN:HB2  | 1.17                     | 1.28              |
| 34:BA:1308:U:C5'  | 46:BQ:110:ARG:NH1  | 1.95                     | 1.28              |
| 34:BA:1329:A:C4'  | 46:BQ:29:ARG:NH2   | 1.74                     | 1.28              |
| 57:BZ:310:PHE:HA  | 57:BZ:356:PHE:O    | 1.21                     | 1.28              |
| 31:AI:140:GLY:HA3 | 33:Ag:137:UNK:CA   | 1.60                     | 1.28              |
| 56:BD:2:C:N3      | 56:BD:71:G:N1      | 1.78                     | 1.28              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:1912:A:O2'    | 34:BA:1495:U:C6   | 1.84                     | 1.27              |
| 4:AD:51:VAL:HB     | 4:AD:52:ARG:CZ    | 1.64                     | 1.27              |
| 31:AI:140:GLY:HA2  | 33:Ag:137:UNK:CA  | 1.60                     | 1.27              |
| 56:BD:67:C:C5      | 56:BD:68:C:C4     | 2.20                     | 1.27              |
| 1:AA:1051:G:H1'    | 1:AA:2752:C:P     | 1.72                     | 1.27              |
| 34:BA:1226:C:C1'   | 52:BW:80:TYR:CD1  | 2.10                     | 1.27              |
| 34:BA:1319:A:C5'   | 52:BW:70:LYS:CE   | 1.91                     | 1.27              |
| 57:BZ:102:PHE:HD2  | 57:BZ:134:GLY:O   | 1.12                     | 1.27              |
| 57:BZ:172:ALA:CB   | 57:BZ:179:MET:CE  | 1.89                     | 1.27              |
| 1:AA:2807:G:C4     | 1:AA:2808:U:C5    | 2.21                     | 1.27              |
| 32:AJ:25:PRO:HB3   | 57:BZ:429:MET:CE  | 1.63                     | 1.27              |
| 34:BA:958:A:C2     | 52:BW:56:GLN:NE2  | 2.03                     | 1.27              |
| 1:AA:1036:G:OP1    | 8:AH:59:ARG:NH2   | 1.63                     | 1.27              |
| 3:AC:40:THR:O      | 3:AC:216:THR:CG2  | 1.81                     | 1.27              |
| 52:BW:15:LEU:CD1   | 52:BW:71:LEU:CD1  | 2.10                     | 1.27              |
| 1:AA:1081:U:C4'    | 32:AJ:125:ARG:HB3 | 1.63                     | 1.27              |
| 1:AA:1128:A:N6     | 1:AA:2518:A:H61   | 1.31                     | 1.27              |
| 57:BZ:363:GLU:HG3  | 57:BZ:453:SER:OG  | 1.35                     | 1.27              |
| 1:AA:2507:C:H1'    | 59:AA:3002:8AN:N3 | 0.95                     | 1.26              |
| 21:AW:24:LEU:O     | 21:AW:39:VAL:HB   | 1.32                     | 1.26              |
| 46:BQ:16:ASP:CG    | 46:BQ:34:LEU:HD11 | 1.55                     | 1.26              |
| 57:BZ:172:ALA:N    | 57:BZ:179:MET:SD  | 2.07                     | 1.26              |
| 57:BZ:422:ARG:HH11 | 57:BZ:480:VAL:CG2 | 1.47                     | 1.26              |
| 1:AA:1241:A:H5''   | 1:AA:1241:A:N3    | 1.46                     | 1.26              |
| 1:AA:2123:G:H4'    | 3:AC:172:HIS:CG   | 1.04                     | 1.26              |
| 1:AA:2252:G:C6     | 59:AA:3003:8AN:C2 | 2.16                     | 1.26              |
| 46:BQ:16:ASP:HB3   | 46:BQ:34:LEU:CD1  | 1.51                     | 1.26              |
| 57:BZ:8:ILE:O      | 57:BZ:72:ILE:HB   | 1.23                     | 1.26              |
| 57:BZ:309:MET:HA   | 57:BZ:383:SER:OG  | 1.22                     | 1.26              |
| 1:AA:2122:U:C4'    | 3:AC:166:ASP:CB   | 2.06                     | 1.26              |
| 1:AA:2125:G:C5'    | 3:AC:40:THR:HG21  | 1.62                     | 1.26              |
| 34:BA:1117:G:C6    | 34:BA:1184:G:C5   | 2.21                     | 1.26              |
| 34:BA:1125:U:O5'   | 43:BN:38:ILE:HD13 | 1.33                     | 1.26              |
| 34:BA:1316:G:H4'   | 34:BA:1360:A:C6   | 1.70                     | 1.26              |
| 46:BQ:37:THR:CB    | 46:BQ:56:LEU:HG   | 1.59                     | 1.26              |
| 57:BZ:27:GLN:CB    | 57:BZ:28:GLN:HB2  | 1.63                     | 1.26              |
| 57:BZ:205:PHE:HD1  | 57:BZ:229:GLY:O   | 1.03                     | 1.26              |
| 57:BZ:379:GLU:OE1  | 57:BZ:581:THR:CG2 | 1.78                     | 1.26              |
| 57:BZ:400:TYR:CE1  | 57:BZ:444:PRO:CB  | 2.17                     | 1.26              |
| 1:AA:1081:U:C5'    | 32:AJ:125:ARG:HB3 | 1.66                     | 1.26              |
| 1:AA:2177:C:H5''   | 3:AC:223:ARG:NH1  | 1.48                     | 1.26              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 10:AL:6:THR:O     | 10:AL:20:MET:HA    | 1.29                     | 1.26              |
| 32:AJ:112:MET:SD  | 32:AJ:122:ALA:CB   | 2.21                     | 1.26              |
| 46:BQ:16:ASP:N    | 46:BQ:34:LEU:CG    | 1.98                     | 1.26              |
| 57:BZ:102:PHE:CD2 | 57:BZ:134:GLY:O    | 1.87                     | 1.26              |
| 57:BZ:482:GLN:C   | 57:BZ:573:ASP:OD2  | 1.79                     | 1.26              |
| 1:AA:1051:G:C1'   | 1:AA:2752:C:P      | 2.24                     | 1.26              |
| 1:AA:2124:G:C4'   | 3:AC:42:GLU:CD     | 2.06                     | 1.26              |
| 32:AJ:53:VAL:CA   | 32:AJ:71:THR:O     | 1.83                     | 1.26              |
| 1:AA:1916:A:N6    | 34:BA:1409:C:H4'   | 1.51                     | 1.25              |
| 1:AA:2807:G:C2    | 1:AA:2892:A:N6     | 1.72                     | 1.25              |
| 32:AJ:54:PRO:O    | 32:AJ:70:LYS:HB2   | 1.28                     | 1.25              |
| 33:Ag:291:UNK:CB  | 33:Ag:342:UNK:CB   | 2.14                     | 1.25              |
| 46:BQ:8:GLU:HG3   | 46:BQ:22:ILE:CG1   | 1.63                     | 1.25              |
| 46:BQ:8:GLU:OE2   | 46:BQ:21:TYR:CB    | 1.84                     | 1.25              |
| 57:BZ:424:GLY:O   | 57:BZ:441:TYR:HD2  | 1.17                     | 1.25              |
| 1:AA:1036:G:N1    | 1:AA:1120:G:C6     | 2.03                     | 1.25              |
| 1:AA:2491:U:H3'   | 1:AA:2491:U:C6     | 1.69                     | 1.25              |
| 1:AA:2788:C:N4    | 1:AA:2789:C:N4     | 1.84                     | 1.25              |
| 3:AC:157:LYS:C    | 3:AC:159:GLY:N     | 1.93                     | 1.25              |
| 32:AJ:52:ILE:O    | 32:AJ:72:PRO:HA    | 1.22                     | 1.25              |
| 34:BA:1311:G:C6   | 34:BA:1327:C:C6    | 2.23                     | 1.25              |
| 57:BZ:6:ARG:CD    | 57:BZ:194:VAL:HG12 | 1.66                     | 1.25              |
| 1:AA:1202:C:C4    | 1:AA:1203:G:H1'    | 1.69                     | 1.25              |
| 3:AC:67:GLY:HA3   | 3:AC:184:LYS:NZ    | 1.49                     | 1.25              |
| 34:BA:1311:G:H22  | 34:BA:1326:C:C2'   | 1.46                     | 1.25              |
| 40:BK:78:ARG:O    | 40:BK:84:ASN:HA    | 1.33                     | 1.25              |
| 46:BQ:11:ARG:O    | 46:BQ:45:VAL:HB    | 1.34                     | 1.25              |
| 57:BZ:2:ILE:HG13  | 57:BZ:266:ASP:OD2  | 1.28                     | 1.25              |
| 1:AA:1051:G:O2'   | 1:AA:2752:C:C5'    | 1.85                     | 1.25              |
| 1:AA:1559:G:N1    | 1:AA:1560:G:H4'    | 1.47                     | 1.25              |
| 46:BQ:22:ILE:CB   | 46:BQ:25:ILE:CD1   | 2.15                     | 1.25              |
| 57:BZ:2:ILE:HG23  | 57:BZ:268:ALA:CB   | 1.65                     | 1.25              |
| 57:BZ:205:PHE:CD1 | 57:BZ:229:GLY:O    | 1.89                     | 1.25              |
| 1:AA:2531:A:N3    | 1:AA:2658:C:H1'    | 0.94                     | 1.25              |
| 1:AA:2666:C:H5    | 1:AA:2667:C:C5     | 1.55                     | 1.25              |
| 46:BQ:8:GLU:CG    | 46:BQ:22:ILE:HG12  | 1.66                     | 1.25              |
| 57:BZ:200:ASP:OD2 | 57:BZ:228:ARG:CD   | 1.83                     | 1.25              |
| 57:BZ:206:GLN:N   | 57:BZ:228:ARG:O    | 1.67                     | 1.25              |
| 57:BZ:407:VAL:O   | 57:BZ:436:ARG:CG   | 1.83                     | 1.25              |
| 1:AA:1105:U:H2'   | 1:AA:1107:G:C8     | 1.71                     | 1.25              |
| 1:AA:1105:U:C5    | 1:AA:1107:G:O6     | 1.89                     | 1.25              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2124:G:C4'    | 3:AC:42:GLU:CG    | 1.98                     | 1.24              |
| 1:AA:2174:C:O2     | 3:AC:219:GLY:CA   | 1.85                     | 1.24              |
| 3:AC:175:VAL:CG1   | 3:AC:189:ILE:HA   | 1.65                     | 1.24              |
| 32:AJ:25:PRO:CB    | 57:BZ:429:MET:CE  | 2.16                     | 1.24              |
| 34:BA:1339:A:C4'   | 56:BE:41:C:H4'    | 1.65                     | 1.24              |
| 57:BZ:25:LEU:O     | 57:BZ:28:GLN:HG2  | 1.30                     | 1.24              |
| 57:BZ:127:ILE:HG12 | 57:BZ:163:VAL:O   | 1.33                     | 1.24              |
| 31:AI:52:PHE:O     | 31:AI:86:PRO:N    | 1.71                     | 1.24              |
| 33:Ag:290:UNK:HA   | 33:Ag:342:UNK:C   | 1.65                     | 1.24              |
| 34:BA:1308:U:C2'   | 34:BA:1309:G:OP1  | 1.85                     | 1.24              |
| 34:BA:1500:A:OP1   | 34:BA:1508:G:OP1  | 1.54                     | 1.24              |
| 46:BQ:19:LEU:C     | 46:BQ:25:ILE:HG21 | 1.63                     | 1.24              |
| 1:AA:1908:C:N4     | 58:AA:3001:NMY:N9 | 1.82                     | 1.24              |
| 1:AA:2129:C:C5'    | 3:AC:6:ARG:CG     | 2.15                     | 1.24              |
| 1:AA:2447:G:C8     | 1:AA:2500:U:C3'   | 2.19                     | 1.24              |
| 1:AA:2532:G:O3'    | 1:AA:2657:A:C2    | 1.89                     | 1.24              |
| 4:AD:8:PRO:O       | 4:AD:25:THR:HA    | 1.22                     | 1.24              |
| 10:AL:25:LEU:HB3   | 10:AL:38:VAL:O    | 1.38                     | 1.24              |
| 34:BA:1125:U:O5'   | 43:BN:38:ILE:CD1  | 1.84                     | 1.24              |
| 34:BA:1125:U:O4    | 43:BN:5:ARG:NH2   | 1.70                     | 1.24              |
| 46:BQ:8:GLU:CD     | 46:BQ:21:TYR:HB2  | 1.60                     | 1.24              |
| 1:AA:1222:C:H42    | 1:AA:1227:A:N6    | 1.34                     | 1.24              |
| 1:AA:811:U:O4      | 11:AM:22:GLY:HA3  | 1.37                     | 1.24              |
| 1:AA:2507:C:C4'    | 56:BD:75:C:O2     | 1.73                     | 1.24              |
| 32:AJ:27:LEU:CD2   | 32:AJ:57:ILE:C    | 2.09                     | 1.24              |
| 57:BZ:312:CYS:HA   | 57:BZ:354:ASP:O   | 1.27                     | 1.24              |
| 1:AA:1959:G:H4'    | 34:BA:1418:A:C1'  | 1.66                     | 1.23              |
| 1:AA:2151:G:O3'    | 3:AC:3:HIS:HA     | 1.38                     | 1.23              |
| 1:AA:2748:A:N3     | 8:AH:67:LEU:HD21  | 1.53                     | 1.23              |
| 17:AS:32:THR:HA    | 17:AS:64:HIS:O    | 1.31                     | 1.23              |
| 21:AW:27:VAL:CG2   | 21:AW:85:HIS:CE1  | 2.19                     | 1.23              |
| 32:AJ:105:LEU:HA   | 32:AJ:123:ALA:CB  | 1.69                     | 1.23              |
| 56:BE:1:G:H1'      | 56:BE:72:C:O2     | 1.32                     | 1.23              |
| 1:AA:1046:A:N6     | 31:AI:9:LEU:H     | 1.35                     | 1.23              |
| 1:AA:1914:C:C2     | 1:AA:1915:U:H5    | 1.56                     | 1.23              |
| 57:BZ:240:ILE:CB   | 57:BZ:286:ASP:HA  | 1.58                     | 1.23              |
| 57:BZ:322:GLU:OE1  | 57:BZ:581:THR:HB  | 1.35                     | 1.23              |
| 57:BZ:496:ALA:CB   | 57:BZ:513:GLY:O   | 1.86                     | 1.23              |
| 1:AA:1081:U:C5'    | 32:AJ:125:ARG:HD3 | 1.68                     | 1.23              |
| 1:AA:2178:C:H4'    | 3:AC:46:LYS:NZ    | 1.52                     | 1.23              |
| 3:AC:45:ALA:CA     | 3:AC:213:TYR:CD1  | 2.19                     | 1.23              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 31:AI:54:ALA:HB1   | 31:AI:84:GLU:N     | 1.51                     | 1.23              |
| 34:BA:1309:G:C2    | 34:BA:1328:C:C4    | 2.26                     | 1.23              |
| 49:BT:18:ARG:NH1   | 49:BT:35:LYS:HB2   | 1.53                     | 1.23              |
| 1:AA:716:A:N3      | 48:BS:44:LYS:CD    | 2.01                     | 1.23              |
| 1:AA:1036:G:C6     | 1:AA:1120:G:O6     | 1.90                     | 1.23              |
| 1:AA:1312:U:H2'    | 1:AA:1313:U:O4'    | 1.34                     | 1.23              |
| 1:AA:2180:U:O2'    | 55:BC:17:C:C5      | 1.91                     | 1.23              |
| 1:AA:2507:C:C6     | 59:AA:3002:8AN:C1' | 2.21                     | 1.23              |
| 57:BZ:28:GLN:O     | 57:BZ:60:ASN:OD1   | 1.53                     | 1.23              |
| 1:AA:1036:G:C2     | 1:AA:1120:G:C6     | 2.27                     | 1.23              |
| 34:BA:949:A:H3'    | 46:BQ:102:ARG:NH1  | 1.01                     | 1.23              |
| 57:BZ:6:ARG:HB2    | 57:BZ:69:ARG:O     | 1.19                     | 1.23              |
| 1:AA:1906:G:C4     | 1:AA:1929:G:C6     | 2.25                     | 1.22              |
| 1:AA:2121:G:O2'    | 3:AC:167:LYS:HE2   | 1.31                     | 1.22              |
| 1:AA:2125:G:N3     | 3:AC:218:MET:N     | 1.87                     | 1.22              |
| 1:AA:2659:G:H2'    | 1:AA:2661:G:OP2    | 1.39                     | 1.22              |
| 14:AP:17:ARG:CZ    | 14:AP:89:ARG:HB2   | 1.66                     | 1.22              |
| 32:AJ:100:THR:OG1  | 32:AJ:103:GLN:CB   | 1.85                     | 1.22              |
| 33:Ag:291:UNK:N    | 33:Ag:342:UNK:O    | 1.72                     | 1.22              |
| 34:BA:1062:U:H2'   | 34:BA:1063:C:C5    | 1.74                     | 1.22              |
| 45:BP:80:HIS:CD2   | 57:BZ:326:VAL:C    | 2.15                     | 1.22              |
| 56:BD:67:C:C5      | 56:BD:68:C:C5      | 2.26                     | 1.22              |
| 57:BZ:220:VAL:CG2  | 57:BZ:279:LEU:CB   | 2.10                     | 1.22              |
| 57:BZ:426:LEU:HD13 | 57:BZ:441:TYR:CZ   | 1.72                     | 1.22              |
| 1:AA:2445:G:H2'    | 1:AA:2446:G:C8     | 1.72                     | 1.22              |
| 1:AA:2591:C:H2'    | 1:AA:2592:G:C8     | 1.73                     | 1.22              |
| 34:BA:901:A:C2     | 34:BA:902:G:H1'    | 1.74                     | 1.22              |
| 57:BZ:379:GLU:CG   | 57:BZ:581:THR:CG2  | 2.11                     | 1.22              |
| 57:BZ:397:GLN:C    | 57:BZ:473:ASP:N    | 1.79                     | 1.22              |
| 1:AA:2661:G:O6     | 8:AH:175:LYS:HE3   | 1.09                     | 1.22              |
| 6:AF:19:GLU:O      | 6:AF:20:LEU:HD23   | 1.34                     | 1.22              |
| 34:BA:1152:A:OP1   | 43:BN:13:HIS:NE2   | 1.70                     | 1.22              |
| 57:BZ:8:ILE:O      | 57:BZ:72:ILE:CB    | 1.81                     | 1.22              |
| 1:AA:2:G:C6        | 1:AA:2902:C:C5     | 2.26                     | 1.22              |
| 3:AC:42:GLU:O      | 3:AC:214:VAL:C     | 1.83                     | 1.22              |
| 11:AM:74:GLU:HB3   | 11:AM:111:ARG:O    | 1.37                     | 1.22              |
| 34:BA:1147:C:O2'   | 42:BM:5:TYR:HE1    | 0.91                     | 1.22              |
| 57:BZ:446:ARG:CG   | 57:BZ:480:VAL:CG1  | 2.15                     | 1.22              |
| 1:AA:1906:G:C8     | 1:AA:1929:G:C5     | 2.26                     | 1.22              |
| 1:AA:1916:A:C6     | 34:BA:1409:C:C4'   | 2.22                     | 1.22              |
| 59:AA:3003:8AN:P   | 22:AX:2:ALA:HB1    | 1.80                     | 1.22              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:AC:67:GLY:CA    | 3:AC:184:LYS:HZ3  | 1.51                     | 1.22              |
| 34:BA:1316:G:N2   | 34:BA:1319:A:C8   | 2.08                     | 1.22              |
| 56:BE:18:G:OP2    | 56:BE:61:C:C5'    | 1.87                     | 1.22              |
| 57:BZ:11:ILE:HD11 | 57:BZ:95:VAL:CG1  | 1.68                     | 1.22              |
| 1:AA:152:G:C2'    | 1:AA:153:C:H5'    | 1.68                     | 1.21              |
| 1:AA:1078:U:OP1   | 32:AJ:137:GLU:OE1 | 1.56                     | 1.21              |
| 6:AF:4:VAL:O      | 6:AF:20:LEU:CD1   | 1.87                     | 1.21              |
| 32:AJ:24:GLY:H    | 32:AJ:35:MET:CE   | 1.42                     | 1.21              |
| 34:BA:1317:C:C4   | 34:BA:1318:A:C4   | 2.22                     | 1.21              |
| 56:BD:2:C:O2      | 56:BD:71:G:N2     | 1.72                     | 1.21              |
| 1:AA:2175:C:C6    | 3:AC:219:GLY:O    | 1.91                     | 1.21              |
| 1:AA:2333:A:H1'   | 1:AA:2335:A:N3    | 1.54                     | 1.21              |
| 34:BA:1112:C:O2'  | 36:BG:179:ARG:NH1 | 1.73                     | 1.21              |
| 34:BA:1125:U:C5'  | 43:BN:38:ILE:CD1  | 2.17                     | 1.21              |
| 46:BQ:4:ILE:HD12  | 46:BQ:57:ARG:CG   | 1.66                     | 1.21              |
| 55:BC:16:U:C5     | 55:BC:18:G:H3'    | 1.75                     | 1.21              |
| 57:BZ:251:VAL:CB  | 57:BZ:273:ILE:HA  | 1.71                     | 1.21              |
| 57:BZ:424:GLY:O   | 57:BZ:441:TYR:CD2 | 1.93                     | 1.21              |
| 1:AA:1051:G:C1'   | 1:AA:2752:C:C5'   | 2.17                     | 1.21              |
| 9:AK:43:THR:HB    | 9:AK:44:PRO:CD    | 1.70                     | 1.21              |
| 31:AI:54:ALA:CB   | 31:AI:84:GLU:N    | 2.00                     | 1.21              |
| 57:BZ:207:MET:HE3 | 57:BZ:224:GLY:C   | 1.66                     | 1.21              |
| 1:AA:2421:G:H2'   | 1:AA:2422:A:H8    | 1.04                     | 1.21              |
| 34:BA:1311:G:N2   | 34:BA:1326:C:C2'  | 2.02                     | 1.21              |
| 57:BZ:170:GLY:C   | 57:BZ:179:MET:HG3 | 1.66                     | 1.21              |
| 57:BZ:200:ASP:CB  | 57:BZ:228:ARG:HG2 | 1.71                     | 1.21              |
| 1:AA:931:G:C8     | 1:AA:932:G:H1'    | 1.76                     | 1.21              |
| 1:AA:1069:A:N6    | 1:AA:1096:A:OP1   | 1.73                     | 1.21              |
| 1:AA:1084:A:OP2   | 31:AI:55:LYS:CB   | 1.84                     | 1.21              |
| 1:AA:2125:G:OP2   | 3:AC:71:GLN:OE1   | 1.56                     | 1.21              |
| 1:AA:2252:G:C5    | 59:AA:3003:8AN:C2 | 2.21                     | 1.21              |
| 1:AA:2666:C:C5    | 1:AA:2667:C:C5    | 2.29                     | 1.21              |
| 4:AD:246:PRO:HD2  | 4:AD:250:TRP:HB3  | 1.21                     | 1.21              |
| 15:AQ:32:TYR:O    | 15:AQ:47:GLY:HA2  | 1.41                     | 1.21              |
| 31:AI:54:ALA:HB2  | 31:AI:84:GLU:CA   | 1.69                     | 1.21              |
| 32:AJ:14:ALA:O    | 32:AJ:49:GLY:CA   | 1.87                     | 1.21              |
| 32:AJ:17:ALA:HB2  | 32:AJ:42:ASN:N    | 0.88                     | 1.21              |
| 34:BA:1224:G:H2'  | 52:BW:78:ARG:NH1  | 1.55                     | 1.21              |
| 1:AA:2653:U:O4    | 1:AA:2669:G:C2    | 1.93                     | 1.20              |
| 12:AN:44:ALA:O    | 12:AN:47:ILE:HB   | 1.40                     | 1.20              |
| 32:AJ:23:VAL:O    | 32:AJ:35:MET:CE   | 1.85                     | 1.20              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1319:A:C5'  | 52:BW:70:LYS:HE2   | 1.52                     | 1.20              |
| 57:BZ:9:ALA:HB2   | 57:BZ:73:VAL:CG2   | 1.46                     | 1.20              |
| 57:BZ:165:ALA:CB  | 57:BZ:171:ILE:CG2  | 2.17                     | 1.20              |
| 57:BZ:379:GLU:OE1 | 57:BZ:581:THR:HG21 | 1.38                     | 1.20              |
| 1:AA:3:U:N3       | 1:AA:2900:A:N1     | 1.89                     | 1.20              |
| 33:Ag:290:UNK:HA  | 33:Ag:343:UNK:CA   | 1.68                     | 1.20              |
| 34:BA:449:C:C2    | 34:BA:450:G:H1'    | 1.77                     | 1.20              |
| 34:BA:927:G:O5'   | 34:BA:1503:A:N6    | 1.71                     | 1.20              |
| 56:BE:21:A:C5     | 56:BE:46:G:C6      | 2.28                     | 1.20              |
| 57:BZ:13:HIS:HB2  | 57:BZ:108:GLN:CB   | 1.71                     | 1.20              |
| 1:AA:1105:U:O3'   | 1:AA:1107:G:OP2    | 1.59                     | 1.20              |
| 1:AA:1206:G:H2'   | 1:AA:1207:C:O4'    | 1.39                     | 1.20              |
| 1:AA:2178:C:C4'   | 3:AC:46:LYS:NZ     | 2.03                     | 1.20              |
| 1:AA:2:G:C4       | 1:AA:2902:C:C2     | 2.30                     | 1.20              |
| 1:AA:1203:G:C6    | 1:AA:1241:A:H8     | 1.60                     | 1.20              |
| 1:AA:1906:G:C5    | 1:AA:1929:G:C5     | 2.28                     | 1.20              |
| 11:AM:73:GLY:HA2  | 11:AM:111:ARG:NH1  | 1.56                     | 1.20              |
| 31:AI:52:PHE:O    | 31:AI:86:PRO:CB    | 1.90                     | 1.20              |
| 32:AJ:112:MET:CG  | 32:AJ:122:ALA:CB   | 2.20                     | 1.20              |
| 34:BA:1454:G:C2'  | 34:BA:1455:G:C8    | 2.24                     | 1.20              |
| 56:BD:7:A:N1      | 56:BD:67:C:N4      | 1.88                     | 1.20              |
| 56:BE:4:C:C2      | 56:BE:6:G:N7       | 2.09                     | 1.20              |
| 57:BZ:81:PHE:O    | 57:BZ:361:ARG:CG   | 1.89                     | 1.20              |
| 57:BZ:204:PRO:CB  | 57:BZ:290:ASP:CG   | 2.14                     | 1.20              |
| 57:BZ:409:GLU:OE2 | 57:BZ:435:GLY:O    | 1.57                     | 1.20              |
| 1:AA:1067:A:C5'   | 32:AJ:21:PRO:HG3   | 1.70                     | 1.20              |
| 1:AA:2660:A:C2    | 57:BZ:456:MET:HB2  | 1.76                     | 1.20              |
| 3:AC:171:ILE:CD1  | 3:AC:192:PHE:CE2   | 2.10                     | 1.20              |
| 16:AR:89:GLU:HB3  | 17:AS:52:VAL:N     | 1.56                     | 1.20              |
| 34:BA:1414:U:O2   | 34:BA:1487:G:C2    | 1.83                     | 1.20              |
| 57:BZ:227:LYS:O   | 57:BZ:267:LEU:CD1  | 1.78                     | 1.20              |
| 57:BZ:400:TYR:HE1 | 57:BZ:444:PRO:CG   | 1.55                     | 1.20              |
| 57:BZ:491:ASN:ND2 | 57:BZ:536:ASN:HB2  | 0.88                     | 1.20              |
| 1:AA:1050:A:C1'   | 1:AA:2752:C:C5     | 2.17                     | 1.19              |
| 1:AA:1080:C:N1    | 32:AJ:129:GLY:HA3  | 1.56                     | 1.19              |
| 22:AX:5:LYS:HG2   | 22:AX:6:GLY:H      | 1.05                     | 1.19              |
| 34:BA:1312:G:C6   | 34:BA:1326:C:C5    | 2.29                     | 1.19              |
| 46:BQ:16:ASP:N    | 46:BQ:34:LEU:CD1   | 2.02                     | 1.19              |
| 57:BZ:55:THR:C    | 57:BZ:56:ILE:HD12  | 1.67                     | 1.19              |
| 1:AA:269:U:H5''   | 1:AA:270(Y):G:H2'  | 1.23                     | 1.19              |
| 1:AA:2332:U:H4'   | 1:AA:2336:A:H62    | 1.07                     | 1.19              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 46:BQ:10:PRO:O     | 46:BQ:45:VAL:HG12 | 1.08                     | 1.19              |
| 46:BQ:16:ASP:H     | 46:BQ:34:LEU:CG   | 1.53                     | 1.19              |
| 56:BD:4:C:C1'      | 56:BD:70:G:N2     | 2.06                     | 1.19              |
| 56:BE:1:G:H1'      | 56:BE:72:C:N3     | 1.54                     | 1.19              |
| 57:BZ:122:LYS:NZ   | 57:BZ:156:GLU:CB  | 2.04                     | 1.19              |
| 1:AA:1075:C:C1'    | 32:AJ:90:LYS:CD   | 2.14                     | 1.19              |
| 13:AO:25:ALA:O     | 13:AO:29:LEU:HG   | 1.43                     | 1.19              |
| 53:BX:50:GLU:H     | 53:BX:99:LEU:HD12 | 1.03                     | 1.19              |
| 56:BE:6:G:N7       | 56:BE:69:G:N2     | 1.88                     | 1.19              |
| 57:BZ:13:HIS:CD2   | 57:BZ:106:MET:CB  | 2.08                     | 1.19              |
| 57:BZ:123:PRO:HD2  | 57:BZ:156:GLU:CD  | 1.67                     | 1.19              |
| 1:AA:1914:C:N3     | 1:AA:1915:U:H5    | 1.40                     | 1.19              |
| 1:AA:2129:C:H5''   | 3:AC:6:ARG:CD     | 1.73                     | 1.19              |
| 4:AD:127:VAL:HA    | 4:AD:193:VAL:HG12 | 1.25                     | 1.19              |
| 34:BA:665:A:H2'    | 34:BA:725:G:N2    | 1.58                     | 1.19              |
| 34:BA:1455:G:OP1   | 53:BX:32:ALA:O    | 1.61                     | 1.19              |
| 56:BE:4:C:C2       | 56:BE:6:G:C8      | 2.30                     | 1.19              |
| 57:BZ:27:GLN:HB2   | 57:BZ:28:GLN:HB2  | 1.19                     | 1.19              |
| 57:BZ:205:PHE:HA   | 57:BZ:228:ARG:O   | 1.39                     | 1.19              |
| 57:BZ:400:TYR:CE1  | 57:BZ:444:PRO:CG  | 2.26                     | 1.19              |
| 57:BZ:427:LYS:HG2  | 57:BZ:442:VAL:CG2 | 1.72                     | 1.19              |
| 1:AA:6:A:C6        | 1:AA:2898:U:C5    | 2.03                     | 1.19              |
| 1:AA:242:G:H3'     | 29:Ae:4:MET:HG3   | 1.19                     | 1.19              |
| 1:AA:1270:C:H1'    | 1:AA:1325:G:N7    | 1.58                     | 1.19              |
| 1:AA:2532:G:C4'    | 1:AA:2657:A:N1    | 2.03                     | 1.19              |
| 1:AA:2653:U:O4     | 1:AA:2669:G:N2    | 1.75                     | 1.19              |
| 32:AJ:52:ILE:HG13  | 32:AJ:76:TYR:CD1  | 1.78                     | 1.19              |
| 32:AJ:75:SER:CA    | 32:AJ:130:SER:HB3 | 1.72                     | 1.19              |
| 34:BA:1117:G:C2    | 34:BA:1184:G:C4   | 2.30                     | 1.19              |
| 34:BA:1318:A:C2'   | 52:BW:37:ARG:CB   | 1.92                     | 1.19              |
| 57:BZ:15:ASP:OD1   | 57:BZ:106:MET:HG3 | 1.42                     | 1.19              |
| 57:BZ:422:ARG:NH1  | 57:BZ:480:VAL:O   | 1.73                     | 1.19              |
| 1:AA:2:G:N7        | 1:AA:2902:C:N3    | 1.91                     | 1.18              |
| 1:AA:2124:G:H4'    | 3:AC:42:GLU:OE1   | 1.05                     | 1.18              |
| 1:AA:2129:C:H5''   | 3:AC:6:ARG:CG     | 1.71                     | 1.18              |
| 12:AN:7:MET:H      | 12:AN:70:PRO:HG2  | 1.03                     | 1.18              |
| 41:BL:84:ARG:HH11  | 41:BL:84:ARG:HB3  | 1.07                     | 1.18              |
| 56:BE:2:C:H2'      | 56:BE:70:G:N2     | 1.56                     | 1.18              |
| 57:BZ:248:ASN:HD21 | 57:BZ:273:ILE:CG1 | 1.57                     | 1.18              |
| 1:AA:1019:U:P      | 1:AA:1036:G:H1'   | 1.83                     | 1.18              |
| 1:AA:1042:G:C5     | 1:AA:1113:U:O4    | 1.96                     | 1.18              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2555:U:O4    | 57:BZ:547:ARG:NH2  | 1.74                     | 1.18              |
| 1:AA:2658:C:N4    | 1:AA:2664:G:N1     | 1.92                     | 1.18              |
| 1:AA:2661:G:O6    | 8:AH:175:LYS:CE    | 1.91                     | 1.18              |
| 1:AA:2670:A:O5'   | 5:AE:206:LYS:NZ    | 1.72                     | 1.18              |
| 4:AD:142:VAL:O    | 4:AD:163:ALA:HB3   | 1.41                     | 1.18              |
| 6:AF:7:TYR:O      | 6:AF:18:ARG:HG3    | 1.44                     | 1.18              |
| 13:AO:99:LYS:HD2  | 13:AO:99:LYS:H     | 1.05                     | 1.18              |
| 31:AI:54:ALA:CA   | 31:AI:84:GLU:O     | 1.92                     | 1.18              |
| 32:AJ:25:PRO:HG3  | 57:BZ:429:MET:CE   | 1.71                     | 1.18              |
| 40:BK:115:ARG:HB2 | 40:BK:118:VAL:HG23 | 1.26                     | 1.18              |
| 46:BQ:20:THR:CB   | 46:BQ:26:GLY:CA    | 2.14                     | 1.18              |
| 57:BZ:163:VAL:CG2 | 57:BZ:173:GLY:O    | 1.89                     | 1.18              |
| 57:BZ:205:PHE:N   | 57:BZ:290:ASP:OD1  | 1.77                     | 1.18              |
| 57:BZ:223:ILE:N   | 57:BZ:272:ASP:HB3  | 1.35                     | 1.18              |
| 57:BZ:310:PHE:N   | 57:BZ:385:PRO:HD3  | 1.26                     | 1.18              |
| 57:BZ:407:VAL:O   | 57:BZ:436:ARG:HG2  | 1.40                     | 1.18              |
| 1:AA:1046:A:H5''  | 31:AI:6:ASN:O      | 1.39                     | 1.18              |
| 1:AA:2173:A:C4    | 3:AC:218:MET:HE3   | 1.72                     | 1.18              |
| 1:AA:2178:C:C4'   | 3:AC:46:LYS:HZ2    | 1.55                     | 1.18              |
| 23:AY:44:LYS:O    | 23:AY:48:LEU:HB2   | 1.41                     | 1.18              |
| 31:AI:145:PRO:N   | 33:Ag:133:UNK:CB   | 2.05                     | 1.18              |
| 34:BA:1309:G:N2   | 34:BA:1328:C:C2    | 2.11                     | 1.18              |
| 56:BD:52:G:C5     | 56:BD:63:G:N2      | 2.11                     | 1.18              |
| 57:BZ:200:ASP:CG  | 57:BZ:228:ARG:HD3  | 1.67                     | 1.18              |
| 57:BZ:311:PHE:O   | 57:BZ:355:ALA:HA   | 1.03                     | 1.18              |
| 57:BZ:408:GLU:HG3 | 57:BZ:436:ARG:HH12 | 1.05                     | 1.18              |
| 1:AA:2122:U:O4'   | 3:AC:166:ASP:OD2   | 1.61                     | 1.18              |
| 1:AA:2532:G:O3'   | 1:AA:2657:A:N1     | 1.75                     | 1.18              |
| 1:AA:2556:C:N3    | 57:BZ:546:MET:HE2  | 1.42                     | 1.18              |
| 16:AR:15:LYS:HA   | 16:AR:18:LEU:HD23  | 1.25                     | 1.18              |
| 32:AJ:52:ILE:O    | 32:AJ:72:PRO:CA    | 1.92                     | 1.18              |
| 57:BZ:172:ALA:CA  | 57:BZ:179:MET:SD   | 2.31                     | 1.18              |
| 57:BZ:405:LEU:CD1 | 57:BZ:464:LEU:HD22 | 1.73                     | 1.18              |
| 1:AA:1252:G:H8    | 1:AA:1253:A:H1'    | 1.09                     | 1.18              |
| 1:AA:1475:G:H1    | 1:AA:1477:A:N6     | 1.42                     | 1.18              |
| 10:AL:10:VAL:HG13 | 10:AL:11:ALA:H     | 1.06                     | 1.18              |
| 12:AN:137:TYR:O   | 12:AN:138:ASP:CG   | 1.86                     | 1.18              |
| 32:AJ:51:ALA:O    | 32:AJ:72:PRO:HB2   | 1.39                     | 1.18              |
| 34:BA:263:A:H2'   | 34:BA:264:U:H5''   | 1.19                     | 1.18              |
| 34:BA:1112:C:O2   | 36:BG:179:ARG:NH2  | 1.76                     | 1.18              |
| 34:BA:1454:G:C6   | 34:BA:1455:G:O6    | 1.97                     | 1.18              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1455:G:C3'  | 53:BX:31:SER:OG    | 1.91                     | 1.18              |
| 52:BW:6:LYS:HB3   | 52:BW:41:VAL:HG11  | 1.18                     | 1.18              |
| 1:AA:885:C:H3'    | 1:AA:886:C:H5'     | 1.20                     | 1.17              |
| 1:AA:2629:A:C3'   | 1:AA:2895:U:C6     | 2.00                     | 1.17              |
| 4:AD:147:LEU:HG   | 4:AD:154:LYS:HD2   | 1.25                     | 1.17              |
| 31:AI:52:PHE:CB   | 31:AI:86:PRO:CB    | 2.22                     | 1.17              |
| 34:BA:558:G:H3'   | 34:BA:559:A:H5''   | 1.26                     | 1.17              |
| 46:BQ:16:ASP:N    | 46:BQ:34:LEU:HD11  | 1.58                     | 1.17              |
| 56:BE:5:G:C6      | 56:BE:67:C:O2      | 1.97                     | 1.17              |
| 1:AA:3:U:C2       | 1:AA:2900:A:H2     | 1.61                     | 1.17              |
| 1:AA:280:C:O3'    | 1:AA:281:G:H3'     | 1.40                     | 1.17              |
| 1:AA:1646:C:H3'   | 1:AA:1647:G:H5'    | 1.23                     | 1.17              |
| 1:AA:1804:C:H4'   | 4:AD:250:TRP:CH2   | 1.78                     | 1.17              |
| 8:AH:38:SER:HB3   | 8:AH:41:MET:HG3    | 1.18                     | 1.17              |
| 12:AN:34:LEU:HA   | 12:AN:131:ILE:HG12 | 1.23                     | 1.17              |
| 32:AJ:23:VAL:O    | 32:AJ:35:MET:SD    | 2.02                     | 1.17              |
| 34:BA:1412:C:N3   | 34:BA:1489:G:C6    | 2.12                     | 1.17              |
| 34:BA:1412:C:C2   | 34:BA:1489:G:N1    | 2.13                     | 1.17              |
| 46:BQ:16:ASP:N    | 46:BQ:34:LEU:HG    | 1.59                     | 1.17              |
| 56:BD:5:G:C6      | 56:BD:69:G:C5      | 2.31                     | 1.17              |
| 1:AA:1019:U:OP1   | 1:AA:1036:G:H1'    | 1.43                     | 1.17              |
| 1:AA:1677:A:H2'   | 1:AA:1678:G:C8     | 1.79                     | 1.17              |
| 1:AA:2129:C:C5'   | 3:AC:6:ARG:HE      | 1.56                     | 1.17              |
| 1:AA:2447:G:H5''  | 1:AA:2500:U:OP2    | 1.44                     | 1.17              |
| 31:AI:52:PHE:C    | 31:AI:86:PRO:CB    | 2.18                     | 1.17              |
| 34:BA:1261:A:H61  | 34:BA:1274:G:H1'   | 1.04                     | 1.17              |
| 37:BH:148:VAL:HB  | 37:BH:181:MET:HE3  | 1.21                     | 1.17              |
| 46:BQ:29:ARG:HD3  | 46:BQ:64:TRP:CH2   | 1.80                     | 1.17              |
| 49:BT:44:THR:HG23 | 49:BT:45:THR:H     | 1.09                     | 1.17              |
| 56:BD:2:C:N4      | 56:BD:71:G:O6      | 1.76                     | 1.17              |
| 57:BZ:240:ILE:CD1 | 57:BZ:287:THR:CG2  | 2.14                     | 1.17              |
| 1:AA:559:G:H2'    | 1:AA:560:C:C6      | 1.79                     | 1.17              |
| 1:AA:878:A:H2'    | 1:AA:879:G:H5''    | 1.17                     | 1.17              |
| 1:AA:1046:A:C5    | 31:AI:7:VAL:N      | 1.86                     | 1.17              |
| 1:AA:1080:C:C2    | 32:AJ:129:GLY:CA   | 2.28                     | 1.17              |
| 1:AA:1912:A:C2'   | 34:BA:1495:U:C6    | 2.28                     | 1.17              |
| 9:AK:23:LEU:HD12  | 9:AK:63:THR:HG23   | 1.26                     | 1.17              |
| 15:AQ:64:ARG:HD3  | 15:AQ:65:LYS:H     | 1.05                     | 1.17              |
| 34:BA:41:G:H2'    | 34:BA:42:G:H8      | 1.08                     | 1.17              |
| 34:BA:266:G:H3'   | 50:BU:67:LYS:HD2   | 1.22                     | 1.17              |
| 34:BA:888:G:N2    | 34:BA:909:A:H62    | 1.41                     | 1.17              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 43:BN:50:ILE:HA   | 43:BN:60:ARG:HG3   | 1.21                     | 1.17              |
| 46:BQ:19:LEU:CD1  | 46:BQ:30:ALA:CA    | 2.01                     | 1.17              |
| 46:BQ:27:LYS:CB   | 54:BY:7:ARG:HH11   | 1.58                     | 1.17              |
| 57:BZ:6:ARG:H     | 57:BZ:69:ARG:CB    | 1.56                     | 1.17              |
| 57:BZ:509:LYS:HZ3 | 57:BZ:561:ILE:CD1  | 1.52                     | 1.17              |
| 1:AA:2129:C:C5'   | 3:AC:6:ARG:HG2     | 1.71                     | 1.17              |
| 1:AA:2375:G:H21   | 1:AA:2378:A:N6     | 1.41                     | 1.17              |
| 1:AA:2506:U:N1    | 59:AA:3002:8AN:H3' | 1.45                     | 1.17              |
| 1:AA:2507:C:C1'   | 59:AA:3002:8AN:C4  | 2.13                     | 1.17              |
| 7:AG:61:ALA:HB2   | 7:AG:67:LYS:HB3    | 1.22                     | 1.17              |
| 15:AQ:33:LYS:HA   | 15:AQ:46:GLU:O     | 1.40                     | 1.17              |
| 18:AT:59:VAL:HA   | 18:AT:63:ASP:HA    | 1.27                     | 1.17              |
| 33:Ag:4:UNK:CA    | 33:Ag:143:UNK:O    | 1.91                     | 1.17              |
| 57:BZ:41:ARG:HA   | 57:BZ:42:VAL:HG13  | 1.24                     | 1.17              |
| 57:BZ:55:THR:OG1  | 57:BZ:254:VAL:HG11 | 1.03                     | 1.17              |
| 57:BZ:165:ALA:N   | 57:BZ:172:ALA:O    | 1.78                     | 1.17              |
| 1:AA:879:G:C6     | 1:AA:897:C:H2'     | 1.78                     | 1.16              |
| 1:AA:1105:U:H2'   | 1:AA:1107:G:N7     | 1.59                     | 1.16              |
| 1:AA:2129:C:O3'   | 3:AC:6:ARG:HD3     | 1.45                     | 1.16              |
| 3:AC:22:ILE:HG21  | 3:AC:190:ARG:HH22  | 1.08                     | 1.16              |
| 34:BA:1312:G:C5   | 34:BA:1326:C:C4    | 2.33                     | 1.16              |
| 34:BA:1319:A:H4'  | 52:BW:37:ARG:HA    | 1.19                     | 1.16              |
| 46:BQ:87:TYR:OH   | 52:BW:75:ALA:CA    | 1.80                     | 1.16              |
| 55:BC:16:U:O4     | 55:BC:18:G:C2'     | 1.93                     | 1.16              |
| 57:BZ:6:ARG:N     | 57:BZ:68:TYR:O     | 1.78                     | 1.16              |
| 57:BZ:55:THR:OG1  | 57:BZ:254:VAL:CG1  | 1.93                     | 1.16              |
| 57:BZ:227:LYS:C   | 57:BZ:267:LEU:HD12 | 1.63                     | 1.16              |
| 57:BZ:380:LEU:O   | 57:BZ:580:VAL:HG22 | 1.44                     | 1.16              |
| 1:AA:2175:C:OP1   | 3:AC:7:TYR:HB2     | 1.29                     | 1.16              |
| 1:AA:2176:A:H1'   | 3:AC:215:THR:HB    | 1.26                     | 1.16              |
| 1:AA:2506:U:H3'   | 59:AA:3002:8AN:N3' | 1.41                     | 1.16              |
| 1:AA:2553:G:N2    | 1:AA:2554:U:H1'    | 1.56                     | 1.16              |
| 1:AA:2652:C:N3    | 1:AA:2670:A:N9     | 1.92                     | 1.16              |
| 1:AA:2653:U:C4    | 1:AA:2668:G:N2     | 2.13                     | 1.16              |
| 3:AC:68:LEU:HD13  | 3:AC:159:GLY:CA    | 1.76                     | 1.16              |
| 5:AE:195:LEU:HD13 | 5:AE:196:VAL:N     | 1.60                     | 1.16              |
| 8:AH:35:VAL:HG11  | 8:AH:72:ILE:HA     | 1.20                     | 1.16              |
| 13:AO:32:GLY:O    | 13:AO:115:GLU:HB2  | 1.39                     | 1.16              |
| 16:AR:88:ILE:C    | 17:AS:52:VAL:HA    | 1.70                     | 1.16              |
| 33:Ag:4:UNK:HA    | 33:Ag:143:UNK:O    | 1.01                     | 1.16              |
| 33:Ag:7:UNK:CB    | 33:Ag:144:UNK:CA   | 2.22                     | 1.16              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1315:U:O2    | 34:BA:1361:G:N9    | 1.77                     | 1.16              |
| 34:BA:1405:G:N2    | 34:BA:1517:G:H22   | 1.41                     | 1.16              |
| 35:BF:219:VAL:HG12 | 35:BF:223:ILE:HD11 | 1.25                     | 1.16              |
| 57:BZ:230:LYS:C    | 57:BZ:265:THR:O    | 1.88                     | 1.16              |
| 57:BZ:377:GLY:HA2  | 57:BZ:582:PRO:CG   | 1.74                     | 1.16              |
| 57:BZ:397:GLN:CA   | 57:BZ:472:TYR:C    | 2.17                     | 1.16              |
| 1:AA:896:A:H2      | 1:AA:897:C:C2      | 1.64                     | 1.16              |
| 1:AA:1555:G:H2'    | 1:AA:1556:C:C6     | 1.80                     | 1.16              |
| 1:AA:2791:C:N4     | 1:AA:2893:G:C8     | 1.97                     | 1.16              |
| 4:AD:55:GLY:N      | 4:AD:219:PRO:HD2   | 1.59                     | 1.16              |
| 4:AD:168:ARG:HG2   | 4:AD:173:VAL:HG13  | 1.28                     | 1.16              |
| 23:AY:27:LEU:HA    | 23:AY:30:LEU:HG    | 1.24                     | 1.16              |
| 32:AJ:25:PRO:HG3   | 57:BZ:429:MET:HE2  | 1.24                     | 1.16              |
| 37:BH:31:CYS:SG    | 37:BH:33:MET:SD    | 2.44                     | 1.16              |
| 45:BP:80:HIS:HD2   | 57:BZ:326:VAL:C    | 1.51                     | 1.16              |
| 56:BE:21:A:N1      | 56:BE:46:G:C2      | 2.13                     | 1.16              |
| 57:BZ:560:PRO:CB   | 57:BZ:562:ARG:N    | 2.07                     | 1.16              |
| 1:AA:2507:C:H5'    | 59:AA:3002:8AN:C4' | 1.73                     | 1.16              |
| 1:AA:2507:C:N1     | 59:AA:3002:8AN:H1' | 1.31                     | 1.16              |
| 1:AA:2558:C:H4'    | 57:BZ:543:LEU:HD21 | 1.27                     | 1.16              |
| 9:AK:74:ARG:HG3    | 9:AK:82:LEU:HD22   | 1.21                     | 1.16              |
| 20:AV:22:GLY:HA3   | 20:AV:73:ARG:NH1   | 1.60                     | 1.16              |
| 27:Ac:36:LEU:O     | 27:Ac:51:GLU:HB3   | 1.44                     | 1.16              |
| 32:AJ:25:PRO:CB    | 57:BZ:429:MET:HE1  | 1.75                     | 1.16              |
| 34:BA:1116:C:O2    | 34:BA:1184:G:N2    | 1.78                     | 1.16              |
| 34:BA:1152:A:OP1   | 43:BN:13:HIS:CD2   | 1.99                     | 1.16              |
| 34:BA:1220:G:N3    | 52:BW:54:GLY:O     | 1.79                     | 1.16              |
| 34:BA:1270:C:C1'   | 34:BA:1313:U:H4'   | 1.75                     | 1.16              |
| 57:BZ:13:HIS:CD2   | 57:BZ:108:GLN:CG   | 2.29                     | 1.16              |
| 57:BZ:62:ALA:CB    | 57:BZ:187:TYR:CD2  | 2.29                     | 1.16              |
| 57:BZ:169:ASN:OD1  | 57:BZ:182:ASP:OD1  | 1.64                     | 1.16              |
| 57:BZ:207:MET:CB   | 57:BZ:226:ILE:HD13 | 1.75                     | 1.16              |
| 1:AA:1059:G:O2'    | 32:AJ:75:SER:N     | 1.77                     | 1.16              |
| 1:AA:1202:C:C5     | 1:AA:1203:G:C1'    | 2.29                     | 1.16              |
| 4:AD:196:VAL:HG12  | 4:AD:197:GLY:H     | 1.03                     | 1.16              |
| 32:AJ:54:PRO:O     | 32:AJ:70:LYS:CB    | 1.94                     | 1.16              |
| 34:BA:1105:A:O2'   | 34:BA:1106:G:H5'   | 1.45                     | 1.16              |
| 34:BA:1310:G:C6    | 34:BA:1327:C:C5    | 2.33                     | 1.16              |
| 34:BA:1330:U:C5'   | 46:BQ:70:LEU:CD2   | 2.22                     | 1.16              |
| 36:BG:189:ALA:HB1  | 36:BG:196:LEU:HG   | 1.17                     | 1.16              |
| 57:BZ:204:PRO:CB   | 57:BZ:290:ASP:OD1  | 1.93                     | 1.16              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:BZ:236:GLN:NE2  | 57:BZ:237:VAL:O    | 1.78                     | 1.16              |
| 57:BZ:400:TYR:CE1  | 57:BZ:444:PRO:HB3  | 1.76                     | 1.16              |
| 57:BZ:408:GLU:HG3  | 57:BZ:436:ARG:NH1  | 1.60                     | 1.16              |
| 11:AM:107:LYS:NZ   | 11:AM:110:TYR:HB3  | 1.61                     | 1.15              |
| 13:AO:78:LYS:O     | 13:AO:82:GLU:CB    | 1.94                     | 1.15              |
| 34:BA:80:G:H2'     | 34:BA:81:G:O4'     | 1.46                     | 1.15              |
| 34:BA:1486:G:H2'   | 34:BA:1487:G:C5'   | 1.74                     | 1.15              |
| 52:BW:9:VAL:HG11   | 52:BW:44:MET:HG3   | 1.27                     | 1.15              |
| 56:BE:1:G:C1'      | 56:BE:72:C:C2      | 2.29                     | 1.15              |
| 57:BZ:426:LEU:HB2  | 57:BZ:441:TYR:CE2  | 1.81                     | 1.15              |
| 1:AA:197:A:N6      | 1:AA:248:G:H22     | 1.41                     | 1.15              |
| 1:AA:1081:U:H5'    | 32:AJ:125:ARG:HB3  | 1.28                     | 1.15              |
| 1:AA:2132:U:H3'    | 1:AA:2133:G:C5'    | 1.75                     | 1.15              |
| 4:AD:147:LEU:HB3   | 4:AD:185:VAL:HG22  | 1.28                     | 1.15              |
| 15:AQ:53:ARG:HB2   | 15:AQ:65:LYS:O     | 1.42                     | 1.15              |
| 15:AQ:64:ARG:HA    | 15:AQ:64:ARG:NH1   | 1.61                     | 1.15              |
| 32:AJ:52:ILE:O     | 32:AJ:73:PRO:CD    | 1.75                     | 1.15              |
| 34:BA:1271:G:P     | 34:BA:1314:C:C5'   | 2.34                     | 1.15              |
| 56:BD:49:C:O2      | 56:BD:65:G:N2      | 1.78                     | 1.15              |
| 57:BZ:163:VAL:HG22 | 57:BZ:173:GLY:O    | 1.43                     | 1.15              |
| 57:BZ:207:MET:CG   | 57:BZ:226:ILE:CD1  | 1.79                     | 1.15              |
| 1:AA:1024:G:N2     | 1:AA:1139:G:H1     | 1.44                     | 1.15              |
| 1:AA:1203:G:C6     | 1:AA:1241:A:C8     | 2.33                     | 1.15              |
| 3:AC:46:LYS:CG     | 3:AC:211:SER:OG    | 1.81                     | 1.15              |
| 26:Ab:51:TYR:HB3   | 26:Ab:55:ARG:HA    | 1.28                     | 1.15              |
| 32:AJ:40:ALA:O     | 32:AJ:66:THR:HG21  | 0.97                     | 1.15              |
| 34:BA:1311:G:N2    | 34:BA:1326:C:O2'   | 1.79                     | 1.15              |
| 40:BK:103:TRP:CH2  | 40:BK:138:LYS:HA   | 1.81                     | 1.15              |
| 45:BP:106:ASP:HA   | 57:BZ:329:ARG:NE   | 1.60                     | 1.15              |
| 56:BD:52:G:C5      | 56:BD:63:G:C2      | 2.33                     | 1.15              |
| 56:BE:21:A:C6      | 56:BE:46:G:C2      | 2.33                     | 1.15              |
| 57:BZ:206:GLN:HB3  | 57:BZ:228:ARG:N    | 1.61                     | 1.15              |
| 57:BZ:312:CYS:HB3  | 57:BZ:354:ASP:O    | 1.42                     | 1.15              |
| 1:AA:896:A:C2      | 1:AA:897:C:C2      | 2.34                     | 1.15              |
| 1:AA:974:G:H3'     | 1:AA:974(A):C:H5'' | 1.23                     | 1.15              |
| 1:AA:2596:U:H2'    | 4:AD:242:ARG:NH1   | 1.62                     | 1.15              |
| 1:AA:2661:G:C6     | 8:AH:175:LYS:HE3   | 1.79                     | 1.15              |
| 5:AE:13:ARG:NH2    | 5:AE:20:ALA:HB3    | 1.61                     | 1.15              |
| 13:AO:32:GLY:CA    | 13:AO:116:LEU:HD21 | 1.76                     | 1.15              |
| 33:Ag:289:UNK:C    | 33:Ag:343:UNK:HA   | 1.75                     | 1.15              |
| 34:BA:764:C:H2'    | 34:BA:765:G:C8     | 1.81                     | 1.15              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1220:G:N2    | 52:BW:55:LYS:CB    | 2.10                     | 1.15              |
| 35:BF:59:GLU:HB3   | 35:BF:221:LEU:HD21 | 1.29                     | 1.15              |
| 57:BZ:495:LYS:HA   | 57:BZ:517:GLU:HA   | 1.25                     | 1.15              |
| 1:AA:2416:C:H5''   | 11:AM:59:LEU:HB2   | 1.16                     | 1.15              |
| 4:AD:183:ARG:HG2   | 4:AD:268:ARG:HB2   | 1.25                     | 1.15              |
| 7:AG:92:VAL:HG13   | 7:AG:94:LEU:HD13   | 1.26                     | 1.15              |
| 10:AL:39:ILE:HG12  | 10:AL:59:LYS:HZ1   | 0.98                     | 1.15              |
| 12:AN:106:VAL:HG22 | 12:AN:107:ALA:H    | 1.00                     | 1.15              |
| 32:AJ:17:ALA:CA    | 32:AJ:41:PHE:HB2   | 1.76                     | 1.15              |
| 34:BA:1126:U:OP1   | 34:BA:1280:A:N7    | 1.76                     | 1.15              |
| 34:BA:1308:U:O3'   | 46:BQ:92:HIS:NE2   | 1.78                     | 1.15              |
| 34:BA:1454:G:C2'   | 34:BA:1455:G:H8    | 1.57                     | 1.15              |
| 56:BD:51:U:N3      | 56:BD:63:G:N2      | 1.94                     | 1.15              |
| 57:BZ:13:HIS:NE2   | 57:BZ:106:MET:HB2  | 0.82                     | 1.15              |
| 57:BZ:18:LYS:N     | 60:BZ:701:GCP:O1B  | 1.79                     | 1.15              |
| 57:BZ:240:ILE:CB   | 57:BZ:286:ASP:CA   | 2.03                     | 1.15              |
| 1:AA:2152:G:H5''   | 3:AC:2:LYS:CB      | 1.76                     | 1.14              |
| 1:AA:2496:C:OP1    | 12:AN:82:ARG:HG3   | 1.46                     | 1.14              |
| 59:AA:3003:8AN:O1P | 22:AX:4:LYS:HD3    | 1.42                     | 1.14              |
| 4:AD:244:ARG:N     | 4:AD:245:PRO:HD3   | 1.61                     | 1.14              |
| 5:AE:117:MET:SD    | 5:AE:136:ARG:HG2   | 1.86                     | 1.14              |
| 5:AE:154:LYS:HZ3   | 5:AE:156:MET:HE2   | 1.04                     | 1.14              |
| 17:AS:40:LEU:HG    | 17:AS:55:ALA:N     | 1.60                     | 1.14              |
| 32:AJ:40:ALA:HB1   | 32:AJ:66:THR:OG1   | 0.98                     | 1.14              |
| 34:BA:1271:G:P     | 34:BA:1314:C:H5''  | 1.87                     | 1.14              |
| 38:BI:48:ALA:CB    | 38:BI:53:LEU:HB3   | 1.77                     | 1.14              |
| 40:BK:126:ASP:HA   | 40:BK:131:LYS:HE3  | 1.25                     | 1.14              |
| 45:BP:80:HIS:CD2   | 57:BZ:327:THR:N    | 1.72                     | 1.14              |
| 46:BQ:15:VAL:CA    | 46:BQ:34:LEU:HD21  | 1.76                     | 1.14              |
| 57:BZ:15:ASP:CB    | 57:BZ:16:HIS:CE1   | 2.29                     | 1.14              |
| 1:AA:781:A:H1'     | 4:AD:222:ARG:HH12  | 1.07                     | 1.14              |
| 1:AA:966:G:H1'     | 1:AA:2267:A:N6     | 1.61                     | 1.14              |
| 1:AA:1081:U:H5'    | 32:AJ:125:ARG:CB   | 1.76                     | 1.14              |
| 1:AA:1128:A:H62    | 1:AA:2518:A:N6     | 1.45                     | 1.14              |
| 1:AA:1542:G:H1'    | 1:AA:1543:A:C6     | 1.81                     | 1.14              |
| 1:AA:2327:A:H2'    | 1:AA:2328:A:H8     | 1.09                     | 1.14              |
| 1:AA:2416:C:C2'    | 1:AA:2417:C:H5''   | 1.77                     | 1.14              |
| 1:AA:2447:G:N7     | 1:AA:2500:U:H3'    | 1.62                     | 1.14              |
| 1:AA:2651:C:C2     | 1:AA:2670:A:N1     | 2.14                     | 1.14              |
| 3:AC:43:VAL:HG11   | 3:AC:224:ILE:CD1   | 1.76                     | 1.14              |
| 3:AC:156:ILE:HG13  | 3:AC:160:ARG:CG    | 1.77                     | 1.14              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 6:AF:30:PRO:O     | 6:AF:33:LEU:HG     | 1.46                     | 1.14              |
| 13:AO:78:LYS:O    | 13:AO:82:GLU:HB2   | 0.99                     | 1.14              |
| 32:AJ:52:ILE:O    | 32:AJ:73:PRO:N     | 1.80                     | 1.14              |
| 34:BA:1220:G:N2   | 52:BW:55:LYS:HA    | 1.60                     | 1.14              |
| 34:BA:1296:C:OP1  | 46:BQ:44:ARG:HD3   | 1.42                     | 1.14              |
| 34:BA:1484:C:H2'  | 34:BA:1485:U:H5'   | 1.21                     | 1.14              |
| 42:BM:55:ALA:CB   | 42:BM:58:HIS:CE1   | 2.30                     | 1.14              |
| 45:BP:80:HIS:O    | 57:BZ:327:THR:CB   | 1.89                     | 1.14              |
| 56:BE:3:C:N3      | 56:BE:70:G:C1'     | 1.95                     | 1.14              |
| 1:AA:1059:G:H21   | 32:AJ:130:SER:CA   | 1.57                     | 1.14              |
| 1:AA:2047:U:H2'   | 1:AA:2048:G:H8     | 1.03                     | 1.14              |
| 1:AA:2564:A:H2'   | 1:AA:2565:A:H8     | 1.04                     | 1.14              |
| 7:AG:148:MET:HG2  | 7:AG:151:ALA:HA    | 1.17                     | 1.14              |
| 12:AN:34:LEU:O    | 12:AN:103:MET:HB2  | 1.43                     | 1.14              |
| 21:AW:24:LEU:HB2  | 21:AW:41:LEU:HD21  | 1.26                     | 1.14              |
| 31:AI:53:VAL:CA   | 31:AI:85:ASP:HA    | 1.76                     | 1.14              |
| 34:BA:1443:G:H4'  | 34:BA:1446:A:H5'   | 1.29                     | 1.14              |
| 45:BP:36:VAL:O    | 45:BP:58:VAL:HG13  | 1.44                     | 1.14              |
| 45:BP:37:CYS:HA   | 45:BP:58:VAL:HG22  | 1.20                     | 1.14              |
| 57:BZ:502:PHE:CD2 | 57:BZ:555:VAL:CB   | 2.31                     | 1.14              |
| 1:AA:1598:C:H5''  | 19:AU:36:LYS:HB3   | 1.27                     | 1.14              |
| 1:AA:2431:U:H2'   | 1:AA:2432:A:H5''   | 1.27                     | 1.14              |
| 1:AA:2489:G:H2'   | 1:AA:2490:G:C8     | 1.82                     | 1.14              |
| 1:AA:2506:U:C6    | 59:AA:3002:8AN:H3' | 1.80                     | 1.14              |
| 1:AA:2658:C:N4    | 1:AA:2664:G:C2     | 2.15                     | 1.14              |
| 2:AB:71:C:C2'     | 2:AB:72:G:H5'      | 1.76                     | 1.14              |
| 4:AD:7:LYS:HG2    | 4:AD:25:THR:HG22   | 1.14                     | 1.14              |
| 14:AP:11:LYS:O    | 14:AP:14:VAL:HB    | 1.47                     | 1.14              |
| 32:AJ:53:VAL:HA   | 32:AJ:71:THR:O     | 0.96                     | 1.14              |
| 32:AJ:112:MET:CG  | 32:AJ:122:ALA:HB3  | 1.73                     | 1.14              |
| 34:BA:1077:G:N2   | 34:BA:1079:G:H3'   | 1.63                     | 1.14              |
| 34:BA:1320:C:C6   | 52:BW:36:ARG:HG3   | 1.70                     | 1.14              |
| 34:BA:1455:G:O3'  | 53:BX:31:SER:OG    | 1.65                     | 1.14              |
| 49:BT:39:TYR:HB2  | 49:BT:49:LEU:HD13  | 1.17                     | 1.14              |
| 57:BZ:250:LYS:O   | 57:BZ:273:ILE:HD12 | 1.45                     | 1.14              |
| 1:AA:893:C:C6     | 1:AA:894:C:H5      | 1.66                     | 1.14              |
| 1:AA:1075:C:H1'   | 32:AJ:90:LYS:CE    | 1.76                     | 1.14              |
| 1:AA:1872:A:H2'   | 1:AA:1878:G:H5'    | 1.24                     | 1.14              |
| 1:AA:2034:U:H3'   | 1:AA:2035:G:H5''   | 1.16                     | 1.14              |
| 1:AA:2792:G:N2    | 1:AA:2804:C:N3     | 1.93                     | 1.14              |
| 6:AF:158:THR:HG21 | 6:AF:196:LEU:H     | 0.98                     | 1.14              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 45:BP:80:HIS:HD2   | 57:BZ:327:THR:N    | 1.08                     | 1.14              |
| 50:BU:5:VAL:HG22   | 50:BU:60:ILE:HA    | 1.18                     | 1.14              |
| 52:BW:9:VAL:CG1    | 52:BW:41:VAL:C     | 2.21                     | 1.14              |
| 57:BZ:136:ARG:HG3  | 57:BZ:139:TRP:HB3  | 1.26                     | 1.14              |
| 57:BZ:402:ASN:HB3  | 57:BZ:441:TYR:C    | 1.62                     | 1.14              |
| 1:AA:221:A:H4'     | 1:AA:222:A:H5'     | 1.15                     | 1.13              |
| 1:AA:1956:U:H2'    | 1:AA:1957:C:C6     | 1.83                     | 1.13              |
| 1:AA:2416:C:H2'    | 1:AA:2417:C:H5''   | 1.16                     | 1.13              |
| 3:AC:68:LEU:CD1    | 3:AC:159:GLY:HA2   | 1.77                     | 1.13              |
| 23:AY:52:ILE:HA    | 23:AY:55:LEU:HD22  | 1.30                     | 1.13              |
| 32:AJ:104:VAL:CB   | 32:AJ:127:ILE:CD1  | 2.19                     | 1.13              |
| 34:BA:1311:G:C6    | 34:BA:1327:C:C4    | 2.22                     | 1.13              |
| 34:BA:1484:C:C2'   | 34:BA:1485:U:H5'   | 1.76                     | 1.13              |
| 37:BH:59:ARG:HA    | 37:BH:59:ARG:NH1   | 1.61                     | 1.13              |
| 38:BI:109:ILE:HG21 | 38:BI:135:THR:HG21 | 1.18                     | 1.13              |
| 53:BX:44:ALA:HB3   | 53:BX:91:LEU:HD12  | 1.19                     | 1.13              |
| 56:BD:47:U:O4      | 57:BZ:598:ARG:CD   | 1.94                     | 1.13              |
| 57:BZ:8:ILE:O      | 57:BZ:72:ILE:CA    | 1.95                     | 1.13              |
| 1:AA:1203:G:C6     | 1:AA:1240:U:C2     | 2.35                     | 1.13              |
| 1:AA:1906:G:C4     | 1:AA:1929:G:C5     | 2.36                     | 1.13              |
| 1:AA:2278:A:OP1    | 12:AN:14:ARG:HG3   | 1.47                     | 1.13              |
| 3:AC:43:VAL:HG21   | 3:AC:224:ILE:CD1   | 1.79                     | 1.13              |
| 6:AF:200:GLU:OE1   | 6:AF:201:VAL:HG23  | 1.49                     | 1.13              |
| 9:AK:89:LYS:H      | 9:AK:89:LYS:HE2    | 1.00                     | 1.13              |
| 13:AO:77:ARG:HB2   | 13:AO:77:ARG:HH11  | 1.06                     | 1.13              |
| 14:AP:74:ALA:HB1   | 14:AP:108:GLY:CA   | 1.77                     | 1.13              |
| 31:AI:152:VAL:HA   | 31:AI:155:GLY:HA3  | 1.30                     | 1.13              |
| 32:AJ:51:ALA:HA    | 32:AJ:76:TYR:CD2   | 1.83                     | 1.13              |
| 42:BM:127:LYS:HB2  | 56:BE:31:A:H5''    | 1.23                     | 1.13              |
| 46:BQ:8:GLU:OE2    | 46:BQ:21:TYR:HB2   | 1.41                     | 1.13              |
| 46:BQ:16:ASP:CA    | 46:BQ:34:LEU:CD1   | 2.27                     | 1.13              |
| 56:BE:18:G:N2      | 56:BE:58:A:O5'     | 1.81                     | 1.13              |
| 57:BZ:81:PHE:HB3   | 57:BZ:365:HIS:CD2  | 1.78                     | 1.13              |
| 1:AA:675:A:H4'     | 6:AF:67:GLN:HE22   | 1.06                     | 1.13              |
| 1:AA:1047:G:C5'    | 1:AA:1110:G:O6     | 1.92                     | 1.13              |
| 9:AK:16:ILE:HD11   | 9:AK:52:VAL:HG22   | 1.17                     | 1.13              |
| 13:AO:105:ARG:HA   | 13:AO:105:ARG:CZ   | 1.79                     | 1.13              |
| 22:AX:12:ASN:HA    | 22:AX:14:ARG:CZ    | 1.78                     | 1.13              |
| 25:Aa:66:SER:HA    | 25:Aa:69:LYS:HD2   | 1.27                     | 1.13              |
| 31:AI:54:ALA:HB2   | 31:AI:85:ASP:N     | 1.61                     | 1.13              |
| 34:BA:985:C:O2'    | 52:BW:55:LYS:NZ    | 1.81                     | 1.13              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 36:BG:126:ARG:HB3  | 36:BG:128:PHE:HE1  | 1.03                     | 1.13              |
| 37:BH:55:ALA:O     | 37:BH:59:ARG:HG2   | 1.48                     | 1.13              |
| 41:BL:86:ILE:HG21  | 41:BL:133:LEU:HB2  | 1.26                     | 1.13              |
| 57:BZ:205:PHE:O    | 57:BZ:289:CYS:CB   | 1.95                     | 1.13              |
| 57:BZ:564:THR:N    | 57:BZ:567:GLN:HB3  | 1.62                     | 1.13              |
| 1:AA:901:A:C5      | 1:AA:902:C:C4      | 2.37                     | 1.13              |
| 1:AA:1012:U:O4     | 9:AK:25:ARG:HB3    | 1.47                     | 1.13              |
| 1:AA:2286:A:H2     | 27:Ac:27:LYS:HB3   | 1.13                     | 1.13              |
| 4:AD:181:GLU:HG3   | 4:AD:270:ILE:HB    | 1.26                     | 1.13              |
| 6:AF:89:VAL:HG12   | 6:AF:90:PHE:H      | 0.99                     | 1.13              |
| 17:AS:6:LYS:HB3    | 17:AS:10:LYS:HA    | 1.25                     | 1.13              |
| 17:AS:27:ALA:HB1   | 17:AS:33:VAL:HG11  | 1.26                     | 1.13              |
| 25:Aa:65:ASP:HA    | 25:Aa:68:ARG:HH22  | 1.05                     | 1.13              |
| 34:BA:551:U:H2'    | 34:BA:552:U:C6     | 1.84                     | 1.13              |
| 34:BA:1014:A:C1'   | 52:BW:34:TRP:CH2   | 2.32                     | 1.13              |
| 34:BA:1315:U:O2    | 34:BA:1361:G:C4    | 2.01                     | 1.13              |
| 46:BQ:36:LYS:HG3   | 46:BQ:56:LEU:HD22  | 1.30                     | 1.13              |
| 46:BQ:48:LEU:HD13  | 46:BQ:53:VAL:HG22  | 1.30                     | 1.13              |
| 56:BE:21:A:O2'     | 56:BE:22:G:O4'     | 1.67                     | 1.13              |
| 57:BZ:250:LYS:O    | 57:BZ:273:ILE:CD1  | 1.94                     | 1.13              |
| 57:BZ:546:MET:HB3  | 57:BZ:547:ARG:HG2  | 1.28                     | 1.13              |
| 1:AA:142:G:H4'     | 19:AU:35:THR:HG21  | 1.30                     | 1.12              |
| 1:AA:662:G:H4'     | 11:AM:18:ARG:H     | 1.11                     | 1.13              |
| 1:AA:1036:G:P      | 8:AH:59:ARG:NH2    | 2.21                     | 1.12              |
| 1:AA:1718:G:H2'    | 1:AA:1725:G:C8     | 1.84                     | 1.12              |
| 1:AA:2252:G:N7     | 59:AA:3003:8AN:C6  | 2.11                     | 1.13              |
| 1:AA:1788:C:H2'    | 4:AD:222:ARG:HH21  | 1.09                     | 1.12              |
| 1:AA:2564:A:H2'    | 1:AA:2565:A:C8     | 1.84                     | 1.12              |
| 1:AA:2581:G:N1     | 1:AA:2610:C:H2'    | 1.62                     | 1.12              |
| 5:AE:105:THR:HB    | 5:AE:166:THR:HB    | 1.29                     | 1.12              |
| 9:AK:27:ALA:HA     | 9:AK:30:ILE:HD12   | 1.31                     | 1.12              |
| 12:AN:23:GLY:HA3   | 12:AN:101:ARG:NH2  | 1.63                     | 1.12              |
| 14:AP:3:ARG:HG2    | 14:AP:4:LEU:HG     | 1.31                     | 1.12              |
| 50:BU:5:VAL:HG13   | 50:BU:59:ILE:O     | 1.49                     | 1.12              |
| 57:BZ:240:ILE:CB   | 57:BZ:286:ASP:HB3  | 1.70                     | 1.13              |
| 32:AJ:17:ALA:HB1   | 32:AJ:38:VAL:O     | 0.97                     | 1.12              |
| 34:BA:1115:C:C2    | 34:BA:1186:G:N1    | 2.17                     | 1.12              |
| 34:BA:1158:C:O2'   | 35:BF:133:LYS:CE   | 1.95                     | 1.12              |
| 57:BZ:73:VAL:HB    | 57:BZ:75:THR:OG1   | 1.45                     | 1.12              |
| 57:BZ:240:ILE:HD13 | 57:BZ:287:THR:CG2  | 1.66                     | 1.12              |
| 57:BZ:373:MET:SD   | 57:BZ:380:LEU:HD21 | 1.88                     | 1.12              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:BZ:499:PHE:CB  | 57:BZ:540:GLY:HA2  | 1.78                     | 1.12              |
| 57:BZ:545:ASN:HB3 | 57:BZ:546:MET:HA   | 1.27                     | 1.12              |
| 1:AA:28:A:H1'     | 1:AA:513:A:N1      | 1.61                     | 1.12              |
| 1:AA:452:G:H3'    | 1:AA:453:C:H5''    | 1.24                     | 1.12              |
| 1:AA:783:A:H5''   | 1:AA:2589:A:OP1    | 1.46                     | 1.12              |
| 1:AA:875:G:N1     | 1:AA:902:C:N3      | 1.76                     | 1.12              |
| 1:AA:1079:C:O2    | 32:AJ:132:ARG:CB   | 1.94                     | 1.12              |
| 1:AA:2148:G:H2'   | 1:AA:2149:G:H8     | 1.00                     | 1.12              |
| 1:AA:2645:G:H4'   | 1:AA:2732:G:O2'    | 1.49                     | 1.12              |
| 1:AA:2659:G:O2'   | 1:AA:2663:G:N2     | 1.82                     | 1.12              |
| 1:AA:2748:A:H1'   | 8:AH:67:LEU:HD22   | 1.27                     | 1.12              |
| 2:AB:101:A:H2'    | 2:AB:102:G:H8      | 1.13                     | 1.12              |
| 4:AD:127:VAL:HG13 | 4:AD:194:GLY:HA3   | 1.25                     | 1.12              |
| 7:AG:19:LEU:HG    | 7:AG:22:ARG:CZ     | 1.77                     | 1.12              |
| 9:AK:89:LYS:H     | 9:AK:89:LYS:CE     | 1.62                     | 1.12              |
| 10:AL:96:THR:HA   | 10:AL:117:LEU:HD11 | 1.26                     | 1.12              |
| 15:AQ:50:ILE:CB   | 15:AQ:66:VAL:HB    | 1.77                     | 1.12              |
| 15:AQ:62:THR:HG22 | 15:AQ:79:HIS:CA    | 1.79                     | 1.12              |
| 24:AZ:6:VAL:HG23  | 24:AZ:35:ARG:HG3   | 1.22                     | 1.12              |
| 34:BA:955:U:H1'   | 34:BA:1227:A:H61   | 1.15                     | 1.12              |
| 34:BA:1151:A:C5   | 34:BA:1152:A:N7    | 2.16                     | 1.12              |
| 34:BA:1312:G:N1   | 34:BA:1326:C:C5    | 2.16                     | 1.12              |
| 45:BP:56:ALA:HB3  | 45:BP:68:ALA:O     | 1.45                     | 1.12              |
| 46:BQ:20:THR:OG1  | 46:BQ:26:GLY:HA2   | 1.48                     | 1.12              |
| 52:BW:6:LYS:HE3   | 52:BW:10:PHE:HB2   | 1.17                     | 1.12              |
| 57:BZ:240:ILE:CD1 | 57:BZ:287:THR:HG23 | 1.58                     | 1.12              |
| 1:AA:828:U:H2'    | 1:AA:829:A:H8      | 1.01                     | 1.12              |
| 1:AA:1324:G:H1'   | 1:AA:1616:A:N6     | 1.65                     | 1.12              |
| 1:AA:2556:C:N3    | 57:BZ:546:MET:HE1  | 1.52                     | 1.12              |
| 1:AA:2701:C:H3'   | 1:AA:2702:U:H5''   | 1.17                     | 1.12              |
| 9:AK:69:GLN:HE22  | 9:AK:87:LEU:HD22   | 1.10                     | 1.12              |
| 12:AN:48:GLU:O    | 12:AN:51:ARG:HG3   | 1.44                     | 1.12              |
| 16:AR:44:ASN:HD21 | 17:AS:78:LYS:HG2   | 1.05                     | 1.12              |
| 21:AW:4:ARG:HG2   | 21:AW:5:LEU:H      | 1.14                     | 1.12              |
| 31:AI:53:VAL:C    | 31:AI:85:ASP:CA    | 2.22                     | 1.12              |
| 32:AJ:19:PRO:HG3  | 32:AJ:37:PHE:N     | 1.63                     | 1.12              |
| 34:BA:1242:C:H5'' | 54:BY:10:ARG:HH12  | 1.14                     | 1.12              |
| 36:BG:20:SER:HB2  | 36:BG:40:ARG:HH22  | 1.13                     | 1.12              |
| 57:BZ:18:LYS:H    | 60:BZ:701:GCP:PB   | 1.72                     | 1.12              |
| 57:BZ:396:LYS:CB  | 57:BZ:474:ASP:C    | 2.22                     | 1.12              |
| 1:AA:966:G:H1'    | 1:AA:2267:A:H62    | 1.08                     | 1.12              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1916:A:N6    | 34:BA:1409:C:C4'  | 2.11                     | 1.12              |
| 1:AA:2572:A:H4'   | 1:AA:2573:C:H5''  | 1.19                     | 1.12              |
| 1:AA:2725:A:H2'   | 1:AA:2726:U:H3'   | 1.30                     | 1.12              |
| 1:AA:2780:G:N2    | 9:AK:97:ARG:HH12  | 1.46                     | 1.12              |
| 4:AD:196:VAL:CG1  | 4:AD:197:GLY:H    | 1.62                     | 1.12              |
| 10:AL:64:ARG:HH12 | 10:AL:77:ILE:HB   | 1.03                     | 1.12              |
| 11:AM:45:LEU:HD23 | 11:AM:46:LYS:HG3  | 1.27                     | 1.12              |
| 14:AP:62:LYS:HD2  | 14:AP:64:GLU:HB3  | 1.17                     | 1.12              |
| 19:AU:44:GLU:HG3  | 19:AU:51:VAL:HG23 | 1.28                     | 1.12              |
| 27:Ac:16:CYS:HB2  | 27:Ac:49:HIS:HA   | 1.16                     | 1.12              |
| 30:Af:17:ILE:HD12 | 30:Af:26:ILE:HD12 | 1.24                     | 1.12              |
| 33:Ag:4:UNK:HA    | 33:Ag:143:UNK:C   | 1.78                     | 1.12              |
| 34:BA:371:G:H2'   | 34:BA:372:C:H5'   | 1.13                     | 1.12              |
| 51:BV:66:LEU:HD12 | 51:BV:67:ALA:N    | 1.65                     | 1.12              |
| 56:BD:51:U:C2     | 56:BD:63:G:N2     | 2.18                     | 1.12              |
| 56:BD:63:G:H2'    | 56:BD:64:A:H8     | 1.14                     | 1.12              |
| 57:BZ:95:VAL:HG23 | 57:BZ:123:PRO:HA  | 1.25                     | 1.12              |
| 57:BZ:205:PHE:CA  | 57:BZ:228:ARG:O   | 1.97                     | 1.12              |
| 57:BZ:230:LYS:HD2 | 57:BZ:265:THR:O   | 1.45                     | 1.12              |
| 57:BZ:379:GLU:HG2 | 57:BZ:581:THR:HA  | 1.15                     | 1.12              |
| 1:AA:1174:A:H2'   | 1:AA:1175:U:H5''  | 1.30                     | 1.12              |
| 1:AA:1568:G:OP1   | 4:AD:61:LEU:HB2   | 1.47                     | 1.12              |
| 1:AA:2107:C:O5'   | 1:AA:2108:C:C5    | 1.84                     | 1.12              |
| 1:AA:2346:A:H1'   | 1:AA:2383:G:C8    | 1.84                     | 1.12              |
| 33:Ag:7:UNK:CB    | 33:Ag:144:UNK:C   | 2.26                     | 1.12              |
| 33:Ag:289:UNK:O   | 33:Ag:343:UNK:CA  | 1.97                     | 1.12              |
| 34:BA:1226:C:H1'  | 52:BW:80:TYR:CD1  | 1.34                     | 1.12              |
| 37:BH:19:LEU:HA   | 37:BH:21:LEU:HD12 | 1.20                     | 1.12              |
| 46:BQ:36:LYS:CG   | 46:BQ:56:LEU:HD22 | 1.80                     | 1.12              |
| 52:BW:41:VAL:HB   | 52:BW:42:PRO:HD2  | 1.24                     | 1.12              |
| 57:BZ:18:LYS:HB3  | 60:BZ:701:GCP:O2B | 1.43                     | 1.12              |
| 57:BZ:426:LEU:HB2 | 57:BZ:441:TYR:CZ  | 1.84                     | 1.12              |
| 1:AA:612:G:H4'    | 1:AA:616:A:N6     | 1.62                     | 1.11              |
| 1:AA:1520:U:H2'   | 1:AA:1521:G:H5''  | 1.13                     | 1.11              |
| 1:AA:2125:G:H1'   | 3:AC:218:MET:N    | 1.18                     | 1.11              |
| 1:AA:2556:C:C2    | 57:BZ:546:MET:HE2 | 1.84                     | 1.11              |
| 4:AD:146:GLU:HB2  | 4:AD:154:LYS:H    | 1.15                     | 1.11              |
| 15:AQ:54:ARG:HG2  | 15:AQ:100:TYR:HB3 | 1.29                     | 1.11              |
| 17:AS:64:HIS:HB3  | 17:AS:96:ILE:HA   | 1.28                     | 1.11              |
| 20:AV:42:VAL:H    | 20:AV:61:ILE:HB   | 1.11                     | 1.11              |
| 32:AJ:72:PRO:CG   | 32:AJ:77:LEU:CG   | 1.88                     | 1.11              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:939:G:H5''   | 40:BK:102:ARG:NH2  | 1.64                     | 1.11              |
| 34:BA:1339:A:C4'   | 56:BE:41:C:C4'     | 2.28                     | 1.11              |
| 46:BQ:10:PRO:HB2   | 46:BQ:45:VAL:HG11  | 1.14                     | 1.11              |
| 51:BV:21:LYS:HZ1   | 51:BV:23:LYS:HB3   | 1.08                     | 1.11              |
| 56:BE:21:A:C6      | 56:BE:46:G:N3      | 2.18                     | 1.11              |
| 57:BZ:80:ASP:OD1   | 57:BZ:365:HIS:HA   | 1.47                     | 1.11              |
| 57:BZ:205:PHE:CZ   | 57:BZ:226:ILE:CD1  | 2.33                     | 1.11              |
| 57:BZ:305:PRO:CB   | 57:BZ:361:ARG:HG2  | 1.79                     | 1.11              |
| 1:AA:287:C:H2'     | 1:AA:288:C:C5      | 1.84                     | 1.11              |
| 1:AA:775:G:H2'     | 1:AA:794:G:N7      | 1.66                     | 1.11              |
| 1:AA:898:C:H2'     | 1:AA:899:A:H4'     | 1.31                     | 1.11              |
| 9:AK:23:LEU:HD11   | 9:AK:63:THR:H      | 1.14                     | 1.11              |
| 15:AQ:30:VAL:CG2   | 15:AQ:90:GLN:HA    | 1.80                     | 1.11              |
| 17:AS:20:LEU:HD13  | 17:AS:68:LYS:HZ3   | 1.13                     | 1.11              |
| 32:AJ:82:ALA:CA    | 32:AJ:99:ILE:HG21  | 1.80                     | 1.11              |
| 34:BA:371:G:C2'    | 34:BA:372:C:H5'    | 1.80                     | 1.11              |
| 34:BA:587:G:H1'    | 34:BA:755:G:N2     | 1.65                     | 1.11              |
| 52:BW:18:LYS:HE3   | 52:BW:18:LYS:HA    | 1.30                     | 1.11              |
| 57:BZ:27:GLN:CA    | 57:BZ:28:GLN:CB    | 2.25                     | 1.11              |
| 57:BZ:57:LEU:HD12  | 57:BZ:255:LEU:HA   | 1.27                     | 1.11              |
| 57:BZ:233:PRO:HG2  | 57:BZ:248:ASN:ND2  | 1.63                     | 1.11              |
| 1:AA:716:A:C1'     | 48:BS:44:LYS:HD3   | 1.80                     | 1.11              |
| 1:AA:1081:U:H5'    | 32:AJ:125:ARG:CG   | 1.78                     | 1.11              |
| 1:AA:2254:C:H2'    | 1:AA:2255:G:H5'    | 1.29                     | 1.11              |
| 3:AC:71:GLN:HG2    | 3:AC:174:PRO:HG3   | 1.33                     | 1.11              |
| 3:AC:71:GLN:NE2    | 3:AC:174:PRO:HD3   | 1.66                     | 1.11              |
| 4:AD:134:ARG:HA    | 4:AD:168:ARG:NH1   | 1.63                     | 1.11              |
| 5:AE:8:LYS:HA      | 5:AE:8:LYS:HE2     | 1.33                     | 1.11              |
| 7:AG:170:ARG:O     | 7:AG:174:GLU:HB3   | 1.49                     | 1.11              |
| 13:AO:79:LEU:HD23  | 13:AO:80:PHE:N     | 1.64                     | 1.11              |
| 21:AW:57:ILE:HG12  | 21:AW:70:LEU:HB3   | 1.16                     | 1.11              |
| 32:AJ:19:PRO:HG3   | 32:AJ:38:VAL:H     | 1.08                     | 1.11              |
| 32:AJ:23:VAL:HG12  | 32:AJ:37:PHE:CD1   | 1.85                     | 1.11              |
| 32:AJ:78:ILE:HG22  | 32:AJ:127:ILE:HG12 | 1.31                     | 1.11              |
| 34:BA:958:A:N1     | 52:BW:56:GLN:NE2   | 1.98                     | 1.11              |
| 34:BA:1117:G:N1    | 34:BA:1184:G:C5    | 2.18                     | 1.11              |
| 34:BA:1220:G:H21   | 52:BW:55:LYS:HA    | 1.07                     | 1.11              |
| 40:BK:76:ARG:HB2   | 40:BK:156:TRP:HE1  | 1.00                     | 1.11              |
| 43:BN:45:ARG:HB3   | 43:BN:45:ARG:HH11  | 1.14                     | 1.11              |
| 45:BP:117:ARG:HH21 | 45:BP:124:LYS:HA   | 1.06                     | 1.11              |
| 52:BW:11:VAL:HG23  | 52:BW:16:LEU:HD13  | 1.16                     | 1.11              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:BZ:81:PHE:CG    | 57:BZ:365:HIS:NE2  | 2.19                     | 1.11              |
| 57:BZ:131:ASP:OD1  | 57:BZ:166:SER:HA   | 1.50                     | 1.11              |
| 57:BZ:167:ALA:HB2  | 60:BZ:701:GCP:HN1  | 1.09                     | 1.11              |
| 57:BZ:400:TYR:HD1  | 57:BZ:443:ILE:C    | 1.58                     | 1.11              |
| 57:BZ:551:ALA:HB1  | 57:BZ:552:ASP:HB2  | 1.31                     | 1.11              |
| 1:AA:112:U:H3'     | 1:AA:113:G:H5''    | 1.12                     | 1.11              |
| 1:AA:265:A:H8      | 1:AA:265:A:H3'     | 1.08                     | 1.11              |
| 1:AA:1718:G:H2'    | 1:AA:1725:G:H8     | 1.15                     | 1.11              |
| 1:AA:1754:C:O2     | 1:AA:1755:A:H1'    | 1.50                     | 1.11              |
| 3:AC:66:HIS:HA     | 3:AC:67:GLY:N      | 0.80                     | 1.11              |
| 3:AC:163:PHE:HD1   | 3:AC:196:LEU:CD1   | 1.64                     | 1.11              |
| 4:AD:134:ARG:HA    | 4:AD:168:ARG:HH12  | 0.94                     | 1.11              |
| 7:AG:130:ASN:O     | 7:AG:159:VAL:HG23  | 1.50                     | 1.11              |
| 15:AQ:62:THR:CG2   | 15:AQ:79:HIS:HA    | 1.80                     | 1.11              |
| 25:Aa:68:ARG:HH11  | 25:Aa:68:ARG:N     | 1.49                     | 1.11              |
| 32:AJ:15:GLY:H     | 32:AJ:45:THR:HB    | 1.05                     | 1.11              |
| 32:AJ:19:PRO:CG    | 32:AJ:38:VAL:H     | 1.63                     | 1.11              |
| 34:BA:1329:A:O2'   | 46:BQ:70:LEU:CD2   | 1.98                     | 1.11              |
| 34:BA:1329:A:OP1   | 46:BQ:29:ARG:HG2   | 1.51                     | 1.11              |
| 34:BA:1330:U:C5'   | 46:BQ:70:LEU:HD21  | 1.79                     | 1.11              |
| 42:BM:85:LEU:HD23  | 42:BM:96:LEU:HD13  | 1.31                     | 1.11              |
| 57:BZ:122:LYS:CE   | 57:BZ:156:GLU:CB   | 2.28                     | 1.11              |
| 57:BZ:122:LYS:HG3  | 57:BZ:158:LEU:O    | 1.48                     | 1.11              |
| 57:BZ:141:VAL:HG21 | 57:BZ:164:TYR:OH   | 1.44                     | 1.11              |
| 57:BZ:228:ARG:N    | 57:BZ:267:LEU:HD12 | 1.65                     | 1.11              |
| 57:BZ:382:VAL:HG22 | 57:BZ:578:VAL:HB   | 1.32                     | 1.11              |
| 1:AA:636:G:H22     | 11:AM:75:ILE:HD12  | 0.94                     | 1.11              |
| 1:AA:953:A:H2'     | 1:AA:954:G:H5'     | 1.15                     | 1.11              |
| 8:AH:98:LEU:HG     | 8:AH:123:PHE:HB2   | 1.33                     | 1.11              |
| 18:AT:19:LEU:HB3   | 26:Ab:25:LEU:HD13  | 1.20                     | 1.11              |
| 25:Aa:18:CYS:H     | 25:Aa:33:VAL:HB    | 1.10                     | 1.11              |
| 34:BA:291:C:H3'    | 34:BA:305:G:H22    | 1.10                     | 1.11              |
| 34:BA:313:A:H2'    | 34:BA:314:C:C6     | 1.85                     | 1.11              |
| 34:BA:408:A:H2'    | 34:BA:409:G:C8     | 1.85                     | 1.11              |
| 34:BA:1312:G:C5    | 34:BA:1326:C:N3    | 2.18                     | 1.11              |
| 34:BA:1318:A:C1'   | 52:BW:37:ARG:HB2   | 1.81                     | 1.11              |
| 34:BA:1329:A:H4'   | 46:BQ:29:ARG:NH2   | 1.15                     | 1.11              |
| 38:BI:121:LYS:NZ   | 38:BI:122:GLU:H    | 1.48                     | 1.11              |
| 57:BZ:200:ASP:HB2  | 57:BZ:228:ARG:CG   | 1.80                     | 1.11              |
| 57:BZ:311:PHE:HB2  | 57:BZ:356:PHE:HB2  | 1.31                     | 1.11              |
| 57:BZ:380:LEU:HD12 | 57:BZ:580:VAL:HG22 | 1.24                     | 1.11              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:BZ:400:TYR:CB   | 57:BZ:442:VAL:CG1  | 2.12                     | 1.11              |
| 1:AA:1813:G:H4'    | 4:AD:46:GLN:CB     | 1.81                     | 1.10              |
| 1:AA:2181:G:N3     | 1:AA:2182:G:O6     | 1.73                     | 1.10              |
| 1:AA:2239:G:H3'    | 1:AA:2240:C:H5''   | 1.23                     | 1.10              |
| 5:AE:173:VAL:HG13  | 5:AE:184:VAL:HA    | 1.32                     | 1.10              |
| 6:AF:18:ARG:O      | 6:AF:19:GLU:HG3    | 1.50                     | 1.10              |
| 10:AL:3:GLN:HE22   | 10:AL:33:ALA:CB    | 1.63                     | 1.10              |
| 26:Ab:20:ARG:O     | 26:Ab:23:HIS:HB2   | 1.49                     | 1.10              |
| 30:Af:20:HIS:HB2   | 30:Af:22:ARG:HG3   | 1.30                     | 1.10              |
| 32:AJ:75:SER:OG    | 32:AJ:130:SER:HB3  | 1.51                     | 1.10              |
| 32:AJ:104:VAL:HG11 | 32:AJ:127:ILE:HG21 | 1.22                     | 1.10              |
| 34:BA:1113:C:H2'   | 34:BA:1114:C:H6    | 1.06                     | 1.10              |
| 45:BP:84:LEU:HB3   | 45:BP:104:VAL:HG11 | 1.30                     | 1.10              |
| 52:BW:32:LYS:HA    | 52:BW:50:ALA:HB3   | 1.19                     | 1.10              |
| 57:BZ:397:GLN:HB3  | 57:BZ:472:TYR:CB   | 1.80                     | 1.10              |
| 1:AA:364:C:H2'     | 1:AA:365:C:C6      | 1.86                     | 1.10              |
| 1:AA:1931:U:H6     | 1:AA:1932:A:C8     | 1.69                     | 1.10              |
| 1:AA:2630:G:C4     | 1:AA:2894:G:C8     | 2.34                     | 1.10              |
| 1:AA:2660:A:H2     | 57:BZ:456:MET:HB2  | 0.94                     | 1.10              |
| 10:AL:60:ALA:O     | 10:AL:83:ALA:HB1   | 1.51                     | 1.10              |
| 12:AN:109:VAL:HG11 | 12:AN:114:ALA:HB2  | 1.30                     | 1.10              |
| 15:AQ:50:ILE:HB    | 15:AQ:66:VAL:CB    | 1.80                     | 1.10              |
| 21:AW:94:GLU:H     | 21:AW:95:PRO:HD3   | 1.12                     | 1.10              |
| 32:AJ:27:LEU:HD21  | 32:AJ:57:ILE:O     | 1.50                     | 1.10              |
| 34:BA:599:C:H4'    | 41:BL:130:GLY:HA3  | 1.17                     | 1.10              |
| 34:BA:1311:G:N1    | 34:BA:1327:C:C6    | 2.19                     | 1.10              |
| 39:BJ:23:LYS:O     | 39:BJ:26:ILE:HB    | 1.52                     | 1.10              |
| 46:BQ:65:LYS:HB2   | 46:BQ:69:GLU:HB3   | 1.29                     | 1.10              |
| 52:BW:9:VAL:HG23   | 52:BW:42:PRO:HB2   | 1.31                     | 1.10              |
| 57:BZ:11:ILE:HG21  | 57:BZ:112:VAL:HB   | 1.20                     | 1.10              |
| 57:BZ:13:HIS:CG    | 57:BZ:109:THR:CG2  | 2.33                     | 1.10              |
| 57:BZ:397:GLN:CG   | 57:BZ:472:TYR:O    | 1.99                     | 1.10              |
| 1:AA:270(C):C:H2'  | 1:AA:270(D):C:H6   | 1.10                     | 1.10              |
| 1:AA:545:G:H1'     | 1:AA:549:G:H22     | 1.14                     | 1.10              |
| 1:AA:2148:G:H2'    | 1:AA:2149:G:C8     | 1.86                     | 1.10              |
| 1:AA:2344:U:H5''   | 27:Ac:38:LYS:HG3   | 1.14                     | 1.10              |
| 1:AA:2619:C:H4'    | 5:AE:152:LYS:HA    | 1.11                     | 1.10              |
| 1:AA:2674:G:H2'    | 1:AA:2675:A:H8     | 1.09                     | 1.10              |
| 5:AE:13:ARG:HG3    | 5:AE:22:PRO:HD3    | 1.15                     | 1.10              |
| 8:AH:104:GLU:O     | 8:AH:113:VAL:HB    | 1.52                     | 1.10              |
| 27:Ac:20:ASN:HD22  | 27:Ac:41:PRO:HB2   | 1.10                     | 1.10              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 29:Ae:50:LEU:HD23  | 29:Ae:51:ALA:H     | 1.08                     | 1.10              |
| 31:AI:54:ALA:HB1   | 31:AI:83:TYR:O     | 1.51                     | 1.10              |
| 32:AJ:112:MET:HE1  | 32:AJ:119:ASP:HB3  | 1.29                     | 1.10              |
| 34:BA:684:A:H4'    | 44:BO:12:ARG:HH22  | 1.13                     | 1.10              |
| 34:BA:1080:A:H5'   | 38:BI:14:ARG:NH2   | 1.65                     | 1.10              |
| 44:BO:61:ALA:HB1   | 44:BO:94:ALA:HB2   | 1.13                     | 1.10              |
| 52:BW:15:LEU:HD13  | 52:BW:71:LEU:HD11  | 1.25                     | 1.10              |
| 57:BZ:512:LEU:HD23 | 57:BZ:518:VAL:HG11 | 1.32                     | 1.10              |
| 1:AA:261:G:H4'     | 1:AA:608:A:C2      | 1.84                     | 1.10              |
| 1:AA:2047:U:H2'    | 1:AA:2048:G:C8     | 1.84                     | 1.10              |
| 1:AA:2670:A:N3     | 1:AA:2671:A:C8     | 2.20                     | 1.10              |
| 4:AD:246:PRO:CD    | 4:AD:250:TRP:HB3   | 1.80                     | 1.10              |
| 6:AF:197:ASP:HA    | 6:AF:200:GLU:CG    | 1.81                     | 1.10              |
| 18:AT:69:LEU:HD23  | 18:AT:107:LEU:HD21 | 1.33                     | 1.10              |
| 21:AW:176:PRO:HB2  | 21:AW:179:ASP:HA   | 1.14                     | 1.10              |
| 31:AI:141:VAL:CA   | 33:Ag:134:UNK:HA   | 1.72                     | 1.10              |
| 34:BA:570:G:H5'    | 34:BA:820:U:H1'    | 1.33                     | 1.10              |
| 34:BA:1270:C:O3'   | 34:BA:1314:C:H5'   | 1.48                     | 1.10              |
| 35:BF:174:VAL:O    | 35:BF:178:ARG:HG2  | 1.50                     | 1.10              |
| 41:BL:87:SER:HB2   | 41:BL:92:ARG:HA    | 1.18                     | 1.10              |
| 46:BQ:78:ILE:HA    | 46:BQ:81:LEU:HD11  | 1.28                     | 1.10              |
| 53:BX:87:LYS:HG3   | 53:BX:91:LEU:HD21  | 1.30                     | 1.10              |
| 56:BE:21:A:H2'     | 56:BE:22:G:H5''    | 1.30                     | 1.10              |
| 57:BZ:10:ILE:HD13  | 57:BZ:21:LEU:CB    | 1.82                     | 1.10              |
| 57:BZ:305:PRO:HB3  | 57:BZ:361:ARG:HG2  | 1.15                     | 1.10              |
| 57:BZ:604:PRO:HB2  | 57:BZ:605:LYS:HB3  | 1.12                     | 1.10              |
| 1:AA:712:G:H2'     | 1:AA:713:G:H8      | 0.98                     | 1.10              |
| 1:AA:1069:A:C2     | 1:AA:1096:A:H5'    | 1.86                     | 1.10              |
| 1:AA:1557:C:H2'    | 1:AA:1558:A:H8     | 1.15                     | 1.10              |
| 1:AA:1913:A:H4'    | 1:AA:1914:C:H5'    | 1.21                     | 1.10              |
| 1:AA:2421:G:H2'    | 1:AA:2422:A:C8     | 1.87                     | 1.10              |
| 1:AA:2788:C:C4     | 1:AA:2789:C:C4     | 2.40                     | 1.10              |
| 5:AE:36:ARG:HG3    | 5:AE:79:ARG:HH11   | 1.06                     | 1.10              |
| 10:AL:119:PRO:HB2  | 34:BA:347:G:OP2    | 1.52                     | 1.10              |
| 16:AR:55:ARG:HG3   | 16:AR:58:ARG:HH21  | 1.05                     | 1.10              |
| 32:AJ:10:LEU:CD2   | 32:AJ:27:LEU:HD21  | 1.80                     | 1.10              |
| 34:BA:262:A:H2'    | 34:BA:263:A:C8     | 1.87                     | 1.10              |
| 34:BA:678:U:H2'    | 34:BA:679:C:C6     | 1.87                     | 1.10              |
| 34:BA:1486:G:H2'   | 34:BA:1487:G:H5''  | 1.28                     | 1.10              |
| 44:BO:58:PRO:HB2   | 44:BO:93:GLN:HB2   | 1.31                     | 1.10              |
| 47:BR:58:LYS:HD3   | 47:BR:59:ALA:N     | 1.67                     | 1.10              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 51:BV:58:LEU:HB3   | 51:BV:62:GLU:HB3   | 1.27                     | 1.10              |
| 51:BV:72:ARG:HA    | 51:BV:75:ILE:HD12  | 1.29                     | 1.10              |
| 52:BW:9:VAL:CG2    | 52:BW:42:PRO:CB    | 1.95                     | 1.10              |
| 56:BD:52:G:C6      | 56:BD:63:G:N1      | 2.20                     | 1.10              |
| 57:BZ:5:LEU:HD13   | 57:BZ:268:ALA:CB   | 1.82                     | 1.10              |
| 57:BZ:38:THR:HA    | 57:BZ:39:GLN:HB3   | 1.26                     | 1.10              |
| 57:BZ:81:PHE:HB2   | 57:BZ:344:ALA:HB3  | 1.31                     | 1.10              |
| 1:AA:172:C:C6      | 1:AA:173:G:N7      | 2.20                     | 1.09              |
| 1:AA:586:A:H5'     | 6:AF:89:VAL:HG21   | 1.20                     | 1.09              |
| 1:AA:729:G:H2'     | 1:AA:730:C:H4'     | 1.19                     | 1.09              |
| 1:AA:1024:G:H5''   | 1:AA:1025:G:C5'    | 1.82                     | 1.09              |
| 1:AA:1079:C:O2     | 32:AJ:129:GLY:O    | 1.67                     | 1.09              |
| 1:AA:1909:C:O2     | 1:AA:1922:G:C2     | 2.04                     | 1.09              |
| 1:AA:1967:C:H42    | 1:AA:1968:G:N2     | 1.48                     | 1.09              |
| 1:AA:1995:U:H5''   | 1:AA:1996:C:H5'    | 1.31                     | 1.09              |
| 1:AA:2353:G:H4'    | 22:AX:32:ARG:HH22  | 1.16                     | 1.09              |
| 1:AA:2416:C:OP1    | 11:AM:59:LEU:HA    | 1.49                     | 1.09              |
| 1:AA:2591:C:H2'    | 1:AA:2592:G:H8     | 1.01                     | 1.09              |
| 2:AB:71:C:H2'      | 2:AB:72:G:H5'      | 1.18                     | 1.09              |
| 10:AL:62:VAL:HG23  | 10:AL:83:ALA:HA    | 1.26                     | 1.09              |
| 16:AR:112:ARG:HH12 | 17:AS:50:PRO:HG3   | 0.95                     | 1.09              |
| 17:AS:28:GLU:HB3   | 17:AS:94:LEU:HD12  | 1.34                     | 1.09              |
| 24:AZ:3:ARG:HB3    | 24:AZ:3:ARG:NH1    | 1.66                     | 1.09              |
| 25:Aa:46:GLN:HE22  | 25:Aa:69:LYS:HE2   | 1.17                     | 1.09              |
| 29:Ae:8:LYS:HD3    | 29:Ae:11:LYS:HZ2   | 1.08                     | 1.09              |
| 32:AJ:123:ALA:HA   | 32:AJ:127:ILE:HG13 | 1.29                     | 1.09              |
| 34:BA:1315:U:C2'   | 34:BA:1360:A:H2'   | 1.80                     | 1.09              |
| 41:BL:6:ILE:HG23   | 41:BL:7:ALA:H      | 1.06                     | 1.09              |
| 42:BM:50:LEU:HD11  | 42:BM:56:LEU:HA    | 1.32                     | 1.09              |
| 44:BO:57:THR:HG23  | 44:BO:60:ALA:H     | 1.13                     | 1.09              |
| 45:BP:23:LYS:HE3   | 45:BP:23:LYS:HA    | 1.30                     | 1.09              |
| 56:BE:14:A:H2'     | 56:BE:15:G:H5'     | 1.32                     | 1.09              |
| 57:BZ:236:GLN:HA   | 57:BZ:247:ARG:CA   | 1.79                     | 1.09              |
| 57:BZ:547:ARG:HD3  | 57:BZ:548:ALA:CB   | 1.82                     | 1.09              |
| 1:AA:270(X):G:H2'  | 1:AA:270(Y):G:H5'  | 1.32                     | 1.09              |
| 1:AA:1405:U:H2'    | 1:AA:1406:U:C6     | 1.86                     | 1.09              |
| 1:AA:1520:U:C2'    | 1:AA:1521:G:H5''   | 1.82                     | 1.09              |
| 1:AA:1543:A:H3'    | 1:AA:1544:C:H4'    | 1.20                     | 1.09              |
| 1:AA:2124:G:C4'    | 3:AC:42:GLU:OE1    | 1.95                     | 1.09              |
| 1:AA:2392:A:H1'    | 11:AM:55:ARG:NH1   | 1.66                     | 1.09              |
| 59:AA:3003:8AN:P   | 22:AX:4:LYS:HD3    | 1.93                     | 1.09              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 3:AC:100:ILE:HG23 | 3:AC:127:LEU:HG    | 1.28                     | 1.09              |
| 5:AE:104:VAL:HG22 | 5:AE:198:VAL:HG13  | 1.29                     | 1.09              |
| 6:AF:197:ASP:HA   | 6:AF:200:GLU:HG3   | 1.09                     | 1.09              |
| 10:AL:4:PRO:HG2   | 10:AL:5:GLN:H      | 1.14                     | 1.09              |
| 10:AL:68:GLU:OE2  | 10:AL:76:ALA:HB3   | 1.51                     | 1.09              |
| 11:AM:46:LYS:HB2  | 11:AM:49:ARG:HB2   | 1.31                     | 1.09              |
| 14:AP:3:ARG:HG2   | 14:AP:4:LEU:H      | 1.04                     | 1.09              |
| 21:AW:176:PRO:CB  | 21:AW:179:ASP:HA   | 1.82                     | 1.09              |
| 24:AZ:9:VAL:HG23  | 24:AZ:10:LYS:H     | 1.08                     | 1.09              |
| 31:AI:140:GLY:HA3 | 33:Ag:136:UNK:O    | 1.51                     | 1.09              |
| 34:BA:932:C:H3'   | 40:BK:3:ARG:HG3    | 1.31                     | 1.09              |
| 34:BA:1270:C:O2'  | 34:BA:1313:U:O3'   | 1.70                     | 1.09              |
| 34:BA:1330:U:H5'  | 46:BQ:70:LEU:HD21  | 1.23                     | 1.09              |
| 37:BH:101:LEU:O   | 37:BH:104:VAL:HG22 | 1.49                     | 1.09              |
| 40:BK:46:ALA:HA   | 40:BK:49:ILE:HD13  | 1.29                     | 1.09              |
| 46:BQ:20:THR:CG2  | 46:BQ:26:GLY:HA3   | 1.65                     | 1.09              |
| 51:BV:70:ILE:HG22 | 51:BV:74:ARG:HE    | 1.18                     | 1.09              |
| 56:BE:21:A:N6     | 56:BE:46:G:N9      | 2.01                     | 1.09              |
| 57:BZ:13:HIS:HB2  | 57:BZ:108:GLN:HB2  | 1.29                     | 1.09              |
| 57:BZ:28:GLN:O    | 57:BZ:60:ASN:CG    | 1.95                     | 1.09              |
| 57:BZ:200:ASP:OD2 | 57:BZ:228:ARG:HD3  | 0.93                     | 1.09              |
| 57:BZ:496:ALA:N   | 57:BZ:516:ALA:O    | 1.83                     | 1.09              |
| 1:AA:6:A:C6       | 1:AA:2897:U:C4     | 2.41                     | 1.09              |
| 1:AA:71:A:H4'     | 1:AA:72:U:H5''     | 1.33                     | 1.09              |
| 1:AA:1080:C:H4'   | 32:AJ:128:ALA:CB   | 1.65                     | 1.09              |
| 1:AA:1258:C:H5'   | 6:AF:84:VAL:HG21   | 1.34                     | 1.09              |
| 1:AA:1466:G:H2'   | 1:AA:1547:C:H41    | 1.09                     | 1.09              |
| 1:AA:1488:G:H2'   | 1:AA:1489:U:H5'    | 1.33                     | 1.09              |
| 1:AA:2063:C:H3'   | 1:AA:2064:C:H5''   | 1.33                     | 1.09              |
| 1:AA:2125:G:C5'   | 3:AC:40:THR:CG2    | 2.30                     | 1.09              |
| 1:AA:2572:A:H4'   | 1:AA:2573:C:C5'    | 1.81                     | 1.09              |
| 1:AA:2651:C:N3    | 1:AA:2670:A:N6     | 2.00                     | 1.09              |
| 2:AB:103:U:H2'    | 2:AB:104:A:H5'     | 1.33                     | 1.09              |
| 3:AC:71:GLN:HE21  | 3:AC:174:PRO:HD3   | 1.02                     | 1.09              |
| 20:AV:28:LYS:H    | 20:AV:28:LYS:HE2   | 1.11                     | 1.09              |
| 29:Ae:34:TRP:C    | 29:Ae:36:LYS:H     | 1.41                     | 1.09              |
| 32:AJ:17:ALA:HB2  | 32:AJ:42:ASN:CA    | 1.82                     | 1.09              |
| 34:BA:1225:A:C4'  | 52:BW:78:ARG:HB3   | 1.81                     | 1.09              |
| 35:BF:184:VAL:O   | 35:BF:198:ASP:HB2  | 1.51                     | 1.09              |
| 46:BQ:4:ILE:HD13  | 46:BQ:57:ARG:HG3   | 1.12                     | 1.09              |
| 46:BQ:87:TYR:OH   | 52:BW:75:ALA:C     | 1.94                     | 1.09              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 48:BS:6:GLU:HG2   | 48:BS:7:GLU:H      | 1.11                     | 1.09              |
| 51:BV:33:ASP:CG   | 51:BV:34:TYR:H     | 1.57                     | 1.09              |
| 57:BZ:7:ASN:OD1   | 57:BZ:71:ASN:HB3   | 1.50                     | 1.09              |
| 1:AA:27:G:H1      | 1:AA:512:G:H2'     | 1.12                     | 1.09              |
| 1:AA:716:A:C2     | 48:BS:44:LYS:CG    | 2.25                     | 1.09              |
| 1:AA:988:A:H62    | 24:AZ:13:ILE:HG13  | 1.14                     | 1.09              |
| 3:AC:62:VAL:CG1   | 3:AC:192:PHE:N     | 2.16                     | 1.09              |
| 5:AE:116:VAL:HG21 | 5:AE:138:PRO:HA    | 1.17                     | 1.09              |
| 7:AG:49:ASP:O     | 7:AG:53:LEU:HB2    | 1.52                     | 1.09              |
| 8:AH:103:LEU:HB2  | 8:AH:115:VAL:HB    | 1.24                     | 1.09              |
| 23:AY:55:LEU:O    | 23:AY:58:VAL:HG13  | 1.51                     | 1.09              |
| 34:BA:38:G:H22    | 34:BA:397:A:C5'    | 1.66                     | 1.09              |
| 34:BA:1310:G:C6   | 34:BA:1327:C:N4    | 2.19                     | 1.09              |
| 37:BH:20:TYR:HA   | 37:BH:26:CYS:SG    | 1.92                     | 1.09              |
| 37:BH:43:HIS:HB3  | 37:BH:46:LYS:HG3   | 1.30                     | 1.09              |
| 57:BZ:520:GLU:OE2 | 57:BZ:593:THR:CA   | 1.98                     | 1.09              |
| 1:AA:2656:U:O4    | 1:AA:2665:A:N6     | 1.86                     | 1.09              |
| 4:AD:142:VAL:HG12 | 4:AD:193:VAL:HA    | 1.28                     | 1.09              |
| 8:AH:38:SER:H     | 8:AH:41:MET:HE2    | 0.96                     | 1.09              |
| 12:AN:44:ALA:HA   | 12:AN:47:ILE:HD12  | 1.35                     | 1.09              |
| 20:AV:14:LEU:HB2  | 20:AV:20:TYR:HA    | 1.32                     | 1.09              |
| 34:BA:677:U:H2'   | 34:BA:678:U:C5     | 1.86                     | 1.09              |
| 34:BA:1315:U:C2   | 34:BA:1361:G:C1'   | 2.33                     | 1.09              |
| 34:BA:1393:U:H4'  | 34:BA:1501:C:O2'   | 1.51                     | 1.09              |
| 35:BF:69:LEU:HA   | 35:BF:91:PRO:O     | 1.53                     | 1.09              |
| 50:BU:25:ARG:HH21 | 50:BU:40:LYS:HD3   | 1.07                     | 1.09              |
| 52:BW:69:HIS:HB2  | 52:BW:74:PHE:HZ    | 1.17                     | 1.09              |
| 57:BZ:390:ARG:HG2 | 57:BZ:391:GLU:HG2  | 1.17                     | 1.09              |
| 1:AA:962:G:H2'    | 1:AA:963:U:C6      | 1.87                     | 1.08              |
| 1:AA:965:C:H5'    | 1:AA:2273:A:H1'    | 1.30                     | 1.08              |
| 1:AA:1105:U:C2'   | 1:AA:1107:G:N7     | 2.16                     | 1.08              |
| 1:AA:1697:G:H3'   | 1:AA:1698:A:C5'    | 1.80                     | 1.08              |
| 1:AA:1780:A:H3'   | 1:AA:1781:C:H5'    | 1.35                     | 1.08              |
| 1:AA:1788:C:H2'   | 4:AD:222:ARG:NH2   | 1.66                     | 1.08              |
| 1:AA:1827:C:H2'   | 1:AA:1828:G:O4'    | 1.53                     | 1.08              |
| 1:AA:1907:G:H1    | 1:AA:1924:C:N4     | 0.82                     | 1.08              |
| 1:AA:2176:A:C3'   | 3:AC:221:SER:OG    | 2.00                     | 1.08              |
| 4:AD:105:ILE:HG13 | 4:AD:106:ILE:HG12  | 1.29                     | 1.08              |
| 7:AG:68:PRO:HB3   | 7:AG:72:ARG:HH22   | 1.00                     | 1.08              |
| 9:AK:46:VAL:HG12  | 9:AK:47:ALA:H      | 0.98                     | 1.08              |
| 12:AN:23:GLY:HA3  | 12:AN:101:ARG:HH21 | 0.99                     | 1.08              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 16:AR:57:PHE:HA   | 16:AR:60:LEU:HG    | 1.34                     | 1.08              |
| 16:AR:89:GLU:HG2  | 17:AS:52:VAL:HG23  | 1.12                     | 1.08              |
| 19:AU:32:PRO:HA   | 19:AU:77:LYS:HD2   | 1.35                     | 1.08              |
| 31:AI:145:PRO:HA  | 33:Ag:133:UNK:CB   | 1.78                     | 1.08              |
| 32:AJ:17:ALA:HA   | 32:AJ:41:PHE:HB2   | 1.23                     | 1.08              |
| 32:AJ:84:LEU:HD12 | 32:AJ:86:LYS:HE3   | 1.30                     | 1.08              |
| 34:BA:1315:U:O2'  | 34:BA:1360:A:C2'   | 1.77                     | 1.08              |
| 34:BA:1477:C:H2'  | 34:BA:1478:C:H6    | 1.18                     | 1.08              |
| 34:BA:1486:G:O6   | 34:BA:1487:G:C5    | 1.94                     | 1.08              |
| 35:BF:50:GLU:HG3  | 35:BF:200:ILE:O    | 1.52                     | 1.08              |
| 36:BG:38:ARG:HB3  | 36:BG:38:ARG:HH11  | 0.94                     | 1.08              |
| 46:BQ:8:GLU:HG3   | 46:BQ:22:ILE:HG13  | 1.34                     | 1.08              |
| 49:BT:75:ARG:HG2  | 49:BT:80:PHE:HB3   | 1.30                     | 1.08              |
| 51:BV:74:ARG:HG2  | 51:BV:81:PHE:HB3   | 1.26                     | 1.08              |
| 57:BZ:220:VAL:CG2 | 57:BZ:279:LEU:HB2  | 1.80                     | 1.08              |
| 57:BZ:495:LYS:HA  | 57:BZ:517:GLU:CA   | 1.79                     | 1.08              |
| 1:AA:1047:G:C2'   | 1:AA:1110:G:C8     | 2.31                     | 1.08              |
| 1:AA:1083:U:C2    | 1:AA:1085:A:C8     | 2.42                     | 1.08              |
| 1:AA:1902:C:C2'   | 1:AA:1903:G:H5'    | 1.83                     | 1.08              |
| 1:AA:2178:C:H5'   | 3:AC:46:LYS:HG2    | 1.12                     | 1.08              |
| 2:AB:46:A:H2'     | 2:AB:47:C:C6       | 1.86                     | 1.08              |
| 3:AC:22:ILE:HG21  | 3:AC:190:ARG:NH2   | 1.67                     | 1.08              |
| 4:AD:6:PHE:O      | 4:AD:27:THR:HA     | 1.53                     | 1.08              |
| 4:AD:37:LEU:HD22  | 4:AD:64:ILE:HG22   | 1.10                     | 1.08              |
| 5:AE:136:ARG:C    | 5:AE:137:HIS:HD1   | 1.61                     | 1.08              |
| 5:AE:146:THR:HB   | 5:AE:147:PRO:HD3   | 1.30                     | 1.08              |
| 12:AN:42:ILE:HD12 | 12:AN:47:ILE:HG13  | 1.29                     | 1.08              |
| 16:AR:98:LEU:HD12 | 16:AR:105:VAL:HG21 | 1.34                     | 1.08              |
| 24:AZ:4:LEU:HB3   | 24:AZ:37:LEU:HD23  | 1.28                     | 1.08              |
| 25:Aa:7:PRO:HD3   | 25:Aa:56:VAL:HG13  | 1.34                     | 1.08              |
| 34:BA:1311:G:O6   | 34:BA:1327:C:C5    | 2.05                     | 1.08              |
| 37:BH:121:VAL:HB  | 37:BH:136:PRO:HG3  | 1.26                     | 1.08              |
| 43:BN:94:VAL:HG12 | 43:BN:95:GLU:H     | 1.13                     | 1.08              |
| 52:BW:6:LYS:CB    | 52:BW:41:VAL:HG11  | 1.82                     | 1.08              |
| 52:BW:10:PHE:N    | 52:BW:41:VAL:HG21  | 1.68                     | 1.08              |
| 56:BD:51:U:O4     | 56:BD:64:A:N6      | 1.86                     | 1.08              |
| 57:BZ:10:ILE:H    | 57:BZ:74:ASP:N     | 1.07                     | 1.08              |
| 57:BZ:10:ILE:N    | 57:BZ:74:ASP:H     | 1.35                     | 1.08              |
| 57:BZ:236:GLN:HG2 | 57:BZ:237:VAL:H    | 1.12                     | 1.08              |
| 1:AA:323:G:H2'    | 6:AF:170:LEU:HB2   | 1.34                     | 1.08              |
| 1:AA:869:G:H2'    | 1:AA:870:A:H5''    | 1.11                     | 1.08              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:917:A:H3'    | 1:AA:917:A:H8     | 1.18                     | 1.08              |
| 1:AA:1649:G:H21   | 13:AO:107:ASP:HB2 | 0.96                     | 1.08              |
| 1:AA:2181:G:N3    | 1:AA:2182:G:N1    | 2.00                     | 1.08              |
| 1:AA:2286:A:H4'   | 1:AA:2287:A:H1'   | 1.29                     | 1.08              |
| 1:AA:2348:U:H3'   | 29:Ae:42:ARG:HH22 | 0.98                     | 1.08              |
| 1:AA:2491:U:H3'   | 1:AA:2491:U:H6    | 0.98                     | 1.08              |
| 6:AF:164:ARG:HB2  | 6:AF:177:ALA:HB2  | 1.30                     | 1.08              |
| 7:AG:75:LYS:HG2   | 7:AG:84:LYS:HB2   | 1.27                     | 1.08              |
| 10:AL:64:ARG:HH11 | 10:AL:67:LYS:N    | 1.50                     | 1.08              |
| 12:AN:66:ILE:HG22 | 12:AN:67:ARG:H    | 0.92                     | 1.08              |
| 18:AT:13:SER:OG   | 18:AT:14:PRO:HD2  | 1.50                     | 1.08              |
| 21:AW:55:HIS:CB   | 21:AW:101:PRO:HG3 | 1.83                     | 1.08              |
| 27:Ac:19:ARG:NH1  | 27:Ac:41:PRO:HG3  | 1.66                     | 1.08              |
| 31:AI:140:GLY:HA2 | 33:Ag:137:UNK:HA  | 1.12                     | 1.08              |
| 32:AJ:17:ALA:HA   | 32:AJ:41:PHE:HB3  | 1.34                     | 1.08              |
| 34:BA:50:A:H5''   | 34:BA:51:A:H5'    | 1.16                     | 1.08              |
| 34:BA:559:A:C4'   | 34:BA:560:U:H5'   | 1.82                     | 1.08              |
| 34:BA:761:G:H5'   | 50:BU:102:GLY:HA3 | 1.30                     | 1.08              |
| 34:BA:770:C:H1'   | 34:BA:900:A:H2    | 1.12                     | 1.08              |
| 34:BA:986:A:C5'   | 52:BW:55:LYS:HZ1  | 1.67                     | 1.08              |
| 34:BA:1329:A:O2'  | 46:BQ:70:LEU:HD22 | 1.53                     | 1.08              |
| 35:BF:56:ARG:NH1  | 35:BF:56:ARG:HB3  | 1.66                     | 1.08              |
| 37:BH:50:ARG:HG2  | 37:BH:51:PRO:HD2  | 1.34                     | 1.08              |
| 40:BK:155:ARG:CZ  | 40:BK:155:ARG:HA  | 1.82                     | 1.08              |
| 52:BW:6:LYS:HB3   | 52:BW:41:VAL:CG1  | 1.82                     | 1.08              |
| 56:BE:21:A:C5     | 56:BE:46:G:C5     | 2.40                     | 1.08              |
| 57:BZ:27:GLN:H    | 57:BZ:28:GLN:CB   | 1.55                     | 1.08              |
| 57:BZ:206:GLN:O   | 57:BZ:227:LYS:HG2 | 1.50                     | 1.08              |
| 57:BZ:309:MET:CA  | 57:BZ:383:SER:OG  | 2.02                     | 1.08              |
| 57:BZ:379:GLU:HB3 | 57:BZ:580:VAL:O   | 1.53                     | 1.08              |
| 57:BZ:402:ASN:HB3 | 57:BZ:441:TYR:O   | 1.51                     | 1.08              |
| 1:AA:1255:U:H5'   | 1:AA:1256:G:C5'   | 1.82                     | 1.08              |
| 1:AA:1819:A:H5''  | 4:AD:178:PRO:HG3  | 1.32                     | 1.08              |
| 1:AA:2630:G:O2'   | 1:AA:2894:G:O5'   | 1.72                     | 1.08              |
| 10:AL:39:ILE:HG12 | 10:AL:59:LYS:NZ   | 1.67                     | 1.08              |
| 12:AN:83:MET:HE2  | 12:AN:83:MET:O    | 1.53                     | 1.08              |
| 16:AR:105:VAL:O   | 16:AR:109:LEU:HG  | 1.53                     | 1.08              |
| 22:AX:64:ASP:HB3  | 22:AX:84:LEU:HD13 | 1.36                     | 1.08              |
| 25:Aa:5:ILE:HG22  | 25:Aa:7:PRO:HD2   | 1.18                     | 1.08              |
| 32:AJ:12:LEU:CD1  | 32:AJ:41:PHE:CZ   | 2.37                     | 1.08              |
| 34:BA:9:G:H5''    | 38:BI:126:ARG:HD3 | 1.29                     | 1.08              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:736:C:H5''   | 51:BV:72:ARG:HH22  | 1.11                     | 1.08              |
| 41:BL:37:ARG:HD3   | 41:BL:41:ARG:HG3   | 1.26                     | 1.08              |
| 51:BV:58:LEU:HB3   | 51:BV:62:GLU:CB    | 1.84                     | 1.08              |
| 51:BV:74:ARG:HB3   | 51:BV:81:PHE:HD2   | 1.10                     | 1.08              |
| 57:BZ:2:ILE:HG22   | 57:BZ:199:VAL:CG2  | 1.82                     | 1.08              |
| 57:BZ:122:LYS:NZ   | 57:BZ:156:GLU:HB3  | 1.61                     | 1.08              |
| 57:BZ:310:PHE:O    | 57:BZ:383:SER:O    | 1.72                     | 1.08              |
| 57:BZ:446:ARG:CG   | 57:BZ:480:VAL:HG12 | 1.82                     | 1.08              |
| 57:BZ:488:LEU:HD12 | 57:BZ:525:GLY:HA3  | 1.33                     | 1.08              |
| 57:BZ:547:ARG:HB3  | 57:BZ:548:ALA:HB2  | 1.10                     | 1.08              |
| 1:AA:663:G:H5'     | 11:AM:18:ARG:HB3   | 1.36                     | 1.08              |
| 1:AA:820:A:H2'     | 1:AA:821:A:H5'     | 1.28                     | 1.08              |
| 1:AA:1048:A:H2     | 1:AA:1113:U:O4'    | 1.35                     | 1.08              |
| 1:AA:2181:G:H5'    | 55:BC:17:C:C4      | 1.88                     | 1.08              |
| 1:AA:2788:C:H42    | 1:AA:2789:C:N4     | 1.46                     | 1.08              |
| 5:AE:171:GLU:HB2   | 5:AE:185:LYS:HZ2   | 1.18                     | 1.08              |
| 7:AG:68:PRO:HB3    | 7:AG:72:ARG:NH2    | 1.67                     | 1.08              |
| 7:AG:91:ARG:HB2    | 7:AG:91:ARG:HH21   | 1.05                     | 1.08              |
| 7:AG:107:LEU:O     | 7:AG:111:LEU:HB2   | 1.53                     | 1.08              |
| 7:AG:148:MET:HG2   | 7:AG:151:ALA:CA    | 1.82                     | 1.08              |
| 8:AH:43:VAL:HG22   | 8:AH:52:VAL:HA     | 1.11                     | 1.08              |
| 21:AW:55:HIS:HB3   | 21:AW:101:PRO:HG3  | 1.36                     | 1.08              |
| 26:Ab:58:LEU:HD22  | 26:Ab:59:GLU:H     | 1.03                     | 1.08              |
| 32:AJ:34:ILE:HD13  | 32:AJ:35:MET:H     | 1.19                     | 1.08              |
| 34:BA:815:A:H1'    | 34:BA:817:C:N4     | 1.68                     | 1.08              |
| 34:BA:1316:G:H5'   | 34:BA:1360:A:C4    | 1.88                     | 1.08              |
| 34:BA:1441:G:N2    | 34:BA:1460:A:H62   | 1.49                     | 1.08              |
| 35:BF:88:ALA:HB2   | 35:BF:219:VAL:HG22 | 1.13                     | 1.08              |
| 35:BF:222:ILE:O    | 35:BF:226:ARG:HB2  | 1.53                     | 1.08              |
| 46:BQ:27:LYS:HB3   | 54:BY:7:ARG:HH11   | 1.15                     | 1.08              |
| 46:BQ:81:LEU:HD23  | 46:BQ:89:GLY:HA3   | 1.13                     | 1.08              |
| 48:BS:54:ARG:HA    | 48:BS:57:LEU:HD22  | 1.35                     | 1.08              |
| 57:BZ:64:ILE:HG23  | 57:BZ:188:GLN:NE2  | 1.68                     | 1.08              |
| 57:BZ:406:ASP:HA   | 57:BZ:407:VAL:HG22 | 1.28                     | 1.08              |
| 57:BZ:446:ARG:HG2  | 57:BZ:480:VAL:HG12 | 1.14                     | 1.08              |
| 57:BZ:564:THR:H    | 57:BZ:567:GLN:HB3  | 0.93                     | 1.08              |
| 1:AA:261:G:H4'     | 1:AA:608:A:H2      | 1.09                     | 1.07              |
| 1:AA:811:U:O2'     | 1:AA:1251:C:H1'    | 1.53                     | 1.07              |
| 1:AA:861:A:H62     | 1:AA:916:G:N2      | 1.50                     | 1.07              |
| 1:AA:895:U:H4'     | 1:AA:896:A:H5'     | 1.15                     | 1.07              |
| 1:AA:1535:U:H2'    | 1:AA:1536:A:O4'    | 1.51                     | 1.07              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1613:G:H3'   | 1:AA:1614:A:H5'    | 1.32                     | 1.07              |
| 1:AA:2058:A:H2'   | 1:AA:2059:A:C8     | 1.89                     | 1.07              |
| 1:AA:2152:G:H5''  | 3:AC:2:LYS:HB2     | 1.08                     | 1.07              |
| 1:AA:2252:G:C5    | 59:AA:3003:8AN:C6  | 2.31                     | 1.07              |
| 6:AF:74:ARG:NE    | 6:AF:75:HIS:H      | 1.52                     | 1.07              |
| 6:AF:104:LYS:HG3  | 6:AF:108:LYS:HZ1   | 1.17                     | 1.07              |
| 7:AG:41:GLN:HE22  | 7:AG:155:MET:HG3   | 1.06                     | 1.07              |
| 10:AL:62:VAL:O    | 10:AL:63:VAL:HG22  | 1.52                     | 1.07              |
| 13:AO:88:ARG:HB2  | 13:AO:88:ARG:HH11  | 0.98                     | 1.07              |
| 18:AT:16:LYS:N    | 18:AT:16:LYS:HZ2   | 1.51                     | 1.07              |
| 20:AV:47:LYS:HD3  | 20:AV:49:VAL:HG21  | 1.35                     | 1.07              |
| 31:AI:47:ASN:CB   | 31:AI:98:LYS:CB    | 2.31                     | 1.07              |
| 32:AJ:112:MET:HG3 | 32:AJ:122:ALA:HB3  | 1.36                     | 1.07              |
| 34:BA:781:A:H2'   | 34:BA:782:A:H5'    | 1.35                     | 1.07              |
| 34:BA:1309:G:N1   | 34:BA:1328:C:C4    | 2.23                     | 1.07              |
| 34:BA:1504:G:OP1  | 34:BA:1507:A:H4'   | 1.53                     | 1.07              |
| 45:BP:86:ARG:HH12 | 45:BP:119:LYS:HG3  | 1.09                     | 1.07              |
| 56:BD:64:A:H2'    | 56:BD:65:G:H8      | 1.15                     | 1.07              |
| 56:BE:20:U:H3'    | 56:BE:21:A:H5''    | 1.16                     | 1.07              |
| 57:BZ:12:ALA:C    | 57:BZ:109:THR:HG22 | 1.77                     | 1.07              |
| 57:BZ:64:ILE:HG23 | 57:BZ:188:GLN:CD   | 1.78                     | 1.07              |
| 57:BZ:236:GLN:CB  | 57:BZ:247:ARG:HA   | 1.83                     | 1.07              |
| 1:AA:976:C:H5'    | 1:AA:1156:A:H62    | 0.98                     | 1.07              |
| 1:AA:1083:U:C2    | 1:AA:1085:A:N7     | 2.22                     | 1.07              |
| 1:AA:1114:G:N2    | 1:AA:1115:G:H1'    | 1.65                     | 1.07              |
| 1:AA:1657:C:H5'   | 5:AE:133:LYS:HD3   | 1.35                     | 1.07              |
| 1:AA:2306:C:N3    | 7:AG:46:ALA:HB2    | 1.69                     | 1.07              |
| 1:AA:2808:U:O3'   | 1:AA:2810:A:OP1    | 1.70                     | 1.07              |
| 3:AC:21:THR:CB    | 3:AC:228:SER:HB3   | 1.84                     | 1.07              |
| 4:AD:23:GLU:HB2   | 4:AD:205:VAL:HG12  | 1.35                     | 1.07              |
| 5:AE:50:GLY:C     | 5:AE:76:ARG:HE     | 1.62                     | 1.07              |
| 9:AK:23:LEU:CD1   | 9:AK:63:THR:H      | 1.68                     | 1.07              |
| 12:AN:8:LYS:HE3   | 12:AN:93:TYR:HB3   | 1.34                     | 1.07              |
| 34:BA:558:G:C3'   | 34:BA:559:A:H5''   | 1.85                     | 1.07              |
| 34:BA:1454:G:OP2  | 53:BX:39:LYS:HD2   | 1.43                     | 1.07              |
| 55:BC:16:U:C4     | 55:BC:18:G:C3'     | 2.35                     | 1.07              |
| 57:BZ:446:ARG:HG2 | 57:BZ:480:VAL:HG11 | 1.13                     | 1.07              |
| 1:AA:2:G:C8       | 1:AA:2902:C:N3     | 2.22                     | 1.07              |
| 1:AA:112:U:H3'    | 1:AA:113:G:C5'     | 1.84                     | 1.07              |
| 1:AA:220:G:H4'    | 1:AA:234:C:H4'     | 1.28                     | 1.07              |
| 1:AA:786:C:O2'    | 1:AA:787:U:H5'     | 1.54                     | 1.07              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:1475:G:N1     | 1:AA:1477:A:N6    | 2.01                     | 1.07              |
| 1:AA:1566:A:C2     | 4:AD:215:LEU:HD13 | 1.88                     | 1.07              |
| 1:AA:2371:G:H4'    | 27:Ac:46:HIS:HB3  | 1.35                     | 1.07              |
| 1:AA:2808:U:H2'    | 1:AA:2809:A:H5''  | 1.35                     | 1.07              |
| 2:AB:89(A):A:H2'   | 2:AB:90:C:H5'     | 1.08                     | 1.07              |
| 9:AK:15:LEU:HD21   | 9:AK:137:LYS:CA   | 1.84                     | 1.07              |
| 9:AK:46:VAL:HG12   | 9:AK:47:ALA:N     | 1.68                     | 1.07              |
| 10:AL:122:LEU:N    | 15:AQ:70:VAL:HG12 | 1.67                     | 1.07              |
| 11:AM:63:PRO:HB2   | 11:AM:64:LYS:HE2  | 1.34                     | 1.07              |
| 12:AN:22:LYS:HD2   | 12:AN:99:PRO:HG3  | 1.35                     | 1.07              |
| 33:Ag:290:UNK:HA   | 33:Ag:342:UNK:O   | 1.51                     | 1.07              |
| 34:BA:1125:U:H5''  | 43:BN:38:ILE:HD13 | 1.15                     | 1.07              |
| 34:BA:1225:A:C5'   | 52:BW:78:ARG:CD   | 2.19                     | 1.07              |
| 34:BA:1268:A:C2    | 34:BA:1311:G:N3   | 2.21                     | 1.07              |
| 34:BA:1311:G:N2    | 34:BA:1326:C:H1'  | 1.48                     | 1.07              |
| 34:BA:1455:G:OP1   | 53:BX:31:SER:O    | 1.70                     | 1.07              |
| 37:BH:82:ALA:HB3   | 37:BH:89:THR:HG23 | 1.34                     | 1.07              |
| 38:BI:144:THR:HG22 | 38:BI:146:ALA:H   | 1.11                     | 1.07              |
| 41:BL:22:GLU:HA    | 41:BL:63:LEU:HD22 | 1.33                     | 1.07              |
| 44:BO:32:ILE:HG22  | 44:BO:40:ILE:HD11 | 1.36                     | 1.07              |
| 56:BE:73:A:H4'     | 56:BE:74:C:C2     | 1.89                     | 1.07              |
| 57:BZ:25:LEU:O     | 57:BZ:28:GLN:CG   | 2.02                     | 1.07              |
| 57:BZ:61:THR:HG22  | 57:BZ:65:LYS:HB3  | 1.35                     | 1.07              |
| 57:BZ:206:GLN:HG2  | 57:BZ:227:LYS:CG  | 1.83                     | 1.07              |
| 57:BZ:207:MET:CB   | 57:BZ:226:ILE:CD1 | 2.33                     | 1.07              |
| 57:BZ:234:ASN:ND2  | 57:BZ:247:ARG:CB  | 1.93                     | 1.07              |
| 57:BZ:400:TYR:CE1  | 57:BZ:444:PRO:N   | 2.22                     | 1.07              |
| 57:BZ:491:ASN:ND2  | 57:BZ:535:VAL:C   | 2.12                     | 1.07              |
| 57:BZ:560:PRO:HB3  | 57:BZ:562:ARG:CA  | 1.82                     | 1.07              |
| 1:AA:477:A:H62     | 1:AA:502:A:N6     | 1.53                     | 1.07              |
| 1:AA:687:C:H5''    | 28:Ad:4:THR:HB    | 1.36                     | 1.07              |
| 1:AA:1047:G:H2'    | 1:AA:1110:G:N9    | 1.39                     | 1.07              |
| 1:AA:1625:C:H2'    | 1:AA:1626:G:H4'   | 1.07                     | 1.07              |
| 1:AA:2128:C:C5'    | 3:AC:35:ALA:CB    | 2.31                     | 1.07              |
| 1:AA:2602:A:N1     | 56:BD:74:C:H2'    | 1.68                     | 1.07              |
| 1:AA:2789:C:O2'    | 1:AA:2791:C:C5'   | 2.03                     | 1.07              |
| 1:AA:2791:C:H2'    | 1:AA:2792:G:C8    | 1.89                     | 1.07              |
| 2:AB:89:G:H2'      | 2:AB:89(A):A:C8   | 1.90                     | 1.07              |
| 6:AF:119:ARG:NH2   | 6:AF:119:ARG:HB2  | 1.69                     | 1.07              |
| 10:AL:122:LEU:HA   | 15:AQ:74:ARG:HH12 | 1.10                     | 1.07              |
| 16:AR:65:ILE:HD12  | 16:AR:96:ALA:HB2  | 1.35                     | 1.07              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 20:AV:2:ARG:HD2    | 20:AV:3:VAL:H      | 1.19                     | 1.07              |
| 21:AW:100:VAL:HG21 | 21:AW:137:ILE:HD12 | 1.33                     | 1.07              |
| 24:AZ:13:ILE:HG23  | 24:AZ:14:GLY:H     | 1.14                     | 1.07              |
| 27:Ac:19:ARG:HH11  | 27:Ac:19:ARG:HG2   | 1.13                     | 1.07              |
| 32:AJ:19:PRO:HG2   | 32:AJ:36:GLU:CA    | 1.84                     | 1.07              |
| 32:AJ:19:PRO:HG2   | 32:AJ:36:GLU:HA    | 1.10                     | 1.07              |
| 32:AJ:23:VAL:CG2   | 32:AJ:41:PHE:CE1   | 2.15                     | 1.07              |
| 34:BA:1112:C:H1'   | 36:BG:179:ARG:NH2  | 1.68                     | 1.07              |
| 34:BA:1117:G:C5    | 34:BA:1184:G:C6    | 2.43                     | 1.07              |
| 34:BA:1118:C:OP1   | 42:BM:103:THR:CG2  | 2.02                     | 1.07              |
| 34:BA:1315:U:O2'   | 34:BA:1360:A:H2'   | 1.32                     | 1.07              |
| 34:BA:1455:G:OP1   | 53:BX:32:ALA:C     | 1.96                     | 1.07              |
| 38:BI:89:ILE:HG12  | 38:BI:131:ILE:HD12 | 1.36                     | 1.07              |
| 41:BL:34:GLU:O     | 41:BL:37:ARG:HB3   | 1.53                     | 1.07              |
| 48:BS:62:GLN:HE21  | 48:BS:66:LEU:HD21  | 1.09                     | 1.07              |
| 57:BZ:2:ILE:CG1    | 57:BZ:266:ASP:OD2  | 2.01                     | 1.07              |
| 57:BZ:27:GLN:HG3   | 57:BZ:28:GLN:HE21  | 1.20                     | 1.07              |
| 57:BZ:244:GLY:HA2  | 57:BZ:245:LYS:HG2  | 1.35                     | 1.07              |
| 57:BZ:378:PHE:N    | 57:BZ:582:PRO:HG3  | 1.69                     | 1.07              |
| 57:BZ:382:VAL:CG2  | 57:BZ:578:VAL:HB   | 1.84                     | 1.07              |
| 57:BZ:400:TYR:CE1  | 57:BZ:444:PRO:CD   | 2.36                     | 1.07              |
| 57:BZ:485:ASN:HA   | 57:BZ:529:ARG:O    | 1.54                     | 1.07              |
| 57:BZ:491:ASN:CG   | 57:BZ:535:VAL:O    | 1.97                     | 1.07              |
| 1:AA:172:C:C5      | 1:AA:173:G:N7      | 2.22                     | 1.07              |
| 1:AA:364:C:H2'     | 1:AA:365:C:C5      | 1.90                     | 1.07              |
| 1:AA:861:A:N6      | 1:AA:916:G:H21     | 1.53                     | 1.07              |
| 1:AA:2123:G:C4'    | 3:AC:172:HIS:CB    | 2.31                     | 1.07              |
| 1:AA:2506:U:C6     | 59:AA:3002:8AN:C3' | 2.38                     | 1.07              |
| 1:AA:2532:G:H4'    | 1:AA:2657:A:N1     | 1.61                     | 1.07              |
| 1:AA:2556:C:H4'    | 57:BZ:550:GLY:O    | 1.53                     | 1.07              |
| 1:AA:2630:G:C4     | 1:AA:2894:G:N7     | 1.74                     | 1.07              |
| 1:AA:2660:A:C2     | 57:BZ:456:MET:CB   | 2.37                     | 1.07              |
| 3:AC:45:ALA:CA     | 3:AC:213:TYR:HD1   | 1.61                     | 1.07              |
| 3:AC:163:PHE:HZ    | 3:AC:192:PHE:HA    | 0.98                     | 1.07              |
| 7:AG:53:LEU:HG     | 7:AG:72:ARG:HD2    | 1.12                     | 1.07              |
| 15:AQ:64:ARG:HH11  | 15:AQ:64:ARG:CA    | 1.67                     | 1.07              |
| 17:AS:17:GLY:HA3   | 17:AS:19:LYS:NZ    | 1.70                     | 1.07              |
| 18:AT:11:ARG:HB2   | 18:AT:98:LYS:HE3   | 1.30                     | 1.07              |
| 28:Ad:28:ARG:HA    | 28:Ad:31:LEU:HD12  | 1.08                     | 1.07              |
| 28:Ad:32:LYS:HA    | 28:Ad:35:ARG:HH11  | 1.06                     | 1.07              |
| 29:Ae:5:LYS:CB     | 29:Ae:60:LEU:HA    | 1.83                     | 1.07              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:43:C:H5''    | 49:BT:12:LYS:HB3   | 1.09                     | 1.07              |
| 34:BA:1116:C:O2    | 34:BA:1184:G:N1    | 1.86                     | 1.07              |
| 34:BA:1242:C:O2'   | 34:BA:1303:C:H5''  | 1.55                     | 1.07              |
| 34:BA:1339:A:H4'   | 56:BE:41:C:H4'     | 1.30                     | 1.07              |
| 36:BG:150:LYS:HB2  | 36:BG:173:VAL:HG21 | 1.33                     | 1.07              |
| 42:BM:55:ALA:HB1   | 42:BM:58:HIS:CE1   | 1.90                     | 1.07              |
| 46:BQ:15:VAL:HG11  | 46:BQ:37:THR:HG21  | 1.35                     | 1.07              |
| 48:BS:16:ALA:HB1   | 48:BS:21:ASP:HB3   | 1.34                     | 1.07              |
| 49:BT:20:VAL:HG22  | 49:BT:35:LYS:HA    | 1.37                     | 1.07              |
| 56:BE:2:C:C5       | 56:BE:70:G:C6      | 2.42                     | 1.07              |
| 57:BZ:69:ARG:NH1   | 57:BZ:253:LYS:HZ2  | 1.51                     | 1.07              |
| 57:BZ:167:ALA:HB2  | 60:BZ:701:GCP:N1   | 1.70                     | 1.07              |
| 57:BZ:543:LEU:HG   | 57:BZ:544:THR:HG23 | 1.32                     | 1.07              |
| 1:AA:684:G:H2'     | 1:AA:687:C:N4      | 1.69                     | 1.06              |
| 1:AA:1203:G:C5     | 1:AA:1241:A:H8     | 1.73                     | 1.06              |
| 1:AA:1204:A:O4'    | 1:AA:1204:A:OP2    | 1.73                     | 1.06              |
| 1:AA:2243:U:H2'    | 1:AA:2244:U:H6     | 1.12                     | 1.06              |
| 1:AA:2832:U:H1'    | 1:AA:2834:G:H21    | 1.13                     | 1.06              |
| 1:AA:2848:G:H22    | 1:AA:2867:G:H1'    | 1.12                     | 1.06              |
| 3:AC:171:ILE:HD12  | 3:AC:192:PHE:HZ    | 1.10                     | 1.06              |
| 6:AF:110:LEU:HA    | 6:AF:183:VAL:HG22  | 1.35                     | 1.06              |
| 11:AM:114:ILE:HD13 | 11:AM:129:ALA:O    | 1.54                     | 1.06              |
| 13:AO:86:ARG:HB3   | 13:AO:86:ARG:HH11  | 1.09                     | 1.06              |
| 14:AP:20:ARG:HB3   | 14:AP:20:ARG:NH2   | 1.70                     | 1.06              |
| 14:AP:63:THR:O     | 14:AP:66:ALA:HB3   | 1.54                     | 1.06              |
| 15:AQ:100:TYR:HA   | 15:AQ:102:ILE:HD13 | 1.35                     | 1.06              |
| 21:AW:10:ARG:HB3   | 21:AW:36:LYS:HD2   | 1.36                     | 1.06              |
| 24:AZ:45:GLY:HA2   | 24:AZ:48:GLU:CD    | 1.80                     | 1.06              |
| 27:Ac:48:VAL:HG13  | 27:Ac:49:HIS:H     | 1.20                     | 1.06              |
| 31:AI:140:GLY:O    | 33:Ag:136:UNK:C    | 2.02                     | 1.06              |
| 32:AJ:19:PRO:CG    | 32:AJ:36:GLU:C     | 2.28                     | 1.06              |
| 32:AJ:99:ILE:HG22  | 32:AJ:103:GLN:OE1  | 1.54                     | 1.06              |
| 33:Ag:288:UNK:HA   | 33:Ag:344:UNK:CB   | 1.83                     | 1.06              |
| 34:BA:1311:G:C4    | 34:BA:1327:C:N1    | 1.99                     | 1.06              |
| 39:BJ:6:VAL:HG22   | 39:BJ:8:ILE:HD11   | 1.33                     | 1.06              |
| 39:BJ:12:PRO:HB3   | 39:BJ:58:GLY:HA2   | 1.31                     | 1.06              |
| 44:BO:48:ILE:HD12  | 44:BO:63:LEU:HD22  | 1.31                     | 1.06              |
| 53:BX:62:LEU:HA    | 53:BX:65:LYS:HG2   | 1.34                     | 1.06              |
| 56:BE:21:A:N6      | 56:BE:46:G:N3      | 2.00                     | 1.06              |
| 57:BZ:64:ILE:CD1   | 57:BZ:187:TYR:HB3  | 1.83                     | 1.06              |
| 57:BZ:240:ILE:CG1  | 57:BZ:286:ASP:HB3  | 1.79                     | 1.06              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:BZ:378:PHE:H   | 57:BZ:582:PRO:HG3  | 1.09                     | 1.06              |
| 1:AA:326:G:H2'    | 1:AA:327:G:H8      | 1.20                     | 1.06              |
| 1:AA:443:A:H5'    | 6:AF:45:ARG:NH1    | 1.69                     | 1.06              |
| 1:AA:1054:A:H2'   | 1:AA:1055:G:C8     | 1.90                     | 1.06              |
| 1:AA:1059:G:C2'   | 32:AJ:75:SER:H     | 1.66                     | 1.06              |
| 1:AA:1105:U:C3'   | 1:AA:1107:G:N7     | 2.18                     | 1.06              |
| 1:AA:1275:A:H2    | 13:AO:16:HIS:HA    | 1.11                     | 1.06              |
| 1:AA:2296:U:H1'   | 1:AA:2335:A:H61    | 1.15                     | 1.06              |
| 1:AA:2649:U:H2'   | 1:AA:2650:U:C6     | 1.91                     | 1.06              |
| 1:AA:2808:U:C6    | 1:AA:2892:A:N6     | 2.24                     | 1.06              |
| 3:AC:213:TYR:HB3  | 3:AC:223:ARG:HA    | 1.33                     | 1.06              |
| 15:AQ:52:ILE:HA   | 15:AQ:66:VAL:HG13  | 1.35                     | 1.06              |
| 18:AT:23:LEU:HD11 | 26:Ab:26:THR:O     | 1.54                     | 1.06              |
| 28:Ad:21:ARG:HB3  | 28:Ad:31:LEU:HD11  | 1.30                     | 1.06              |
| 32:AJ:10:LEU:HD22 | 32:AJ:27:LEU:HD21  | 1.07                     | 1.06              |
| 34:BA:50:A:N6     | 34:BA:361:G:H4'    | 1.70                     | 1.06              |
| 34:BA:959:A:H3'   | 34:BA:960:U:H5''   | 1.36                     | 1.06              |
| 46:BQ:91:ARG:HD3  | 46:BQ:98:VAL:O     | 1.54                     | 1.06              |
| 48:BS:77:ARG:HH12 | 48:BS:81:LEU:HB2   | 1.08                     | 1.06              |
| 53:BX:12:ALA:H    | 53:BX:13:LEU:HD12  | 1.10                     | 1.06              |
| 53:BX:33:ILE:HD13 | 53:BX:63:ILE:HA    | 1.34                     | 1.06              |
| 57:BZ:127:ILE:HB  | 57:BZ:164:TYR:HA   | 1.35                     | 1.06              |
| 57:BZ:379:GLU:HG2 | 57:BZ:581:THR:CG2  | 1.81                     | 1.06              |
| 57:BZ:395:ARG:HG3 | 57:BZ:474:ASP:HB3  | 1.07                     | 1.06              |
| 1:AA:484:C:H2'    | 1:AA:485:C:C6      | 1.91                     | 1.06              |
| 1:AA:858:U:O2'    | 1:AA:2268:A:H2'    | 1.53                     | 1.06              |
| 1:AA:1668:A:N1    | 1:AA:1993:U:H1'    | 1.69                     | 1.06              |
| 1:AA:2507:C:H5''  | 1:AA:2573:C:H41    | 1.20                     | 1.06              |
| 1:AA:2581:G:H1    | 1:AA:2610:C:H2'    | 0.97                     | 1.06              |
| 4:AD:44:ASN:HB2   | 4:AD:217:ARG:HH22  | 1.15                     | 1.06              |
| 5:AE:45:THR:HB    | 5:AE:81:ILE:HA     | 1.09                     | 1.06              |
| 11:AM:75:ILE:HG22 | 11:AM:115:LEU:HD11 | 1.35                     | 1.06              |
| 11:AM:107:LYS:HE2 | 11:AM:110:TYR:HD1  | 1.20                     | 1.06              |
| 12:AN:6:ARG:HB2   | 12:AN:44:ALA:HB1   | 1.36                     | 1.06              |
| 16:AR:70:ARG:HG2  | 16:AR:75:ASN:HA    | 1.35                     | 1.06              |
| 17:AS:14:VAL:HG11 | 17:AS:19:LYS:HG3   | 1.26                     | 1.06              |
| 31:AI:152:VAL:CA  | 31:AI:155:GLY:HA3  | 1.83                     | 1.06              |
| 34:BA:1113:C:H2'  | 34:BA:1114:C:C6    | 1.90                     | 1.06              |
| 36:BG:182:ILE:HA  | 36:BG:204:LEU:HG   | 1.37                     | 1.06              |
| 38:BI:31:LEU:HD12 | 38:BI:129:ILE:HG23 | 1.28                     | 1.06              |
| 38:BI:78:HIS:HB3  | 41:BL:107:LEU:HD21 | 1.31                     | 1.06              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 46:BQ:10:PRO:HG2   | 46:BQ:45:VAL:CG1   | 1.83                     | 1.06              |
| 46:BQ:22:ILE:HB    | 46:BQ:25:ILE:HD11  | 1.12                     | 1.06              |
| 47:BR:16:PHE:HE1   | 52:BW:14:HIS:NE2   | 1.36                     | 1.06              |
| 51:BV:46:GLU:HB3   | 51:BV:85:LEU:HD13  | 1.37                     | 1.06              |
| 54:BY:10:ARG:O     | 54:BY:13:ILE:HG22  | 1.55                     | 1.06              |
| 57:BZ:6:ARG:N      | 57:BZ:69:ARG:HB2   | 1.69                     | 1.06              |
| 57:BZ:11:ILE:CG2   | 57:BZ:112:VAL:CB   | 2.13                     | 1.06              |
| 57:BZ:41:ARG:HA    | 57:BZ:42:VAL:CG1   | 1.84                     | 1.06              |
| 57:BZ:87:ARG:HD3   | 57:BZ:343:VAL:HG21 | 1.31                     | 1.06              |
| 57:BZ:171:ILE:N    | 57:BZ:179:MET:HG3  | 1.70                     | 1.06              |
| 57:BZ:400:TYR:CZ   | 57:BZ:444:PRO:HB3  | 1.91                     | 1.06              |
| 57:BZ:488:LEU:HG   | 57:BZ:525:GLY:O    | 1.56                     | 1.06              |
| 1:AA:729:G:H2'     | 1:AA:730:C:C4'     | 1.84                     | 1.06              |
| 1:AA:729:G:C2'     | 1:AA:730:C:H4'     | 1.84                     | 1.06              |
| 1:AA:1029:A:H2'    | 1:AA:1030:G:O4'    | 1.54                     | 1.06              |
| 1:AA:1051:G:O2'    | 1:AA:2752:C:H5'    | 1.42                     | 1.06              |
| 1:AA:1914:C:N3     | 1:AA:1915:U:C5     | 2.21                     | 1.06              |
| 1:AA:2025:C:H2'    | 1:AA:2026:C:C6     | 1.90                     | 1.06              |
| 1:AA:2576:G:H4'    | 1:AA:2577:A:H5'    | 1.07                     | 1.06              |
| 1:AA:2659:G:P      | 8:AH:158:HIS:NE2   | 2.28                     | 1.06              |
| 2:AB:12:C:C6       | 22:AX:74:ARG:HB2   | 1.91                     | 1.06              |
| 3:AC:97:GLU:HA     | 3:AC:100:ILE:HD12  | 1.30                     | 1.06              |
| 16:AR:50:ARG:HB2   | 16:AR:50:ARG:NH1   | 1.69                     | 1.06              |
| 32:AJ:104:VAL:HG11 | 32:AJ:127:ILE:CG2  | 1.86                     | 1.06              |
| 33:Ag:290:UNK:HA   | 33:Ag:343:UNK:N    | 1.70                     | 1.06              |
| 34:BA:611:A:N6     | 34:BA:629:G:H1     | 1.53                     | 1.06              |
| 34:BA:1310:G:N1    | 34:BA:1327:C:C4    | 1.98                     | 1.06              |
| 34:BA:1317:C:O2    | 34:BA:1318:A:O4'   | 1.73                     | 1.06              |
| 36:BG:38:ARG:HB3   | 36:BG:38:ARG:NH1   | 1.70                     | 1.06              |
| 46:BQ:91:ARG:CD    | 46:BQ:98:VAL:O     | 2.03                     | 1.06              |
| 53:BX:43:LEU:HD12  | 53:BX:55:ILE:HD11  | 1.37                     | 1.06              |
| 56:BE:2:C:H2'      | 56:BE:70:G:H22     | 1.13                     | 1.06              |
| 57:BZ:13:HIS:CG    | 57:BZ:108:GLN:CG   | 2.39                     | 1.06              |
| 57:BZ:325:PHE:O    | 57:BZ:378:PHE:HD1  | 1.24                     | 1.06              |
| 57:BZ:446:ARG:CG   | 57:BZ:480:VAL:HG11 | 1.79                     | 1.06              |
| 1:AA:215:G:H4'     | 1:AA:216:A:O5'     | 1.53                     | 1.06              |
| 1:AA:783:A:H2'     | 1:AA:784:A:H4'     | 1.34                     | 1.06              |
| 1:AA:828:U:H2'     | 1:AA:829:A:C8      | 1.91                     | 1.06              |
| 1:AA:1051:G:H1'    | 1:AA:2752:C:OP2    | 0.90                     | 1.06              |
| 1:AA:1105:U:H4'    | 1:AA:1106:G:C5'    | 1.85                     | 1.06              |
| 1:AA:1186:G:H3'    | 1:AA:1187:G:H8     | 1.12                     | 1.06              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1241:A:N3     | 1:AA:1241:A:C5'    | 2.18                     | 1.06              |
| 1:AA:1351:C:H2'    | 1:AA:1352:U:H6     | 1.12                     | 1.06              |
| 1:AA:1804:C:H4'    | 4:AD:250:TRP:HH2   | 1.12                     | 1.06              |
| 1:AA:2181:G:C2     | 1:AA:2182:G:N1     | 2.24                     | 1.06              |
| 1:AA:2790:A:H4'    | 1:AA:2893:G:N2     | 1.70                     | 1.06              |
| 4:AD:63:ARG:NH1    | 4:AD:85:ASP:HB2    | 1.70                     | 1.06              |
| 5:AE:173:VAL:CG1   | 5:AE:184:VAL:HA    | 1.86                     | 1.06              |
| 6:AF:157:VAL:HA    | 6:AF:176:LEU:O     | 1.54                     | 1.06              |
| 9:AK:28:THR:O      | 9:AK:31:ALA:HB3    | 1.53                     | 1.06              |
| 29:Ae:14:VAL:O     | 29:Ae:15:LYS:HE2   | 1.56                     | 1.06              |
| 40:BK:73:MET:HE3   | 40:BK:146:GLU:HB2  | 1.36                     | 1.06              |
| 46:BQ:11:ARG:O     | 46:BQ:44:ARG:O     | 1.74                     | 1.06              |
| 46:BQ:23:TYR:CD2   | 46:BQ:67:GLU:HA    | 1.91                     | 1.06              |
| 46:BQ:23:TYR:HD2   | 46:BQ:67:GLU:HA    | 1.14                     | 1.06              |
| 57:BZ:578:VAL:HG13 | 57:BZ:587:ILE:HG12 | 1.32                     | 1.06              |
| 1:AA:685:A:H5''    | 1:AA:686:G:N2      | 1.70                     | 1.05              |
| 1:AA:1024:G:C5'    | 1:AA:1025:G:H5''   | 1.86                     | 1.05              |
| 1:AA:1054:A:N1     | 1:AA:1106:G:N1     | 1.73                     | 1.05              |
| 1:AA:2175:C:OP1    | 3:AC:7:TYR:CD1     | 2.07                     | 1.05              |
| 1:AA:2544:G:H5'    | 1:AA:2645:G:N7     | 1.71                     | 1.05              |
| 13:AO:98:LEU:O     | 13:AO:112:ALA:HB1  | 1.54                     | 1.05              |
| 17:AS:65:GLY:O     | 17:AS:66:ARG:HG2   | 1.56                     | 1.05              |
| 21:AW:145:GLU:N    | 21:AW:174:VAL:HG21 | 1.71                     | 1.05              |
| 24:AZ:9:VAL:HG22   | 24:AZ:53:LEU:C     | 1.81                     | 1.05              |
| 34:BA:1151:A:N7    | 34:BA:1152:A:N7    | 2.03                     | 1.05              |
| 34:BA:1153:C:H2'   | 34:BA:1154:G:C8    | 1.90                     | 1.05              |
| 34:BA:1221:G:C8    | 52:BW:54:GLY:O     | 1.89                     | 1.05              |
| 34:BA:1277:C:H4'   | 34:BA:1282:C:H1'   | 1.36                     | 1.05              |
| 34:BA:1453:G:H2'   | 53:BX:36:LEU:HD13  | 1.34                     | 1.05              |
| 36:BG:91:LEU:HD21  | 36:BG:98:ASN:HA    | 1.37                     | 1.05              |
| 42:BM:42:ARG:HB3   | 42:BM:74:ILE:HD13  | 1.33                     | 1.05              |
| 46:BQ:15:VAL:CB    | 46:BQ:39:ILE:HD12  | 1.71                     | 1.05              |
| 47:BR:45:ARG:HB2   | 47:BR:45:ARG:HH11  | 1.17                     | 1.05              |
| 48:BS:71:GLN:HG3   | 48:BS:75:PRO:HB3   | 1.32                     | 1.05              |
| 56:BE:3:C:N3       | 56:BE:70:G:H1'     | 1.70                     | 1.05              |
| 57:BZ:11:ILE:HD11  | 57:BZ:95:VAL:CB    | 1.86                     | 1.05              |
| 57:BZ:19:THR:HB    | 57:BZ:22:VAL:HG22  | 1.32                     | 1.05              |
| 57:BZ:308:SER:OG   | 57:BZ:357:ARG:HG3  | 1.54                     | 1.05              |
| 1:AA:296:C:H2'     | 1:AA:297:C:H6      | 1.19                     | 1.05              |
| 1:AA:977:G:H2'     | 1:AA:978:G:O4'     | 1.55                     | 1.05              |
| 1:AA:1914:C:C2     | 1:AA:1915:U:C5     | 2.44                     | 1.05              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2058:A:H2'   | 1:AA:2059:A:H8     | 1.16                     | 1.05              |
| 1:AA:2507:C:H4'   | 56:BD:75:C:O2      | 1.45                     | 1.05              |
| 1:AA:2681:C:O2'   | 1:AA:2682:U:H5'    | 1.56                     | 1.05              |
| 1:AA:2788:C:N4    | 1:AA:2789:C:H41    | 1.47                     | 1.05              |
| 4:AD:105:ILE:HD12 | 4:AD:106:ILE:H     | 1.21                     | 1.05              |
| 4:AD:133:LEU:HB3  | 4:AD:136:ILE:HD11  | 1.38                     | 1.05              |
| 5:AE:8:LYS:HD3    | 5:AE:9:VAL:HG22    | 1.36                     | 1.05              |
| 5:AE:51:PHE:O     | 5:AE:74:PRO:HB3    | 1.53                     | 1.05              |
| 12:AN:42:ILE:HD11 | 12:AN:46:GLN:HB3   | 1.38                     | 1.05              |
| 17:AS:61:VAL:O    | 17:AS:99:ILE:HB    | 1.55                     | 1.05              |
| 22:AX:37:LEU:CD1  | 22:AX:59:LEU:HB3   | 1.86                     | 1.05              |
| 32:AJ:12:LEU:HG   | 32:AJ:57:ILE:HG23  | 1.39                     | 1.05              |
| 34:BA:770:C:H1'   | 34:BA:900:A:C2     | 1.91                     | 1.05              |
| 34:BA:1270:C:O3'  | 34:BA:1314:C:C5'   | 2.04                     | 1.05              |
| 34:BA:1308:U:H2'  | 34:BA:1309:G:OP1   | 1.25                     | 1.05              |
| 55:BC:16:U:H3'    | 55:BC:17:C:H5'     | 1.37                     | 1.05              |
| 57:BZ:207:MET:HG2 | 57:BZ:226:ILE:HD13 | 1.29                     | 1.05              |
| 57:BZ:236:GLN:HA  | 57:BZ:247:ARG:HA   | 1.06                     | 1.05              |
| 57:BZ:398:GLU:HA  | 57:BZ:472:TYR:CD1  | 1.90                     | 1.05              |
| 57:BZ:560:PRO:HA  | 57:BZ:561:ILE:HB   | 1.32                     | 1.05              |
| 57:BZ:565:LEU:HB2 | 57:BZ:566:GLU:OE2  | 1.56                     | 1.05              |
| 1:AA:1203:G:N3    | 1:AA:1203:G:H2'    | 1.60                     | 1.05              |
| 1:AA:1324:G:H3'   | 1:AA:1325:G:H4'    | 1.35                     | 1.05              |
| 1:AA:2025:C:H5'   | 9:AK:78:TYR:OH     | 1.54                     | 1.05              |
| 1:AA:2387:U:H1'   | 22:AX:41:ARG:NH2   | 1.70                     | 1.05              |
| 1:AA:2788:C:C4    | 1:AA:2789:C:N4     | 2.23                     | 1.05              |
| 4:AD:244:ARG:H    | 4:AD:245:PRO:HD3   | 1.16                     | 1.05              |
| 12:AN:66:ILE:HG22 | 12:AN:67:ARG:N     | 1.69                     | 1.05              |
| 22:AX:46:LYS:HG3  | 22:AX:78:TYR:CE2   | 1.90                     | 1.05              |
| 34:BA:373:A:H1'   | 34:BA:481:G:H1'    | 1.35                     | 1.05              |
| 34:BA:1302:U:OP2  | 46:BQ:21:TYR:HE2   | 1.36                     | 1.05              |
| 37:BH:74:GLN:HA   | 37:BH:77:ASN:HD22  | 1.13                     | 1.05              |
| 39:BJ:30:LEU:HA   | 39:BJ:75:LEU:HD11  | 1.37                     | 1.05              |
| 50:BU:43:LEU:HD22 | 50:BU:44:ALA:N     | 1.71                     | 1.05              |
| 52:BW:32:LYS:CA   | 52:BW:50:ALA:HB3   | 1.86                     | 1.05              |
| 56:BD:5:G:N1      | 56:BD:69:G:N7      | 2.04                     | 1.05              |
| 56:BE:16:U:N3     | 56:BE:59:U:C2      | 2.25                     | 1.05              |
| 57:BZ:322:GLU:OE2 | 57:BZ:581:THR:HG21 | 1.55                     | 1.05              |
| 1:AA:1063:G:N7    | 1:AA:1064:C:C5     | 2.24                     | 1.05              |
| 1:AA:1081:U:H5''  | 32:AJ:125:ARG:HD3  | 1.12                     | 1.05              |
| 1:AA:1252:G:H22   | 16:AR:37:GLU:HG3   | 1.22                     | 1.05              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1961:C:OP1    | 34:BA:1484:C:O2'   | 1.73                     | 1.05              |
| 1:AA:2709:G:H2'    | 1:AA:2710:C:H5'    | 1.34                     | 1.05              |
| 2:AB:76:G:OP2      | 21:AW:11:GLU:HA    | 1.55                     | 1.05              |
| 12:AN:26:TYR:N     | 12:AN:102:VAL:HB   | 1.71                     | 1.05              |
| 12:AN:83:MET:N     | 12:AN:83:MET:SD    | 2.26                     | 1.05              |
| 13:AO:20:LEU:HD21  | 13:AO:24:GLN:HG3   | 1.35                     | 1.05              |
| 13:AO:83:ILE:HA    | 13:AO:86:ARG:HG3   | 1.34                     | 1.05              |
| 17:AS:36:PRO:HA    | 17:AS:60:GLU:O     | 1.55                     | 1.05              |
| 17:AS:43:GLU:H     | 17:AS:44:LYS:NZ    | 1.53                     | 1.05              |
| 18:AT:17:VAL:O     | 18:AT:20:VAL:HG12  | 1.53                     | 1.05              |
| 25:Aa:59:PHE:HA    | 25:Aa:62:ARG:HD2   | 1.36                     | 1.05              |
| 32:AJ:78:ILE:HG23  | 32:AJ:122:ALA:O    | 1.54                     | 1.05              |
| 41:BL:10:LEU:O     | 41:BL:13:ILE:HB    | 1.56                     | 1.05              |
| 46:BQ:20:THR:CA    | 46:BQ:26:GLY:N     | 2.20                     | 1.05              |
| 50:BU:4:LYS:HD2    | 50:BU:5:VAL:H      | 1.18                     | 1.05              |
| 51:BV:62:GLU:O     | 51:BV:66:LEU:HG    | 1.56                     | 1.05              |
| 52:BW:15:LEU:HD13  | 52:BW:71:LEU:CD1   | 1.80                     | 1.05              |
| 55:BC:34:G:H2'     | 55:BC:35:A:H5'     | 1.39                     | 1.05              |
| 56:BD:1:G:N2       | 56:BD:72:C:C2      | 2.25                     | 1.05              |
| 56:BD:64:A:H2'     | 56:BD:65:G:C8      | 1.90                     | 1.05              |
| 57:BZ:11:ILE:HG23  | 57:BZ:112:VAL:HG11 | 1.33                     | 1.05              |
| 57:BZ:55:THR:O     | 57:BZ:56:ILE:CD1   | 2.05                     | 1.05              |
| 57:BZ:512:LEU:HD23 | 57:BZ:518:VAL:CG1  | 1.87                     | 1.05              |
| 1:AA:785:G:H2'     | 1:AA:786:C:H6      | 1.22                     | 1.05              |
| 1:AA:911:A:H8      | 1:AA:2264:C:H1'    | 1.08                     | 1.05              |
| 1:AA:1037:G:C2     | 1:AA:1119:C:C2     | 2.44                     | 1.05              |
| 1:AA:1144:G:H2'    | 1:AA:1145:C:C6     | 1.92                     | 1.05              |
| 1:AA:1902:C:H2'    | 1:AA:1903:G:H5'    | 1.06                     | 1.05              |
| 1:AA:1906:G:C2     | 1:AA:1929:G:O6     | 2.10                     | 1.05              |
| 1:AA:2431:U:C2'    | 1:AA:2432:A:H5''   | 1.87                     | 1.05              |
| 1:AA:2447:G:O3'    | 1:AA:2499:C:P      | 2.14                     | 1.05              |
| 1:AA:2471:C:H5''   | 57:BZ:529:ARG:HH12 | 1.19                     | 1.05              |
| 1:AA:2651:C:O2     | 1:AA:2670:A:N1     | 1.90                     | 1.05              |
| 1:AA:2746:U:O4     | 1:AA:2756:U:C5     | 2.09                     | 1.05              |
| 1:AA:2792:G:N2     | 1:AA:2803:C:N3     | 2.03                     | 1.05              |
| 4:AD:76:PRO:O      | 4:AD:98:VAL:HG23   | 1.57                     | 1.05              |
| 16:AR:83:LEU:O     | 16:AR:86:ALA:HB3   | 1.55                     | 1.05              |
| 18:AT:56:ALA:O     | 18:AT:60:ASN:HB3   | 1.54                     | 1.05              |
| 19:AU:92:LEU:O     | 19:AU:95:LEU:HB2   | 1.56                     | 1.05              |
| 34:BA:551:U:H5'    | 45:BP:119:LYS:NZ   | 1.71                     | 1.05              |
| 34:BA:765:G:O2'    | 34:BA:766:A:H5'    | 1.56                     | 1.05              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:946:A:H2'    | 34:BA:947:G:C8     | 1.92                     | 1.05              |
| 34:BA:1004:A:H3'   | 34:BA:1025:U:N3    | 1.71                     | 1.05              |
| 34:BA:1128:C:O3'   | 42:BM:16:ARG:NH2   | 1.89                     | 1.05              |
| 34:BA:1220:G:OP1   | 52:BW:34:TRP:HB3   | 1.56                     | 1.05              |
| 34:BA:1455:G:H5''  | 53:BX:31:SER:OG    | 1.57                     | 1.05              |
| 34:BA:1506:U:H5''  | 34:BA:1507:A:OP2   | 1.53                     | 1.05              |
| 35:BF:55:PHE:HA    | 35:BF:58:ILE:HD12  | 1.35                     | 1.05              |
| 37:BH:12:CYS:HA    | 37:BH:19:LEU:HB2   | 1.36                     | 1.05              |
| 37:BH:93:PHE:HA    | 37:BH:96:LEU:HD12  | 1.39                     | 1.05              |
| 37:BH:133:VAL:HG11 | 37:BH:138:TYR:HD1  | 1.21                     | 1.05              |
| 42:BM:127:LYS:HG3  | 56:BE:31:A:OP1     | 1.57                     | 1.05              |
| 47:BR:29:ARG:HB3   | 47:BR:29:ARG:HH11  | 1.22                     | 1.05              |
| 48:BS:62:GLN:HA    | 48:BS:65:ARG:NH2   | 1.72                     | 1.05              |
| 57:BZ:5:LEU:HB2    | 57:BZ:268:ALA:HB1  | 1.38                     | 1.05              |
| 57:BZ:22:VAL:HG11  | 57:BZ:74:ASP:OD1   | 1.54                     | 1.05              |
| 57:BZ:73:VAL:CG2   | 57:BZ:88:VAL:HG11  | 1.87                     | 1.05              |
| 57:BZ:73:VAL:HG11  | 57:BZ:88:VAL:HG22  | 1.34                     | 1.05              |
| 57:BZ:248:ASN:HD21 | 57:BZ:273:ILE:HG13 | 0.92                     | 1.05              |
| 57:BZ:491:ASN:CG   | 57:BZ:536:ASN:CB   | 2.18                     | 1.05              |
| 1:AA:242:G:H3'     | 29:Ae:4:MET:CG     | 1.87                     | 1.04              |
| 1:AA:1841:U:H2'    | 1:AA:1842:G:H8     | 1.22                     | 1.04              |
| 2:AB:102:G:H2'     | 21:AW:73:GLN:HE21  | 1.20                     | 1.04              |
| 3:AC:64:LEU:HD12   | 3:AC:188:ASN:HD22  | 1.19                     | 1.04              |
| 4:AD:87:ASN:N      | 4:AD:87:ASN:HD22   | 1.53                     | 1.04              |
| 6:AF:6:VAL:HA      | 6:AF:20:LEU:HD21   | 1.34                     | 1.04              |
| 6:AF:119:ARG:HB2   | 6:AF:119:ARG:HH21  | 1.21                     | 1.04              |
| 12:AN:42:ILE:HG22  | 12:AN:95:ALA:HB3   | 1.39                     | 1.04              |
| 24:AZ:50:VAL:HG13  | 24:AZ:53:LEU:HD12  | 1.39                     | 1.04              |
| 34:BA:559:A:H4'    | 34:BA:560:U:C5'    | 1.87                     | 1.04              |
| 34:BA:1311:G:C5    | 34:BA:1327:C:C6    | 2.45                     | 1.04              |
| 34:BA:1315:U:C1'   | 34:BA:1360:A:H2'   | 1.87                     | 1.04              |
| 35:BF:209:ARG:HH12 | 35:BF:213:LEU:HD12 | 1.19                     | 1.04              |
| 37:BH:107:ARG:HH11 | 37:BH:107:ARG:HA   | 1.18                     | 1.04              |
| 55:BC:16:U:O4      | 55:BC:18:G:H2'     | 1.53                     | 1.04              |
| 57:BZ:205:PHE:CE1  | 57:BZ:226:ILE:HD12 | 1.90                     | 1.04              |
| 57:BZ:405:LEU:HD12 | 57:BZ:464:LEU:HD22 | 1.31                     | 1.04              |
| 1:AA:6:A:H2        | 1:AA:2897:U:H2'    | 1.22                     | 1.04              |
| 1:AA:234:C:H42     | 1:AA:430:G:H22     | 1.05                     | 1.04              |
| 1:AA:251:A:H2'     | 1:AA:252:G:O4'     | 1.55                     | 1.04              |
| 1:AA:712:G:H2'     | 1:AA:713:G:C8      | 1.91                     | 1.04              |
| 1:AA:893:C:C6      | 1:AA:894:C:C5      | 2.46                     | 1.04              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:1042:G:C6     | 1:AA:1113:U:O4    | 2.10                     | 1.04              |
| 1:AA:1909:C:O2     | 1:AA:1922:G:N2    | 1.90                     | 1.04              |
| 1:AA:2124:G:H4'    | 3:AC:42:GLU:CG    | 1.69                     | 1.04              |
| 1:AA:2125:G:H5''   | 3:AC:40:THR:CG2   | 1.84                     | 1.04              |
| 3:AC:115:ALA:HB3   | 3:AC:120:MET:SD   | 1.97                     | 1.04              |
| 6:AF:6:VAL:HA      | 6:AF:20:LEU:CD2   | 1.87                     | 1.04              |
| 15:AQ:48:ILE:HD13  | 15:AQ:50:ILE:HD13 | 1.35                     | 1.04              |
| 16:AR:93:LYS:HG2   | 17:AS:10:LYS:HZ1  | 1.16                     | 1.04              |
| 21:AW:165:VAL:HG12 | 21:AW:166:SER:H   | 1.18                     | 1.04              |
| 31:AI:140:GLY:C    | 33:Ag:136:UNK:C   | 2.30                     | 1.04              |
| 33:Ag:309:UNK:CA   | 57:BZ:142:ASP:OD1 | 2.05                     | 1.04              |
| 34:BA:37:U:H6      | 34:BA:37:U:H3'    | 1.21                     | 1.04              |
| 34:BA:571:U:H3'    | 34:BA:572:A:H5''  | 1.05                     | 1.04              |
| 34:BA:1117:G:N2    | 34:BA:1184:G:C1'  | 2.21                     | 1.04              |
| 34:BA:1229:A:H5'   | 56:BE:29:G:H5''   | 1.38                     | 1.04              |
| 34:BA:1453:G:C2'   | 53:BX:36:LEU:HD13 | 1.87                     | 1.04              |
| 40:BK:35:LYS:NZ    | 40:BK:38:LEU:HD22 | 1.73                     | 1.04              |
| 49:BT:18:ARG:HH12  | 49:BT:35:LYS:CB   | 1.70                     | 1.04              |
| 56:BE:5:G:H1'      | 56:BE:7:A:H5''    | 1.39                     | 1.04              |
| 1:AA:6:A:C6        | 1:AA:2897:U:N3    | 2.26                     | 1.04              |
| 1:AA:196:A:N1      | 1:AA:828:U:H5''   | 1.72                     | 1.04              |
| 1:AA:893:C:H2'     | 1:AA:894:C:H6     | 1.20                     | 1.04              |
| 1:AA:988:A:C3'     | 24:AZ:10:LYS:HZ1  | 1.70                     | 1.04              |
| 1:AA:1036:G:N1     | 1:AA:1120:G:O6    | 1.86                     | 1.04              |
| 1:AA:1046:A:N6     | 31:AI:9:LEU:N     | 2.06                     | 1.04              |
| 1:AA:1105:U:C4     | 1:AA:1107:G:O6    | 2.11                     | 1.04              |
| 1:AA:1475:G:H21    | 1:AA:1476:C:H5''  | 1.23                     | 1.04              |
| 1:AA:1762:A:H3'    | 1:AA:1762:A:C8    | 1.92                     | 1.04              |
| 1:AA:1995:U:H5''   | 1:AA:1996:C:C5'   | 1.85                     | 1.04              |
| 1:AA:2181:G:H5''   | 55:BC:17:C:H41    | 1.21                     | 1.04              |
| 1:AA:2461:C:H1'    | 1:AA:2492:U:C5    | 1.92                     | 1.04              |
| 4:AD:5:LYS:HZ3     | 4:AD:31:LYS:NZ    | 1.53                     | 1.04              |
| 4:AD:216:GLY:O     | 4:AD:217:ARG:HB3  | 1.58                     | 1.04              |
| 6:AF:130:ALA:HB3   | 6:AF:142:TRP:HB2  | 1.05                     | 1.04              |
| 9:AK:4:TYR:HB2     | 16:AR:64:ARG:HH12 | 1.19                     | 1.04              |
| 9:AK:66:LYS:HA     | 9:AK:87:LEU:HD11  | 1.36                     | 1.04              |
| 10:AL:18:LYS:HB3   | 10:AL:45:GLU:HG3  | 1.38                     | 1.04              |
| 13:AO:46:GLY:O     | 13:AO:49:ASP:HB3  | 1.58                     | 1.04              |
| 33:Ag:291:UNK:N    | 33:Ag:342:UNK:CB  | 2.20                     | 1.04              |
| 34:BA:47:C:H4'     | 34:BA:48:C:H5''   | 1.30                     | 1.04              |
| 34:BA:792:A:H2'    | 34:BA:794:A:H62   | 1.18                     | 1.04              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:978:A:N6     | 34:BA:1361:G:H22   | 1.54                     | 1.04              |
| 34:BA:1316:G:C4'   | 34:BA:1360:A:C6    | 2.41                     | 1.04              |
| 45:BP:24:VAL:HG23  | 45:BP:97:ARG:HG2   | 1.38                     | 1.04              |
| 45:BP:93:LEU:HD12  | 45:BP:96:VAL:HG21  | 1.35                     | 1.04              |
| 49:BT:49:LEU:HD11  | 49:BT:51:VAL:HG22  | 1.33                     | 1.04              |
| 57:BZ:322:GLU:CD   | 57:BZ:581:THR:CG2  | 2.30                     | 1.04              |
| 1:AA:1044:G:N3     | 31:AI:6:ASN:HA     | 1.69                     | 1.04              |
| 1:AA:1105:U:C4     | 1:AA:1107:G:C6     | 2.46                     | 1.04              |
| 1:AA:1965:C:H3'    | 1:AA:1966:A:C8     | 1.93                     | 1.04              |
| 1:AA:2659:G:C1'    | 1:AA:2663:G:H22    | 1.69                     | 1.04              |
| 3:AC:43:VAL:CG1    | 3:AC:224:ILE:CD1   | 2.36                     | 1.04              |
| 3:AC:108:MET:HE3   | 3:AC:136:LEU:HD12  | 1.40                     | 1.04              |
| 4:AD:61:LEU:HD22   | 4:AD:63:ARG:NH2    | 1.73                     | 1.04              |
| 5:AE:91:VAL:HG21   | 5:AE:93:VAL:HG13   | 1.38                     | 1.04              |
| 7:AG:49:ASP:HA     | 7:AG:53:LEU:HD22   | 1.39                     | 1.04              |
| 9:AK:26:LEU:HG     | 9:AK:30:ILE:HD11   | 1.38                     | 1.04              |
| 10:AL:64:ARG:NH1   | 10:AL:67:LYS:H     | 1.55                     | 1.04              |
| 11:AM:23:PRO:HB2   | 11:AM:28:GLY:HA2   | 1.35                     | 1.04              |
| 12:AN:66:ILE:CG2   | 12:AN:67:ARG:H     | 1.68                     | 1.04              |
| 14:AP:106:ARG:NH1  | 14:AP:110:LEU:HB2  | 1.73                     | 1.04              |
| 16:AR:76:TYR:CD2   | 16:AR:80:ILE:HD11  | 1.92                     | 1.04              |
| 21:AW:152:ALA:HA   | 21:AW:155:LEU:HD13 | 1.38                     | 1.04              |
| 24:AZ:26:LEU:HD23  | 24:AZ:28:LEU:HD11  | 1.40                     | 1.04              |
| 28:Ad:48:LYS:HG3   | 28:Ad:49:ARG:N     | 1.65                     | 1.04              |
| 29:Ae:56:GLU:H     | 29:Ae:56:GLU:CD    | 1.57                     | 1.04              |
| 34:BA:1116:C:O2    | 34:BA:1184:G:C2    | 2.11                     | 1.04              |
| 35:BF:213:LEU:HD22 | 35:BF:214:ILE:HD13 | 1.29                     | 1.04              |
| 41:BL:64:LYS:HG2   | 41:BL:79:VAL:HG21  | 1.36                     | 1.04              |
| 42:BM:97:LYS:HZ1   | 42:BM:102:LEU:HD13 | 1.14                     | 1.04              |
| 44:BO:50:TYR:HB3   | 44:BO:55:LYS:HG2   | 1.40                     | 1.04              |
| 46:BQ:8:GLU:OE2    | 46:BQ:21:TYR:HB3   | 1.57                     | 1.04              |
| 57:BZ:123:PRO:HD2  | 57:BZ:156:GLU:OE1  | 1.56                     | 1.04              |
| 57:BZ:502:PHE:CZ   | 57:BZ:556:VAL:O    | 2.09                     | 1.04              |
| 1:AA:308:G:C2      | 1:AA:309:G:H1'     | 1.92                     | 1.04              |
| 1:AA:764:A:H62     | 1:AA:1776:G:H1'    | 1.18                     | 1.04              |
| 1:AA:901:A:C6      | 1:AA:902:C:N3      | 2.26                     | 1.04              |
| 1:AA:903:C:H2'     | 1:AA:904:C:C6      | 1.92                     | 1.04              |
| 1:AA:1182:A:H3'    | 1:AA:1183:G:H3'    | 1.39                     | 1.04              |
| 1:AA:2122:U:H4'    | 3:AC:166:ASP:HB3   | 1.39                     | 1.04              |
| 1:AA:2506:U:C3'    | 59:AA:3002:8AN:N3' | 2.17                     | 1.04              |
| 3:AC:87:GLU:HG3    | 3:AC:94:VAL:HG21   | 1.36                     | 1.04              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 5:AE:127:ASP:HB2  | 5:AE:135:HIS:HA    | 1.35                     | 1.04              |
| 9:AK:53:VAL:HA    | 9:AK:121:LYS:O     | 1.58                     | 1.04              |
| 10:AL:19:ILE:HG22 | 10:AL:43:VAL:HA    | 1.34                     | 1.04              |
| 12:AN:124:LYS:HZ2 | 12:AN:124:LYS:HB3  | 0.93                     | 1.04              |
| 15:AQ:18:ASP:HB3  | 15:AQ:81:PRO:HA    | 1.35                     | 1.04              |
| 17:AS:40:LEU:HA   | 17:AS:54:GLY:HA3   | 1.39                     | 1.04              |
| 21:AW:98:MET:HG3  | 21:AW:133:ILE:HG21 | 1.35                     | 1.04              |
| 30:Af:25:VAL:HB   | 30:Af:34:GLN:HB2   | 1.40                     | 1.04              |
| 32:AJ:64:SER:HB2  | 32:AJ:65:PHE:CD1   | 1.92                     | 1.04              |
| 33:Ag:290:UNK:CA  | 33:Ag:343:UNK:CA   | 2.36                     | 1.04              |
| 34:BA:355:C:H1'   | 34:BA:388:G:H2'    | 1.40                     | 1.04              |
| 34:BA:571:U:C3'   | 34:BA:572:A:H5''   | 1.87                     | 1.04              |
| 34:BA:754:C:H5'   | 34:BA:755:G:C8     | 1.93                     | 1.04              |
| 34:BA:1447:G:N2   | 34:BA:1459:C:O2    | 1.91                     | 1.04              |
| 34:BA:1454:G:OP2  | 53:BX:39:LYS:HD3   | 1.57                     | 1.04              |
| 58:BA:1601:NMY:N2 | 58:BA:1601:NMY:O16 | 1.88                     | 1.04              |
| 36:BG:33:LEU:HD11 | 47:BR:54:PRO:HD2   | 1.39                     | 1.04              |
| 36:BG:122:GLU:HA  | 36:BG:125:GLU:HG2  | 1.36                     | 1.04              |
| 56:BD:50:U:N3     | 56:BD:64:A:C2      | 2.03                     | 1.04              |
| 56:BD:72:C:C4     | 56:BD:73:A:H2      | 1.76                     | 1.04              |
| 56:BE:4:C:C4      | 56:BE:6:G:N7       | 2.26                     | 1.04              |
| 57:BZ:11:ILE:CD1  | 57:BZ:95:VAL:HB    | 1.86                     | 1.04              |
| 57:BZ:64:ILE:HD11 | 57:BZ:187:TYR:HB2  | 1.34                     | 1.04              |
| 57:BZ:153:ALA:H   | 57:BZ:154:THR:HA   | 1.22                     | 1.04              |
| 57:BZ:497:VAL:CA  | 57:BZ:514:HIS:CE1  | 2.40                     | 1.04              |
| 1:AA:5:A:C6       | 1:AA:2899:G:C5     | 2.31                     | 1.03              |
| 1:AA:578:A:H2'    | 1:AA:2018:G:H5''   | 1.38                     | 1.03              |
| 1:AA:1072:C:H2'   | 1:AA:1093:G:C6     | 1.91                     | 1.03              |
| 1:AA:1933:G:H21   | 1:AA:1974:C:H5'    | 1.18                     | 1.03              |
| 1:AA:2173:A:C4    | 3:AC:218:MET:CE    | 2.41                     | 1.03              |
| 1:AA:2277:G:H3'   | 1:AA:2278:A:H5''   | 1.39                     | 1.03              |
| 4:AD:196:VAL:HG12 | 4:AD:197:GLY:N     | 1.66                     | 1.03              |
| 5:AE:109:LYS:HG3  | 5:AE:191:PRO:HG3   | 1.36                     | 1.03              |
| 7:AG:60:LEU:HD21  | 7:AG:90:LEU:HD11   | 1.38                     | 1.03              |
| 10:AL:97:ARG:HG3  | 10:AL:117:LEU:HD21 | 1.37                     | 1.03              |
| 14:AP:106:ARG:NH2 | 14:AP:110:LEU:HD22 | 1.72                     | 1.03              |
| 17:AS:6:LYS:HD3   | 17:AS:10:LYS:HG2   | 1.39                     | 1.03              |
| 18:AT:25:ARG:HH21 | 18:AT:74:ALA:N     | 1.54                     | 1.03              |
| 27:Ac:12:GLU:HG2  | 27:Ac:13:CYS:H     | 1.22                     | 1.03              |
| 30:Af:2:LYS:CG    | 30:Af:35:ARG:HB2   | 1.87                     | 1.03              |
| 31:AI:145:PRO:CB  | 33:Ag:133:UNK:CB   | 2.37                     | 1.03              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:306:G:H2'    | 34:BA:307:C:H6     | 1.19                     | 1.03              |
| 34:BA:389:A:H2'    | 34:BA:390:C:H5'    | 1.37                     | 1.03              |
| 34:BA:1117:G:C2    | 34:BA:1184:G:N9    | 2.26                     | 1.03              |
| 34:BA:1236:A:H4'   | 34:BA:1304:G:H4'   | 1.38                     | 1.03              |
| 34:BA:1415:G:C6    | 34:BA:1486:G:C6    | 2.46                     | 1.03              |
| 34:BA:1453:G:H2'   | 53:BX:36:LEU:CD1   | 1.87                     | 1.03              |
| 35:BF:95:GLN:HE21  | 35:BF:148:TYR:HB3  | 1.23                     | 1.03              |
| 42:BM:48:GLU:HB3   | 42:BM:78:LYS:HZ3   | 1.22                     | 1.03              |
| 43:BN:8:LEU:HD13   | 43:BN:94:VAL:HG11  | 1.36                     | 1.03              |
| 43:BN:49:VAL:HG13  | 47:BR:41:ARG:HD2   | 1.37                     | 1.03              |
| 56:BE:18:G:N2      | 56:BE:58:A:H5'     | 1.59                     | 1.03              |
| 57:BZ:2:ILE:CG2    | 57:BZ:199:VAL:CG2  | 2.35                     | 1.03              |
| 57:BZ:397:GLN:HB3  | 57:BZ:472:TYR:HB3  | 1.04                     | 1.03              |
| 1:AA:745:G:O2'     | 1:AA:748:G:H1'     | 1.58                     | 1.03              |
| 1:AA:1700:A:H2'    | 1:AA:1701:A:H5'    | 1.40                     | 1.03              |
| 1:AA:1772:G:H2'    | 1:AA:1773:A:H4'    | 1.36                     | 1.03              |
| 1:AA:2582:G:N2     | 1:AA:2583:G:H1'    | 1.73                     | 1.03              |
| 5:AE:105:THR:HB    | 5:AE:166:THR:CB    | 1.88                     | 1.03              |
| 12:AN:25:ASP:HB2   | 12:AN:101:ARG:HD2  | 1.40                     | 1.03              |
| 16:AR:64:ARG:O     | 16:AR:67:ALA:HB3   | 1.58                     | 1.03              |
| 17:AS:62:LEU:HD12  | 17:AS:96:ILE:HB    | 1.06                     | 1.03              |
| 18:AT:25:ARG:NH2   | 18:AT:74:ALA:H     | 1.55                     | 1.03              |
| 21:AW:2:GLU:OE2    | 21:AW:58:VAL:HB    | 1.59                     | 1.03              |
| 21:AW:127:LYS:HD2  | 21:AW:163:LEU:HA   | 1.39                     | 1.03              |
| 21:AW:144:LEU:HB3  | 21:AW:174:VAL:HG11 | 1.33                     | 1.03              |
| 22:AX:72:ARG:HB3   | 22:AX:75:LEU:HD13  | 1.38                     | 1.03              |
| 23:AY:38:GLN:H     | 23:AY:41:GLN:NE2   | 1.55                     | 1.03              |
| 26:Ab:45:VAL:HB    | 26:Ab:50:GLY:HA2   | 1.39                     | 1.03              |
| 28:Ad:21:ARG:HG2   | 28:Ad:31:LEU:HD21  | 1.35                     | 1.03              |
| 34:BA:82:U:H2'     | 34:BA:85:U:H5      | 1.22                     | 1.03              |
| 34:BA:263:A:C2'    | 34:BA:264:U:H5''   | 1.89                     | 1.03              |
| 34:BA:1286:A:H5'   | 54:BY:25:LYS:HG2   | 1.35                     | 1.03              |
| 37:BH:104:VAL:HG11 | 37:BH:140:VAL:HG21 | 1.37                     | 1.03              |
| 42:BM:40:LEU:HB3   | 42:BM:42:ARG:HB2   | 1.38                     | 1.03              |
| 43:BN:30:SER:HB2   | 43:BN:81:THR:HA    | 1.35                     | 1.03              |
| 43:BN:65:LEU:HD12  | 47:BR:56:VAL:HG22  | 1.36                     | 1.03              |
| 45:BP:88:GLY:H     | 45:BP:98:TYR:HA    | 1.20                     | 1.03              |
| 46:BQ:27:LYS:CB    | 54:BY:7:ARG:NH1    | 2.20                     | 1.03              |
| 57:BZ:22:VAL:HG12  | 57:BZ:56:ILE:HG12  | 1.39                     | 1.03              |
| 57:BZ:239:ILE:H    | 57:BZ:244:GLY:CA   | 1.70                     | 1.03              |
| 57:BZ:240:ILE:HG13 | 57:BZ:286:ASP:HB3  | 1.35                     | 1.03              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:BZ:396:LYS:HB2  | 57:BZ:475:VAL:N    | 1.56                     | 1.03              |
| 1:AA:1046:A:C4     | 31:AI:11:ALA:HB2   | 1.94                     | 1.03              |
| 1:AA:1058:G:C2'    | 32:AJ:116:ASN:HD22 | 1.72                     | 1.03              |
| 1:AA:1203:G:C6     | 1:AA:1240:U:N3     | 2.27                     | 1.03              |
| 1:AA:2447:G:O3'    | 1:AA:2499:C:OP2    | 1.75                     | 1.03              |
| 5:AE:118:LYS:HA    | 5:AE:118:LYS:HE2   | 1.35                     | 1.03              |
| 6:AF:34:TRP:HB3    | 6:AF:38:ARG:CZ     | 1.88                     | 1.03              |
| 7:AG:163:ALA:HB1   | 7:AG:169:ALA:HA    | 1.34                     | 1.03              |
| 9:AK:69:GLN:NE2    | 9:AK:87:LEU:HD22   | 1.73                     | 1.03              |
| 10:AL:76:ALA:HA    | 15:AQ:77:PRO:HD2   | 1.39                     | 1.03              |
| 10:AL:76:ALA:HA    | 15:AQ:77:PRO:CD    | 1.88                     | 1.03              |
| 10:AL:106:LEU:HB2  | 15:AQ:39:ARG:HH22  | 1.20                     | 1.03              |
| 13:AO:32:GLY:HA2   | 13:AO:116:LEU:CD2  | 1.87                     | 1.03              |
| 14:AP:20:ARG:HB3   | 14:AP:20:ARG:HH21  | 0.92                     | 1.03              |
| 14:AP:73:LEU:O     | 14:AP:76:LYS:HD3   | 1.56                     | 1.03              |
| 17:AS:6:LYS:HG2    | 17:AS:12:TYR:H     | 1.22                     | 1.03              |
| 19:AU:47:PHE:HE2   | 19:AU:89:ILE:HA    | 1.22                     | 1.03              |
| 20:AV:22:GLY:CA    | 20:AV:73:ARG:HH12  | 1.70                     | 1.03              |
| 24:AZ:29:ARG:HB2   | 24:AZ:30:ARG:NH2   | 1.73                     | 1.03              |
| 34:BA:570:G:H1     | 34:BA:866:C:N4     | 1.55                     | 1.03              |
| 34:BA:947:G:O3'    | 46:BQ:109:THR:OG1  | 1.75                     | 1.03              |
| 34:BA:1220:G:N2    | 52:BW:55:LYS:CA    | 2.13                     | 1.03              |
| 34:BA:1220:G:C2    | 52:BW:54:GLY:O     | 2.10                     | 1.03              |
| 34:BA:1412:C:N3    | 34:BA:1489:G:O6    | 1.90                     | 1.03              |
| 41:BL:10:LEU:HD11  | 41:BL:85:ARG:HD3   | 1.38                     | 1.03              |
| 46:BQ:19:LEU:C     | 46:BQ:25:ILE:CG2   | 2.31                     | 1.03              |
| 56:BE:5:G:H4'      | 56:BE:6:G:H5'      | 1.35                     | 1.03              |
| 57:BZ:160:PHE:CD2  | 57:BZ:162:ILE:HD12 | 1.94                     | 1.03              |
| 1:AA:3:U:C2        | 1:AA:2900:A:C2     | 2.41                     | 1.03              |
| 1:AA:29:U:H2'      | 1:AA:30:G:N7       | 1.72                     | 1.03              |
| 1:AA:104:U:H2'     | 1:AA:105:C:O4'     | 1.57                     | 1.03              |
| 1:AA:183:C:H1'     | 1:AA:433:C:H1'     | 1.40                     | 1.03              |
| 1:AA:388:G:H2'     | 1:AA:390:A:N7      | 1.73                     | 1.03              |
| 1:AA:630:G:H5''    | 29:Ae:46:ARG:NH1   | 1.74                     | 1.03              |
| 1:AA:988:A:H3'     | 24:AZ:10:LYS:HZ1   | 1.21                     | 1.03              |
| 1:AA:1646:C:H3'    | 1:AA:1647:G:C5'    | 1.88                     | 1.03              |
| 1:AA:1702:G:H2'    | 1:AA:1703:G:C5'    | 1.88                     | 1.03              |
| 1:AA:2637:U:H5''   | 5:AE:81:ILE:HD11   | 1.40                     | 1.03              |
| 59:AA:3003:8AN:O1P | 22:AX:2:ALA:HB1    | 1.58                     | 1.03              |
| 3:AC:46:LYS:HE2    | 3:AC:210:ARG:HE    | 1.18                     | 1.03              |
| 7:AG:84:LYS:NZ     | 56:BE:54:U:C5      | 2.25                     | 1.03              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 10:AL:3:GLN:HG2   | 10:AL:6:THR:HB    | 1.39                     | 1.03              |
| 11:AM:46:LYS:H    | 11:AM:46:LYS:HE3  | 1.22                     | 1.03              |
| 11:AM:72:PRO:HB2  | 11:AM:111:ARG:HB3 | 1.41                     | 1.03              |
| 14:AP:23:ARG:NH1  | 14:AP:42:ASP:HB3  | 1.72                     | 1.03              |
| 15:AQ:58:ASN:N    | 15:AQ:58:ASN:HD22 | 1.55                     | 1.03              |
| 30:Af:10:ILE:HD13 | 30:Af:32:HIS:CD2  | 1.93                     | 1.03              |
| 32:AJ:10:LEU:HD22 | 32:AJ:27:LEU:CD2  | 1.88                     | 1.03              |
| 33:Ag:290:UNK:CA  | 33:Ag:343:UNK:HA  | 1.88                     | 1.03              |
| 34:BA:232:G:H2'   | 34:BA:233:C:C6    | 1.94                     | 1.03              |
| 34:BA:922:G:H4'   | 38:BI:20:GLN:HA   | 1.37                     | 1.03              |
| 34:BA:927:G:C5'   | 34:BA:1503:A:H62  | 1.72                     | 1.03              |
| 34:BA:1014:A:C1'  | 52:BW:34:TRP:CZ3  | 2.40                     | 1.03              |
| 34:BA:1064:G:H1'  | 34:BA:1066:C:C4   | 1.94                     | 1.03              |
| 34:BA:1109:C:OP1  | 36:BG:176:HIS:NE2 | 1.90                     | 1.03              |
| 41:BL:14:ARG:NH1  | 41:BL:14:ARG:HB3  | 1.73                     | 1.03              |
| 41:BL:29:SER:HB2  | 41:BL:32:LYS:HE2  | 1.36                     | 1.03              |
| 50:BU:88:TYR:N    | 50:BU:91:ARG:HH21 | 1.56                     | 1.03              |
| 57:BZ:73:VAL:HA   | 57:BZ:74:ASP:HB3  | 1.07                     | 1.03              |
| 57:BZ:200:ASP:HB2 | 57:BZ:228:ARG:HG2 | 1.06                     | 1.03              |
| 1:AA:112:U:C3'    | 1:AA:113:G:H5''   | 1.89                     | 1.03              |
| 1:AA:371:A:H5''   | 1:AA:423:A:N7     | 1.73                     | 1.03              |
| 1:AA:549:G:H2'    | 1:AA:550:G:H8     | 1.24                     | 1.03              |
| 1:AA:602:G:O3'    | 1:AA:603:A:H4'    | 1.57                     | 1.03              |
| 1:AA:1053:C:H2'   | 1:AA:1054:A:C8    | 1.94                     | 1.03              |
| 1:AA:1075:C:C2'   | 32:AJ:90:LYS:HD3  | 1.88                     | 1.03              |
| 1:AA:1081:U:C4'   | 32:AJ:125:ARG:CB  | 2.37                     | 1.03              |
| 1:AA:1802:A:H61   | 1:AA:1822:G:H1'   | 1.24                     | 1.03              |
| 6:AF:36:VAL:HG21  | 6:AF:183:VAL:HG21 | 1.36                     | 1.03              |
| 12:AN:27:VAL:HG22 | 12:AN:28:ALA:H    | 1.21                     | 1.03              |
| 15:AQ:10:VAL:O    | 15:AQ:13:ARG:HB3  | 1.58                     | 1.03              |
| 16:AR:53:ARG:HA   | 16:AR:56:ASP:OD2  | 1.56                     | 1.03              |
| 16:AR:55:ARG:HG2  | 16:AR:55:ARG:HH11 | 1.23                     | 1.03              |
| 16:AR:112:ARG:NH1 | 17:AS:50:PRO:HG3  | 1.73                     | 1.03              |
| 25:Aa:4:GLY:HA2   | 25:Aa:11:PRO:HB3  | 1.40                     | 1.03              |
| 31:AI:140:GLY:HA2 | 33:Ag:137:UNK:C   | 1.89                     | 1.03              |
| 32:AJ:92:GLY:HA3  | 32:AJ:93:ARG:HB2  | 1.38                     | 1.03              |
| 34:BA:22:G:H2'    | 34:BA:23:C:H6     | 1.22                     | 1.03              |
| 34:BA:91:C:H2'    | 34:BA:92:G:H8     | 1.23                     | 1.03              |
| 34:BA:958:A:C6    | 52:BW:56:GLN:NE2  | 2.26                     | 1.03              |
| 34:BA:1116:C:C2   | 34:BA:1184:G:N1   | 2.27                     | 1.03              |
| 34:BA:1117:G:C4   | 34:BA:1184:G:C2   | 2.47                     | 1.03              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1205:U:H4'  | 36:BG:195:VAL:HG13 | 1.41                     | 1.03              |
| 34:BA:1311:G:C5   | 34:BA:1327:C:C5    | 2.29                     | 1.03              |
| 34:BA:1313:U:N3   | 34:BA:1324:A:H2    | 1.48                     | 1.03              |
| 34:BA:1319:A:H4'  | 52:BW:37:ARG:CA    | 1.86                     | 1.03              |
| 34:BA:1405:G:H21  | 34:BA:1517:G:N2    | 1.57                     | 1.03              |
| 34:BA:1417:G:H2'  | 34:BA:1482:G:N2    | 1.72                     | 1.03              |
| 34:BA:1428:A:H2'  | 34:BA:1429:C:C6    | 1.94                     | 1.03              |
| 35:BF:91:PRO:HG3  | 35:BF:154:LEU:HB3  | 1.40                     | 1.03              |
| 35:BF:178:ARG:NE  | 35:BF:196:LEU:HD13 | 1.73                     | 1.03              |
| 39:BJ:52:ILE:HD13 | 39:BJ:87:ARG:NH2   | 1.73                     | 1.03              |
| 42:BM:19:LEU:HD21 | 42:BM:59:PHE:HB3   | 1.07                     | 1.03              |
| 46:BQ:12:ASN:C    | 46:BQ:44:ARG:O     | 2.01                     | 1.03              |
| 46:BQ:14:ARG:HH21 | 46:BQ:42:ALA:HA    | 1.22                     | 1.03              |
| 57:BZ:13:HIS:CB   | 57:BZ:109:THR:HG23 | 1.89                     | 1.03              |
| 57:BZ:396:LYS:CB  | 57:BZ:475:VAL:N    | 2.18                     | 1.03              |
| 57:BZ:427:LYS:HG2 | 57:BZ:442:VAL:HG23 | 1.05                     | 1.03              |
| 57:BZ:502:PHE:CZ  | 57:BZ:555:VAL:C    | 2.37                     | 1.03              |
| 57:BZ:565:LEU:CA  | 57:BZ:566:GLU:CG   | 2.03                     | 1.03              |
| 1:AA:1252:G:C8    | 1:AA:1253:A:H1'    | 1.93                     | 1.02              |
| 1:AA:2176:A:H1'   | 3:AC:44:HIS:CD2    | 1.94                     | 1.02              |
| 1:AA:2178:C:C3'   | 3:AC:46:LYS:NZ     | 2.21                     | 1.02              |
| 1:AA:2652:C:C4    | 1:AA:2669:G:C2     | 2.47                     | 1.02              |
| 1:AA:2668:G:H2'   | 1:AA:2669:G:C8     | 1.92                     | 1.02              |
| 1:AA:2670:A:C5'   | 5:AE:206:LYS:NZ    | 2.21                     | 1.02              |
| 1:AA:2832:U:H1'   | 1:AA:2834:G:N2     | 1.73                     | 1.02              |
| 3:AC:45:ALA:N     | 3:AC:213:TYR:CD1   | 2.15                     | 1.02              |
| 4:AD:125:ILE:HG21 | 4:AD:137:PRO:HG3   | 1.36                     | 1.02              |
| 6:AF:123:LEU:HD12 | 6:AF:193:VAL:HG22  | 1.39                     | 1.02              |
| 13:AO:13:HIS:HB3  | 13:AO:16:HIS:CD2   | 1.94                     | 1.02              |
| 13:AO:38:VAL:HB   | 13:AO:39:PRO:HD3   | 1.41                     | 1.02              |
| 18:AT:78:GLU:CD   | 18:AT:99:ARG:HB3   | 1.83                     | 1.02              |
| 21:AW:151:HIS:HB3 | 21:AW:170:THR:H    | 1.21                     | 1.02              |
| 34:BA:716:A:H1'   | 44:BO:118:GLY:HA2  | 1.37                     | 1.02              |
| 34:BA:939:G:H5''  | 40:BK:102:ARG:HH22 | 0.91                     | 1.02              |
| 34:BA:962:C:H4'   | 34:BA:1200:C:H41   | 1.18                     | 1.02              |
| 34:BA:1499:A:H2'  | 34:BA:1500:A:H5'   | 1.38                     | 1.02              |
| 35:BF:163:PHE:HA  | 35:BF:185:ILE:O    | 1.59                     | 1.02              |
| 38:BI:79:GLU:HB3  | 38:BI:92:LYS:HA    | 1.39                     | 1.02              |
| 43:BN:23:ILE:HG23 | 43:BN:85:LEU:HD23  | 1.37                     | 1.02              |
| 45:BP:28:LYS:NZ   | 45:BP:33:ARG:HH22  | 1.56                     | 1.02              |
| 47:BR:45:ARG:HH11 | 47:BR:45:ARG:CB    | 1.71                     | 1.02              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 56:BE:4:C:C6       | 56:BE:6:G:N7       | 2.27                     | 1.02              |
| 57:BZ:40:GLU:CB    | 57:BZ:41:ARG:HB2   | 1.88                     | 1.02              |
| 57:BZ:55:THR:O     | 57:BZ:56:ILE:HD12  | 1.56                     | 1.02              |
| 1:AA:152:G:O2'     | 1:AA:153:C:C5'     | 2.07                     | 1.02              |
| 1:AA:519:U:H6      | 1:AA:519:U:H5'     | 1.24                     | 1.02              |
| 1:AA:853:G:H2'     | 1:AA:854:G:H8      | 1.24                     | 1.02              |
| 1:AA:956:G:O6      | 1:AA:958:U:H1'     | 1.57                     | 1.02              |
| 1:AA:1043:C:O4'    | 1:AA:1112:G:N2     | 1.91                     | 1.02              |
| 1:AA:1438:U:H2'    | 1:AA:1439:A:H5'    | 1.42                     | 1.02              |
| 1:AA:2327:A:H2'    | 1:AA:2328:A:C8     | 1.93                     | 1.02              |
| 3:AC:43:VAL:CG1    | 3:AC:224:ILE:HD11  | 1.89                     | 1.02              |
| 3:AC:62:VAL:CB     | 3:AC:191:ALA:C     | 2.16                     | 1.02              |
| 8:AH:103:LEU:HD13  | 8:AH:115:VAL:HG11  | 1.39                     | 1.02              |
| 10:AL:59:LYS:HA    | 10:AL:86:ILE:HD12  | 1.35                     | 1.02              |
| 16:AR:82:GLY:HA2   | 16:AR:117:GLN:HG2  | 1.37                     | 1.02              |
| 18:AT:5:ALA:HB2    | 18:AT:54:ALA:HB2   | 1.39                     | 1.02              |
| 33:Ag:7:UNK:CB     | 33:Ag:144:UNK:HA   | 1.87                     | 1.02              |
| 34:BA:886:G:O2'    | 34:BA:887:G:H5'    | 1.57                     | 1.02              |
| 34:BA:1004:A:H8    | 34:BA:1036:G:O6    | 1.39                     | 1.02              |
| 39:BJ:3:ARG:HA     | 39:BJ:67:MET:HE1   | 1.03                     | 1.02              |
| 45:BP:57:LYS:HG2   | 45:BP:67:THR:HG22  | 1.41                     | 1.02              |
| 57:BZ:6:ARG:CB     | 57:BZ:68:TYR:O     | 2.07                     | 1.02              |
| 57:BZ:11:ILE:HD11  | 57:BZ:95:VAL:HG12  | 1.37                     | 1.02              |
| 57:BZ:12:ALA:O     | 57:BZ:109:THR:HG22 | 1.58                     | 1.02              |
| 57:BZ:248:ASN:ND2  | 57:BZ:273:ILE:HG13 | 1.73                     | 1.02              |
| 57:BZ:251:VAL:CG1  | 57:BZ:273:ILE:HA   | 1.26                     | 1.02              |
| 57:BZ:310:PHE:CA   | 57:BZ:356:PHE:O    | 2.05                     | 1.02              |
| 57:BZ:488:LEU:HG   | 57:BZ:525:GLY:C    | 1.82                     | 1.02              |
| 1:AA:2175:C:C2     | 3:AC:219:GLY:C     | 2.35                     | 1.02              |
| 1:AA:2660:A:N3     | 57:BZ:456:MET:C    | 2.17                     | 1.02              |
| 1:AA:2765:A:H2'    | 1:AA:2765:A:N3     | 1.72                     | 1.02              |
| 3:AC:22:ILE:HD11   | 3:AC:226:PRO:HA    | 1.40                     | 1.02              |
| 4:AD:5:LYS:HD3     | 4:AD:29:PRO:HB3    | 1.38                     | 1.02              |
| 5:AE:30:PRO:HA     | 5:AE:49:LEU:O      | 1.59                     | 1.02              |
| 5:AE:111:ARG:N     | 5:AE:161:GLY:HA3   | 1.75                     | 1.02              |
| 5:AE:179:GLU:O     | 5:AE:181:LEU:HG    | 1.59                     | 1.02              |
| 10:AL:9:GLU:HB2    | 10:AL:82:ASN:HB3   | 1.39                     | 1.02              |
| 10:AL:23:ARG:HB2   | 10:AL:23:ARG:HH11  | 1.20                     | 1.02              |
| 10:AL:52:VAL:HG22  | 10:AL:53:LYS:H     | 1.21                     | 1.02              |
| 12:AN:41:TRP:HA    | 12:AN:95:ALA:O     | 1.59                     | 1.02              |
| 14:AP:106:ARG:HH12 | 14:AP:110:LEU:HB2  | 1.16                     | 1.02              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 18:AT:64:MET:HG2   | 18:AT:109:GLU:HG3  | 1.41                     | 1.02              |
| 24:AZ:4:LEU:O      | 24:AZ:37:LEU:HB3   | 1.60                     | 1.02              |
| 24:AZ:10:LYS:HZ3   | 24:AZ:12:PRO:HG3   | 1.23                     | 1.02              |
| 28:Ad:28:ARG:O     | 28:Ad:31:LEU:HB2   | 1.60                     | 1.02              |
| 32:AJ:17:ALA:HB2   | 32:AJ:41:PHE:C     | 1.83                     | 1.02              |
| 34:BA:1005:A:H5''  | 34:BA:1006:C:C5    | 1.95                     | 1.02              |
| 34:BA:1318:A:C3'   | 52:BW:37:ARG:CB    | 2.38                     | 1.02              |
| 34:BA:1461:G:H2'   | 34:BA:1462:G:H8    | 1.23                     | 1.02              |
| 45:BP:28:LYS:HZ2   | 45:BP:33:ARG:HH22  | 1.08                     | 1.02              |
| 50:BU:59:ILE:HD11  | 50:BU:71:PHE:HB3   | 1.38                     | 1.02              |
| 57:BZ:397:GLN:CB   | 57:BZ:472:TYR:C    | 2.30                     | 1.02              |
| 1:AA:2:G:C6        | 1:AA:2902:C:N4     | 2.28                     | 1.02              |
| 1:AA:259:G:H2'     | 1:AA:260:G:H8      | 1.15                     | 1.02              |
| 1:AA:270:A:N1      | 1:AA:370:G:H1'     | 1.75                     | 1.02              |
| 1:AA:1024:G:H5''   | 1:AA:1025:G:H5''   | 1.06                     | 1.02              |
| 1:AA:1288:U:H5''   | 1:AA:1289:C:OP2    | 1.57                     | 1.02              |
| 1:AA:2023:G:H2'    | 1:AA:2024:G:H8     | 1.22                     | 1.02              |
| 1:AA:2584:U:H2'    | 1:AA:2585:U:C5     | 1.95                     | 1.02              |
| 5:AE:13:ARG:HG3    | 5:AE:22:PRO:CD     | 1.88                     | 1.02              |
| 11:AM:65:ARG:NH1   | 11:AM:67:MET:H     | 1.56                     | 1.02              |
| 14:AP:37:ALA:O     | 14:AP:51:ALA:HB2   | 1.59                     | 1.02              |
| 16:AR:8:VAL:HG23   | 16:AR:9:VAL:H      | 1.20                     | 1.02              |
| 32:AJ:24:GLY:H     | 32:AJ:35:MET:HE2   | 1.20                     | 1.02              |
| 34:BA:22:G:H2'     | 34:BA:23:C:C6      | 1.93                     | 1.02              |
| 34:BA:38:G:H22     | 34:BA:397:A:H5''   | 0.86                     | 1.02              |
| 34:BA:952:U:H5'    | 34:BA:972:C:H41    | 1.23                     | 1.02              |
| 34:BA:1192:C:H6    | 34:BA:1192:C:H3'   | 1.25                     | 1.02              |
| 34:BA:1253:G:H1    | 34:BA:1285:A:N6    | 1.55                     | 1.02              |
| 37:BH:19:LEU:H     | 37:BH:33:MET:HE1   | 1.24                     | 1.02              |
| 37:BH:162:LEU:HD13 | 37:BH:181:MET:HG2  | 1.42                     | 1.02              |
| 38:BI:84:PHE:CZ    | 38:BI:133:TYR:HB3  | 1.93                     | 1.02              |
| 43:BN:18:ALA:HB3   | 43:BN:91:PRO:HB3   | 1.41                     | 1.02              |
| 43:BN:25:GLU:HA    | 43:BN:28:ARG:HD2   | 1.41                     | 1.02              |
| 56:BE:21:A:C2'     | 56:BE:22:G:H5''    | 1.89                     | 1.02              |
| 57:BZ:27:GLN:HG3   | 57:BZ:28:GLN:NE2   | 1.73                     | 1.02              |
| 57:BZ:233:PRO:HG2  | 57:BZ:248:ASN:HD22 | 0.88                     | 1.02              |
| 57:BZ:251:VAL:HG12 | 57:BZ:273:ILE:C    | 1.85                     | 1.02              |
| 1:AA:781:A:H1'     | 4:AD:222:ARG:NH1   | 1.74                     | 1.02              |
| 1:AA:785:G:H2'     | 1:AA:786:C:C6      | 1.93                     | 1.02              |
| 1:AA:1785:A:H5''   | 1:AA:1982:C:O2'    | 1.58                     | 1.02              |
| 1:AA:2123:G:O4'    | 3:AC:172:HIS:HB3   | 1.53                     | 1.02              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2176:A:OP1   | 3:AC:222:VAL:HG23  | 1.60                     | 1.02              |
| 1:AA:2808:U:C2'   | 1:AA:2809:A:H5''   | 1.90                     | 1.02              |
| 3:AC:21:THR:HB    | 3:AC:228:SER:CB    | 1.89                     | 1.02              |
| 4:AD:77:ALA:HB1   | 4:AD:95:LEU:HD21   | 1.38                     | 1.02              |
| 4:AD:169:GLU:HB3  | 4:AD:184:LYS:HZ1   | 1.21                     | 1.02              |
| 5:AE:104:VAL:HG13 | 5:AE:197:ILE:O     | 1.59                     | 1.02              |
| 6:AF:66:PRO:C     | 6:AF:68:LYS:H      | 1.64                     | 1.02              |
| 7:AG:54:GLU:O     | 7:AG:57:ALA:HB3    | 1.60                     | 1.02              |
| 9:AK:15:LEU:HG    | 9:AK:138:LEU:O     | 1.60                     | 1.02              |
| 12:AN:34:LEU:HB2  | 12:AN:67:ARG:HH22  | 1.23                     | 1.02              |
| 16:AR:93:LYS:HA   | 16:AR:93:LYS:HZ2   | 1.19                     | 1.02              |
| 21:AW:56:VAL:HG21 | 21:AW:135:GLU:HA   | 1.40                     | 1.02              |
| 21:AW:151:HIS:HA  | 21:AW:171:ILE:HG22 | 1.38                     | 1.02              |
| 24:AZ:3:ARG:HH12  | 24:AZ:59:VAL:HB    | 1.17                     | 1.02              |
| 31:AI:52:PHE:CA   | 31:AI:86:PRO:CB    | 2.37                     | 1.02              |
| 31:AI:140:GLY:HA3 | 33:Ag:136:UNK:C    | 1.89                     | 1.02              |
| 32:AJ:12:LEU:HD13 | 32:AJ:41:PHE:CE1   | 1.93                     | 1.02              |
| 32:AJ:25:PRO:CG   | 57:BZ:429:MET:HE2  | 1.80                     | 1.02              |
| 32:AJ:27:LEU:HD22 | 32:AJ:58:THR:CA    | 1.89                     | 1.02              |
| 34:BA:132:C:H5'   | 34:BA:262:A:H1'    | 1.37                     | 1.02              |
| 34:BA:475:G:H2'   | 34:BA:476:G:C8     | 1.94                     | 1.02              |
| 34:BA:684:A:H4'   | 44:BO:12:ARG:NH2   | 1.75                     | 1.02              |
| 34:BA:1309:G:N2   | 34:BA:1328:C:N1    | 2.05                     | 1.02              |
| 34:BA:1312:G:C4   | 34:BA:1326:C:C2    | 2.48                     | 1.02              |
| 35:BF:155:LEU:CB  | 35:BF:159:PRO:HG3  | 1.88                     | 1.02              |
| 38:BI:52:PRO:O    | 38:BI:55:VAL:HB    | 1.59                     | 1.02              |
| 41:BL:91:ARG:HG2  | 50:BU:34:LYS:HB2   | 1.39                     | 1.02              |
| 42:BM:9:ARG:HD2   | 42:BM:14:VAL:HG22  | 1.39                     | 1.02              |
| 45:BP:37:CYS:CA   | 45:BP:58:VAL:HG22  | 1.88                     | 1.02              |
| 46:BQ:85:GLY:O    | 52:BW:74:PHE:HA    | 1.60                     | 1.02              |
| 57:BZ:26:LEU:HB3  | 57:BZ:29:SER:O     | 1.58                     | 1.02              |
| 57:BZ:27:GLN:CA   | 57:BZ:28:GLN:HB3   | 1.89                     | 1.02              |
| 57:BZ:125:VAL:HB  | 57:BZ:162:ILE:HA   | 1.42                     | 1.02              |
| 57:BZ:205:PHE:C   | 57:BZ:228:ARG:O    | 2.02                     | 1.02              |
| 57:BZ:207:MET:CE  | 57:BZ:224:GLY:HA3  | 1.90                     | 1.02              |
| 1:AA:6:A:C2       | 1:AA:2898:U:N1     | 2.28                     | 1.01              |
| 1:AA:627:A:H2'    | 1:AA:628:G:O4'     | 1.59                     | 1.01              |
| 1:AA:1035:U:O3'   | 8:AH:59:ARG:CZ     | 2.07                     | 1.01              |
| 1:AA:1839:G:O6    | 1:AA:1927:A:C2     | 2.14                     | 1.01              |
| 1:AA:2129:C:C5'   | 3:AC:6:ARG:NE      | 2.19                     | 1.01              |
| 1:AA:2178:C:H5''  | 3:AC:46:LYS:CD     | 1.90                     | 1.01              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:2181:G:H5''   | 55:BC:17:C:N4      | 1.73                     | 1.01              |
| 1:AA:2652:C:C4     | 1:AA:2669:G:N2     | 2.27                     | 1.01              |
| 1:AA:2841:C:H2'    | 1:AA:2842:G:H8     | 1.22                     | 1.01              |
| 3:AC:46:LYS:HG3    | 3:AC:211:SER:OG    | 1.49                     | 1.01              |
| 4:AD:136:ILE:HB    | 4:AD:168:ARG:NH2   | 1.75                     | 1.01              |
| 4:AD:202:LYS:HD2   | 4:AD:202:LYS:H     | 1.25                     | 1.01              |
| 8:AH:73:ALA:O      | 8:AH:76:VAL:HG22   | 1.58                     | 1.01              |
| 14:AP:89:ARG:HG3   | 14:AP:90:GLY:H     | 1.24                     | 1.01              |
| 14:AP:95:HIS:N     | 14:AP:99:LYS:HB2   | 1.74                     | 1.01              |
| 20:AV:12:THR:HG22  | 20:AV:13:VAL:H     | 1.21                     | 1.01              |
| 25:Aa:5:ILE:HD11   | 25:Aa:10:VAL:HG23  | 1.39                     | 1.01              |
| 25:Aa:65:ASP:O     | 25:Aa:69:LYS:HG3   | 1.59                     | 1.01              |
| 27:Ac:16:CYS:HB2   | 27:Ac:49:HIS:CA    | 1.90                     | 1.01              |
| 27:Ac:24:GLU:HG2   | 29:Ae:37:SER:HB2   | 1.37                     | 1.01              |
| 34:BA:1312:G:C2    | 34:BA:1326:C:C6    | 2.48                     | 1.01              |
| 34:BA:1327:C:H5''  | 54:BY:20:LYS:HD3   | 1.41                     | 1.01              |
| 35:BF:161:ALA:HA   | 35:BF:183:PRO:HB2  | 1.42                     | 1.01              |
| 37:BH:18:LYS:HG2   | 37:BH:33:MET:HB3   | 1.40                     | 1.01              |
| 37:BH:53:ASP:O     | 37:BH:56:VAL:HB    | 1.60                     | 1.01              |
| 37:BH:132:ARG:HH11 | 37:BH:132:ARG:HG2  | 1.21                     | 1.01              |
| 40:BK:69:VAL:HG22  | 40:BK:135:VAL:HG22 | 1.39                     | 1.01              |
| 42:BM:55:ALA:HB3   | 42:BM:58:HIS:CE1   | 1.94                     | 1.01              |
| 57:BZ:73:VAL:HG22  | 57:BZ:88:VAL:CG1   | 1.91                     | 1.01              |
| 57:BZ:156:GLU:HG3  | 57:BZ:159:ASP:CB   | 1.89                     | 1.01              |
| 57:BZ:163:VAL:HA   | 57:BZ:174:LEU:O    | 1.59                     | 1.01              |
| 57:BZ:210:SER:HA   | 57:BZ:284:ILE:HG23 | 1.41                     | 1.01              |
| 57:BZ:379:GLU:CB   | 57:BZ:580:VAL:O    | 2.07                     | 1.01              |
| 1:AA:270(O):U:H5'' | 1:AA:270(P):C:H5   | 1.23                     | 1.01              |
| 1:AA:477:A:N6      | 1:AA:502:A:H61     | 1.58                     | 1.01              |
| 1:AA:592:G:O2'     | 29:Ae:2:PRO:HA     | 1.60                     | 1.01              |
| 1:AA:716:A:H1'     | 48:BS:44:LYS:HD3   | 1.02                     | 1.01              |
| 1:AA:944:G:H5''    | 1:AA:945:A:H5''    | 1.40                     | 1.01              |
| 1:AA:976:C:H5'     | 1:AA:1156:A:N6     | 1.75                     | 1.01              |
| 1:AA:988:A:N6      | 24:AZ:13:ILE:HG13  | 1.75                     | 1.01              |
| 1:AA:1105:U:C4'    | 1:AA:1106:G:O5'    | 2.07                     | 1.01              |
| 1:AA:1312:U:H3'    | 1:AA:1313:U:C5     | 1.96                     | 1.01              |
| 1:AA:2213:U:H5'    | 1:AA:2215:G:N7     | 1.75                     | 1.01              |
| 1:AA:2243:U:H2'    | 1:AA:2244:U:C6     | 1.95                     | 1.01              |
| 1:AA:2792:G:N3     | 1:AA:2805:G:N1     | 2.06                     | 1.01              |
| 1:AA:2847:U:H3'    | 15:AQ:99:LEU:CD1   | 1.90                     | 1.01              |
| 2:AB:33:G:H2'      | 2:AB:34:U:C6       | 1.94                     | 1.01              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 3:AC:67:GLY:CA     | 3:AC:184:LYS:NZ    | 2.15                     | 1.01              |
| 4:AD:54:ARG:HA     | 4:AD:219:PRO:HG2   | 1.43                     | 1.01              |
| 5:AE:49:LEU:HD22   | 5:AE:76:ARG:C      | 1.85                     | 1.01              |
| 7:AG:47:LYS:HD3    | 7:AG:72:ARG:C      | 1.84                     | 1.01              |
| 9:AK:14:VAL:HG13   | 9:AK:138:LEU:HB3   | 1.40                     | 1.01              |
| 10:AL:105:GLU:O    | 10:AL:111:PHE:HZ   | 1.38                     | 1.01              |
| 15:AQ:17:THR:HB    | 15:AQ:20:PRO:HD3   | 1.41                     | 1.01              |
| 16:AR:13:LYS:HD2   | 16:AR:13:LYS:H     | 1.21                     | 1.01              |
| 19:AU:66:LEU:HG    | 19:AU:69:TYR:O     | 1.60                     | 1.01              |
| 20:AV:22:GLY:HA3   | 20:AV:73:ARG:HH12  | 0.86                     | 1.01              |
| 25:Aa:5:ILE:HG23   | 25:Aa:57:GLU:HB2   | 1.42                     | 1.01              |
| 32:AJ:19:PRO:CG    | 32:AJ:36:GLU:HA    | 1.89                     | 1.01              |
| 34:BA:1310:G:O6    | 34:BA:1327:C:C4    | 2.13                     | 1.01              |
| 37:BH:141:ARG:HD3  | 37:BH:142:PRO:HD2  | 1.40                     | 1.01              |
| 38:BI:48:ALA:HB3   | 38:BI:53:LEU:HB3   | 1.40                     | 1.01              |
| 46:BQ:36:LYS:CG    | 46:BQ:56:LEU:CD2   | 2.37                     | 1.01              |
| 57:BZ:172:ALA:CA   | 57:BZ:179:MET:CE   | 2.38                     | 1.01              |
| 57:BZ:382:VAL:HG23 | 57:BZ:578:VAL:HG23 | 1.38                     | 1.01              |
| 57:BZ:564:THR:C    | 57:BZ:566:GLU:CG   | 2.22                     | 1.01              |
| 1:AA:248:G:N3      | 1:AA:2431:U:H5'    | 1.75                     | 1.01              |
| 1:AA:270(C):C:H2'  | 1:AA:270(D):C:C6   | 1.94                     | 1.01              |
| 1:AA:2128:C:C5'    | 3:AC:35:ALA:HB3    | 1.91                     | 1.01              |
| 1:AA:2178:C:H5'    | 3:AC:46:LYS:CG     | 1.65                     | 1.01              |
| 3:AC:48:GLY:N      | 3:AC:210:ARG:HG3   | 1.75                     | 1.01              |
| 3:AC:62:VAL:HG11   | 3:AC:192:PHE:H     | 1.19                     | 1.01              |
| 3:AC:153:ILE:HA    | 3:AC:156:ILE:HD12  | 1.40                     | 1.01              |
| 4:AD:58:HIS:O      | 4:AD:59:LYS:HG3    | 1.58                     | 1.01              |
| 4:AD:166:GLN:O     | 4:AD:174:ILE:HB    | 1.58                     | 1.01              |
| 5:AE:117:MET:HG2   | 5:AE:136:ARG:HE    | 1.25                     | 1.01              |
| 7:AG:5:VAL:HG12    | 7:AG:9:ARG:HH22    | 1.22                     | 1.01              |
| 10:AL:39:ILE:CG1   | 10:AL:59:LYS:HZ1   | 1.72                     | 1.01              |
| 12:AN:78:PRO:HB3   | 12:AN:81:VAL:HG23  | 1.41                     | 1.01              |
| 18:AT:36:LEU:HD23  | 18:AT:51:LEU:HD21  | 1.39                     | 1.01              |
| 23:AY:12:SER:HB3   | 23:AY:13:PRO:HD2   | 1.41                     | 1.01              |
| 25:Aa:5:ILE:HG21   | 25:Aa:60:GLN:OE1   | 1.59                     | 1.01              |
| 28:Ad:48:LYS:CG    | 28:Ad:49:ARG:H     | 1.71                     | 1.01              |
| 32:AJ:37:PHE:CZ    | 32:AJ:63:ARG:CD    | 2.44                     | 1.01              |
| 32:AJ:52:ILE:C     | 32:AJ:72:PRO:HA    | 1.85                     | 1.01              |
| 33:Ag:25:UNK:CA    | 33:Ag:130:UNK:CB   | 2.38                     | 1.01              |
| 34:BA:986:A:C5'    | 52:BW:55:LYS:NZ    | 2.18                     | 1.01              |
| 34:BA:1443:G:O2'   | 34:BA:1446:A:O3'   | 1.79                     | 1.01              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BF:84:GLU:HG2   | 35:BF:234:PRO:HD2  | 1.42                     | 1.01              |
| 35:BF:178:ARG:HD2  | 35:BF:184:VAL:HG11 | 1.42                     | 1.01              |
| 35:BF:178:ARG:HH21 | 35:BF:196:LEU:HB2  | 1.22                     | 1.01              |
| 36:BG:126:ARG:HB3  | 36:BG:128:PHE:CE1  | 1.95                     | 1.01              |
| 39:BJ:3:ARG:CA     | 39:BJ:67:MET:HE1   | 1.89                     | 1.01              |
| 41:BL:98:LYS:H     | 41:BL:98:LYS:HZ2   | 1.04                     | 1.01              |
| 46:BQ:15:VAL:N     | 46:BQ:34:LEU:HD21  | 1.73                     | 1.01              |
| 48:BS:7:GLU:O      | 48:BS:10:LYS:HG2   | 1.60                     | 1.01              |
| 57:BZ:82:GLY:HA3   | 57:BZ:361:ARG:CG   | 1.91                     | 1.01              |
| 57:BZ:427:LYS:CG   | 57:BZ:442:VAL:CG2  | 2.37                     | 1.01              |
| 1:AA:265:A:H3'     | 1:AA:265:A:C8      | 1.96                     | 1.01              |
| 1:AA:270(M):U:H4'  | 1:AA:270(N):G:H4'  | 1.01                     | 1.01              |
| 1:AA:424:G:O2'     | 1:AA:425:G:H5'     | 1.59                     | 1.01              |
| 1:AA:627:A:C6      | 1:AA:637:A:H1'     | 1.96                     | 1.01              |
| 1:AA:630:G:H5''    | 29:Ae:46:ARG:HH12  | 1.20                     | 1.01              |
| 1:AA:1903:G:H2'    | 1:AA:1904:G:C8     | 1.95                     | 1.01              |
| 1:AA:2210:G:C6     | 4:AD:150:LYS:HA    | 1.94                     | 1.01              |
| 1:AA:2345:G:N7     | 1:AA:2371:G:N2     | 2.08                     | 1.01              |
| 1:AA:2506:U:C6     | 59:AA:3002:8AN:N3' | 2.28                     | 1.01              |
| 1:AA:2619:C:C4'    | 5:AE:152:LYS:HA    | 1.91                     | 1.01              |
| 3:AC:180:PHE:HZ    | 3:AC:184:LYS:HD2   | 0.92                     | 1.01              |
| 5:AE:102:VAL:HG13  | 5:AE:170:LEU:HG    | 1.42                     | 1.01              |
| 9:AK:43:THR:CB     | 9:AK:44:PRO:HD2    | 1.88                     | 1.01              |
| 17:AS:11:GLN:HE22  | 17:AS:24:LYS:NZ    | 1.58                     | 1.01              |
| 24:AZ:4:LEU:HD21   | 24:AZ:56:VAL:HG23  | 1.42                     | 1.01              |
| 27:Ac:16:CYS:SG    | 27:Ac:19:ARG:CZ    | 2.49                     | 1.01              |
| 34:BA:191:G:H1'    | 53:BX:105:SER:HA   | 1.43                     | 1.01              |
| 34:BA:1308:U:C3'   | 34:BA:1309:G:OP1   | 2.07                     | 1.01              |
| 34:BA:1316:G:O4'   | 34:BA:1360:A:C2    | 2.13                     | 1.01              |
| 34:BA:1499:A:C8    | 34:BA:1500:A:N7    | 2.29                     | 1.01              |
| 35:BF:42:ILE:HD11  | 35:BF:202:PRO:HB2  | 1.38                     | 1.01              |
| 35:BF:187:LEU:HA   | 35:BF:201:ILE:O    | 1.59                     | 1.01              |
| 42:BM:47:LEU:HD12  | 42:BM:51:ARG:HH22  | 1.24                     | 1.01              |
| 43:BN:43:ARG:O     | 43:BN:66:ARG:HB2   | 1.58                     | 1.01              |
| 46:BQ:108:ARG:HH11 | 46:BQ:108:ARG:HA   | 1.21                     | 1.01              |
| 51:BV:36:ASN:O     | 51:BV:40:LEU:HG    | 1.59                     | 1.01              |
| 56:BD:1:G:C2       | 56:BD:72:C:C2      | 2.42                     | 1.01              |
| 56:BE:5:G:N1       | 56:BE:67:C:O2      | 1.92                     | 1.01              |
| 57:BZ:10:ILE:CD1   | 57:BZ:21:LEU:CB    | 2.39                     | 1.01              |
| 57:BZ:80:ASP:OD1   | 57:BZ:365:HIS:CA   | 2.09                     | 1.01              |
| 57:BZ:401:GLU:O    | 57:BZ:467:SER:HB3  | 1.61                     | 1.01              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:BZ:490:SER:O   | 57:BZ:534:THR:CG2  | 2.08                     | 1.01              |
| 57:BZ:520:GLU:CD  | 57:BZ:593:THR:HA   | 1.84                     | 1.01              |
| 1:AA:52:A:H2'     | 1:AA:53:A:H8       | 1.21                     | 1.01              |
| 1:AA:1151:G:H5''  | 16:AR:81:HIS:NE2   | 1.76                     | 1.01              |
| 1:AA:1203:G:O6    | 1:AA:1240:U:O2     | 1.78                     | 1.01              |
| 1:AA:1718:G:N2    | 1:AA:1742:C:N3     | 2.09                     | 1.01              |
| 1:AA:2239:G:H5'   | 1:AA:2240:C:OP2    | 1.60                     | 1.01              |
| 1:AA:2311:A:H3'   | 1:AA:2312:U:C5     | 1.96                     | 1.01              |
| 3:AC:156:ILE:HG12 | 3:AC:160:ARG:CB    | 1.91                     | 1.01              |
| 4:AD:177:LEU:HB2  | 4:AD:178:PRO:HD2   | 1.40                     | 1.01              |
| 10:AL:85:VAL:O    | 10:AL:93:PRO:HD3   | 1.61                     | 1.01              |
| 11:AM:46:LYS:HB3  | 11:AM:49:ARG:CZ    | 1.91                     | 1.01              |
| 20:AV:52:SER:HB3  | 20:AV:56:PRO:HB3   | 1.39                     | 1.01              |
| 25:Aa:57:GLU:C    | 25:Aa:61:ARG:HG3   | 1.85                     | 1.01              |
| 27:Ac:11:LEU:HD13 | 29:Ae:35:GLN:NE2   | 1.75                     | 1.01              |
| 27:Ac:14:THR:HB   | 27:Ac:51:GLU:HA    | 1.43                     | 1.01              |
| 33:Ag:7:UNK:C     | 33:Ag:147:UNK:C    | 2.35                     | 1.01              |
| 36:BG:59:ARG:NE   | 36:BG:64:VAL:HA    | 1.74                     | 1.01              |
| 37:BH:100:ARG:O   | 37:BH:104:VAL:HG13 | 1.61                     | 1.01              |
| 38:BI:76:ILE:HD13 | 38:BI:142:LEU:HB2  | 1.40                     | 1.01              |
| 41:BL:12:ARG:HH11 | 41:BL:27:PRO:HD3   | 1.21                     | 1.01              |
| 44:BO:111:ASP:OD2 | 44:BO:113:PRO:HD3  | 1.61                     | 1.01              |
| 46:BQ:25:ILE:HG22 | 46:BQ:26:GLY:H     | 1.24                     | 1.01              |
| 48:BS:60:VAL:O    | 48:BS:63:ARG:HG3   | 1.60                     | 1.01              |
| 57:BZ:122:LYS:HE2 | 57:BZ:155:ASP:C    | 1.85                     | 1.01              |
| 57:BZ:123:PRO:HD2 | 57:BZ:156:GLU:OE2  | 1.57                     | 1.01              |
| 57:BZ:565:LEU:N   | 57:BZ:566:GLU:HG2  | 1.54                     | 1.01              |
| 1:AA:479:A:H1'    | 1:AA:480:A:N7      | 1.76                     | 1.00              |
| 1:AA:616:A:H3'    | 1:AA:616:A:OP2     | 1.60                     | 1.00              |
| 1:AA:663:G:O2'    | 1:AA:940:G:H4'     | 1.61                     | 1.00              |
| 1:AA:684:G:H2'    | 1:AA:687:C:H41     | 1.25                     | 1.00              |
| 1:AA:1049:C:N3    | 1:AA:1050:A:N6     | 2.08                     | 1.00              |
| 1:AA:1105:U:H3'   | 1:AA:1107:G:N7     | 1.75                     | 1.00              |
| 1:AA:1702:G:H2'   | 1:AA:1703:G:H5''   | 1.05                     | 1.00              |
| 1:AA:1774:C:C6    | 1:AA:1775:U:H5     | 1.79                     | 1.00              |
| 1:AA:1824:G:O2'   | 4:AD:246:PRO:HB3   | 1.59                     | 1.00              |
| 1:AA:1906:G:N7    | 1:AA:1929:G:C5     | 2.27                     | 1.00              |
| 1:AA:2125:G:H5''  | 3:AC:40:THR:HG21   | 1.01                     | 1.00              |
| 1:AA:2254:C:C2'   | 1:AA:2255:G:H5'    | 1.90                     | 1.00              |
| 1:AA:2344:U:H5''  | 27:Ac:38:LYS:CG    | 1.91                     | 1.00              |
| 1:AA:2507:C:C5'   | 59:AA:3002:8AN:C4' | 2.38                     | 1.00              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2674:G:H2'   | 1:AA:2675:A:C8     | 1.95                     | 1.00              |
| 3:AC:43:VAL:HG11  | 3:AC:224:ILE:HD11  | 1.02                     | 1.00              |
| 3:AC:175:VAL:HG12 | 3:AC:189:ILE:HA    | 1.38                     | 1.00              |
| 4:AD:91:ARG:HH12  | 4:AD:198:ASN:HB2   | 1.23                     | 1.00              |
| 16:AR:93:LYS:HA   | 16:AR:93:LYS:NZ    | 1.76                     | 1.00              |
| 18:AT:29:LEU:O    | 18:AT:33:ARG:HB2   | 1.61                     | 1.00              |
| 25:Aa:65:ASP:HA   | 25:Aa:68:ARG:NH2   | 1.76                     | 1.00              |
| 26:Ab:34:PRO:HD3  | 26:Ab:40:LYS:HD2   | 1.42                     | 1.00              |
| 26:Ab:39:MET:HE1  | 26:Ab:41:PRO:HD3   | 1.41                     | 1.00              |
| 28:Ad:41:ARG:HH11 | 28:Ad:41:ARG:HB2   | 1.17                     | 1.00              |
| 34:BA:8:A:H1'     | 38:BI:102:ALA:O    | 1.61                     | 1.00              |
| 34:BA:279:A:N1    | 50:BU:98:LEU:HG    | 1.75                     | 1.00              |
| 34:BA:1162:C:C2   | 34:BA:1163:C:H5    | 1.78                     | 1.00              |
| 34:BA:1225:A:H5'  | 52:BW:78:ARG:HD3   | 1.38                     | 1.00              |
| 34:BA:1225:A:H4'  | 52:BW:78:ARG:CB    | 1.91                     | 1.00              |
| 34:BA:1316:G:H4'  | 34:BA:1360:A:C5    | 1.95                     | 1.00              |
| 34:BA:1317:C:N3   | 34:BA:1318:A:C4    | 2.28                     | 1.00              |
| 39:BJ:47:ARG:HD3  | 39:BJ:57:GLN:HB3   | 1.42                     | 1.00              |
| 41:BL:26:VAL:HG22 | 41:BL:27:PRO:HD2   | 1.42                     | 1.00              |
| 41:BL:38:ILE:HG13 | 41:BL:118:VAL:HG11 | 1.43                     | 1.00              |
| 46:BQ:98:VAL:HG23 | 46:BQ:110:ARG:HH12 | 1.22                     | 1.00              |
| 47:BR:16:PHE:CZ   | 52:BW:14:HIS:NE2   | 2.29                     | 1.00              |
| 50:BU:89:LEU:O    | 50:BU:92:ARG:HB3   | 1.60                     | 1.00              |
| 52:BW:9:VAL:HG21  | 52:BW:42:PRO:HB2   | 1.41                     | 1.00              |
| 56:BD:5:G:C2      | 56:BD:69:G:N7      | 2.27                     | 1.00              |
| 57:BZ:62:ALA:HA   | 57:BZ:187:TYR:CE2  | 1.94                     | 1.00              |
| 57:BZ:89:MET:HE2  | 57:BZ:119:TYR:CE1  | 1.95                     | 1.00              |
| 57:BZ:240:ILE:N   | 57:BZ:286:ASP:HB3  | 1.76                     | 1.00              |
| 1:AA:445:C:H3'    | 16:AR:3:ARG:HE     | 1.23                     | 1.00              |
| 1:AA:869:G:C2'    | 1:AA:870:A:H5''    | 1.91                     | 1.00              |
| 1:AA:957:A:OP2    | 12:AN:77:LYS:HD3   | 1.59                     | 1.00              |
| 1:AA:1105:U:O3'   | 1:AA:1106:G:H3'    | 1.41                     | 1.00              |
| 1:AA:1155:A:H2'   | 1:AA:1156:A:H5''   | 1.39                     | 1.00              |
| 1:AA:1342:A:C2'   | 1:AA:1345:C:H41    | 1.73                     | 1.00              |
| 1:AA:1906:G:N7    | 1:AA:1929:G:C4     | 2.30                     | 1.00              |
| 1:AA:2332:U:C4'   | 1:AA:2336:A:H62    | 1.73                     | 1.00              |
| 1:AA:2674:G:H4'   | 10:AL:26:LYS:HZ3   | 1.23                     | 1.00              |
| 4:AD:46:GLN:OE1   | 4:AD:51:VAL:HG23   | 1.61                     | 1.00              |
| 4:AD:61:LEU:HB2   | 4:AD:86:PRO:HG2    | 1.43                     | 1.00              |
| 8:AH:110:SER:O    | 8:AH:112:PRO:HD2   | 1.61                     | 1.00              |
| 10:AL:122:LEU:H   | 15:AQ:70:VAL:HG12  | 0.85                     | 1.00              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 12:AN:115:MET:O   | 12:AN:118:LEU:HG   | 1.60                     | 1.00              |
| 34:BA:973:G:N2    | 34:BA:974:A:N6     | 2.08                     | 1.00              |
| 34:BA:1053:G:H5'  | 34:BA:1054:C:H5'   | 1.40                     | 1.00              |
| 34:BA:1106:G:H2'  | 34:BA:1107:C:C6    | 1.96                     | 1.00              |
| 34:BA:1119:C:H2'  | 34:BA:1120:G:C8    | 1.96                     | 1.00              |
| 34:BA:1311:G:H22  | 34:BA:1326:C:H1'   | 0.87                     | 1.00              |
| 35:BF:155:LEU:HB2 | 35:BF:159:PRO:HG3  | 1.38                     | 1.00              |
| 38:BI:78:HIS:ND1  | 41:BL:107:LEU:HD11 | 1.76                     | 1.00              |
| 46:BQ:16:ASP:CA   | 46:BQ:30:ALA:HB1   | 1.90                     | 1.00              |
| 46:BQ:100:GLY:HA3 | 46:BQ:101:GLN:HG2  | 1.36                     | 1.00              |
| 48:BS:62:GLN:NE2  | 48:BS:66:LEU:HD21  | 1.76                     | 1.00              |
| 57:BZ:14:VAL:HA   | 57:BZ:78:HIS:HD2   | 1.23                     | 1.00              |
| 57:BZ:21:LEU:HD21 | 57:BZ:98:VAL:HG21  | 1.42                     | 1.00              |
| 57:BZ:111:PHE:CE1 | 57:BZ:115:LYS:HG2  | 1.95                     | 1.00              |
| 57:BZ:122:LYS:HE3 | 57:BZ:156:GLU:HB2  | 1.03                     | 1.00              |
| 1:AA:325:G:H2'    | 1:AA:326:G:H8      | 1.24                     | 1.00              |
| 1:AA:1046:A:N9    | 31:AI:11:ALA:HB2   | 1.76                     | 1.00              |
| 1:AA:1257:C:O2'   | 6:AF:84:VAL:HG23   | 1.61                     | 1.00              |
| 1:AA:1466:G:C2'   | 1:AA:1547:C:H41    | 1.73                     | 1.00              |
| 1:AA:1819:A:H3'   | 4:AD:178:PRO:HB2   | 1.43                     | 1.00              |
| 1:AA:1912:A:O2'   | 34:BA:1495:U:O4'   | 1.55                     | 1.00              |
| 1:AA:1993:U:H2'   | 1:AA:1994:C:H6     | 1.20                     | 1.00              |
| 1:AA:1996:C:H6    | 1:AA:1996:C:H5''   | 1.20                     | 1.00              |
| 1:AA:2128:C:H5''  | 3:AC:35:ALA:HB3    | 1.01                     | 1.00              |
| 1:AA:2418:A:H2'   | 1:AA:2419:U:O4'    | 1.62                     | 1.00              |
| 1:AA:2875:C:H5''  | 15:AQ:3:ARG:HD2    | 1.44                     | 1.00              |
| 3:AC:163:PHE:CZ   | 3:AC:192:PHE:HA    | 1.80                     | 1.00              |
| 5:AE:8:LYS:HZ2    | 5:AE:9:VAL:HG13    | 1.25                     | 1.00              |
| 10:AL:7:TYR:HD1   | 10:AL:7:TYR:N      | 1.56                     | 1.00              |
| 10:AL:97:ARG:HH11 | 10:AL:98:VAL:C     | 1.68                     | 1.00              |
| 14:AP:9:ARG:HB2   | 14:AP:9:ARG:NH1    | 1.76                     | 1.00              |
| 14:AP:28:VAL:HG22 | 14:AP:29:PHE:H     | 1.24                     | 1.00              |
| 17:AS:40:LEU:HD21 | 17:AS:55:ALA:HB2   | 1.43                     | 1.00              |
| 17:AS:69:LYS:O    | 17:AS:91:TYR:O     | 1.79                     | 1.00              |
| 27:Ac:16:CYS:CB   | 27:Ac:49:HIS:HA    | 1.90                     | 1.00              |
| 31:AI:27:VAL:O    | 31:AI:83:TYR:CB    | 2.09                     | 1.00              |
| 32:AJ:25:PRO:HG3  | 57:BZ:429:MET:SD   | 1.89                     | 1.00              |
| 32:AJ:51:ALA:O    | 32:AJ:72:PRO:CB    | 2.10                     | 1.00              |
| 34:BA:64:G:H4'    | 34:BA:65:U:H5''    | 1.39                     | 1.00              |
| 34:BA:1465:C:H2'  | 34:BA:1466:C:H5'   | 1.41                     | 1.00              |
| 52:BW:15:LEU:HD12 | 52:BW:71:LEU:HD11  | 1.37                     | 1.00              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 52:BW:53:ASN:HD21  | 52:BW:56:GLN:HB2   | 1.27                     | 1.00              |
| 56:BD:6:G:N1       | 56:BD:67:C:C4      | 2.30                     | 1.00              |
| 57:BZ:156:GLU:CG   | 57:BZ:159:ASP:HB2  | 1.91                     | 1.00              |
| 1:AA:5:A:N6        | 1:AA:2898:U:C4     | 2.25                     | 1.00              |
| 1:AA:839:U:H2'     | 1:AA:840:C:C6      | 1.96                     | 1.00              |
| 1:AA:1051:G:O2'    | 1:AA:2752:C:H5''   | 1.60                     | 1.00              |
| 1:AA:2349:G:H3'    | 1:AA:2350:C:H5''   | 1.39                     | 1.00              |
| 12:AN:118:LEU:HD13 | 12:AN:131:ILE:HG21 | 1.43                     | 1.00              |
| 18:AT:16:LYS:HD3   | 18:AT:16:LYS:H     | 1.24                     | 1.00              |
| 32:AJ:23:VAL:O     | 32:AJ:35:MET:HE1   | 1.48                     | 1.00              |
| 34:BA:291:C:H3'    | 34:BA:305:G:N2     | 1.76                     | 1.00              |
| 34:BA:572:A:H4'    | 34:BA:917:G:H5'    | 1.40                     | 1.00              |
| 34:BA:1302:U:H5    | 46:BQ:13:LYS:NZ    | 1.58                     | 1.00              |
| 34:BA:1323:G:H2'   | 34:BA:1324:A:H8    | 1.27                     | 1.00              |
| 36:BG:33:LEU:HD11  | 47:BR:53:LEU:HA    | 1.38                     | 1.00              |
| 57:BZ:5:LEU:HD13   | 57:BZ:268:ALA:HB3  | 1.02                     | 1.00              |
| 57:BZ:67:ASP:CG    | 57:BZ:191:VAL:HG22 | 1.85                     | 1.00              |
| 57:BZ:73:VAL:HA    | 57:BZ:74:ASP:CB    | 1.87                     | 1.00              |
| 57:BZ:560:PRO:CB   | 57:BZ:562:ARG:H    | 1.73                     | 1.00              |
| 1:AA:871:U:H4'     | 12:AN:69:PHE:CZ    | 1.96                     | 1.00              |
| 1:AA:1042:G:C6     | 1:AA:1113:U:C4     | 2.50                     | 1.00              |
| 1:AA:2019:A:H3'    | 1:AA:2020:A:H5''   | 1.43                     | 1.00              |
| 1:AA:2115:G:H2'    | 1:AA:2117:A:N7     | 1.75                     | 1.00              |
| 1:AA:2780:G:H22    | 9:AK:97:ARG:NH1    | 1.59                     | 1.00              |
| 2:AB:14:U:O2'      | 2:AB:107:U:H1'     | 1.59                     | 1.00              |
| 4:AD:68:LYS:HB3    | 4:AD:70:TRP:HE1    | 1.21                     | 1.00              |
| 5:AE:8:LYS:NZ      | 5:AE:9:VAL:HG13    | 1.76                     | 1.00              |
| 6:AF:64:ILE:HD13   | 6:AF:65:TRP:N      | 1.75                     | 1.00              |
| 7:AG:163:ALA:HB2   | 7:AG:172:LEU:HD23  | 1.43                     | 1.00              |
| 10:AL:24:VAL:HG21  | 10:AL:26:LYS:HE3   | 1.44                     | 1.00              |
| 15:AQ:112:ARG:CZ   | 34:BA:1464:G:OP1   | 2.09                     | 1.00              |
| 21:AW:179:ASP:O    | 21:AW:180:VAL:HG23 | 1.60                     | 1.00              |
| 23:AY:2:ARG:HA     | 23:AY:5:LEU:HD13   | 1.39                     | 1.00              |
| 34:BA:1311:G:C2    | 34:BA:1327:C:C6    | 2.50                     | 1.00              |
| 35:BF:95:GLN:HG3   | 35:BF:148:TYR:HB3  | 1.39                     | 1.00              |
| 37:BH:20:TYR:HD1   | 37:BH:21:LEU:N     | 1.58                     | 1.00              |
| 56:BD:4:C:H2'      | 56:BD:5:G:H5'      | 1.41                     | 1.00              |
| 57:BZ:6:ARG:H      | 57:BZ:69:ARG:HB2   | 0.83                     | 1.00              |
| 1:AA:6:A:C5        | 1:AA:2898:U:N3     | 2.30                     | 1.00              |
| 1:AA:1939:U:H1'    | 1:AA:2592:G:C1'    | 1.91                     | 1.00              |
| 1:AA:2023:G:H2'    | 1:AA:2024:G:C8     | 1.97                     | 1.00              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:2629:A:H5'    | 1:AA:2895:U:N1     | 1.75                     | 1.00              |
| 3:AC:156:ILE:HG13  | 3:AC:160:ARG:HG2   | 1.41                     | 1.00              |
| 6:AF:19:GLU:O      | 6:AF:20:LEU:CD2    | 2.10                     | 1.00              |
| 10:AL:96:THR:HG22  | 10:AL:97:ARG:H     | 1.21                     | 1.00              |
| 11:AM:56:SER:HB3   | 29:Ae:13:ARG:CZ    | 1.91                     | 1.00              |
| 34:BA:12:U:H2'     | 34:BA:13:U:H5      | 1.21                     | 1.00              |
| 34:BA:186(B):C:H4' | 53:BX:89:ARG:HH12  | 1.27                     | 1.00              |
| 34:BA:1318:A:H2'   | 52:BW:37:ARG:N     | 1.73                     | 1.00              |
| 35:BF:222:ILE:HB   | 35:BF:226:ARG:NH2  | 1.77                     | 1.00              |
| 41:BL:95:VAL:HG22  | 41:BL:133:LEU:HD21 | 1.38                     | 1.00              |
| 46:BQ:20:THR:CA    | 46:BQ:26:GLY:HA2   | 1.91                     | 1.00              |
| 46:BQ:27:LYS:HB3   | 54:BY:7:ARG:NH1    | 1.77                     | 1.00              |
| 57:BZ:2:ILE:CG2    | 57:BZ:199:VAL:HG11 | 1.92                     | 1.00              |
| 57:BZ:122:LYS:NZ   | 57:BZ:156:GLU:HB2  | 1.73                     | 1.00              |
| 1:AA:1046:A:C6     | 31:AI:9:LEU:N      | 2.30                     | 1.00              |
| 1:AA:1910:G:C2     | 1:AA:1921:G:C8     | 2.44                     | 1.00              |
| 1:AA:2103:C:H2'    | 1:AA:2104:G:H8     | 1.26                     | 1.00              |
| 4:AD:120:GLY:O     | 4:AD:131:LEU:HD11  | 1.60                     | 1.00              |
| 6:AF:155:LEU:HG    | 6:AF:189:THR:HG21  | 1.41                     | 1.00              |
| 6:AF:192:LEU:HD11  | 6:AF:194:MET:HG3   | 1.42                     | 1.00              |
| 16:AR:107:ALA:O    | 16:AR:110:VAL:HB   | 1.60                     | 1.00              |
| 19:AU:36:LYS:HD2   | 19:AU:54:VAL:HG12  | 1.42                     | 1.00              |
| 34:BA:164:U:H2'    | 34:BA:165:C:C5     | 1.97                     | 1.00              |
| 39:BJ:76:ALA:HB1   | 39:BJ:80:ARG:HH12  | 1.25                     | 1.00              |
| 47:BR:24:CYS:HB2   | 47:BR:40:CYS:N     | 1.76                     | 1.00              |
| 50:BU:62:SER:HB3   | 50:BU:72:ARG:NE    | 1.76                     | 1.00              |
| 50:BU:82:MET:O     | 50:BU:85:VAL:HB    | 1.61                     | 1.00              |
| 51:BV:21:LYS:NZ    | 51:BV:23:LYS:HB3   | 1.77                     | 1.00              |
| 1:AA:535:C:H5'     | 16:AR:49:HIS:HB3   | 1.44                     | 0.99              |
| 1:AA:948:G:H1'     | 1:AA:984:A:C2      | 1.97                     | 0.99              |
| 1:AA:1186:G:H8     | 1:AA:1187:G:C8     | 1.80                     | 0.99              |
| 1:AA:1363:C:N4     | 25:Aa:2:LYS:HE2    | 1.76                     | 0.99              |
| 1:AA:1995:U:C5'    | 1:AA:1996:C:H5'    | 1.91                     | 0.99              |
| 1:AA:2091:U:H2'    | 1:AA:2092:U:H5'    | 1.41                     | 0.99              |
| 1:AA:2125:G:C1'    | 3:AC:218:MET:H     | 1.45                     | 0.99              |
| 1:AA:2471:C:H4'    | 57:BZ:529:ARG:NH2  | 1.14                     | 0.99              |
| 4:AD:5:LYS:NZ      | 4:AD:31:LYS:HZ1    | 1.60                     | 0.99              |
| 4:AD:246:PRO:HG3   | 4:AD:252:TRP:CE3   | 1.97                     | 0.99              |
| 6:AF:183:VAL:HA    | 6:AF:186:ILE:HD12  | 1.43                     | 0.99              |
| 7:AG:60:LEU:HB3    | 7:AG:66:GLN:O      | 1.61                     | 0.99              |
| 8:AH:38:SER:N      | 8:AH:41:MET:HE2    | 1.77                     | 0.99              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AL:77:ILE:HG21  | 15:AQ:65:LYS:HE2   | 1.40                     | 0.99              |
| 11:AM:128:HIS:HA   | 11:AM:147:LEU:HD21 | 1.44                     | 0.99              |
| 12:AN:63:LYS:HD3   | 12:AN:64:ILE:H     | 1.25                     | 0.99              |
| 31:AI:54:ALA:HA    | 31:AI:84:GLU:O     | 1.58                     | 0.99              |
| 34:BA:520:A:H62    | 34:BA:529:G:H21    | 1.03                     | 0.99              |
| 34:BA:888:G:H21    | 34:BA:909:A:N6     | 1.60                     | 0.99              |
| 34:BA:1080:A:H5'   | 38:BI:14:ARG:HH21  | 1.23                     | 0.99              |
| 36:BG:108:ASN:HD21 | 36:BG:110:ASN:HB2  | 1.27                     | 0.99              |
| 46:BQ:4:ILE:HD11   | 46:BQ:57:ARG:HG3   | 1.42                     | 0.99              |
| 57:BZ:488:LEU:HD12 | 57:BZ:525:GLY:CA   | 1.92                     | 0.99              |
| 1:AA:270(O):U:H5'' | 1:AA:270(P):C:C5   | 1.97                     | 0.99              |
| 1:AA:685:A:H5''    | 1:AA:686:G:H21     | 1.25                     | 0.99              |
| 1:AA:759:G:H2'     | 1:AA:760:G:H8      | 1.27                     | 0.99              |
| 1:AA:1202:C:C6     | 1:AA:1203:G:H1'    | 1.97                     | 0.99              |
| 1:AA:1264:G:H3'    | 1:AA:1265:A:H5''   | 1.43                     | 0.99              |
| 1:AA:1625:C:C2'    | 1:AA:1626:G:H4'    | 1.91                     | 0.99              |
| 1:AA:2122:U:H2'    | 1:AA:2123:G:H5''   | 1.40                     | 0.99              |
| 1:AA:2701:C:H3'    | 1:AA:2702:U:C5'    | 1.92                     | 0.99              |
| 17:AS:39:LEU:HG    | 17:AS:58:VAL:O     | 1.62                     | 0.99              |
| 34:BA:979:C:H5''   | 34:BA:1222:G:O6    | 1.63                     | 0.99              |
| 34:BA:1308:U:H5''  | 46:BQ:110:ARG:HH12 | 1.22                     | 0.99              |
| 34:BA:1433:A:H62   | 34:BA:1467:G:N2    | 1.59                     | 0.99              |
| 41:BL:29:SER:HB2   | 41:BL:32:LYS:CE    | 1.91                     | 0.99              |
| 47:BR:26:ARG:HD2   | 47:BR:47:LEU:HD12  | 1.40                     | 0.99              |
| 57:BZ:13:HIS:HA    | 57:BZ:77:GLY:O     | 1.61                     | 0.99              |
| 57:BZ:82:GLY:C     | 57:BZ:361:ARG:HD2  | 1.87                     | 0.99              |
| 57:BZ:380:LEU:CD1  | 57:BZ:580:VAL:CG2  | 2.40                     | 0.99              |
| 1:AA:270(M):U:C4'  | 1:AA:270(N):G:H4'  | 1.91                     | 0.99              |
| 1:AA:594:U:H2'     | 1:AA:595:C:C6      | 1.96                     | 0.99              |
| 1:AA:1203:G:C5     | 1:AA:1241:A:C8     | 2.49                     | 0.99              |
| 1:AA:1275:A:C2     | 13:AO:16:HIS:HA    | 1.96                     | 0.99              |
| 1:AA:1902:C:C6     | 1:AA:1903:G:C8     | 2.48                     | 0.99              |
| 3:AC:175:VAL:CG1   | 3:AC:189:ILE:CA    | 2.34                     | 0.99              |
| 4:AD:76:PRO:HG2    | 4:AD:98:VAL:HG21   | 1.39                     | 0.99              |
| 6:AF:31:HIS:HB2    | 11:AM:14:LYS:HZ2   | 1.25                     | 0.99              |
| 18:AT:20:VAL:HG22  | 18:AT:24:ILE:HD11  | 1.40                     | 0.99              |
| 18:AT:39:THR:OG1   | 26:Ab:28:PRO:HG3   | 1.61                     | 0.99              |
| 21:AW:94:GLU:H     | 21:AW:95:PRO:CD    | 1.73                     | 0.99              |
| 25:Aa:6:HIS:NE2    | 25:Aa:55:ARG:HD3   | 1.74                     | 0.99              |
| 38:BI:43:LEU:H     | 38:BI:65:ASN:HD22  | 1.03                     | 0.99              |
| 40:BK:69:VAL:HG21  | 40:BK:104:LEU:HD21 | 1.43                     | 0.99              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 41:BL:84:ARG:HB3  | 41:BL:84:ARG:NH1  | 1.75                     | 0.99              |
| 47:BR:54:PRO:O    | 47:BR:56:VAL:HG23 | 1.60                     | 0.99              |
| 57:BZ:400:TYR:CD1 | 57:BZ:443:ILE:C   | 2.40                     | 0.99              |
| 1:AA:355:G:H2'    | 1:AA:356:G:C8     | 1.97                     | 0.99              |
| 1:AA:586:A:C5'    | 6:AF:89:VAL:HG21  | 1.90                     | 0.99              |
| 1:AA:747:U:H2'    | 1:AA:2613:U:O4    | 1.61                     | 0.99              |
| 1:AA:1255:U:H5'   | 1:AA:1256:G:H5''  | 1.40                     | 0.99              |
| 1:AA:1326:U:H2'   | 1:AA:1327:C:H5'   | 1.45                     | 0.99              |
| 1:AA:1498:C:C6    | 1:AA:1576:U:H4'   | 1.98                     | 0.99              |
| 1:AA:1570:A:N6    | 1:AA:1571:A:H62   | 1.60                     | 0.99              |
| 1:AA:1649:G:N2    | 13:AO:107:ASP:HB2 | 1.77                     | 0.99              |
| 1:AA:1786:A:H4'   | 1:AA:1938:A:H61   | 1.27                     | 0.99              |
| 4:AD:56:GLY:H     | 4:AD:217:ARG:HD2  | 1.26                     | 0.99              |
| 9:AK:46:VAL:CG1   | 9:AK:47:ALA:H     | 1.70                     | 0.99              |
| 12:AN:12:GLN:HE22 | 12:AN:13:GLN:HE21 | 1.08                     | 0.99              |
| 32:AJ:23:VAL:HG21 | 32:AJ:41:PHE:CZ   | 1.97                     | 0.99              |
| 33:Ag:290:UNK:CA  | 33:Ag:342:UNK:C   | 2.39                     | 0.99              |
| 34:BA:781:A:H2'   | 34:BA:782:A:C5'   | 1.92                     | 0.99              |
| 36:BG:69:HIS:ND1  | 36:BG:104:GLN:HB2 | 1.77                     | 0.99              |
| 37:BH:24:GLU:O    | 37:BH:27:TYR:HB3  | 1.62                     | 0.99              |
| 43:BN:34:VAL:HG12 | 43:BN:35:SER:H    | 1.23                     | 0.99              |
| 46:BQ:10:PRO:HB2  | 46:BQ:45:VAL:CG1  | 1.92                     | 0.99              |
| 57:BZ:2:ILE:HG23  | 57:BZ:268:ALA:HB2 | 1.00                     | 0.99              |
| 57:BZ:406:ASP:HA  | 57:BZ:407:VAL:CG2 | 1.91                     | 0.99              |
| 1:AA:636:G:N2     | 11:AM:75:ILE:HD12 | 1.77                     | 0.99              |
| 1:AA:2392:A:H1'   | 11:AM:55:ARG:HH12 | 0.84                     | 0.99              |
| 3:AC:67:GLY:N     | 3:AC:184:LYS:HE2  | 1.78                     | 0.99              |
| 5:AE:116:VAL:CG2  | 5:AE:138:PRO:HA   | 1.93                     | 0.99              |
| 6:AF:153:SER:O    | 6:AF:190:GLU:HB2  | 1.61                     | 0.99              |
| 11:AM:45:LEU:HD13 | 29:Ae:59:LYS:CE   | 1.91                     | 0.99              |
| 17:AS:62:LEU:HD22 | 17:AS:98:GLU:HA   | 1.44                     | 0.99              |
| 19:AU:12:VAL:HB   | 19:AU:27:THR:O    | 1.60                     | 0.99              |
| 32:AJ:11:GLN:HA   | 32:AJ:56:GLU:HB2  | 1.40                     | 0.99              |
| 34:BA:1449:C:N4   | 34:BA:1454:G:O6   | 1.95                     | 0.99              |
| 41:BL:80:ILE:HD12 | 41:BL:80:ILE:H    | 1.25                     | 0.99              |
| 42:BM:47:LEU:HD13 | 42:BM:50:LEU:HB3  | 1.44                     | 0.99              |
| 43:BN:30:SER:HB2  | 43:BN:81:THR:CA   | 1.91                     | 0.99              |
| 57:BZ:13:HIS:CG   | 57:BZ:108:GLN:HG2 | 1.96                     | 0.99              |
| 57:BZ:379:GLU:CG  | 57:BZ:581:THR:HA  | 1.93                     | 0.99              |
| 1:AA:5:A:C2       | 1:AA:2899:G:C4    | 2.50                     | 0.99              |
| 1:AA:1051:G:O4'   | 1:AA:2752:C:P     | 2.21                     | 0.99              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2018:G:H1'    | 16:AR:34:LYS:HZ2  | 1.27                     | 0.99              |
| 1:AA:2581:G:N1     | 1:AA:2610:C:H6    | 1.60                     | 0.99              |
| 5:AE:49:LEU:HG     | 5:AE:74:PRO:HG2   | 1.43                     | 0.99              |
| 8:AH:84:SER:HA     | 8:AH:134:SER:HA   | 1.43                     | 0.99              |
| 10:AL:7:TYR:HB3    | 10:AL:18:LYS:NZ   | 1.76                     | 0.99              |
| 24:AZ:45:GLY:O     | 24:AZ:48:GLU:HG2  | 1.61                     | 0.99              |
| 32:AJ:72:PRO:HG3   | 32:AJ:77:LEU:HD21 | 1.00                     | 0.99              |
| 34:BA:1226:C:C5    | 46:BQ:104:ARG:HB2 | 1.97                     | 0.99              |
| 34:BA:1318:A:H1'   | 52:BW:35:SER:OG   | 0.82                     | 0.99              |
| 34:BA:1318:A:H3'   | 52:BW:37:ARG:HB3  | 1.44                     | 0.99              |
| 34:BA:1441:G:N3    | 34:BA:1460:A:N6   | 2.11                     | 0.99              |
| 39:BJ:48:LEU:HB3   | 51:BV:78:LEU:HD23 | 1.44                     | 0.99              |
| 40:BK:143:ARG:HH11 | 40:BK:144:MET:HB2 | 1.25                     | 0.99              |
| 50:BU:62:SER:OG    | 50:BU:72:ARG:HG2  | 1.61                     | 0.99              |
| 57:BZ:19:THR:HA    | 57:BZ:21:LEU:N    | 1.77                     | 0.99              |
| 57:BZ:63:ALA:HB1   | 57:BZ:65:LYS:HG2  | 1.42                     | 0.99              |
| 57:BZ:69:ARG:HG3   | 57:BZ:71:ASN:HB2  | 1.42                     | 0.99              |
| 57:BZ:127:ILE:CB   | 57:BZ:164:TYR:HA  | 1.91                     | 0.99              |
| 57:BZ:381:ALA:CB   | 57:BZ:577:LEU:HB3 | 1.92                     | 0.99              |
| 57:BZ:381:ALA:HB1  | 57:BZ:577:LEU:HB3 | 1.41                     | 0.99              |
| 57:BZ:395:ARG:HG3  | 57:BZ:474:ASP:CG  | 1.88                     | 0.99              |
| 1:AA:241:A:H1'     | 1:AA:243:U:H1'    | 1.41                     | 0.99              |
| 1:AA:1068:G:N3     | 1:AA:1069:A:N6    | 2.10                     | 0.99              |
| 1:AA:1555:G:H2'    | 1:AA:1556:C:H6    | 1.16                     | 0.99              |
| 1:AA:2181:G:N2     | 1:AA:2182:G:N1    | 2.08                     | 0.99              |
| 1:AA:2675:A:H4'    | 10:AL:29:ASN:OD1  | 1.62                     | 0.99              |
| 1:AA:2714:G:H2'    | 1:AA:2715:C:H5'   | 1.42                     | 0.99              |
| 5:AE:114:ALA:HB3   | 5:AE:118:LYS:HB2  | 1.45                     | 0.99              |
| 5:AE:154:LYS:NZ    | 5:AE:156:MET:HE2  | 1.77                     | 0.99              |
| 11:AM:38:GLN:C     | 11:AM:40:SER:H    | 1.62                     | 0.99              |
| 15:AQ:29:ARG:HG2   | 15:AQ:51:ARG:HG2  | 1.45                     | 0.99              |
| 17:AS:5:VAL:HG11   | 17:AS:37:VAL:HG13 | 1.44                     | 0.99              |
| 21:AW:2:GLU:O      | 21:AW:60:GLU:HA   | 1.60                     | 0.99              |
| 28:Ad:48:LYS:HG3   | 28:Ad:49:ARG:H    | 0.83                     | 0.99              |
| 34:BA:112:G:H5'    | 34:BA:389:A:H4'   | 1.41                     | 0.99              |
| 34:BA:408:A:H2'    | 34:BA:409:G:H8    | 1.17                     | 0.99              |
| 34:BA:1197:G:OP1   | 34:BA:1197:G:H3'  | 1.62                     | 0.99              |
| 34:BA:1349:A:OP2   | 42:BM:118:LYS:HD2 | 1.61                     | 0.99              |
| 36:BG:15:THR:HG21  | 36:BG:181:ASN:HA  | 1.41                     | 0.99              |
| 37:BH:60:GLU:OE2   | 37:BH:199:ASN:HB3 | 1.61                     | 0.99              |
| 38:BI:51:VAL:HB    | 38:BI:52:PRO:HD3  | 1.44                     | 0.99              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 46:BQ:10:PRO:HB3   | 46:BQ:18:ALA:HB2   | 1.42                     | 0.99              |
| 57:BZ:2:ILE:HG21   | 57:BZ:199:VAL:CB   | 1.93                     | 0.99              |
| 1:AA:1107:G:H2'    | 1:AA:1108:U:H5'    | 1.41                     | 0.99              |
| 1:AA:1158:C:H4'    | 24:AZ:32:GLN:HE21  | 1.23                     | 0.99              |
| 1:AA:2176:A:H3'    | 3:AC:221:SER:OG    | 1.61                     | 0.99              |
| 3:AC:175:VAL:HG11  | 3:AC:189:ILE:HA    | 1.38                     | 0.99              |
| 14:AP:9:ARG:CB     | 14:AP:9:ARG:HH11   | 1.75                     | 0.99              |
| 15:AQ:54:ARG:C     | 15:AQ:64:ARG:HB2   | 1.88                     | 0.99              |
| 34:BA:1268:A:H2    | 34:BA:1311:G:C1'   | 1.74                     | 0.99              |
| 57:BZ:15:ASP:HB3   | 57:BZ:16:HIS:ND1   | 1.76                     | 0.99              |
| 57:BZ:156:GLU:HA   | 57:BZ:158:LEU:N    | 1.77                     | 0.99              |
| 57:BZ:397:GLN:C    | 57:BZ:473:ASP:H    | 1.55                     | 0.99              |
| 57:BZ:407:VAL:O    | 57:BZ:436:ARG:HB3  | 1.57                     | 0.99              |
| 57:BZ:496:ALA:HB1  | 57:BZ:513:GLY:O    | 1.62                     | 0.99              |
| 1:AA:1081:U:C5'    | 32:AJ:125:ARG:CD   | 2.40                     | 0.99              |
| 1:AA:2459:A:N3     | 1:AA:2460:U:C1'    | 2.26                     | 0.99              |
| 1:AA:2558:C:C4'    | 57:BZ:543:LEU:HD21 | 1.93                     | 0.99              |
| 3:AC:46:LYS:HD3    | 3:AC:210:ARG:HB2   | 1.43                     | 0.99              |
| 10:AL:64:ARG:HH21  | 10:AL:64:ARG:HG3   | 1.28                     | 0.99              |
| 11:AM:131:SER:O    | 11:AM:134:ALA:HB3  | 1.62                     | 0.99              |
| 16:AR:44:ASN:ND2   | 17:AS:78:LYS:HG2   | 1.76                     | 0.99              |
| 28:Ad:30:VAL:HG13  | 28:Ad:33:ARG:CZ    | 1.91                     | 0.99              |
| 34:BA:1115:C:N3    | 34:BA:1186:G:C6    | 2.31                     | 0.99              |
| 34:BA:1206:G:H5'   | 36:BG:194:GLY:HA2  | 1.45                     | 0.99              |
| 35:BF:111:ARG:HH11 | 35:BF:111:ARG:HA   | 1.25                     | 0.99              |
| 46:BQ:92:HIS:CE1   | 46:BQ:110:ARG:NH1  | 2.25                     | 0.99              |
| 51:BV:74:ARG:HB3   | 51:BV:81:PHE:CD2   | 1.98                     | 0.99              |
| 57:BZ:54:ILE:CG1   | 57:BZ:211:GLN:HE22 | 1.76                     | 0.99              |
| 57:BZ:81:PHE:C     | 57:BZ:361:ARG:CB   | 2.36                     | 0.99              |
| 57:BZ:383:SER:HB3  | 57:BZ:384:ARG:HA   | 1.42                     | 0.99              |
| 1:AA:279:C:N4      | 1:AA:359:A:N3      | 2.11                     | 0.99              |
| 1:AA:893:C:C5      | 1:AA:894:C:C5      | 2.51                     | 0.99              |
| 1:AA:2286:A:C2     | 27:Ac:27:LYS:HB3   | 1.96                     | 0.99              |
| 1:AA:2532:G:O2'    | 1:AA:2664:G:O2'    | 1.79                     | 0.99              |
| 1:AA:2553:G:H21    | 1:AA:2554:U:C1'    | 1.74                     | 0.99              |
| 2:AB:89(A):A:C2'   | 2:AB:90:C:H5'      | 1.93                     | 0.99              |
| 6:AF:80:ALA:H      | 6:AF:83:PHE:HE2    | 1.11                     | 0.99              |
| 7:AG:53:LEU:HD23   | 7:AG:71:THR:H      | 1.26                     | 0.99              |
| 12:AN:121:ALA:O    | 12:AN:125:LEU:HG   | 1.62                     | 0.99              |
| 32:AJ:75:SER:CA    | 32:AJ:130:SER:CB   | 2.35                     | 0.99              |
| 32:AJ:105:LEU:HA   | 32:AJ:123:ALA:HB1  | 1.40                     | 0.99              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:37:U:H3'     | 34:BA:37:U:C6      | 1.96                     | 0.99              |
| 38:BI:12:LEU:HB3   | 38:BI:31:LEU:HB3   | 1.44                     | 0.99              |
| 41:BL:46:LYS:HE3   | 41:BL:64:LYS:HG3   | 1.44                     | 0.99              |
| 41:BL:129:VAL:HG22 | 41:BL:130:GLY:H    | 1.26                     | 0.99              |
| 56:BD:68:C:H2'     | 56:BD:69:G:H8      | 1.28                     | 0.99              |
| 56:BE:14:A:C2'     | 56:BE:15:G:H5'     | 1.93                     | 0.99              |
| 57:BZ:312:CYS:HA   | 57:BZ:354:ASP:C    | 1.87                     | 0.99              |
| 1:AA:878:A:N3      | 1:AA:879:G:C8      | 2.31                     | 0.98              |
| 1:AA:979:G:H3'     | 1:AA:980:A:H5''    | 1.40                     | 0.98              |
| 1:AA:1055:G:N3     | 1:AA:1084:A:H2     | 1.61                     | 0.98              |
| 1:AA:1557:C:H2'    | 1:AA:1558:A:C8     | 1.97                     | 0.98              |
| 5:AE:136:ARG:C     | 5:AE:137:HIS:ND1   | 2.19                     | 0.98              |
| 8:AH:7:LEU:HG      | 8:AH:51:ARG:HH21   | 1.28                     | 0.98              |
| 15:AQ:111:ARG:HA   | 15:AQ:114:LEU:HD12 | 1.44                     | 0.98              |
| 17:AS:40:LEU:HD23  | 17:AS:51:VAL:HG12  | 1.45                     | 0.98              |
| 34:BA:129(A):G:H2' | 34:BA:189:U:C6     | 1.98                     | 0.98              |
| 34:BA:384:G:H2'    | 34:BA:385:C:C6     | 1.98                     | 0.98              |
| 34:BA:495:A:H1'    | 34:BA:496:A:C8     | 1.98                     | 0.98              |
| 34:BA:1143:G:H2'   | 34:BA:1144:G:H8    | 1.27                     | 0.98              |
| 34:BA:1226:C:C5    | 46:BQ:104:ARG:HG3  | 1.97                     | 0.98              |
| 37:BH:187:ARG:NE   | 37:BH:188:LEU:HG   | 1.76                     | 0.98              |
| 40:BK:31:MET:HG2   | 40:BK:32:ARG:N     | 1.77                     | 0.98              |
| 50:BU:59:ILE:HD12  | 50:BU:60:ILE:H     | 1.28                     | 0.98              |
| 57:BZ:165:ALA:HA   | 57:BZ:171:ILE:HG22 | 1.45                     | 0.98              |
| 1:AA:175:G:O2'     | 1:AA:176:G:H5'     | 1.64                     | 0.98              |
| 1:AA:325:G:H2'     | 1:AA:326:G:C8      | 1.97                     | 0.98              |
| 1:AA:969:U:H2'     | 1:AA:970:C:O4'     | 1.64                     | 0.98              |
| 1:AA:1206:G:H3'    | 1:AA:1206:G:H8     | 1.28                     | 0.98              |
| 1:AA:1488:G:C2'    | 1:AA:1489:U:H5'    | 1.93                     | 0.98              |
| 1:AA:2348:U:H3'    | 29:Ae:42:ARG:NH2   | 1.77                     | 0.98              |
| 2:AB:37:C:H2'      | 2:AB:38:C:O4'      | 1.61                     | 0.98              |
| 2:AB:71:C:H2'      | 2:AB:72:G:C5'      | 1.93                     | 0.98              |
| 6:AF:89:VAL:HG12   | 6:AF:90:PHE:N      | 1.73                     | 0.98              |
| 16:AR:17:ILE:HA    | 16:AR:20:LEU:CG    | 1.93                     | 0.98              |
| 16:AR:17:ILE:CA    | 16:AR:20:LEU:HG    | 1.93                     | 0.98              |
| 21:AW:30:ASN:HB2   | 21:AW:90:VAL:HG23  | 1.40                     | 0.98              |
| 21:AW:57:ILE:HG23  | 21:AW:69:THR:O     | 1.62                     | 0.98              |
| 32:AJ:27:LEU:HD22  | 32:AJ:58:THR:N     | 1.79                     | 0.98              |
| 33:Ag:327:UNK:O    | 33:Ag:348:UNK:CB   | 2.11                     | 0.98              |
| 34:BA:169:C:H2'    | 34:BA:170:U:C6     | 1.98                     | 0.98              |
| 34:BA:1066:C:H3'   | 34:BA:1067:A:H8    | 1.27                     | 0.98              |

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| Atom-1             | Atom-2              | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 35:BF:54:THR:HG21  | 35:BF:201:ILE:HD11  | 1.42                     | 0.98              |
| 35:BF:55:PHE:HA    | 35:BF:58:ILE:CD1    | 1.91                     | 0.98              |
| 37:BH:36:ARG:HB3   | 37:BH:38:TYR:CZ     | 1.98                     | 0.98              |
| 40:BK:113:GLU:HG3  | 40:BK:118:VAL:HB    | 1.42                     | 0.98              |
| 46:BQ:20:THR:HA    | 46:BQ:26:GLY:CA     | 1.92                     | 0.98              |
| 57:BZ:18:LYS:HB2   | 60:BZ:701:GCP:O2B   | 1.33                     | 0.98              |
| 57:BZ:206:GLN:O    | 57:BZ:227:LYS:N     | 1.96                     | 0.98              |
| 1:AA:6:A:N1        | 1:AA:2897:U:C2      | 2.31                     | 0.98              |
| 1:AA:10:G:H21      | 1:AA:2801:A:H1'     | 1.29                     | 0.98              |
| 1:AA:1042:G:C5     | 1:AA:1113:U:C4      | 2.46                     | 0.98              |
| 1:AA:1902:C:C6     | 1:AA:1903:G:N7      | 2.30                     | 0.98              |
| 1:AA:1977:A:H2'    | 1:AA:1978:A:H8      | 1.28                     | 0.98              |
| 1:AA:2631:G:OP2    | 1:AA:2894:G:O2'     | 1.80                     | 0.98              |
| 10:AL:117:LEU:O    | 10:AL:119:PRO:HD3   | 1.61                     | 0.98              |
| 12:AN:121:ALA:O    | 12:AN:124:LYS:HB2   | 1.63                     | 0.98              |
| 14:AP:71:ARG:O     | 14:AP:74:ALA:HB3    | 1.62                     | 0.98              |
| 15:AQ:53:ARG:NE    | 15:AQ:53:ARG:HA     | 1.73                     | 0.98              |
| 29:Ae:8:LYS:CD     | 29:Ae:11:LYS:HZ2    | 1.77                     | 0.98              |
| 32:AJ:84:LEU:O     | 32:AJ:86:LYS:NZ     | 1.95                     | 0.98              |
| 34:BA:174:C:H2'    | 34:BA:175:C:H6      | 1.26                     | 0.98              |
| 34:BA:1288:A:H2'   | 34:BA:1289:A:H8     | 1.27                     | 0.98              |
| 34:BA:1477:C:H2'   | 34:BA:1478:C:C6     | 1.97                     | 0.98              |
| 38:BI:152:ARG:CZ   | 41:BL:43:GLY:HA3    | 1.93                     | 0.98              |
| 45:BP:101:VAL:O    | 45:BP:104:VAL:HG23  | 1.64                     | 0.98              |
| 49:BT:4:ILE:HG23   | 49:BT:21:VAL:CG1    | 1.93                     | 0.98              |
| 57:BZ:81:PHE:CG    | 57:BZ:365:HIS:HD2   | 1.60                     | 0.98              |
| 57:BZ:248:ASN:ND2  | 57:BZ:273:ILE:CG1   | 2.25                     | 0.98              |
| 1:AA:472:A:H2'     | 1:AA:473:G:H5''     | 1.45                     | 0.98              |
| 1:AA:593:G:OP1     | 29:Ae:62:LEU:HD21   | 1.63                     | 0.98              |
| 1:AA:895:U:C4'     | 1:AA:896:A:H5'      | 1.93                     | 0.98              |
| 1:AA:914:C:H6      | 1:AA:914:C:H3'      | 1.25                     | 0.98              |
| 1:AA:1178:C:H2'    | 1:AA:1179:C:C6      | 1.98                     | 0.98              |
| 1:AA:1450:C:O2'    | 1:AA:1451:C:H4'     | 1.63                     | 0.98              |
| 1:AA:1902:C:H2'    | 1:AA:1903:G:C5'     | 1.93                     | 0.98              |
| 1:AA:1907:G:N1     | 1:AA:1924:C:N4      | 1.68                     | 0.98              |
| 1:AA:2175:C:C4     | 3:AC:219:GLY:O      | 2.16                     | 0.98              |
| 1:AA:2506:U:H3'    | 59:AA:3002:8AN:HN3' | 0.83                     | 0.98              |
| 1:AA:2651:C:C2     | 1:AA:2670:A:C6      | 2.48                     | 0.98              |
| 13:AO:10:LEU:HD13  | 13:AO:21:TYR:OH     | 1.64                     | 0.98              |
| 18:AT:28:SER:HA    | 18:AT:70:TYR:HA     | 1.45                     | 0.98              |
| 21:AW:165:VAL:HG12 | 21:AW:166:SER:N     | 1.75                     | 0.98              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 30:Af:2:LYS:HG2    | 30:Af:35:ARG:CB    | 1.91                     | 0.98              |
| 34:BA:1005:A:H3'   | 34:BA:1006:C:H6    | 1.24                     | 0.98              |
| 35:BF:102:LEU:H    | 35:BF:102:LEU:CD1  | 1.77                     | 0.98              |
| 36:BG:30:ARG:HG2   | 36:BG:31:HIS:H     | 1.27                     | 0.98              |
| 43:BN:23:ILE:HG13  | 43:BN:85:LEU:HB3   | 1.45                     | 0.98              |
| 46:BQ:2:ALA:N      | 46:BQ:10:PRO:HD2   | 1.78                     | 0.98              |
| 46:BQ:19:LEU:HD11  | 46:BQ:30:ALA:CB    | 1.93                     | 0.98              |
| 46:BQ:80:ARG:NH1   | 46:BQ:81:LEU:HD12  | 1.78                     | 0.98              |
| 52:BW:9:VAL:HG13   | 52:BW:41:VAL:CA    | 1.92                     | 0.98              |
| 57:BZ:62:ALA:HB1   | 57:BZ:187:TYR:HD2  | 1.26                     | 0.98              |
| 57:BZ:233:PRO:CG   | 57:BZ:248:ASN:HD22 | 1.77                     | 0.98              |
| 57:BZ:482:GLN:CA   | 57:BZ:573:ASP:OD2  | 2.11                     | 0.98              |
| 1:AA:575:A:O2'     | 1:AA:576:U:H5'     | 1.63                     | 0.98              |
| 1:AA:2125:G:N3     | 3:AC:217:THR:C     | 2.12                     | 0.98              |
| 1:AA:2361:A:OP2    | 29:Ae:28:GLY:HA2   | 1.62                     | 0.98              |
| 1:AA:2491:U:C6     | 1:AA:2492:U:H5'    | 1.98                     | 0.98              |
| 1:AA:2648:C:H3'    | 1:AA:2649:U:C5     | 1.96                     | 0.98              |
| 3:AC:83:ILE:O      | 3:AC:87:GLU:HB2    | 1.63                     | 0.98              |
| 4:AD:70:TRP:HA     | 4:AD:73:VAL:HG13   | 1.43                     | 0.98              |
| 6:AF:122:LYS:HE3   | 6:AF:192:LEU:HD12  | 1.45                     | 0.98              |
| 6:AF:131:GLY:HA2   | 6:AF:138:GLU:HG3   | 1.41                     | 0.98              |
| 9:AK:86:PRO:HB2    | 9:AK:89:LYS:NZ     | 1.79                     | 0.98              |
| 9:AK:96:GLU:O      | 9:AK:99:LEU:HG     | 1.61                     | 0.98              |
| 10:AL:24:VAL:HA    | 10:AL:39:ILE:HG22  | 1.45                     | 0.98              |
| 12:AN:26:TYR:HD1   | 12:AN:27:VAL:H     | 1.01                     | 0.98              |
| 12:AN:134:ARG:HE   | 12:AN:137:TYR:HA   | 1.25                     | 0.98              |
| 13:AO:41:ALA:HB1   | 13:AO:114:VAL:HG21 | 1.43                     | 0.98              |
| 24:AZ:12:PRO:HA    | 24:AZ:15:TYR:CE2   | 1.97                     | 0.98              |
| 29:Ae:30:ARG:HH21  | 29:Ae:43:GLN:C     | 1.72                     | 0.98              |
| 32:AJ:14:ALA:CA    | 32:AJ:48:MET:O     | 2.11                     | 0.98              |
| 34:BA:1137:C:H4'   | 34:BA:1138:G:C2    | 1.98                     | 0.98              |
| 34:BA:1442:G:N2    | 34:BA:1446:A:H5''  | 1.77                     | 0.98              |
| 40:BK:143:ARG:NH1  | 40:BK:144:MET:HB2  | 1.78                     | 0.98              |
| 41:BL:100:ILE:HD12 | 41:BL:100:ILE:H    | 1.27                     | 0.98              |
| 41:BL:102:ARG:HB3  | 41:BL:102:ARG:CZ   | 1.93                     | 0.98              |
| 49:BT:6:LEU:HD13   | 49:BT:6:LEU:H      | 1.29                     | 0.98              |
| 52:BW:69:HIS:HB2   | 52:BW:74:PHE:CZ    | 1.96                     | 0.98              |
| 57:BZ:15:ASP:CB    | 57:BZ:16:HIS:CG    | 2.38                     | 0.98              |
| 57:BZ:205:PHE:O    | 57:BZ:289:CYS:HB3  | 1.59                     | 0.98              |
| 3:AC:44:HIS:CE1    | 3:AC:215:THR:N     | 2.16                     | 0.98              |
| 3:AC:86:ALA:HA     | 3:AC:150:GLY:HA2   | 1.45                     | 0.98              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AH:145:ALA:O     | 8:AH:148:ILE:HG22 | 1.60                     | 0.98              |
| 16:AR:17:ILE:HA    | 16:AR:20:LEU:HG   | 0.99                     | 0.98              |
| 19:AU:73:ARG:HB3   | 19:AU:73:ARG:HH11 | 1.26                     | 0.98              |
| 21:AW:152:ALA:HB3  | 21:AW:168:GLU:HA  | 1.43                     | 0.98              |
| 31:AI:140:GLY:CA   | 33:Ag:136:UNK:C   | 2.41                     | 0.98              |
| 32:AJ:12:LEU:HD21  | 32:AJ:57:ILE:HG21 | 1.45                     | 0.98              |
| 34:BA:678:U:H2'    | 34:BA:679:C:H6    | 1.26                     | 0.98              |
| 34:BA:781:A:H4'    | 34:BA:1522:U:O2'  | 1.64                     | 0.98              |
| 34:BA:1329:A:O3'   | 46:BQ:24:GLY:O    | 1.72                     | 0.98              |
| 40:BK:140:ASP:HA   | 40:BK:143:ARG:CZ  | 1.91                     | 0.98              |
| 46:BQ:16:ASP:C     | 46:BQ:30:ALA:HB1  | 1.88                     | 0.98              |
| 46:BQ:19:LEU:CD1   | 46:BQ:30:ALA:N    | 2.26                     | 0.98              |
| 57:BZ:73:VAL:HG21  | 57:BZ:88:VAL:HG21 | 1.46                     | 0.98              |
| 1:AA:271(B):G:H4'  | 1:AA:271(C):U:OP2 | 1.64                     | 0.98              |
| 1:AA:640:C:H2'     | 1:AA:641:C:C5'    | 1.94                     | 0.98              |
| 1:AA:1047:G:C2'    | 1:AA:1110:G:N9    | 2.20                     | 0.98              |
| 1:AA:1061:U:H2'    | 32:AJ:52:ILE:HD13 | 1.42                     | 0.98              |
| 1:AA:1912:A:H2'    | 34:BA:1495:U:C6   | 1.95                     | 0.98              |
| 1:AA:2630:G:O4'    | 1:AA:2894:G:N3    | 1.92                     | 0.98              |
| 2:AB:67:G:H2'      | 2:AB:68:C:H6      | 1.28                     | 0.98              |
| 3:AC:103:ILE:HB    | 3:AC:127:LEU:HD21 | 1.44                     | 0.98              |
| 6:AF:103:LYS:HA    | 6:AF:106:ARG:HG2  | 1.41                     | 0.98              |
| 12:AN:106:VAL:HG22 | 12:AN:107:ALA:N   | 1.78                     | 0.98              |
| 20:AV:75:ILE:HG22  | 20:AV:100:ALA:HB2 | 1.44                     | 0.98              |
| 25:Aa:43:TYR:HA    | 25:Aa:61:ARG:HH22 | 1.18                     | 0.98              |
| 32:AJ:52:ILE:O     | 32:AJ:72:PRO:C    | 2.06                     | 0.98              |
| 34:BA:983:A:H1'    | 34:BA:1201:A:N7   | 1.77                     | 0.98              |
| 56:BD:5:G:H2'      | 56:BD:6:G:C8      | 1.98                     | 0.98              |
| 57:BZ:172:ALA:HA   | 57:BZ:179:MET:SD  | 2.00                     | 0.98              |
| 1:AA:531:C:H42     | 16:AR:38:THR:HA   | 1.25                     | 0.98              |
| 1:AA:878:A:C2'     | 1:AA:879:G:H5''   | 1.93                     | 0.98              |
| 1:AA:1300:U:H2'    | 1:AA:1626:G:N2    | 1.79                     | 0.98              |
| 1:AA:1977:A:H2'    | 1:AA:1978:A:C8    | 1.99                     | 0.98              |
| 1:AA:2128:C:C5'    | 3:AC:35:ALA:HB1   | 1.94                     | 0.98              |
| 1:AA:2177:C:C5'    | 3:AC:223:ARG:HB2  | 1.93                     | 0.98              |
| 4:AD:147:LEU:HA    | 4:AD:185:VAL:HG13 | 1.46                     | 0.98              |
| 5:AE:105:THR:O     | 5:AE:196:VAL:HG13 | 1.63                     | 0.98              |
| 12:AN:12:GLN:HE22  | 12:AN:13:GLN:NE2  | 1.59                     | 0.98              |
| 12:AN:74:TYR:OH    | 12:AN:94:VAL:HG22 | 1.62                     | 0.98              |
| 21:AW:158:PRO:HB2  | 21:AW:159:PRO:HD2 | 1.45                     | 0.98              |
| 22:AX:29:GLN:O     | 22:AX:67:VAL:HG23 | 1.64                     | 0.98              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:AX:65:GLY:HA3  | 22:AX:81:VAL:HG12  | 1.45                     | 0.98              |
| 29:Ae:25:MET:O    | 29:Ae:27:THR:HG22  | 1.64                     | 0.98              |
| 32:AJ:21:PRO:HD2  | 32:AJ:22:PRO:HD3   | 1.40                     | 0.98              |
| 34:BA:1151:A:C5   | 34:BA:1152:A:C8    | 2.51                     | 0.98              |
| 34:BA:1320:C:H6   | 52:BW:36:ARG:HG3   | 1.15                     | 0.98              |
| 46:BQ:8:GLU:HB2   | 46:BQ:22:ILE:HG12  | 1.40                     | 0.98              |
| 46:BQ:10:PRO:C    | 46:BQ:45:VAL:HG11  | 1.89                     | 0.98              |
| 52:BW:11:VAL:CG2  | 52:BW:16:LEU:HD13  | 1.94                     | 0.98              |
| 56:BD:51:U:O4     | 56:BD:64:A:C6      | 2.15                     | 0.98              |
| 57:BZ:91:MET:HE1  | 57:BZ:268:ALA:O    | 1.63                     | 0.98              |
| 57:BZ:287:THR:O   | 57:BZ:297:LEU:HD21 | 1.63                     | 0.98              |
| 1:AA:559:G:H2'    | 1:AA:560:C:H6      | 1.21                     | 0.98              |
| 1:AA:1059:G:H4'   | 32:AJ:74:ALA:H     | 1.28                     | 0.98              |
| 1:AA:1224:G:H2'   | 17:AS:87:HIS:NE2   | 1.77                     | 0.98              |
| 1:AA:2660:A:H2    | 57:BZ:456:MET:CB   | 1.74                     | 0.98              |
| 8:AH:118:PRO:HD2  | 8:AH:121:ILE:HD13  | 1.42                     | 0.98              |
| 14:AP:9:ARG:HB2   | 14:AP:9:ARG:HH11   | 1.25                     | 0.98              |
| 16:AR:27:LEU:O    | 16:AR:31:SER:HB3   | 1.62                     | 0.98              |
| 17:AS:62:LEU:HD22 | 17:AS:99:ILE:H     | 1.25                     | 0.98              |
| 32:AJ:52:ILE:HG13 | 32:AJ:76:TYR:CG    | 1.98                     | 0.98              |
| 32:AJ:79:ARG:NH1  | 32:AJ:84:LEU:HD21  | 1.76                     | 0.98              |
| 32:AJ:112:MET:HE2 | 32:AJ:121:GLU:C    | 1.89                     | 0.98              |
| 33:Ag:7:UNK:O     | 33:Ag:148:UNK:N    | 1.96                     | 0.98              |
| 34:BA:1234:C:H5'  | 34:BA:1364:U:O2'   | 1.63                     | 0.98              |
| 52:BW:9:VAL:HG22  | 52:BW:42:PRO:CG    | 1.93                     | 0.98              |
| 56:BE:18:G:H21    | 56:BE:58:A:H5'     | 0.84                     | 0.98              |
| 57:BZ:239:ILE:H   | 57:BZ:244:GLY:HA3  | 1.25                     | 0.98              |
| 57:BZ:243:GLU:HG2 | 57:BZ:244:GLY:H    | 1.26                     | 0.98              |
| 1:AA:185:U:H2'    | 1:AA:186:G:C8      | 1.99                     | 0.98              |
| 1:AA:993:G:H1'    | 17:AS:91:TYR:CE2   | 1.99                     | 0.98              |
| 1:AA:2041:U:H2'   | 1:AA:2042:A:H8     | 1.23                     | 0.98              |
| 1:AA:2671:A:H2'   | 1:AA:2672:G:C8     | 1.99                     | 0.98              |
| 2:AB:7:G:H4'      | 14:AP:29:PHE:CE2   | 1.99                     | 0.98              |
| 3:AC:65:PRO:HD2   | 3:AC:187:ASP:OD1   | 1.62                     | 0.98              |
| 4:AD:168:ARG:HD3  | 4:AD:173:VAL:HG22  | 1.45                     | 0.98              |
| 18:AT:14:PRO:HD3  | 18:AT:78:GLU:OE1   | 1.62                     | 0.98              |
| 30:Af:2:LYS:HG2   | 30:Af:35:ARG:HB2   | 1.00                     | 0.98              |
| 31:AI:94:VAL:HA   | 31:AI:134:LEU:N    | 1.78                     | 0.98              |
| 34:BA:50:A:C5'    | 34:BA:51:A:H5'     | 1.92                     | 0.98              |
| 34:BA:1339:A:H2'  | 34:BA:1340:A:H5'   | 1.44                     | 0.98              |
| 41:BL:82:HIS:O    | 41:BL:137:VAL:HA   | 1.64                     | 0.98              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 41:BL:98:LYS:HZ2  | 41:BL:98:LYS:N     | 1.60                     | 0.98              |
| 50:BU:18:THR:HG22 | 50:BU:43:LEU:HD21  | 1.42                     | 0.98              |
| 51:BV:41:LYS:O    | 51:BV:44:LEU:HG    | 1.63                     | 0.98              |
| 52:BW:27:GLU:HG2  | 52:BW:29:ARG:H     | 1.29                     | 0.98              |
| 56:BD:52:G:C6     | 56:BD:63:G:C2      | 2.52                     | 0.98              |
| 56:BE:16:U:N3     | 56:BE:59:U:N3      | 1.95                     | 0.98              |
| 57:BZ:2:ILE:HG22  | 57:BZ:199:VAL:HG21 | 1.01                     | 0.98              |
| 1:AA:27:G:N1      | 1:AA:512:G:H2'     | 1.78                     | 0.97              |
| 1:AA:296:C:H2'    | 1:AA:297:C:C6      | 1.98                     | 0.97              |
| 1:AA:996:A:H4'    | 16:AR:93:LYS:HG3   | 1.43                     | 0.97              |
| 1:AA:1037:G:C6    | 1:AA:1119:C:N3     | 2.32                     | 0.97              |
| 1:AA:1069:A:N1    | 1:AA:1096:A:C5'    | 2.26                     | 0.97              |
| 1:AA:1902:C:C5    | 1:AA:1903:G:C5     | 2.51                     | 0.97              |
| 1:AA:2346:A:N6    | 27:Ac:37:ARG:HH12  | 1.62                     | 0.97              |
| 4:AD:39:LYS:HA    | 4:AD:62:TYR:HB2    | 1.41                     | 0.97              |
| 5:AE:11:MET:O     | 5:AE:22:PRO:HD2    | 1.62                     | 0.97              |
| 16:AR:67:ALA:HA   | 16:AR:70:ARG:HH21  | 1.27                     | 0.97              |
| 34:BA:1108:G:H4'  | 34:BA:1191:A:H1'   | 1.46                     | 0.97              |
| 34:BA:1110:A:H2'  | 34:BA:1111:A:H5'   | 1.46                     | 0.97              |
| 34:BA:1162:C:C2   | 34:BA:1163:C:C5    | 2.50                     | 0.97              |
| 34:BA:1241:G:H2'  | 34:BA:1242:C:C6    | 1.98                     | 0.97              |
| 34:BA:1309:G:N2   | 34:BA:1328:C:C6    | 2.31                     | 0.97              |
| 36:BG:36:ASP:O    | 36:BG:39:ILE:HB    | 1.61                     | 0.97              |
| 36:BG:52:LEU:HA   | 36:BG:70:VAL:HG22  | 1.41                     | 0.97              |
| 39:BJ:14:LEU:CD1  | 39:BJ:15:ASP:H     | 1.75                     | 0.97              |
| 46:BQ:10:PRO:CB   | 46:BQ:45:VAL:CG1   | 2.41                     | 0.97              |
| 57:BZ:81:PHE:C    | 57:BZ:361:ARG:HB2  | 1.88                     | 0.97              |
| 57:BZ:253:LYS:CE  | 57:BZ:269:GLU:HB3  | 1.92                     | 0.97              |
| 57:BZ:305:PRO:HB2 | 57:BZ:361:ARG:HA   | 1.43                     | 0.97              |
| 1:AA:451:C:H41    | 1:AA:453:C:H3'     | 1.26                     | 0.97              |
| 1:AA:2812:G:H2'   | 1:AA:2813:A:C8     | 1.99                     | 0.97              |
| 3:AC:43:VAL:HG22  | 3:AC:224:ILE:HG21  | 1.46                     | 0.97              |
| 7:AG:36:LYS:HE2   | 7:AG:38:VAL:HG13   | 1.41                     | 0.97              |
| 10:AL:94:ARG:HG3  | 10:AL:95:GLY:N     | 1.78                     | 0.97              |
| 18:AT:19:LEU:HD22 | 26:Ab:25:LEU:HB3   | 1.41                     | 0.97              |
| 19:AU:73:ARG:HB3  | 19:AU:73:ARG:NH1   | 1.79                     | 0.97              |
| 21:AW:4:ARG:HG2   | 21:AW:5:LEU:N      | 1.74                     | 0.97              |
| 34:BA:1221:G:H5'  | 52:BW:52:TYR:C     | 1.89                     | 0.97              |
| 34:BA:1226:C:C1'  | 52:BW:80:TYR:CG    | 2.20                     | 0.97              |
| 34:BA:1269:A:N3   | 34:BA:1312:G:N3    | 1.85                     | 0.97              |
| 34:BA:1443:G:H4'  | 34:BA:1446:A:C5'   | 1.93                     | 0.97              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 37:BH:20:TYR:HA  | 37:BH:26:CYS:O     | 1.61                     | 0.97              |
| 46:BQ:10:PRO:HG2 | 46:BQ:45:VAL:HG13  | 1.41                     | 0.97              |
| 56:BD:28:G:H1    | 56:BD:42:C:H42     | 1.03                     | 0.97              |
| 56:BE:18:G:C8    | 56:BE:58:A:C2      | 2.52                     | 0.97              |
| 1:AA:1047:G:H5'  | 1:AA:1110:G:O6     | 1.62                     | 0.97              |
| 1:AA:1697:G:C5'  | 1:AA:1698:A:H5'    | 1.93                     | 0.97              |
| 1:AA:1784:A:O2'  | 1:AA:1785:A:OP2    | 1.82                     | 0.97              |
| 1:AA:2025:C:H5'  | 9:AK:78:TYR:HH     | 1.18                     | 0.97              |
| 1:AA:2596:U:C2'  | 4:AD:242:ARG:CZ    | 2.42                     | 0.97              |
| 1:AA:2615:U:H1'  | 26:Ab:7:PRO:HB3    | 1.45                     | 0.97              |
| 2:AB:48:A:H2'    | 2:AB:49:C:C6       | 1.98                     | 0.97              |
| 6:AF:160:ASN:O   | 6:AF:163:VAL:HB    | 1.61                     | 0.97              |
| 8:AH:17:VAL:HG21 | 8:AH:45:VAL:HG11   | 1.44                     | 0.97              |
| 13:AO:20:LEU:CD2 | 13:AO:24:GLN:HG3   | 1.94                     | 0.97              |
| 18:AT:4:LYS:HA   | 18:AT:106:ILE:HD12 | 1.45                     | 0.97              |
| 26:Ab:13:LYS:HD3 | 26:Ab:13:LYS:H     | 1.30                     | 0.97              |
| 31:AI:54:ALA:N   | 31:AI:84:GLU:O     | 1.96                     | 0.97              |
| 32:AJ:82:ALA:HA  | 32:AJ:99:ILE:HG21  | 0.97                     | 0.97              |
| 33:Ag:290:UNK:CB | 33:Ag:343:UNK:CB   | 2.41                     | 0.97              |
| 34:BA:265:G:H2'  | 34:BA:267:C:H5     | 1.27                     | 0.97              |
| 34:BA:902:G:O2'  | 34:BA:903:G:H5'    | 1.62                     | 0.97              |
| 34:BA:1239:A:H4' | 34:BA:1240:U:H5''  | 1.47                     | 0.97              |
| 56:BE:3:C:H2'    | 56:BE:4:C:C6       | 1.97                     | 0.97              |
| 57:BZ:82:GLY:HA3 | 57:BZ:361:ARG:HD2  | 0.97                     | 0.97              |
| 1:AA:343:C:O2'   | 1:AA:344:G:H5'     | 1.63                     | 0.97              |
| 1:AA:1106:G:H2'  | 1:AA:1107:G:C8     | 1.98                     | 0.97              |
| 1:AA:1351:C:H2'  | 1:AA:1352:U:C6     | 2.00                     | 0.97              |
| 1:AA:1364:G:N7   | 25:Aa:2:LYS:HB2    | 1.80                     | 0.97              |
| 1:AA:1518:C:H3'  | 1:AA:1519:G:H5''   | 1.43                     | 0.97              |
| 1:AA:1803:A:H4'  | 4:AD:257:LEU:HD13  | 1.41                     | 0.97              |
| 1:AA:1961:C:C5'  | 34:BA:1484:C:H4'   | 1.94                     | 0.97              |
| 1:AA:2126:A:C5   | 1:AA:2163:C:H4'    | 1.99                     | 0.97              |
| 4:AD:133:LEU:C   | 4:AD:136:ILE:HG13  | 1.89                     | 0.97              |
| 9:AK:85:ILE:HB   | 9:AK:90:MET:HE1    | 1.47                     | 0.97              |
| 24:AZ:9:VAL:HG22 | 24:AZ:53:LEU:O     | 1.63                     | 0.97              |
| 29:Ae:8:LYS:H    | 29:Ae:8:LYS:HE2    | 1.28                     | 0.97              |
| 33:Ag:290:UNK:C  | 33:Ag:342:UNK:O    | 2.12                     | 0.97              |
| 34:BA:41:G:H2'   | 34:BA:42:G:C8      | 1.98                     | 0.97              |
| 34:BA:1256:A:O3' | 34:BA:1257:U:H4'   | 1.62                     | 0.97              |
| 37:BH:11:LEU:O   | 37:BH:19:LEU:HD12  | 1.64                     | 0.97              |
| 57:BZ:15:ASP:CG  | 57:BZ:16:HIS:CE1   | 2.43                     | 0.97              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:674:G:H4'     | 6:AF:74:ARG:CZ     | 1.95                     | 0.97              |
| 1:AA:1081:U:C5     | 1:AA:1082:U:C4     | 2.53                     | 0.97              |
| 9:AK:30:ILE:O      | 9:AK:34:LEU:HD12   | 1.64                     | 0.97              |
| 15:AQ:11:GLU:H     | 15:AQ:11:GLU:CD    | 1.71                     | 0.97              |
| 20:AV:49:VAL:HG21  | 20:AV:51:VAL:HB    | 1.46                     | 0.97              |
| 20:AV:97:ARG:HA    | 20:AV:101:LYS:HG3  | 1.46                     | 0.97              |
| 21:AW:118:GLN:HB2  | 21:AW:144:LEU:HD22 | 1.44                     | 0.97              |
| 21:AW:157:LEU:HD13 | 21:AW:161:VAL:HG13 | 1.44                     | 0.97              |
| 27:Ac:31:PRO:HB3   | 27:Ac:34:LEU:HD12  | 1.44                     | 0.97              |
| 34:BA:958:A:H1'    | 52:BW:55:LYS:HZ3   | 1.21                     | 0.97              |
| 34:BA:1317:C:N3    | 34:BA:1318:A:N3    | 2.06                     | 0.97              |
| 41:BL:45:ILE:CD1   | 41:BL:48:TYR:HB3   | 1.94                     | 0.97              |
| 57:BZ:73:VAL:CG2   | 57:BZ:88:VAL:CG1   | 2.41                     | 0.97              |
| 57:BZ:207:MET:HG3  | 57:BZ:226:ILE:HD11 | 1.01                     | 0.97              |
| 1:AA:1105:U:C2'    | 1:AA:1107:G:C8     | 2.47                     | 0.97              |
| 1:AA:2064:C:H1'    | 1:AA:2450:A:N6     | 1.79                     | 0.97              |
| 1:AA:2532:G:C3'    | 1:AA:2657:A:C2     | 2.41                     | 0.97              |
| 2:AB:77:U:O3'      | 21:AW:78:LYS:HE3   | 1.62                     | 0.97              |
| 4:AD:134:ARG:CA    | 4:AD:168:ARG:HH12  | 1.76                     | 0.97              |
| 5:AE:30:PRO:HB2    | 5:AE:48:GLN:HB2    | 1.45                     | 0.97              |
| 13:AO:16:HIS:O     | 13:AO:19:ALA:HB3   | 1.63                     | 0.97              |
| 15:AQ:64:ARG:HA    | 15:AQ:64:ARG:HH11  | 0.81                     | 0.97              |
| 16:AR:111:GLU:HA   | 16:AR:114:LYS:HZ1  | 1.26                     | 0.97              |
| 17:AS:14:VAL:HG12  | 17:AS:15:GLU:H     | 1.27                     | 0.97              |
| 18:AT:82:LEU:HD12  | 18:AT:84:ARG:HG3   | 1.43                     | 0.97              |
| 19:AU:72:LYS:O     | 19:AU:73:ARG:HB2   | 1.65                     | 0.97              |
| 27:Ac:26:ASN:O     | 27:Ac:27:LYS:HB2   | 1.63                     | 0.97              |
| 28:Ad:34:ARG:HB3   | 28:Ad:34:ARG:HH11  | 1.24                     | 0.97              |
| 33:Ag:291:UNK:CA   | 33:Ag:342:UNK:CB   | 2.43                     | 0.97              |
| 34:BA:1220:G:C2    | 52:BW:55:LYS:HA    | 1.98                     | 0.97              |
| 34:BA:1241:G:H2'   | 34:BA:1242:C:H6    | 1.29                     | 0.97              |
| 40:BK:87:VAL:HG13  | 40:BK:152:ALA:HA   | 1.44                     | 0.97              |
| 45:BP:85:ILE:HD11  | 45:BP:99:HIS:N     | 1.80                     | 0.97              |
| 57:BZ:497:VAL:HA   | 57:BZ:514:HIS:HE1  | 1.23                     | 0.97              |
| 1:AA:443:A:H5'     | 6:AF:45:ARG:HH12   | 1.27                     | 0.97              |
| 1:AA:603:A:N6      | 1:AA:624:C:N4      | 2.11                     | 0.97              |
| 1:AA:1022:G:OP1    | 1:AA:1022:G:H4'    | 1.62                     | 0.97              |
| 1:AA:1222:C:N4     | 1:AA:1227:A:N6     | 2.12                     | 0.97              |
| 1:AA:1906:G:C1'    | 1:AA:1929:G:N7     | 2.26                     | 0.97              |
| 1:AA:1906:G:N3     | 1:AA:1929:G:O6     | 1.97                     | 0.97              |
| 3:AC:47:LEU:HA     | 3:AC:210:ARG:H     | 1.27                     | 0.97              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 5:AE:8:LYS:HB3     | 5:AE:24:THR:HB    | 1.46                     | 0.97              |
| 12:AN:59:ARG:HH22  | 21:AW:177:PRO:HB3 | 1.30                     | 0.97              |
| 15:AQ:70:VAL:HB    | 15:AQ:74:ARG:NH1  | 1.79                     | 0.97              |
| 16:AR:53:ARG:HB2   | 16:AR:53:ARG:HH11 | 1.29                     | 0.97              |
| 25:Aa:5:ILE:CG2    | 25:Aa:7:PRO:HD2   | 1.95                     | 0.97              |
| 27:Ac:7:ILE:C      | 27:Ac:9:LEU:H     | 1.69                     | 0.97              |
| 34:BA:1342:C:H1'   | 42:BM:124:GLN:OE1 | 1.65                     | 0.97              |
| 34:BA:1455:G:C3'   | 53:BX:31:SER:HG   | 1.72                     | 0.97              |
| 57:BZ:14:VAL:HA    | 57:BZ:78:HIS:CD2  | 1.98                     | 0.97              |
| 57:BZ:407:VAL:O    | 57:BZ:436:ARG:CA  | 2.13                     | 0.97              |
| 1:AA:125:G:N2      | 28:Ad:10:ARG:HA   | 1.80                     | 0.97              |
| 1:AA:297:C:H5''    | 20:AV:83:THR:OG1  | 1.62                     | 0.97              |
| 1:AA:469:G:N2      | 28:Ad:40:TRP:HZ2  | 1.63                     | 0.97              |
| 1:AA:1507:A:H2'    | 1:AA:1507:A:N3    | 1.80                     | 0.97              |
| 1:AA:1669:A:H5''   | 1:AA:2550:G:OP1   | 1.65                     | 0.97              |
| 1:AA:1844:C:OP1    | 4:AD:255:LYS:HA   | 1.64                     | 0.97              |
| 1:AA:2623:G:N2     | 26:Ab:22:HIS:HE1  | 1.60                     | 0.97              |
| 1:AA:2667:C:H3'    | 1:AA:2668:G:H8    | 1.30                     | 0.97              |
| 3:AC:22:ILE:HD13   | 3:AC:190:ARG:NH2  | 1.80                     | 0.97              |
| 3:AC:43:VAL:CG2    | 3:AC:224:ILE:CD1  | 2.38                     | 0.97              |
| 3:AC:46:LYS:HD3    | 3:AC:210:ARG:CB   | 1.93                     | 0.97              |
| 4:AD:63:ARG:HH11   | 4:AD:85:ASP:HB2   | 1.27                     | 0.97              |
| 5:AE:108:SER:OG    | 5:AE:164:ARG:HA   | 1.64                     | 0.97              |
| 7:AG:101:ILE:O     | 7:AG:101:ILE:HD13 | 1.65                     | 0.97              |
| 13:AO:57:ARG:NE    | 13:AO:62:ALA:HB2  | 1.80                     | 0.97              |
| 15:AQ:30:VAL:HG22  | 15:AQ:32:TYR:CE2  | 1.99                     | 0.97              |
| 31:AI:140:GLY:CA   | 33:Ag:136:UNK:O   | 2.12                     | 0.97              |
| 34:BA:962:C:H4'    | 34:BA:1200:C:N4   | 1.78                     | 0.97              |
| 34:BA:1317:C:O2'   | 34:BA:1318:A:H5'  | 0.90                     | 0.97              |
| 49:BT:3:LYS:HZ2    | 49:BT:3:LYS:HB3   | 1.26                     | 0.97              |
| 50:BU:59:ILE:CD1   | 50:BU:71:PHE:HB3  | 1.95                     | 0.97              |
| 50:BU:68:ARG:H     | 50:BU:70:ARG:NH2  | 1.62                     | 0.97              |
| 51:BV:45:SER:CB    | 51:BV:51:LEU:HD11 | 1.95                     | 0.97              |
| 57:BZ:141:VAL:HG23 | 57:BZ:164:TYR:OH  | 1.65                     | 0.97              |
| 1:AA:349:G:H2'     | 1:AA:350:U:C6     | 2.00                     | 0.97              |
| 1:AA:1058:G:H1'    | 32:AJ:116:ASN:ND2 | 1.79                     | 0.97              |
| 1:AA:1248:G:C8     | 16:AR:2:PRO:HA    | 2.00                     | 0.97              |
| 1:AA:1559:G:H1     | 1:AA:1560:G:H4'   | 1.27                     | 0.97              |
| 1:AA:1695:G:H3'    | 1:AA:1695:G:N3    | 1.80                     | 0.97              |
| 1:AA:1773:A:N6     | 1:AA:1829:A:H1'   | 1.80                     | 0.97              |
| 1:AA:1799:G:H1     | 4:AD:157:ARG:HH12 | 1.01                     | 0.97              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2018:G:H1'   | 16:AR:34:LYS:NZ    | 1.80                     | 0.97              |
| 1:AA:2123:G:O5'   | 3:AC:172:HIS:CE1   | 2.16                     | 0.97              |
| 4:AD:7:LYS:CG     | 4:AD:25:THR:HG22   | 1.93                     | 0.97              |
| 5:AE:52:LEU:HA    | 5:AE:74:PRO:HA     | 1.42                     | 0.97              |
| 9:AK:109:LYS:NZ   | 9:AK:110:GLY:H     | 1.63                     | 0.97              |
| 12:AN:23:GLY:CA   | 12:AN:101:ARG:HH21 | 1.77                     | 0.97              |
| 13:AO:83:ILE:HG23 | 13:AO:86:ARG:CZ    | 1.95                     | 0.97              |
| 13:AO:99:LYS:H    | 13:AO:99:LYS:CD    | 1.74                     | 0.97              |
| 14:AP:25:ARG:HA   | 14:AP:87:PHE:O     | 1.64                     | 0.97              |
| 18:AT:48:ALA:HA   | 18:AT:51:LEU:HD22  | 1.46                     | 0.97              |
| 24:AZ:31:LEU:HD12 | 24:AZ:32:GLN:HE22  | 1.28                     | 0.97              |
| 25:Aa:5:ILE:HG21  | 25:Aa:60:GLN:CD    | 1.89                     | 0.97              |
| 29:Ae:21:LYS:HZ2  | 29:Ae:21:LYS:HB2   | 1.25                     | 0.97              |
| 34:BA:37:U:OP1    | 45:BP:123:LYS:HB3  | 1.63                     | 0.97              |
| 34:BA:1115:C:C2   | 34:BA:1186:G:C6    | 2.52                     | 0.97              |
| 34:BA:1129:C:H5'  | 34:BA:1130:A:OP1   | 1.64                     | 0.97              |
| 41:BL:36:LEU:H    | 41:BL:36:LEU:HD23  | 1.30                     | 0.97              |
| 45:BP:60:LEU:HD13 | 45:BP:60:LEU:H     | 1.25                     | 0.97              |
| 48:BS:80:ALA:O    | 48:BS:83:GLU:HB3   | 1.63                     | 0.97              |
| 52:BW:9:VAL:C     | 52:BW:41:VAL:CG2   | 2.38                     | 0.97              |
| 57:BZ:19:THR:CB   | 57:BZ:22:VAL:HG22  | 1.95                     | 0.97              |
| 57:BZ:89:MET:HE2  | 57:BZ:119:TYR:CD1  | 1.98                     | 0.97              |
| 57:BZ:390:ARG:HG2 | 57:BZ:391:GLU:CG   | 1.93                     | 0.97              |
| 1:AA:68:G:H2'     | 1:AA:69:C:C6       | 1.99                     | 0.97              |
| 1:AA:289:A:H2'    | 1:AA:351:G:H1      | 1.23                     | 0.97              |
| 1:AA:627:A:H61    | 1:AA:638:G:H1'     | 1.27                     | 0.97              |
| 1:AA:911:A:C8     | 1:AA:2264:C:H1'    | 2.00                     | 0.97              |
| 1:AA:2135:A:H4'   | 1:AA:2136:C:C5     | 1.98                     | 0.97              |
| 4:AD:148:GLU:HB2  | 4:AD:154:LYS:HZ2   | 1.25                     | 0.97              |
| 4:AD:258:LYS:HA   | 4:AD:261:LYS:HZ2   | 1.28                     | 0.97              |
| 6:AF:183:VAL:O    | 6:AF:186:ILE:HB    | 1.65                     | 0.97              |
| 15:AQ:96:ARG:HD3  | 15:AQ:117:ASP:OD2  | 1.63                     | 0.97              |
| 18:AT:6:ILE:HG12  | 18:AT:104:THR:HA   | 1.44                     | 0.97              |
| 27:Ac:19:ARG:HH12 | 27:Ac:41:PRO:HG3   | 1.21                     | 0.97              |
| 34:BA:1115:C:C2   | 34:BA:1186:G:C2    | 2.53                     | 0.97              |
| 34:BA:1129:C:P    | 42:BM:16:ARG:HH22  | 1.88                     | 0.97              |
| 35:BF:217:ARG:HA  | 35:BF:220:ASP:OD2  | 1.64                     | 0.97              |
| 56:BE:21:A:C6     | 56:BE:46:G:C5      | 2.52                     | 0.97              |
| 57:BZ:165:ALA:HB1 | 57:BZ:171:ILE:HG22 | 1.11                     | 0.97              |
| 1:AA:570:G:N1     | 1:AA:2498:C:H4'    | 1.79                     | 0.96              |
| 1:AA:1046:A:H61   | 31:AI:9:LEU:H      | 1.06                     | 0.96              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1083:U:N3    | 1:AA:1085:A:C8     | 2.33                     | 0.96              |
| 1:AA:2121:G:C1'   | 3:AC:167:LYS:HZ3   | 1.78                     | 0.96              |
| 1:AA:2125:G:O4'   | 3:AC:217:THR:N     | 1.87                     | 0.96              |
| 1:AA:2319:G:H4'   | 1:AA:2320:A:OP1    | 1.62                     | 0.96              |
| 1:AA:2491:U:C6    | 1:AA:2491:U:C3'    | 2.46                     | 0.96              |
| 3:AC:63:SER:OG    | 3:AC:155:GLU:HG2   | 1.64                     | 0.96              |
| 5:AE:64:LYS:HA    | 5:AE:67:PHE:HB2    | 1.46                     | 0.96              |
| 12:AN:12:GLN:NE2  | 12:AN:13:GLN:HG2   | 1.80                     | 0.96              |
| 24:AZ:20:LYS:HA   | 24:AZ:23:LEU:HD22  | 1.46                     | 0.96              |
| 27:Ac:14:THR:HG22 | 27:Ac:51:GLU:HG2   | 1.47                     | 0.96              |
| 34:BA:1268:A:C2   | 34:BA:1311:G:C1'   | 2.46                     | 0.96              |
| 35:BF:81:VAL:HG12 | 35:BF:92:TYR:HD1   | 1.27                     | 0.96              |
| 37:BH:106:TYR:HA  | 37:BH:111:ALA:HB3  | 1.42                     | 0.96              |
| 40:BK:5:ARG:HD2   | 40:BK:7:ALA:H      | 1.29                     | 0.96              |
| 48:BS:54:ARG:O    | 48:BS:57:LEU:HB2   | 1.64                     | 0.96              |
| 48:BS:62:GLN:O    | 48:BS:66:LEU:HD23  | 1.65                     | 0.96              |
| 51:BV:43:PHE:O    | 51:BV:51:LEU:HD13  | 1.64                     | 0.96              |
| 57:BZ:243:GLU:HG2 | 57:BZ:245:LYS:HD3  | 1.45                     | 0.96              |
| 57:BZ:483:ARG:HG2 | 57:BZ:573:ASP:HB2  | 1.45                     | 0.96              |
| 1:AA:2123:G:N2    | 3:AC:220:PRO:O     | 1.97                     | 0.96              |
| 1:AA:2583:G:H2'   | 1:AA:2584:U:O2     | 1.65                     | 0.96              |
| 1:AA:2598:A:OP1   | 4:AD:234:GLY:HA3   | 1.64                     | 0.96              |
| 1:AA:2607:G:H2'   | 1:AA:2608:G:H5'    | 1.48                     | 0.96              |
| 59:AA:3003:8AN:H8 | 22:AX:4:LYS:HZ3    | 1.25                     | 0.96              |
| 10:AL:8:LEU:HD22  | 10:AL:9:GLU:H      | 1.30                     | 0.96              |
| 32:AJ:14:ALA:O    | 32:AJ:49:GLY:HA3   | 1.04                     | 0.96              |
| 34:BA:12:U:H2'    | 34:BA:13:U:C5      | 2.00                     | 0.96              |
| 34:BA:265:G:O2'   | 34:BA:266:G:H5'    | 1.65                     | 0.96              |
| 34:BA:329:A:H4'   | 34:BA:330:C:OP1    | 1.65                     | 0.96              |
| 42:BM:79:LEU:HD13 | 42:BM:101:PHE:HB3  | 1.47                     | 0.96              |
| 45:BP:60:LEU:HD13 | 45:BP:60:LEU:N     | 1.80                     | 0.96              |
| 45:BP:126:LYS:N   | 45:BP:126:LYS:HE3  | 1.80                     | 0.96              |
| 46:BQ:20:THR:CA   | 46:BQ:26:GLY:CA    | 2.42                     | 0.96              |
| 55:BC:38:A:H3'    | 55:BC:39:U:H5''    | 1.46                     | 0.96              |
| 57:BZ:81:PHE:O    | 57:BZ:361:ARG:CB   | 2.12                     | 0.96              |
| 57:BZ:240:ILE:HB  | 57:BZ:286:ASP:HA   | 1.06                     | 0.96              |
| 57:BZ:427:LYS:CG  | 57:BZ:442:VAL:HG23 | 1.95                     | 0.96              |
| 1:AA:308:G:N2     | 1:AA:309:G:H1'     | 1.80                     | 0.96              |
| 1:AA:442:G:H4'    | 6:AF:46:ARG:HG3    | 1.48                     | 0.96              |
| 1:AA:1080:C:N1    | 32:AJ:129:GLY:CA   | 2.25                     | 0.96              |
| 1:AA:2175:C:N3    | 3:AC:219:GLY:O     | 1.97                     | 0.96              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:2757:A:H2'    | 1:AA:2758:A:H5'    | 1.46                     | 0.96              |
| 4:AD:176:ARG:HG3   | 4:AD:176:ARG:HH11  | 1.30                     | 0.96              |
| 21:AW:57:ILE:CG1   | 21:AW:70:LEU:HB3   | 1.94                     | 0.96              |
| 23:AY:20:VAL:HG23  | 23:AY:52:ILE:HG23  | 1.43                     | 0.96              |
| 23:AY:60:ASN:O     | 23:AY:64:ARG:HB2   | 1.63                     | 0.96              |
| 24:AZ:4:LEU:HB3    | 24:AZ:37:LEU:CD2   | 1.95                     | 0.96              |
| 29:Ae:23:VAL:HG22  | 29:Ae:47:LYS:O     | 1.64                     | 0.96              |
| 33:Ag:11:UNK:CB    | 33:Ag:152:UNK:CB   | 2.43                     | 0.96              |
| 34:BA:1490:C:C5    | 58:BA:1601:NMY:O17 | 2.17                     | 0.96              |
| 36:BG:142:MET:HE3  | 36:BG:143:GLU:HA   | 1.43                     | 0.96              |
| 38:BI:145:LYS:O    | 38:BI:148:VAL:HB   | 1.65                     | 0.96              |
| 40:BK:155:ARG:NH1  | 40:BK:156:TRP:H    | 1.62                     | 0.96              |
| 43:BN:79:ARG:HD3   | 43:BN:79:ARG:C     | 1.90                     | 0.96              |
| 45:BP:83:VAL:HG22  | 45:BP:84:LEU:H     | 1.24                     | 0.96              |
| 57:BZ:509:LYS:HZ2  | 57:BZ:561:ILE:HD11 | 1.17                     | 0.96              |
| 57:BZ:560:PRO:CB   | 57:BZ:562:ARG:CB   | 2.43                     | 0.96              |
| 1:AA:60:G:H21      | 1:AA:74:A:H4'      | 1.30                     | 0.96              |
| 1:AA:172:C:H2'     | 1:AA:173:G:H8      | 1.31                     | 0.96              |
| 1:AA:343:C:C2'     | 1:AA:344:G:H5'     | 1.95                     | 0.96              |
| 1:AA:623:G:H3'     | 11:AM:105:LEU:HD22 | 1.45                     | 0.96              |
| 1:AA:2587:A:C2'    | 1:AA:2588:G:H5'    | 1.95                     | 0.96              |
| 4:AD:60:ARG:HD3    | 4:AD:62:TYR:HE2    | 1.28                     | 0.96              |
| 4:AD:95:LEU:HD22   | 4:AD:96:HIS:H      | 1.31                     | 0.96              |
| 4:AD:171:ASP:O     | 4:AD:186:HIS:HA    | 1.64                     | 0.96              |
| 14:AP:49:VAL:HG11  | 14:AP:80:LEU:HG    | 1.48                     | 0.96              |
| 25:Aa:47:GLN:HA    | 25:Aa:52:THR:CB    | 1.95                     | 0.96              |
| 32:AJ:25:PRO:HB3   | 57:BZ:429:MET:HE1  | 0.98                     | 0.96              |
| 34:BA:1329:A:O2'   | 46:BQ:70:LEU:CD1   | 2.12                     | 0.96              |
| 37:BH:105:VAL:HG21 | 37:BH:121:VAL:HG22 | 1.47                     | 0.96              |
| 56:BD:72:C:C4      | 56:BD:73:A:C2      | 2.54                     | 0.96              |
| 57:BZ:27:GLN:CB    | 57:BZ:28:GLN:CB    | 2.42                     | 0.96              |
| 57:BZ:240:ILE:H    | 57:BZ:286:ASP:HB3  | 1.24                     | 0.96              |
| 1:AA:1080:C:C5     | 32:AJ:132:ARG:NH2  | 2.33                     | 0.96              |
| 1:AA:1087:G:H2'    | 1:AA:1089:G:H4'    | 1.47                     | 0.96              |
| 1:AA:1244:G:H5'    | 11:AM:9:ASN:HB3    | 1.44                     | 0.96              |
| 1:AA:2461:C:H1'    | 1:AA:2492:U:H5     | 1.22                     | 0.96              |
| 1:AA:2491:U:H6     | 1:AA:2491:U:C3'    | 1.78                     | 0.96              |
| 1:AA:2532:G:C2'    | 1:AA:2657:A:N1     | 2.16                     | 0.96              |
| 4:AD:37:LEU:HD11   | 4:AD:63:ARG:C      | 1.90                     | 0.96              |
| 4:AD:133:LEU:HD11  | 4:AD:185:VAL:HG12  | 1.43                     | 0.96              |
| 4:AD:138:VAL:HA    | 4:AD:165:ILE:HG21  | 1.44                     | 0.96              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 5:AE:110:GLY:HA2   | 5:AE:161:GLY:O     | 1.66                     | 0.96              |
| 7:AG:56:ALA:HA     | 7:AG:59:GLU:OE1    | 1.65                     | 0.96              |
| 8:AH:18:GLU:OE2    | 8:AH:25:LYS:HB3    | 1.66                     | 0.96              |
| 8:AH:115:VAL:HG13  | 8:AH:116:GLU:N     | 1.79                     | 0.96              |
| 9:AK:67:LEU:H      | 9:AK:87:LEU:CD2    | 1.77                     | 0.96              |
| 13:AO:88:ARG:HB2   | 13:AO:88:ARG:NH1   | 1.81                     | 0.96              |
| 21:AW:27:VAL:CG2   | 21:AW:85:HIS:NE2   | 2.26                     | 0.96              |
| 34:BA:528:C:N4     | 45:BP:49:ASN:HD21  | 1.62                     | 0.96              |
| 35:BF:187:LEU:HD22 | 35:BF:188:ALA:H    | 1.31                     | 0.96              |
| 53:BX:51:GLU:HA    | 53:BX:54:LYS:CD    | 1.95                     | 0.96              |
| 57:BZ:64:ILE:CD1   | 57:BZ:187:TYR:CB   | 2.40                     | 0.96              |
| 57:BZ:363:GLU:HG3  | 57:BZ:453:SER:HG   | 1.19                     | 0.96              |
| 57:BZ:401:GLU:O    | 57:BZ:467:SER:CB   | 2.11                     | 0.96              |
| 1:AA:2:G:O6        | 1:AA:2902:C:N4     | 1.99                     | 0.96              |
| 1:AA:469:G:H22     | 28:Ad:40:TRP:HZ2   | 0.97                     | 0.96              |
| 1:AA:484:C:H2'     | 1:AA:485:C:H6      | 1.29                     | 0.96              |
| 1:AA:673:C:H4'     | 6:AF:82:ILE:HD12   | 1.46                     | 0.96              |
| 1:AA:865:C:H42     | 1:AA:909:A:N6      | 1.63                     | 0.96              |
| 1:AA:1081:U:O4     | 1:AA:1086:A:C2     | 2.18                     | 0.96              |
| 1:AA:1647:G:H4'    | 1:AA:1648:C:OP1    | 1.63                     | 0.96              |
| 1:AA:2206:C:H2'    | 1:AA:2207:C:H6     | 1.27                     | 0.96              |
| 1:AA:2789:C:O2'    | 1:AA:2791:C:H5'    | 1.65                     | 0.96              |
| 2:AB:43:C:O2       | 7:AG:95:ARG:HB2    | 1.66                     | 0.96              |
| 8:AH:43:VAL:HG13   | 8:AH:51:ARG:O      | 1.65                     | 0.96              |
| 9:AK:109:LYS:HZ2   | 9:AK:110:GLY:H     | 0.96                     | 0.96              |
| 10:AL:11:ALA:CB    | 10:AL:97:ARG:HH12  | 1.76                     | 0.96              |
| 12:AN:112:GLU:O    | 12:AN:115:MET:HB2  | 1.65                     | 0.96              |
| 34:BA:1308:U:C5'   | 46:BQ:110:ARG:HH12 | 1.61                     | 0.96              |
| 34:BA:1318:A:C2'   | 52:BW:37:ARG:CA    | 2.36                     | 0.96              |
| 41:BL:64:LYS:HD3   | 41:BL:79:VAL:HG11  | 1.47                     | 0.96              |
| 41:BL:68:ARG:HD3   | 41:BL:69:ARG:H     | 1.26                     | 0.96              |
| 46:BQ:91:ARG:HB3   | 46:BQ:98:VAL:HA    | 1.44                     | 0.96              |
| 52:BW:9:VAL:CG1    | 52:BW:41:VAL:O     | 2.13                     | 0.96              |
| 57:BZ:163:VAL:CG2  | 57:BZ:173:GLY:C    | 2.34                     | 0.96              |
| 57:BZ:482:GLN:N    | 57:BZ:573:ASP:CG   | 2.24                     | 0.96              |
| 1:AA:270(M):U:H4'  | 1:AA:270(N):G:C4'  | 1.95                     | 0.96              |
| 1:AA:545:G:H1'     | 1:AA:549:G:N2      | 1.80                     | 0.96              |
| 1:AA:612:G:H4'     | 1:AA:616:A:H61     | 1.15                     | 0.96              |
| 1:AA:763:G:O2'     | 1:AA:764:A:H5''    | 1.65                     | 0.96              |
| 1:AA:1079:C:N4     | 1:AA:1088:A:H5'    | 1.80                     | 0.96              |
| 1:AA:1259:G:H2'    | 1:AA:1260:G:H8     | 1.30                     | 0.96              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1270:C:H4'    | 1:AA:1271:G:C5'    | 1.96                     | 0.96              |
| 1:AA:1309:G:O2'    | 1:AA:1310:G:H5'    | 1.65                     | 0.96              |
| 1:AA:2698:U:H2'    | 1:AA:2699:C:C6     | 2.01                     | 0.96              |
| 4:AD:183:ARG:HG2   | 4:AD:268:ARG:CB    | 1.93                     | 0.96              |
| 7:AG:77:ILE:HA     | 7:AG:83:ARG:HE     | 1.27                     | 0.96              |
| 12:AN:109:VAL:HG11 | 12:AN:114:ALA:CB   | 1.95                     | 0.96              |
| 16:AR:74:LEU:HD13  | 16:AR:78:THR:HG21  | 1.48                     | 0.96              |
| 32:AJ:15:GLY:N     | 32:AJ:45:THR:HB    | 1.79                     | 0.96              |
| 34:BA:1180:A:OP1   | 42:BM:102:LEU:HD12 | 1.65                     | 0.96              |
| 35:BF:47:THR:O     | 35:BF:51:LEU:HG    | 1.64                     | 0.96              |
| 41:BL:12:ARG:NH1   | 41:BL:27:PRO:HD3   | 1.80                     | 0.96              |
| 49:BT:60:LEU:HA    | 49:BT:64:ALA:HB3   | 1.46                     | 0.96              |
| 51:BV:61:LYS:HD2   | 51:BV:64:ARG:HH22  | 1.25                     | 0.96              |
| 1:AA:1241:A:N3     | 1:AA:1241:A:H3'    | 1.79                     | 0.96              |
| 1:AA:2440:C:H5''   | 1:AA:2587:A:H4'    | 1.48                     | 0.96              |
| 1:AA:2666:C:H5     | 1:AA:2667:C:H5     | 0.99                     | 0.96              |
| 1:AA:2812:G:H2'    | 1:AA:2813:A:H8     | 1.26                     | 0.96              |
| 9:AK:25:ARG:O      | 9:AK:28:THR:HG23   | 1.65                     | 0.96              |
| 32:AJ:17:ALA:HB1   | 32:AJ:42:ASN:H     | 1.31                     | 0.96              |
| 34:BA:1128:C:H1'   | 34:BA:1146:A:H61   | 1.29                     | 0.96              |
| 34:BA:1220:G:N2    | 52:BW:55:LYS:HB2   | 1.80                     | 0.96              |
| 34:BA:1270:C:O2'   | 34:BA:1313:U:C4'   | 2.14                     | 0.96              |
| 37:BH:147:ALA:HB2  | 37:BH:182:LYS:HA   | 1.46                     | 0.96              |
| 46:BQ:4:ILE:HD12   | 46:BQ:57:ARG:HG3   | 1.21                     | 0.96              |
| 46:BQ:10:PRO:HB3   | 46:BQ:18:ALA:CB    | 1.94                     | 0.96              |
| 52:BW:9:VAL:HG12   | 52:BW:41:VAL:HG23  | 1.44                     | 0.96              |
| 57:BZ:380:LEU:HD12 | 57:BZ:580:VAL:HG21 | 1.48                     | 0.96              |
| 1:AA:176:G:H2'     | 1:AA:177:G:O4'     | 1.64                     | 0.96              |
| 1:AA:598:G:H4'     | 11:AM:12:ALA:HB3   | 1.45                     | 0.96              |
| 1:AA:2178:C:C4'    | 3:AC:46:LYS:HG2    | 1.95                     | 0.96              |
| 1:AA:2453:A:O2'    | 1:AA:2454:G:H5'    | 1.65                     | 0.96              |
| 3:AC:46:LYS:HE2    | 3:AC:210:ARG:NE    | 1.80                     | 0.96              |
| 9:AK:109:LYS:HZ2   | 9:AK:110:GLY:N     | 1.63                     | 0.96              |
| 34:BA:625:G:OP1    | 49:BT:9:PHE:HB3    | 1.65                     | 0.96              |
| 34:BA:1004:A:H3'   | 34:BA:1025:U:C4    | 2.01                     | 0.96              |
| 43:BN:7:LYS:O      | 43:BN:97:GLU:HB2   | 1.64                     | 0.96              |
| 48:BS:77:ARG:HH12  | 48:BS:81:LEU:CB    | 1.78                     | 0.96              |
| 56:BD:50:U:O4      | 56:BD:64:A:N1      | 1.98                     | 0.96              |
| 57:BZ:73:VAL:CA    | 57:BZ:74:ASP:HB3   | 1.95                     | 0.96              |
| 1:AA:1080:C:C5'    | 32:AJ:128:ALA:HB3  | 1.69                     | 0.96              |
| 1:AA:2175:C:C5     | 3:AC:219:GLY:O     | 2.19                     | 0.96              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 5:AE:27:LEU:HD11   | 5:AE:30:PRO:HD3    | 1.46                     | 0.96              |
| 10:AL:68:GLU:HA    | 10:AL:104:ARG:NH1  | 1.79                     | 0.96              |
| 12:AN:124:LYS:HB3  | 12:AN:124:LYS:NZ   | 1.78                     | 0.96              |
| 13:AO:32:GLY:HA2   | 13:AO:116:LEU:HD21 | 0.96                     | 0.96              |
| 14:AP:76:LYS:O     | 14:AP:80:LEU:HB2   | 1.66                     | 0.96              |
| 19:AU:85:PRO:HG2   | 19:AU:87:GLN:HG2   | 1.47                     | 0.96              |
| 21:AW:39:VAL:HG13  | 21:AW:44:PHE:CD2   | 2.01                     | 0.96              |
| 34:BA:259:G:H2'    | 34:BA:260:G:C8     | 1.99                     | 0.96              |
| 34:BA:1425:U:H2'   | 34:BA:1426:C:H6    | 1.31                     | 0.96              |
| 35:BF:184:VAL:HB   | 35:BF:198:ASP:OD1  | 1.65                     | 0.96              |
| 38:BI:11:ILE:HG22  | 38:BI:12:LEU:H     | 1.29                     | 0.96              |
| 40:BK:49:ILE:HG21  | 40:BK:121:ALA:HB1  | 1.48                     | 0.96              |
| 46:BQ:19:LEU:HD11  | 46:BQ:30:ALA:N     | 1.77                     | 0.96              |
| 57:BZ:13:HIS:CE1   | 57:BZ:106:MET:HB2  | 2.01                     | 0.96              |
| 57:BZ:209:ILE:HG23 | 57:BZ:222:GLY:O    | 1.65                     | 0.96              |
| 57:BZ:603:ALA:HB3  | 57:BZ:604:PRO:HD3  | 1.47                     | 0.96              |
| 1:AA:566:U:H5''    | 17:AS:82:ARG:NH1   | 1.80                     | 0.95              |
| 1:AA:1272:A:OP2    | 1:AA:1646:C:H2'    | 1.66                     | 0.95              |
| 1:AA:1405:U:H2'    | 1:AA:1406:U:C5     | 2.00                     | 0.95              |
| 1:AA:1819:A:H5''   | 4:AD:178:PRO:CG    | 1.96                     | 0.95              |
| 4:AD:27:THR:HG22   | 4:AD:29:PRO:CD     | 1.96                     | 0.95              |
| 4:AD:134:ARG:HD2   | 4:AD:188:GLU:HA    | 1.46                     | 0.95              |
| 5:AE:49:LEU:HA     | 5:AE:76:ARG:O      | 1.65                     | 0.95              |
| 5:AE:146:THR:HB    | 5:AE:147:PRO:CD    | 1.96                     | 0.95              |
| 13:AO:58:GLY:HA2   | 13:AO:80:PHE:CE2   | 2.00                     | 0.95              |
| 17:AS:40:LEU:HD23  | 17:AS:51:VAL:O     | 1.66                     | 0.95              |
| 22:AX:38:VAL:O     | 22:AX:59:LEU:HB2   | 1.65                     | 0.95              |
| 34:BA:1226:C:C5    | 46:BQ:104:ARG:CB   | 2.48                     | 0.95              |
| 34:BA:1413:A:N1    | 34:BA:1487:G:C2    | 2.34                     | 0.95              |
| 34:BA:1455:G:C4'   | 53:BX:31:SER:OG    | 2.12                     | 0.95              |
| 35:BF:78:GLN:HG3   | 35:BF:94:ASN:HB3   | 1.45                     | 0.95              |
| 35:BF:166:ASP:O    | 35:BF:169:LYS:HB3  | 1.64                     | 0.95              |
| 36:BG:189:ALA:CB   | 36:BG:196:LEU:HG   | 1.96                     | 0.95              |
| 36:BG:189:ALA:HB3  | 36:BG:196:LEU:H    | 1.29                     | 0.95              |
| 40:BK:29:LYS:HZ3   | 40:BK:102:ARG:HB2  | 1.27                     | 0.95              |
| 41:BL:90:GLY:O     | 45:BP:7:ILE:HG21   | 1.65                     | 0.95              |
| 44:BO:61:ALA:HB1   | 44:BO:94:ALA:CB    | 1.95                     | 0.95              |
| 46:BQ:36:LYS:HD3   | 46:BQ:59:TYR:CD2   | 2.01                     | 0.95              |
| 56:BD:41:C:H3'     | 56:BD:42:C:H5''    | 1.46                     | 0.95              |
| 56:BD:68:C:H2'     | 56:BD:69:G:C8      | 1.98                     | 0.95              |
| 1:AA:674:G:H5''    | 6:AF:74:ARG:HH11   | 1.31                     | 0.95              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:740:U:H5'     | 1:AA:1784:A:OP1    | 1.65                     | 0.95              |
| 1:AA:995:C:H1'     | 16:AR:57:PHE:CE2   | 2.01                     | 0.95              |
| 1:AA:1059:G:O2'    | 32:AJ:73:PRO:C     | 2.08                     | 0.95              |
| 1:AA:1312:U:H3'    | 1:AA:1313:U:C6     | 2.01                     | 0.95              |
| 1:AA:1818:U:H5''   | 4:AD:158:ALA:HB2   | 1.45                     | 0.95              |
| 1:AA:1842:G:H2'    | 1:AA:1843:C:H6     | 1.28                     | 0.95              |
| 1:AA:1931:U:C6     | 1:AA:1932:A:C8     | 2.54                     | 0.95              |
| 1:AA:2063:C:H1'    | 1:AA:2451:A:C2     | 2.01                     | 0.95              |
| 4:AD:232:PRO:HG2   | 4:AD:247:ALA:CA    | 1.95                     | 0.95              |
| 12:AN:25:ASP:HB3   | 12:AN:102:VAL:H    | 1.29                     | 0.95              |
| 22:AX:46:LYS:HG3   | 22:AX:78:TYR:CZ    | 2.01                     | 0.95              |
| 35:BF:135:GLN:C    | 35:BF:139:LYS:HZ2  | 1.74                     | 0.95              |
| 36:BG:59:ARG:HE    | 36:BG:64:VAL:HA    | 1.26                     | 0.95              |
| 37:BH:148:VAL:HG21 | 37:BH:162:LEU:HD11 | 1.49                     | 0.95              |
| 56:BD:7:A:N1       | 56:BD:66:U:O2      | 1.97                     | 0.95              |
| 57:BZ:54:ILE:CD1   | 57:BZ:211:GLN:HE22 | 1.78                     | 0.95              |
| 1:AA:91:A:H2'      | 1:AA:91:A:N3       | 1.81                     | 0.95              |
| 1:AA:270(X):G:C2'  | 1:AA:270(Y):G:H5'  | 1.96                     | 0.95              |
| 1:AA:289:A:H2'     | 1:AA:351:G:N1      | 1.82                     | 0.95              |
| 1:AA:880:G:C3'     | 1:AA:881:G:H4'     | 1.96                     | 0.95              |
| 1:AA:1038:C:O3'    | 1:AA:1039:G:H3'    | 1.66                     | 0.95              |
| 1:AA:1710:C:H2'    | 1:AA:1711:C:H6     | 1.32                     | 0.95              |
| 4:AD:169:GLU:CB    | 4:AD:184:LYS:HZ1   | 1.79                     | 0.95              |
| 12:AN:16:ARG:CZ    | 12:AN:73:PRO:HD3   | 1.96                     | 0.95              |
| 13:AO:103:ARG:HB2  | 13:AO:108:GLY:C    | 1.90                     | 0.95              |
| 25:Aa:7:PRO:HD3    | 25:Aa:56:VAL:CG1   | 1.97                     | 0.95              |
| 25:Aa:68:ARG:N     | 25:Aa:68:ARG:HD3   | 1.77                     | 0.95              |
| 34:BA:1077:G:H22   | 34:BA:1079:G:H3'   | 1.21                     | 0.95              |
| 36:BG:12:LEU:HD21  | 47:BR:57:ARG:HG3   | 1.48                     | 0.95              |
| 57:BZ:565:LEU:CB   | 57:BZ:566:GLU:CD   | 2.23                     | 0.95              |
| 1:AA:976:C:N4      | 1:AA:988:A:C2      | 2.34                     | 0.95              |
| 1:AA:1037:G:N1     | 1:AA:1119:C:C2     | 2.35                     | 0.95              |
| 1:AA:1314:C:OP1    | 1:AA:1332:G:H5'    | 1.66                     | 0.95              |
| 1:AA:1788:C:C2'    | 4:AD:222:ARG:HH21  | 1.79                     | 0.95              |
| 5:AE:45:THR:CB     | 5:AE:81:ILE:HA     | 1.95                     | 0.95              |
| 10:AL:47:ILE:HD12  | 10:AL:52:VAL:HG22  | 1.49                     | 0.95              |
| 10:AL:115:VAL:HG12 | 34:BA:345:C:H2'    | 1.46                     | 0.95              |
| 15:AQ:62:THR:HG22  | 15:AQ:79:HIS:HA    | 0.98                     | 0.95              |
| 17:AS:64:HIS:HA    | 17:AS:97:LYS:HD2   | 1.46                     | 0.95              |
| 24:AZ:3:ARG:NH1    | 24:AZ:59:VAL:HB    | 1.80                     | 0.95              |
| 34:BA:101:A:H2'    | 34:BA:102:G:H8     | 1.30                     | 0.95              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:186(A):C:H1' | 53:BX:104:LEU:CD2  | 1.96                     | 0.95              |
| 34:BA:296:U:H1'    | 34:BA:302:G:N2     | 1.81                     | 0.95              |
| 34:BA:778:G:O2'    | 34:BA:779:C:H5'    | 1.67                     | 0.95              |
| 41:BL:87:SER:CB    | 41:BL:92:ARG:HA    | 1.95                     | 0.95              |
| 53:BX:11:SER:HA    | 53:BX:13:LEU:HD11  | 1.48                     | 0.95              |
| 57:BZ:207:MET:CE   | 57:BZ:224:GLY:CA   | 2.43                     | 0.95              |
| 57:BZ:322:GLU:OE2  | 57:BZ:581:THR:CG2  | 2.12                     | 0.95              |
| 57:BZ:397:GLN:HG2  | 57:BZ:472:TYR:O    | 1.66                     | 0.95              |
| 57:BZ:592:LEU:O    | 57:BZ:597:ARG:NH1  | 1.99                     | 0.95              |
| 1:AA:494:G:H4'     | 18:AT:6:ILE:O      | 1.67                     | 0.95              |
| 1:AA:653:A:H62     | 1:AA:655:A:H1'     | 1.28                     | 0.95              |
| 1:AA:716:A:H1'     | 48:BS:44:LYS:CD    | 1.95                     | 0.95              |
| 1:AA:740:U:H1'     | 1:AA:1784:A:N7     | 1.80                     | 0.95              |
| 1:AA:899:A:C2      | 1:AA:900:A:C2      | 2.53                     | 0.95              |
| 1:AA:1922:G:O6     | 58:AA:3001:NMY:C6  | 2.14                     | 0.95              |
| 1:AA:2542:A:H4'    | 1:AA:2543:G:OP1    | 1.62                     | 0.95              |
| 1:AA:2553:G:H21    | 1:AA:2554:U:C2'    | 1.78                     | 0.95              |
| 5:AE:49:LEU:HD11   | 5:AE:74:PRO:HB2    | 1.48                     | 0.95              |
| 16:AR:55:ARG:CG    | 16:AR:58:ARG:HH21  | 1.79                     | 0.95              |
| 20:AV:74:PRO:HB3   | 20:AV:101:LYS:C    | 1.90                     | 0.95              |
| 21:AW:111:VAL:HG22 | 21:AW:117:LEU:HG   | 1.48                     | 0.95              |
| 33:Ag:309:UNK:HA   | 57:BZ:142:ASP:OD1  | 1.63                     | 0.95              |
| 34:BA:1268:A:H2    | 34:BA:1311:G:H1'   | 1.29                     | 0.95              |
| 37:BH:155:LEU:HB2  | 37:BH:158:ILE:HG12 | 1.47                     | 0.95              |
| 46:BQ:86:CYS:C     | 52:BW:73:GLU:O     | 2.08                     | 0.95              |
| 49:BT:21:VAL:HG21  | 49:BT:59:TRP:NE1   | 1.80                     | 0.95              |
| 57:BZ:170:GLY:O    | 57:BZ:179:MET:CB   | 2.13                     | 0.95              |
| 1:AA:1565:C:N3     | 1:AA:1567:A:H1'    | 1.81                     | 0.95              |
| 1:AA:1689:A:N6     | 1:AA:1698:A:C2     | 2.35                     | 0.95              |
| 1:AA:2392:A:C1'    | 11:AM:55:ARG:HH12  | 1.77                     | 0.95              |
| 1:AA:2677:G:O2'    | 1:AA:2678:C:H5'    | 1.64                     | 0.95              |
| 2:AB:24:G:O6       | 2:AB:56:G:H2'      | 1.64                     | 0.95              |
| 5:AE:120:TRP:CZ2   | 5:AE:122:PHE:HB2   | 2.02                     | 0.95              |
| 6:AF:70:THR:C      | 6:AF:72:ARG:H      | 1.70                     | 0.95              |
| 9:AK:34:LEU:C      | 9:AK:49:GLY:HA2    | 1.90                     | 0.95              |
| 11:AM:107:LYS:HE2  | 11:AM:110:TYR:CD1  | 2.02                     | 0.95              |
| 12:AN:134:ARG:CZ   | 12:AN:137:TYR:H    | 1.79                     | 0.95              |
| 16:AR:59:ARG:O     | 16:AR:62:ILE:HB    | 1.65                     | 0.95              |
| 25:Aa:68:ARG:NH1   | 25:Aa:68:ARG:H     | 1.62                     | 0.95              |
| 32:AJ:105:LEU:HD23 | 32:AJ:123:ALA:HB1  | 1.43                     | 0.95              |
| 34:BA:416:G:H2'    | 34:BA:417:C:C6     | 2.01                     | 0.95              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BA:1115:C:C1'   | 34:BA:1186:G:N2   | 2.29                     | 0.95              |
| 35:BF:23:ARG:HH11  | 35:BF:24:TRP:N    | 1.65                     | 0.95              |
| 39:BJ:33:TYR:CD1   | 39:BJ:75:LEU:HG   | 2.01                     | 0.95              |
| 45:BP:39:VAL:HB    | 45:BP:57:LYS:HB2  | 1.47                     | 0.95              |
| 48:BS:70:LEU:HG    | 48:BS:78:TYR:CD1  | 2.02                     | 0.95              |
| 56:BD:51:U:C4      | 56:BD:64:A:N1     | 2.35                     | 0.95              |
| 57:BZ:122:LYS:HE3  | 57:BZ:156:GLU:CB  | 1.93                     | 0.95              |
| 57:BZ:205:PHE:HZ   | 57:BZ:226:ILE:CD1 | 1.79                     | 0.95              |
| 1:AA:674:G:H4'     | 6:AF:74:ARG:NE    | 1.82                     | 0.95              |
| 1:AA:1473:G:H1     | 1:AA:1519:G:H1'   | 1.31                     | 0.95              |
| 1:AA:2212:A:H2'    | 1:AA:2212:A:N3    | 1.79                     | 0.95              |
| 1:AA:2876:G:H4'    | 15:AQ:1:MET:H2    | 1.30                     | 0.95              |
| 2:AB:102:G:H2'     | 21:AW:73:GLN:NE2  | 1.81                     | 0.95              |
| 17:AS:66:ARG:HE    | 17:AS:95:LEU:HB2  | 1.30                     | 0.95              |
| 21:AW:39:VAL:HG22  | 21:AW:44:PHE:CE2  | 2.01                     | 0.95              |
| 28:Ad:34:ARG:HH22  | 28:Ad:42:LEU:HA   | 1.30                     | 0.95              |
| 32:AJ:98:ARG:HH22  | 32:AJ:101:TRP:CD1 | 1.84                     | 0.95              |
| 34:BA:1486:G:C5    | 34:BA:1487:G:H8   | 1.83                     | 0.95              |
| 35:BF:20:GLU:HA    | 35:BF:21:ARG:HH21 | 1.29                     | 0.95              |
| 40:BK:76:ARG:HB2   | 40:BK:156:TRP:NE1 | 1.81                     | 0.95              |
| 53:BX:87:LYS:HA    | 53:BX:87:LYS:HE3  | 1.46                     | 0.95              |
| 56:BD:2:C:C2       | 56:BD:71:G:N2     | 2.26                     | 0.95              |
| 56:BD:63:G:H2'     | 56:BD:64:A:C8     | 2.02                     | 0.95              |
| 1:AA:559:G:H8      | 1:AA:559:G:H5'    | 1.28                     | 0.95              |
| 1:AA:1777:U:O2'    | 1:AA:1778:U:H5'   | 1.66                     | 0.95              |
| 6:AF:65:TRP:NE1    | 6:AF:73:ALA:HB3   | 1.81                     | 0.95              |
| 9:AK:15:LEU:HD21   | 9:AK:137:LYS:HA   | 1.45                     | 0.95              |
| 21:AW:28:MET:HE2   | 21:AW:28:MET:HA   | 1.47                     | 0.95              |
| 24:AZ:18:ASP:O     | 24:AZ:21:ALA:HB3  | 1.66                     | 0.95              |
| 29:Ae:26:LYS:HA    | 29:Ae:47:LYS:HG2  | 1.45                     | 0.95              |
| 29:Ae:50:LEU:CD2   | 29:Ae:51:ALA:H    | 1.78                     | 0.95              |
| 32:AJ:112:MET:CG   | 32:AJ:122:ALA:HB2 | 1.92                     | 0.95              |
| 36:BG:67:THR:HG22  | 36:BG:104:GLN:HG2 | 1.49                     | 0.95              |
| 53:BX:13:LEU:HD12  | 53:BX:13:LEU:H    | 1.29                     | 0.95              |
| 53:BX:45:GLN:HE21  | 53:BX:91:LEU:HD13 | 1.32                     | 0.95              |
| 57:BZ:220:VAL:HG21 | 57:BZ:279:LEU:CB  | 1.97                     | 0.95              |
| 57:BZ:239:ILE:N    | 57:BZ:244:GLY:HA3 | 1.80                     | 0.95              |
| 57:BZ:468:THR:HG23 | 57:BZ:469:PHE:H   | 1.31                     | 0.95              |
| 57:BZ:482:GLN:N    | 57:BZ:573:ASP:OD1 | 2.00                     | 0.95              |
| 57:BZ:547:ARG:HB3  | 57:BZ:548:ALA:CB  | 1.96                     | 0.95              |
| 1:AA:221:A:H61     | 1:AA:265:A:N6     | 1.63                     | 0.95              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:636:G:N2     | 11:AM:75:ILE:HG23 | 1.81                     | 0.95              |
| 1:AA:1708:C:C2'   | 1:AA:1709:U:H5''  | 1.97                     | 0.95              |
| 1:AA:1961:C:H5'   | 34:BA:1484:C:H4'  | 1.48                     | 0.95              |
| 1:AA:1966:A:N3    | 1:AA:2593:U:H5'   | 1.81                     | 0.95              |
| 1:AA:2121:G:O2'   | 3:AC:167:LYS:CE   | 2.15                     | 0.95              |
| 1:AA:2178:C:H4'   | 3:AC:46:LYS:HZ2   | 0.78                     | 0.95              |
| 1:AA:2848:G:N2    | 1:AA:2867:G:H1'   | 1.81                     | 0.95              |
| 2:AB:67:G:H2'     | 2:AB:68:C:C6      | 2.00                     | 0.95              |
| 3:AC:21:THR:HB    | 3:AC:228:SER:HB3  | 0.98                     | 0.95              |
| 3:AC:156:ILE:CB   | 3:AC:160:ARG:HB2  | 1.96                     | 0.95              |
| 5:AE:8:LYS:CD     | 5:AE:9:VAL:HG22   | 1.96                     | 0.95              |
| 7:AG:2:PRO:O      | 7:AG:5:VAL:HB     | 1.65                     | 0.95              |
| 16:AR:19:LYS:HB2  | 16:AR:19:LYS:NZ   | 1.81                     | 0.95              |
| 18:AT:17:VAL:HG23 | 18:AT:76:VAL:HG11 | 1.48                     | 0.95              |
| 20:AV:50:ARG:HA   | 20:AV:54:LYS:HA   | 1.49                     | 0.95              |
| 21:AW:43:GLU:H    | 21:AW:43:GLU:CD   | 1.68                     | 0.95              |
| 21:AW:127:LYS:NZ  | 21:AW:165:VAL:HB  | 1.80                     | 0.95              |
| 27:Ac:25:LYS:HE3  | 29:Ae:35:GLN:O    | 1.66                     | 0.95              |
| 28:Ad:17:GLY:H    | 28:Ad:21:ARG:HH22 | 1.06                     | 0.95              |
| 32:AJ:20:ALA:HB3  | 32:AJ:21:PRO:HD3  | 1.47                     | 0.95              |
| 32:AJ:131:ALA:HB1 | 32:AJ:136:VAL:HB  | 1.46                     | 0.95              |
| 34:BA:1151:A:N6   | 34:BA:1152:A:C6   | 2.35                     | 0.95              |
| 36:BG:14:ILE:HG21 | 36:BG:179:ARG:HA  | 1.49                     | 0.95              |
| 41:BL:18:ARG:HA   | 41:BL:18:ARG:NH1  | 1.81                     | 0.95              |
| 43:BN:63:PHE:HB3  | 47:BR:58:LYS:HA   | 1.47                     | 0.95              |
| 52:BW:22:LEU:HG   | 52:BW:25:LYS:HZ1  | 1.30                     | 0.95              |
| 1:AA:84:A:H5'     | 20:AV:8:LYS:HE2   | 1.49                     | 0.95              |
| 1:AA:455:C:H4'    | 1:AA:456:C:OP1    | 1.67                     | 0.95              |
| 1:AA:624:C:H41    | 11:AM:104:GLY:HA2 | 1.28                     | 0.95              |
| 1:AA:687:C:H1'    | 1:AA:788:A:H5'    | 1.49                     | 0.95              |
| 1:AA:1026:U:O2    | 1:AA:1026:U:H2'   | 1.63                     | 0.95              |
| 1:AA:1498:C:H6    | 1:AA:1576:U:H4'   | 1.31                     | 0.95              |
| 1:AA:1966:A:H1'   | 1:AA:2593:U:H5'   | 1.45                     | 0.95              |
| 1:AA:1967:C:N4    | 1:AA:1968:G:N2    | 2.14                     | 0.95              |
| 1:AA:2320:A:H1'   | 1:AA:2333:A:N6    | 1.81                     | 0.95              |
| 5:AE:133:LYS:NZ   | 5:AE:137:HIS:HB3  | 1.81                     | 0.95              |
| 8:AH:175:LYS:HG3  | 8:AH:176:ALA:N    | 1.77                     | 0.95              |
| 12:AN:7:MET:N     | 12:AN:70:PRO:HG2  | 1.80                     | 0.95              |
| 18:AT:38:TYR:CD2  | 26:Ab:39:MET:HE2  | 2.02                     | 0.95              |
| 20:AV:47:LYS:NZ   | 20:AV:51:VAL:HG21 | 1.81                     | 0.95              |
| 34:BA:169:C:H2'   | 34:BA:170:U:H6    | 1.31                     | 0.95              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:863:U:O2     | 34:BA:863:U:H2'    | 1.64                     | 0.95              |
| 34:BA:911:U:H2'    | 34:BA:912:C:H6     | 1.31                     | 0.95              |
| 34:BA:1319:A:C4'   | 52:BW:37:ARG:HA    | 1.96                     | 0.95              |
| 34:BA:1455:G:C5'   | 53:BX:31:SER:OG    | 2.14                     | 0.95              |
| 58:BA:1601:NMY:O14 | 58:BA:1601:NMY:N23 | 2.00                     | 0.95              |
| 37:BH:47:ARG:NH1   | 37:BH:47:ARG:HB2   | 1.81                     | 0.95              |
| 39:BJ:23:LYS:HA    | 39:BJ:26:ILE:CD1   | 1.97                     | 0.95              |
| 40:BK:72:ARG:HH11  | 40:BK:72:ARG:HB3   | 1.32                     | 0.95              |
| 40:BK:145:ALA:O    | 40:BK:146:GLU:HB3  | 1.66                     | 0.95              |
| 42:BM:78:LYS:HZ2   | 42:BM:101:PHE:HE2  | 1.15                     | 0.95              |
| 42:BM:116:LYS:HB3  | 42:BM:122:ALA:HA   | 1.46                     | 0.95              |
| 52:BW:15:LEU:HD11  | 52:BW:71:LEU:CD1   | 1.95                     | 0.95              |
| 56:BE:16:U:N3      | 56:BE:59:U:O2      | 2.00                     | 0.95              |
| 57:BZ:13:HIS:ND1   | 57:BZ:109:THR:HG23 | 1.82                     | 0.95              |
| 57:BZ:37:GLU:HA    | 57:BZ:39:GLN:CB    | 1.97                     | 0.95              |
| 1:AA:477:A:H2'     | 1:AA:478:A:H8      | 1.28                     | 0.94              |
| 1:AA:1014:U:O2'    | 1:AA:1015:G:H5'    | 1.66                     | 0.94              |
| 1:AA:2210:G:C5     | 4:AD:150:LYS:HA    | 2.01                     | 0.94              |
| 1:AA:2507:C:H5'    | 59:AA:3002:8AN:C5' | 1.97                     | 0.94              |
| 1:AA:2805:G:H3'    | 1:AA:2807:G:H5''   | 1.47                     | 0.94              |
| 2:AB:44:G:N2       | 2:AB:48:A:H1'      | 1.82                     | 0.94              |
| 3:AC:162:GLU:C     | 3:AC:163:PHE:HD2   | 1.74                     | 0.94              |
| 8:AH:38:SER:HB3    | 8:AH:41:MET:CG     | 1.97                     | 0.94              |
| 8:AH:153:LYS:HB2   | 8:AH:162:ILE:HG23  | 1.47                     | 0.94              |
| 11:AM:56:SER:HB3   | 29:Ae:13:ARG:NH2   | 1.82                     | 0.94              |
| 31:AI:141:VAL:HA   | 33:Ag:134:UNK:HA   | 1.49                     | 0.94              |
| 34:BA:944:G:H21    | 34:BA:1339:A:H62   | 1.01                     | 0.94              |
| 34:BA:1310:G:C6    | 34:BA:1327:C:N3    | 2.29                     | 0.94              |
| 34:BA:1455:G:H4'   | 53:BX:28:ALA:O     | 1.66                     | 0.94              |
| 35:BF:144:ARG:HA   | 35:BF:147:LYS:HB2  | 1.47                     | 0.94              |
| 39:BJ:72:VAL:HG23  | 39:BJ:73:ASN:H     | 1.32                     | 0.94              |
| 39:BJ:75:LEU:HD22  | 39:BJ:79:LEU:HD21  | 1.47                     | 0.94              |
| 40:BK:75:VAL:HA    | 40:BK:89:MET:HE1   | 1.46                     | 0.94              |
| 48:BS:62:GLN:HA    | 48:BS:65:ARG:HH22  | 1.31                     | 0.94              |
| 55:BC:69:G:H2'     | 55:BC:70:G:H5''    | 1.49                     | 0.94              |
| 57:BZ:220:VAL:O    | 57:BZ:274:VAL:HG12 | 1.67                     | 0.94              |
| 57:BZ:426:LEU:CD1  | 57:BZ:441:TYR:CD1  | 2.48                     | 0.94              |
| 1:AA:1919:A:O2'    | 1:AA:1920:C:OP1    | 1.86                     | 0.94              |
| 3:AC:82:LYS:HE3    | 3:AC:147:PHE:HD1   | 1.30                     | 0.94              |
| 10:AL:25:LEU:HD22  | 10:AL:38:VAL:HG23  | 1.47                     | 0.94              |
| 13:AO:12:ARG:CZ    | 13:AO:16:HIS:HB3   | 1.97                     | 0.94              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 28:Ad:28:ARG:HA   | 28:Ad:31:LEU:CD1   | 1.97                     | 0.94              |
| 28:Ad:32:LYS:HA   | 28:Ad:35:ARG:NH1   | 1.81                     | 0.94              |
| 34:BA:1308:U:C3'  | 46:BQ:92:HIS:NE2   | 2.19                     | 0.94              |
| 46:BQ:80:ARG:HB3  | 52:BW:65:ASN:HD22  | 1.28                     | 0.94              |
| 56:BE:18:G:P      | 56:BE:61:C:H5'     | 2.06                     | 0.94              |
| 57:BZ:64:ILE:HD11 | 57:BZ:187:TYR:HB3  | 1.38                     | 0.94              |
| 1:AA:3:U:C4       | 1:AA:2900:A:N1     | 2.34                     | 0.94              |
| 1:AA:247:G:H22    | 29:Ae:8:LYS:HD2    | 1.30                     | 0.94              |
| 1:AA:279:C:N4     | 1:AA:359:A:H1'     | 1.82                     | 0.94              |
| 1:AA:1533:C:N3    | 1:AA:1539:G:N2     | 2.15                     | 0.94              |
| 1:AA:1725:G:N2    | 1:AA:1726:G:H1'    | 1.82                     | 0.94              |
| 1:AA:2075:U:H3    | 1:AA:2238:G:H1     | 1.01                     | 0.94              |
| 1:AA:2107:C:P     | 1:AA:2108:C:C5     | 2.59                     | 0.94              |
| 1:AA:2576:G:C4'   | 1:AA:2577:A:H5'    | 1.96                     | 0.94              |
| 3:AC:156:ILE:HA   | 3:AC:160:ARG:CA    | 1.96                     | 0.94              |
| 3:AC:162:GLU:HG2  | 3:AC:163:PHE:H     | 1.30                     | 0.94              |
| 4:AD:131:LEU:HG   | 4:AD:132:PRO:HD2   | 1.50                     | 0.94              |
| 9:AK:87:LEU:O     | 9:AK:90:MET:HB2    | 1.67                     | 0.94              |
| 12:AN:99:PRO:O    | 12:AN:101:ARG:HD3  | 1.66                     | 0.94              |
| 15:AQ:35:LYS:HG3  | 15:AQ:84:GLN:O     | 1.67                     | 0.94              |
| 34:BA:1099:G:O2'  | 34:BA:1542:U:H4'   | 1.68                     | 0.94              |
| 34:BA:1504:G:O2'  | 34:BA:1505:G:OP2   | 1.85                     | 0.94              |
| 41:BL:87:SER:HB2  | 41:BL:92:ARG:CA    | 1.97                     | 0.94              |
| 57:BZ:61:THR:CG2  | 57:BZ:65:LYS:HB3   | 1.97                     | 0.94              |
| 57:BZ:379:GLU:CA  | 57:BZ:580:VAL:O    | 2.15                     | 0.94              |
| 57:BZ:564:THR:H   | 57:BZ:567:GLN:CB   | 1.80                     | 0.94              |
| 1:AA:107:C:H4'    | 1:AA:293:U:H1'     | 1.49                     | 0.94              |
| 1:AA:451:C:N4     | 1:AA:453:C:H3'     | 1.80                     | 0.94              |
| 1:AA:1965:C:H3'   | 1:AA:1966:A:H8     | 1.31                     | 0.94              |
| 3:AC:108:MET:SD   | 3:AC:131:LEU:HD23  | 2.07                     | 0.94              |
| 7:AG:105:LYS:O    | 7:AG:109:VAL:HG22  | 1.67                     | 0.94              |
| 12:AN:134:ARG:NH2 | 12:AN:137:TYR:H    | 1.64                     | 0.94              |
| 18:AT:34:ASN:HA   | 18:AT:37:ARG:HE    | 1.30                     | 0.94              |
| 20:AV:46:LYS:NZ   | 20:AV:52:SER:HB2   | 1.82                     | 0.94              |
| 33:Ag:290:UNK:CA  | 33:Ag:342:UNK:O    | 2.13                     | 0.94              |
| 34:BA:279:A:H5'   | 34:BA:280:C:H3'    | 1.47                     | 0.94              |
| 34:BA:923:A:H2'   | 34:BA:924:C:C6     | 2.01                     | 0.94              |
| 34:BA:1126:U:H1'  | 34:BA:1280:A:N6    | 1.82                     | 0.94              |
| 34:BA:1204:A:C2   | 36:BG:195:VAL:HG21 | 2.02                     | 0.94              |
| 36:BG:116:VAL:O   | 36:BG:119:ARG:HB3  | 1.67                     | 0.94              |
| 42:BM:19:LEU:CD2  | 42:BM:59:PHE:HB3   | 1.96                     | 0.94              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 46:BQ:10:PRO:CG    | 46:BQ:45:VAL:HG11 | 1.96                     | 0.94              |
| 57:BZ:180:ALA:N    | 57:BZ:181:GLU:O   | 1.99                     | 0.94              |
| 57:BZ:181:GLU:OE2  | 57:BZ:182:ASP:N   | 2.01                     | 0.94              |
| 57:BZ:205:PHE:O    | 57:BZ:289:CYS:HB2 | 1.66                     | 0.94              |
| 57:BZ:311:PHE:H    | 57:BZ:356:PHE:H   | 1.02                     | 0.94              |
| 57:BZ:502:PHE:HE1  | 57:BZ:556:VAL:O   | 1.29                     | 0.94              |
| 1:AA:470:A:C2      | 1:AA:471:A:H1'    | 2.01                     | 0.94              |
| 1:AA:1105:U:H4'    | 1:AA:1106:G:O5'   | 1.64                     | 0.94              |
| 1:AA:1107:G:C2'    | 1:AA:1108:U:H5'   | 1.98                     | 0.94              |
| 1:AA:1281:G:H2'    | 1:AA:1282:U:H6    | 1.33                     | 0.94              |
| 1:AA:1341:U:H3     | 1:AA:1398:C:H5'   | 1.31                     | 0.94              |
| 1:AA:1779:U:O2'    | 1:AA:1783:A:N6    | 2.00                     | 0.94              |
| 1:AA:1912:A:O2'    | 34:BA:1495:U:H6   | 1.32                     | 0.94              |
| 1:AA:2306:C:H4'    | 7:AG:153:ARG:NH2  | 1.83                     | 0.94              |
| 3:AC:65:PRO:HD2    | 3:AC:187:ASP:CG   | 1.92                     | 0.94              |
| 6:AF:11:VAL:HG13   | 6:AF:127:GLU:HB2  | 1.49                     | 0.94              |
| 8:AH:94:TYR:H      | 8:AH:95:ARG:NH2   | 1.65                     | 0.94              |
| 9:AK:19:GLU:HB2    | 9:AK:56:ASN:HB3   | 1.46                     | 0.94              |
| 13:AO:45:ARG:HB2   | 13:AO:95:THR:HG21 | 1.48                     | 0.94              |
| 32:AJ:27:LEU:CD2   | 32:AJ:58:THR:N    | 2.29                     | 0.94              |
| 34:BA:345:C:H4'    | 34:BA:346:G:O5'   | 1.66                     | 0.94              |
| 37:BH:82:ALA:CB    | 37:BH:89:THR:HG23 | 1.97                     | 0.94              |
| 42:BM:103:THR:HG22 | 42:BM:104:ARG:H   | 1.32                     | 0.94              |
| 43:BN:15:THR:OG1   | 43:BN:94:VAL:HG23 | 1.66                     | 0.94              |
| 46:BQ:10:PRO:CG    | 46:BQ:45:VAL:CG1  | 2.46                     | 0.94              |
| 46:BQ:81:LEU:HD23  | 46:BQ:89:GLY:CA   | 1.97                     | 0.94              |
| 56:BD:66:U:H2'     | 56:BD:67:C:C4     | 2.03                     | 0.94              |
| 57:BZ:6:ARG:C      | 57:BZ:69:ARG:HB3  | 1.92                     | 0.94              |
| 57:BZ:62:ALA:HB2   | 57:BZ:187:TYR:CD2 | 2.02                     | 0.94              |
| 57:BZ:481:GLY:HA2  | 57:BZ:482:GLN:CB  | 1.95                     | 0.94              |
| 57:BZ:499:PHE:CB   | 57:BZ:540:GLY:CA  | 2.45                     | 0.94              |
| 1:AA:185:U:H2'     | 1:AA:186:G:H8     | 1.30                     | 0.94              |
| 1:AA:479:A:H1'     | 1:AA:480:A:C8     | 2.03                     | 0.94              |
| 1:AA:535:C:H4'     | 16:AR:53:ARG:HD2  | 1.46                     | 0.94              |
| 1:AA:716:A:H2'     | 1:AA:717:G:H5'    | 1.50                     | 0.94              |
| 1:AA:862:G:C2      | 1:AA:863:A:H1'    | 2.01                     | 0.94              |
| 1:AA:896:A:H2      | 1:AA:897:C:N1     | 1.64                     | 0.94              |
| 1:AA:1425:G:H2'    | 1:AA:1426:G:C8    | 2.02                     | 0.94              |
| 1:AA:1543:A:OP2    | 1:AA:1544:C:H6    | 1.49                     | 0.94              |
| 1:AA:1799:G:H3'    | 4:AD:183:ARG:NH2  | 1.82                     | 0.94              |
| 4:AD:252:TRP:H     | 4:AD:255:LYS:HZ1  | 1.03                     | 0.94              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 16:AR:97:ASP:C    | 16:AR:101:ARG:HE  | 1.75                     | 0.94              |
| 25:Aa:65:ASP:CA   | 25:Aa:68:ARG:HH22 | 1.79                     | 0.94              |
| 26:Ab:58:LEU:HD22 | 26:Ab:59:GLU:N    | 1.83                     | 0.94              |
| 27:Ac:32:ASN:CG   | 27:Ac:33:LYS:H    | 1.69                     | 0.94              |
| 32:AJ:19:PRO:CG   | 32:AJ:36:GLU:CA   | 2.45                     | 0.94              |
| 34:BA:1107:C:OP1  | 36:BG:172:ARG:NH1 | 2.01                     | 0.94              |
| 34:BA:1309:G:C2   | 34:BA:1328:C:N3   | 2.35                     | 0.94              |
| 40:BK:86:GLN:HB2  | 40:BK:148:ASN:ND2 | 1.81                     | 0.94              |
| 48:BS:70:LEU:HG   | 48:BS:78:TYR:CG   | 2.02                     | 0.94              |
| 51:BV:79:LEU:HD13 | 51:BV:79:LEU:O    | 1.67                     | 0.94              |
| 57:BZ:170:GLY:C   | 57:BZ:179:MET:CG  | 2.40                     | 0.94              |
| 57:BZ:244:GLY:HA2 | 57:BZ:245:LYS:CG  | 1.97                     | 0.94              |
| 57:BZ:502:PHE:HE2 | 57:BZ:555:VAL:CB  | 1.41                     | 0.94              |
| 1:AA:674:G:H5''   | 6:AF:74:ARG:NH1   | 1.81                     | 0.94              |
| 1:AA:1820:U:H2'   | 4:AD:202:LYS:HG3  | 1.49                     | 0.94              |
| 1:AA:2296:U:H1'   | 1:AA:2335:A:N6    | 1.82                     | 0.94              |
| 7:AG:57:ALA:HA    | 7:AG:68:PRO:CD    | 1.98                     | 0.94              |
| 11:AM:13:ASN:HD22 | 11:AM:14:LYS:H    | 1.12                     | 0.94              |
| 11:AM:72:PRO:HB2  | 11:AM:111:ARG:CB  | 1.98                     | 0.94              |
| 16:AR:53:ARG:HB2  | 16:AR:53:ARG:NH1  | 1.81                     | 0.94              |
| 26:Ab:46:CYS:HB2  | 26:Ab:47:PRO:HD2  | 1.50                     | 0.94              |
| 27:Ac:19:ARG:C    | 27:Ac:43:CYS:HG   | 1.74                     | 0.94              |
| 34:BA:375:U:O3'   | 49:BT:6:LEU:HD21  | 1.67                     | 0.94              |
| 34:BA:1010:G:N2   | 34:BA:1020:U:H1'  | 1.80                     | 0.94              |
| 34:BA:1309:G:C2'  | 34:BA:1329:A:C4   | 2.30                     | 0.94              |
| 34:BA:1375:A:H2'  | 34:BA:1376:U:C6   | 2.02                     | 0.94              |
| 34:BA:1433:A:N6   | 34:BA:1467:G:H21  | 1.64                     | 0.94              |
| 38:BI:33:VAL:HG22 | 38:BI:43:LEU:HD12 | 1.49                     | 0.94              |
| 48:BS:5:LYS:O     | 48:BS:8:LYS:HB3   | 1.66                     | 0.94              |
| 48:BS:77:ARG:NH1  | 48:BS:81:LEU:HB2  | 1.82                     | 0.94              |
| 56:BD:51:U:C4     | 56:BD:64:A:C6     | 2.55                     | 0.94              |
| 56:BE:2:C:C6      | 56:BE:71:G:C5     | 2.41                     | 0.94              |
| 56:BE:4:C:N1      | 56:BE:6:G:N7      | 2.14                     | 0.94              |
| 57:BZ:483:ARG:N   | 57:BZ:573:ASP:OD2 | 1.99                     | 0.94              |
| 1:AA:2:G:N7       | 1:AA:2902:C:C4    | 2.32                     | 0.94              |
| 1:AA:150:C:H42    | 1:AA:176:G:H1     | 1.01                     | 0.94              |
| 1:AA:391:G:H2'    | 1:AA:392:C:C6     | 2.03                     | 0.94              |
| 1:AA:447:A:H1'    | 1:AA:449:A:H61    | 1.32                     | 0.94              |
| 1:AA:917:A:C3'    | 1:AA:918:A:H5''   | 1.96                     | 0.94              |
| 1:AA:932:G:H2'    | 1:AA:933:A:C8     | 2.02                     | 0.94              |
| 1:AA:1046:A:C6    | 31:AI:7:VAL:N     | 2.04                     | 0.94              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1272:A:O2'   | 1:AA:1273:U:OP1    | 1.85                     | 0.94              |
| 1:AA:1650:G:N2    | 1:AA:1651:G:H1'    | 1.83                     | 0.94              |
| 1:AA:1809:A:H61   | 25:Aa:3:GLU:HG3    | 1.31                     | 0.94              |
| 1:AA:1939:U:H1'   | 1:AA:2592:G:O4'    | 1.66                     | 0.94              |
| 1:AA:1993:U:H2'   | 1:AA:1994:C:C6     | 2.02                     | 0.94              |
| 1:AA:2371:G:H5'   | 27:Ac:45:LYS:HB3   | 1.47                     | 0.94              |
| 1:AA:2533:A:C4'   | 1:AA:2664:G:HO2'   | 1.80                     | 0.94              |
| 1:AA:2553:G:N7    | 1:AA:2583:G:H4'    | 1.83                     | 0.94              |
| 1:AA:2573:C:OP1   | 1:AA:2574:G:H5''   | 1.66                     | 0.94              |
| 1:AA:2815:C:O2'   | 1:AA:2816:C:H5'    | 1.67                     | 0.94              |
| 3:AC:45:ALA:CA    | 3:AC:213:TYR:CE1   | 2.45                     | 0.94              |
| 4:AD:119:ALA:HB2  | 4:AD:130:ALA:H     | 1.31                     | 0.94              |
| 4:AD:181:GLU:HB2  | 4:AD:268:ARG:HH21  | 1.33                     | 0.94              |
| 5:AE:2:LYS:NZ     | 5:AE:83:ASP:HB2    | 1.82                     | 0.94              |
| 6:AF:5:ALA:C      | 6:AF:20:LEU:HD13   | 1.93                     | 0.94              |
| 9:AK:97:ARG:HA    | 9:AK:100:GLU:HG2   | 1.50                     | 0.94              |
| 10:AL:24:VAL:HA   | 10:AL:39:ILE:CG2   | 1.98                     | 0.94              |
| 12:AN:94:VAL:HG23 | 12:AN:95:ALA:N     | 1.80                     | 0.94              |
| 13:AO:14:SER:O    | 13:AO:17:ARG:HG2   | 1.67                     | 0.94              |
| 15:AQ:18:ASP:OD1  | 15:AQ:81:PRO:HG3   | 1.67                     | 0.94              |
| 16:AR:55:ARG:HG3  | 16:AR:58:ARG:NH2   | 1.82                     | 0.94              |
| 17:AS:20:LEU:HB2  | 17:AS:95:LEU:HD22  | 1.46                     | 0.94              |
| 22:AX:68:GLU:CB   | 22:AX:80:HIS:O     | 2.15                     | 0.94              |
| 31:AI:54:ALA:CA   | 31:AI:83:TYR:O     | 2.15                     | 0.94              |
| 34:BA:194:C:H2'   | 34:BA:195:A:H5''   | 1.47                     | 0.94              |
| 34:BA:866:C:C5    | 34:BA:867:G:H1'    | 2.03                     | 0.94              |
| 34:BA:1124:G:N2   | 34:BA:1126:U:H3    | 1.64                     | 0.94              |
| 34:BA:1162:C:H2'  | 34:BA:1163:C:C6    | 2.02                     | 0.94              |
| 34:BA:1302:U:C5   | 46:BQ:13:LYS:NZ    | 2.36                     | 0.94              |
| 34:BA:1506:U:C5'  | 34:BA:1507:A:OP2   | 2.16                     | 0.94              |
| 35:BF:17:PHE:HD1  | 35:BF:18:GLY:N     | 1.66                     | 0.94              |
| 35:BF:31:TYR:CE2  | 35:BF:200:ILE:HG21 | 2.03                     | 0.94              |
| 35:BF:42:ILE:CD1  | 35:BF:202:PRO:HB2  | 1.97                     | 0.94              |
| 37:BH:173:TRP:NE1 | 37:BH:189:PRO:HB3  | 1.83                     | 0.94              |
| 41:BL:13:ILE:HG22 | 41:BL:14:ARG:N     | 1.81                     | 0.94              |
| 45:BP:59:ARG:HA   | 45:BP:64:TYR:O     | 1.68                     | 0.94              |
| 56:BD:4:C:H1'     | 56:BD:70:G:H21     | 1.21                     | 0.94              |
| 56:BE:20:U:H3'    | 56:BE:21:A:C5'     | 1.97                     | 0.94              |
| 57:BZ:9:ALA:CB    | 57:BZ:73:VAL:HG22  | 1.67                     | 0.94              |
| 57:BZ:62:ALA:CB   | 57:BZ:187:TYR:HD2  | 1.78                     | 0.94              |
| 57:BZ:88:VAL:HG13 | 57:BZ:92:VAL:HG11  | 1.46                     | 0.94              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:BZ:169:ASN:CG  | 57:BZ:182:ASP:OD1 | 2.03                     | 0.94              |
| 57:BZ:377:GLY:HA2 | 57:BZ:582:PRO:HG2 | 1.47                     | 0.94              |
| 1:AA:234:C:N4     | 1:AA:430:G:H22    | 1.65                     | 0.94              |
| 1:AA:351:G:H1'    | 1:AA:352:G:N7     | 1.82                     | 0.94              |
| 1:AA:1660:C:N4    | 1:AA:2001:A:H61   | 1.65                     | 0.94              |
| 1:AA:2083:G:H2'   | 1:AA:2084:C:C6    | 2.03                     | 0.94              |
| 7:AG:39:ILE:HG23  | 7:AG:157:ILE:HB   | 1.47                     | 0.94              |
| 12:AN:16:ARG:HG3  | 12:AN:72:LYS:HD2  | 1.47                     | 0.94              |
| 15:AQ:64:ARG:HD3  | 15:AQ:65:LYS:N    | 1.81                     | 0.94              |
| 31:AI:54:ALA:CB   | 31:AI:83:TYR:O    | 2.10                     | 0.94              |
| 32:AJ:75:SER:HB3  | 32:AJ:130:SER:HB2 | 0.95                     | 0.94              |
| 33:Ag:7:UNK:HA    | 33:Ag:144:UNK:O   | 1.67                     | 0.94              |
| 34:BA:7:G:H21     | 38:BI:121:LYS:HG3 | 1.32                     | 0.94              |
| 34:BA:523:A:H61   | 45:BP:53:ARG:NH2  | 1.64                     | 0.94              |
| 34:BA:1200:C:H3'  | 34:BA:1201:A:H5'  | 1.50                     | 0.94              |
| 34:BA:1329:A:H4'  | 46:BQ:29:ARG:HH22 | 1.31                     | 0.94              |
| 34:BA:1486:G:C4   | 34:BA:1487:G:H8   | 1.80                     | 0.94              |
| 37:BH:57:ARG:HB3  | 37:BH:206:PHE:HB2 | 1.47                     | 0.94              |
| 46:BQ:22:ILE:HB   | 46:BQ:25:ILE:HD12 | 0.96                     | 0.94              |
| 46:BQ:87:TYR:OH   | 52:BW:75:ALA:O    | 1.85                     | 0.94              |
| 53:BX:49:ALA:HA   | 53:BX:92:LEU:HD22 | 1.47                     | 0.94              |
| 53:BX:50:GLU:N    | 53:BX:99:LEU:HD12 | 1.83                     | 0.94              |
| 57:BZ:234:ASN:CB  | 57:BZ:248:ASN:O   | 2.15                     | 0.94              |
| 57:BZ:310:PHE:O   | 57:BZ:383:SER:C   | 2.10                     | 0.94              |
| 57:BZ:390:ARG:HB3 | 57:BZ:391:GLU:HB2 | 1.46                     | 0.94              |
| 57:BZ:575:ASP:HB3 | 57:BZ:590:ARG:HB2 | 1.50                     | 0.94              |
| 1:AA:902:C:H2'    | 1:AA:903:C:C2     | 2.01                     | 0.94              |
| 1:AA:917:A:H3'    | 1:AA:917:A:C8     | 2.02                     | 0.94              |
| 1:AA:1244:G:H5'   | 11:AM:9:ASN:CB    | 1.98                     | 0.94              |
| 1:AA:1491:G:H2'   | 1:AA:1492:G:H4'   | 1.48                     | 0.94              |
| 1:AA:1934:C:H5'   | 1:AA:1974:C:H4'   | 1.50                     | 0.94              |
| 1:AA:1996:C:H2'   | 1:AA:1997:G:C5'   | 1.97                     | 0.94              |
| 1:AA:2178:C:C4'   | 3:AC:46:LYS:HZ3   | 1.81                     | 0.94              |
| 1:AA:2330:G:H1    | 1:AA:2385:C:H42   | 1.01                     | 0.94              |
| 3:AC:74:VAL:HG22  | 3:AC:112:ALA:HB3  | 1.47                     | 0.94              |
| 6:AF:130:ALA:HB3  | 6:AF:142:TRP:CB   | 1.97                     | 0.94              |
| 7:AG:55:LYS:HD3   | 7:AG:147:ASP:O    | 1.68                     | 0.94              |
| 8:AH:139:GLN:HG3  | 8:AH:140:LYS:H    | 1.33                     | 0.94              |
| 10:AL:1:MET:HB3   | 10:AL:66:LYS:HB3  | 1.49                     | 0.94              |
| 16:AR:49:HIS:CD2  | 16:AR:52:ARG:HH22 | 1.85                     | 0.94              |
| 24:AZ:6:VAL:HG12  | 24:AZ:55:ARG:O    | 1.68                     | 0.94              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 28:Ad:42:LEU:HB3  | 28:Ad:44:PRO:HG2   | 1.46                     | 0.94              |
| 33:Ag:290:UNK:HA  | 33:Ag:343:UNK:HA   | 1.27                     | 0.94              |
| 34:BA:306:G:H2'   | 34:BA:307:C:C6     | 2.02                     | 0.94              |
| 34:BA:1179:A:H4'  | 42:BM:103:THR:OG1  | 1.67                     | 0.94              |
| 34:BA:1224:G:C2'  | 52:BW:78:ARG:NH1   | 2.31                     | 0.94              |
| 34:BA:1226:C:N4   | 46:BQ:104:ARG:CG   | 2.18                     | 0.94              |
| 34:BA:1227:A:O5'  | 52:BW:80:TYR:OH    | 1.80                     | 0.94              |
| 34:BA:1321:C:O2   | 52:BW:36:ARG:NH1   | 2.00                     | 0.94              |
| 35:BF:178:ARG:HE  | 35:BF:196:LEU:HD13 | 1.25                     | 0.94              |
| 37:BH:20:TYR:CA   | 37:BH:26:CYS:SG    | 2.56                     | 0.94              |
| 55:BC:35:A:H2'    | 55:BC:36:A:C8      | 2.02                     | 0.94              |
| 56:BD:5:G:C6      | 56:BD:69:G:C6      | 2.56                     | 0.94              |
| 57:BZ:5:LEU:CD1   | 57:BZ:268:ALA:HB3  | 1.97                     | 0.94              |
| 57:BZ:248:ASN:OD1 | 57:BZ:276:ILE:N    | 1.85                     | 0.94              |
| 1:AA:627:A:H4'    | 1:AA:627:A:OP2     | 1.67                     | 0.93              |
| 1:AA:832:G:H2'    | 1:AA:833:U:H5      | 1.33                     | 0.93              |
| 1:AA:901:A:C6     | 1:AA:902:C:C2      | 2.55                     | 0.93              |
| 1:AA:1906:G:C6    | 1:AA:1929:G:C6     | 2.56                     | 0.93              |
| 1:AA:2305:A:H8    | 1:AA:2306:C:H5''   | 1.32                     | 0.93              |
| 5:AE:164:ARG:O    | 5:AE:165:VAL:HG22  | 1.68                     | 0.93              |
| 6:AF:197:ASP:CA   | 6:AF:200:GLU:HG3   | 1.98                     | 0.93              |
| 10:AL:34:THR:O    | 10:AL:61:VAL:HG11  | 1.68                     | 0.93              |
| 12:AN:46:GLN:O    | 12:AN:49:ALA:HB3   | 1.68                     | 0.93              |
| 32:AJ:72:PRO:HG3  | 32:AJ:77:LEU:HD22  | 0.95                     | 0.93              |
| 32:AJ:72:PRO:HD2  | 32:AJ:77:LEU:HG    | 1.47                     | 0.93              |
| 34:BA:7:G:H1'     | 34:BA:298:A:C8     | 2.02                     | 0.93              |
| 34:BA:564:C:C4    | 50:BU:31:LEU:HD11  | 2.02                     | 0.93              |
| 34:BA:1117:G:C5   | 34:BA:1184:G:N1    | 2.36                     | 0.93              |
| 36:BG:29:TYR:CZ   | 47:BR:54:PRO:HB2   | 2.03                     | 0.93              |
| 42:BM:48:GLU:HB3  | 42:BM:78:LYS:NZ    | 1.81                     | 0.93              |
| 57:BZ:239:ILE:CB  | 57:BZ:244:GLY:HA3  | 1.97                     | 0.93              |
| 1:AA:687:C:O2     | 1:AA:787:U:O3'     | 1.85                     | 0.93              |
| 1:AA:1205:U:C4    | 1:AA:1207:C:N4     | 2.37                     | 0.93              |
| 1:AA:1697:G:H5''  | 1:AA:1698:A:H5'    | 1.46                     | 0.93              |
| 1:AA:1809:A:H2'   | 1:AA:1810:A:H5'    | 1.49                     | 0.93              |
| 1:AA:1907:G:O6    | 58:AA:3001:NMY:C8  | 2.16                     | 0.93              |
| 1:AA:2282:G:H1    | 1:AA:2427:C:H42    | 1.10                     | 0.93              |
| 1:AA:2850:A:C2    | 1:AA:2869:G:H4'    | 2.03                     | 0.93              |
| 1:AA:2862:G:H2'   | 1:AA:2863:C:H6     | 1.32                     | 0.93              |
| 1:AA:2889:C:H2'   | 1:AA:2891:G:C8     | 2.03                     | 0.93              |
| 4:AD:176:ARG:HH22 | 4:AD:270:ILE:HD11  | 1.29                     | 0.93              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 7:AG:41:GLN:NE2    | 7:AG:155:MET:HG3   | 1.83                     | 0.93              |
| 9:AK:111:PRO:O     | 9:AK:114:ARG:HB3   | 1.65                     | 0.93              |
| 18:AT:38:TYR:HD2   | 26:Ab:39:MET:HE2   | 1.30                     | 0.93              |
| 28:Ad:17:GLY:H     | 28:Ad:21:ARG:NH2   | 1.66                     | 0.93              |
| 34:BA:570:G:HO2'   | 34:BA:819:A:H8     | 1.15                     | 0.93              |
| 34:BA:858:G:H22    | 34:BA:869:G:C3'    | 1.81                     | 0.93              |
| 35:BF:193:ASP:OD2  | 35:BF:196:LEU:HD11 | 1.68                     | 0.93              |
| 39:BJ:97:PHE:HD2   | 51:BV:31:LEU:HD13  | 1.32                     | 0.93              |
| 42:BM:55:ALA:HB3   | 42:BM:58:HIS:HE1   | 1.31                     | 0.93              |
| 43:BN:15:THR:HG23  | 43:BN:16:LEU:HD22  | 1.47                     | 0.93              |
| 53:BX:63:ILE:CD1   | 53:BX:80:ARG:HB3   | 1.98                     | 0.93              |
| 56:BE:2:C:H3'      | 56:BE:70:G:H1      | 1.32                     | 0.93              |
| 1:AA:179:G:H5'     | 28:Ad:32:LYS:NZ    | 1.84                     | 0.93              |
| 1:AA:566:U:H5''    | 17:AS:82:ARG:CZ    | 1.99                     | 0.93              |
| 1:AA:675:A:H4'     | 6:AF:67:GLN:NE2    | 1.82                     | 0.93              |
| 1:AA:783:A:H4'     | 1:AA:2588:G:O3'    | 1.66                     | 0.93              |
| 1:AA:1006:C:H1'    | 9:AK:106:MET:SD    | 2.07                     | 0.93              |
| 1:AA:1034:G:C5     | 1:AA:1122:G:C6     | 2.56                     | 0.93              |
| 1:AA:1902:C:C5     | 1:AA:1903:G:N7     | 2.37                     | 0.93              |
| 1:AA:2116:G:H5'    | 1:AA:2117:A:OP2    | 1.68                     | 0.93              |
| 1:AA:2177:C:H5'    | 3:AC:223:ARG:HB2   | 1.51                     | 0.93              |
| 1:AA:2455:G:H2'    | 1:AA:2456:C:C6     | 2.04                     | 0.93              |
| 1:AA:2557:G:H2'    | 1:AA:2558:C:C6     | 2.03                     | 0.93              |
| 5:AE:53:PRO:HG3    | 5:AE:75:VAL:CG2    | 1.98                     | 0.93              |
| 8:AH:120:GLY:HA3   | 8:AH:136:ILE:HG22  | 1.48                     | 0.93              |
| 34:BA:553:A:H2'    | 34:BA:554:C:C6     | 2.03                     | 0.93              |
| 34:BA:1115:C:H2'   | 34:BA:1116:C:C6    | 2.02                     | 0.93              |
| 38:BI:100:VAL:HG11 | 38:BI:107:ARG:HG3  | 1.48                     | 0.93              |
| 44:BO:121:PRO:HG2  | 44:BO:126:ARG:HG2  | 1.48                     | 0.93              |
| 46:BQ:8:GLU:CG     | 46:BQ:22:ILE:CG1   | 2.35                     | 0.93              |
| 46:BQ:16:ASP:H     | 46:BQ:34:LEU:HD11  | 1.04                     | 0.93              |
| 49:BT:4:ILE:HG23   | 49:BT:21:VAL:HG12  | 1.50                     | 0.93              |
| 57:BZ:10:ILE:HD13  | 57:BZ:21:LEU:HB3   | 0.97                     | 0.93              |
| 57:BZ:499:PHE:CD1  | 57:BZ:541:LYS:O    | 2.20                     | 0.93              |
| 1:AA:221:A:H61     | 1:AA:265:A:H62     | 0.96                     | 0.93              |
| 1:AA:715:G:N2      | 48:BS:43:LEU:HD13  | 1.83                     | 0.93              |
| 1:AA:887:A:O2'     | 1:AA:888:C:O4'     | 1.86                     | 0.93              |
| 1:AA:972:G:OP1     | 1:AA:974(A):C:H5'  | 1.67                     | 0.93              |
| 1:AA:1005:C:O2     | 9:AK:28:THR:HB     | 1.68                     | 0.93              |
| 1:AA:1466:G:H2'    | 1:AA:1547:C:N4     | 1.83                     | 0.93              |
| 1:AA:2307:G:H3'    | 1:AA:2308:G:O4'    | 1.68                     | 0.93              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2439:A:C8    | 1:AA:2586:C:H4'    | 2.03                     | 0.93              |
| 1:AA:2445:G:H2'   | 1:AA:2446:G:H8     | 1.27                     | 0.93              |
| 1:AA:2531:A:C4    | 1:AA:2658:C:H1'    | 2.03                     | 0.93              |
| 1:AA:2764:A:OP1   | 1:AA:2764:A:H4'    | 1.68                     | 0.93              |
| 4:AD:37:LEU:HD11  | 4:AD:63:ARG:HA     | 1.50                     | 0.93              |
| 7:AG:131:TYR:CG   | 7:AG:132:ASN:N     | 2.29                     | 0.93              |
| 8:AH:164:TYR:HE2  | 8:AH:167:GLU:H     | 1.09                     | 0.93              |
| 12:AN:8:LYS:HZ2   | 12:AN:93:TYR:HD2   | 0.94                     | 0.93              |
| 13:AO:45:ARG:O    | 13:AO:49:ASP:CB    | 2.17                     | 0.93              |
| 16:AR:13:LYS:HD2  | 16:AR:13:LYS:N     | 1.80                     | 0.93              |
| 20:AV:42:VAL:N    | 20:AV:61:ILE:HB    | 1.83                     | 0.93              |
| 30:Af:19:ARG:O    | 30:Af:22:ARG:CB    | 2.16                     | 0.93              |
| 34:BA:1054:C:H2'  | 34:BA:1055:A:H5''  | 1.51                     | 0.93              |
| 34:BA:1204:A:H2   | 36:BG:195:VAL:HG21 | 1.32                     | 0.93              |
| 34:BA:1307:U:OP1  | 46:BQ:101:GLN:OE1  | 1.85                     | 0.93              |
| 40:BK:74:GLU:HG2  | 40:BK:75:VAL:H     | 1.30                     | 0.93              |
| 46:BQ:36:LYS:HG3  | 46:BQ:56:LEU:CD2   | 1.97                     | 0.93              |
| 53:BX:73:HIS:H    | 53:BX:76:ALA:CB    | 1.82                     | 0.93              |
| 57:BZ:11:ILE:HD12 | 57:BZ:11:ILE:H     | 1.32                     | 0.93              |
| 57:BZ:40:GLU:HB2  | 57:BZ:41:ARG:HB2   | 1.49                     | 0.93              |
| 57:BZ:400:TYR:HB2 | 57:BZ:442:VAL:HG12 | 1.48                     | 0.93              |
| 1:AA:301:G:H2'    | 1:AA:302:C:C6      | 2.03                     | 0.93              |
| 1:AA:447:A:H1'    | 1:AA:449:A:N6      | 1.82                     | 0.93              |
| 1:AA:715:G:H21    | 48:BS:43:LEU:HD13  | 1.30                     | 0.93              |
| 1:AA:1417:C:H42   | 1:AA:1581:G:H1     | 1.01                     | 0.93              |
| 1:AA:1689:A:N6    | 1:AA:1698:A:H2     | 1.64                     | 0.93              |
| 1:AA:2122:U:C5'   | 3:AC:166:ASP:HB2   | 1.99                     | 0.93              |
| 6:AF:131:GLY:HA2  | 6:AF:138:GLU:HB2   | 1.49                     | 0.93              |
| 12:AN:51:ARG:O    | 12:AN:55:VAL:HG23  | 1.68                     | 0.93              |
| 12:AN:81:VAL:HG12 | 12:AN:82:ARG:H     | 1.31                     | 0.93              |
| 14:AP:74:ALA:HB1  | 14:AP:108:GLY:N    | 1.81                     | 0.93              |
| 17:AS:57:VAL:HG12 | 17:AS:58:VAL:H     | 1.33                     | 0.93              |
| 20:AV:14:LEU:HB2  | 20:AV:20:TYR:CA    | 1.98                     | 0.93              |
| 20:AV:38:ILE:HA   | 20:AV:62:GLU:HG3   | 1.51                     | 0.93              |
| 25:Aa:18:CYS:N    | 25:Aa:33:VAL:HB    | 1.81                     | 0.93              |
| 27:Ac:19:ARG:NH1  | 27:Ac:43:CYS:HB2   | 1.83                     | 0.93              |
| 41:BL:7:ALA:HA    | 41:BL:10:LEU:HD12  | 1.49                     | 0.93              |
| 46:BQ:10:PRO:C    | 46:BQ:45:VAL:CG1   | 2.41                     | 0.93              |
| 52:BW:9:VAL:CG1   | 52:BW:44:MET:HG3   | 1.98                     | 0.93              |
| 56:BD:52:G:C4     | 56:BD:63:G:N2      | 2.35                     | 0.93              |
| 57:BZ:363:GLU:CG  | 57:BZ:453:SER:OG   | 2.16                     | 0.93              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1046:A:C4    | 31:AI:11:ALA:CB    | 2.50                     | 0.93              |
| 1:AA:1717:G:N2    | 1:AA:1718:G:N3     | 2.17                     | 0.93              |
| 1:AA:1910:G:N3    | 1:AA:1921:G:C4     | 2.22                     | 0.93              |
| 1:AA:2673:G:H2'   | 1:AA:2674:G:H8     | 1.34                     | 0.93              |
| 1:AA:2675:A:C2'   | 1:AA:2676:C:H5'    | 1.99                     | 0.93              |
| 1:AA:2893:G:O4'   | 1:AA:2894:G:OP2    | 1.87                     | 0.93              |
| 2:AB:101:A:H2'    | 2:AB:102:G:C8      | 2.04                     | 0.93              |
| 3:AC:75:LEU:HD11  | 3:AC:99:ILE:HG21   | 1.48                     | 0.93              |
| 9:AK:16:ILE:HB    | 9:AK:54:VAL:HG23   | 1.50                     | 0.93              |
| 16:AR:89:GLU:HB3  | 17:AS:51:VAL:C     | 1.93                     | 0.93              |
| 17:AS:5:VAL:H     | 17:AS:12:TYR:HD2   | 0.96                     | 0.93              |
| 32:AJ:78:ILE:CG2  | 32:AJ:122:ALA:O    | 2.16                     | 0.93              |
| 32:AJ:110:GLN:O   | 32:AJ:112:MET:N    | 1.99                     | 0.93              |
| 34:BA:410:G:H1'   | 34:BA:432:A:H61    | 1.33                     | 0.93              |
| 34:BA:783:C:O2'   | 34:BA:784:C:H5'    | 1.69                     | 0.93              |
| 34:BA:958:A:C1'   | 52:BW:55:LYS:NZ    | 2.29                     | 0.93              |
| 35:BF:150:SER:HA  | 35:BF:153:ARG:HB2  | 1.48                     | 0.93              |
| 40:BK:122:HIS:O   | 40:BK:125:MET:HG3  | 1.69                     | 0.93              |
| 57:BZ:205:PHE:CZ  | 57:BZ:207:MET:HB2  | 2.04                     | 0.93              |
| 1:AA:621:A:H2'    | 1:AA:622:G:H5'     | 1.49                     | 0.93              |
| 1:AA:784:A:N6     | 1:AA:792:G:N3      | 2.17                     | 0.93              |
| 1:AA:1754:C:H2'   | 1:AA:1755:A:O4'    | 1.68                     | 0.93              |
| 1:AA:1800:C:H3'   | 1:AA:1800:C:C6     | 2.04                     | 0.93              |
| 1:AA:1809:A:H5''  | 1:AA:1810:A:C2     | 2.01                     | 0.93              |
| 1:AA:2667:C:C2'   | 1:AA:2668:G:H5'    | 1.98                     | 0.93              |
| 1:AA:2792:G:H1    | 1:AA:2803:C:H42    | 1.04                     | 0.93              |
| 8:AH:24:VAL:HG22  | 8:AH:35:VAL:O      | 1.67                     | 0.93              |
| 9:AK:110:GLY:O    | 9:AK:114:ARG:HB2   | 1.67                     | 0.93              |
| 12:AN:109:VAL:CG1 | 12:AN:114:ALA:HB2  | 1.97                     | 0.93              |
| 15:AQ:30:VAL:HG23 | 15:AQ:89:VAL:O     | 1.68                     | 0.93              |
| 16:AR:49:HIS:HA   | 16:AR:52:ARG:CZ    | 1.98                     | 0.93              |
| 21:AW:151:HIS:HB2 | 21:AW:168:GLU:HG2  | 1.51                     | 0.93              |
| 25:Aa:31:ILE:HD13 | 25:Aa:31:ILE:H     | 1.29                     | 0.93              |
| 29:Ae:7:HIS:HB2   | 29:Ae:8:LYS:HZ3    | 1.33                     | 0.93              |
| 34:BA:449:C:H2'   | 34:BA:450:G:O4'    | 1.68                     | 0.93              |
| 34:BA:551:U:H5'   | 45:BP:119:LYS:HZ1  | 1.31                     | 0.93              |
| 34:BA:1316:G:C4'  | 34:BA:1360:A:C5    | 2.51                     | 0.93              |
| 40:BK:69:VAL:CG2  | 40:BK:104:LEU:HD21 | 1.98                     | 0.93              |
| 43:BN:65:LEU:HB2  | 47:BR:56:VAL:HG13  | 1.50                     | 0.93              |
| 57:BZ:156:GLU:HG3 | 57:BZ:159:ASP:HB2  | 0.95                     | 0.93              |
| 57:BZ:160:PHE:N   | 57:BZ:161:ALA:HB3  | 1.82                     | 0.93              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:BZ:382:VAL:CG2 | 57:BZ:578:VAL:CG2 | 2.46                     | 0.93              |
| 1:AA:1110:G:O3'   | 1:AA:1111:A:O4'   | 1.86                     | 0.93              |
| 1:AA:1281:G:H2'   | 1:AA:1282:U:C6    | 2.04                     | 0.93              |
| 1:AA:1448:G:H4'   | 1:AA:1543:A:C6    | 2.04                     | 0.93              |
| 1:AA:1791:A:H3'   | 1:AA:1792:G:H8    | 1.33                     | 0.93              |
| 1:AA:1959:G:H4'   | 34:BA:1418:A:H1'  | 0.93                     | 0.93              |
| 1:AA:2041:U:H2'   | 1:AA:2042:A:C8    | 2.04                     | 0.93              |
| 1:AA:2121:G:H1'   | 3:AC:167:LYS:CE   | 1.99                     | 0.93              |
| 1:AA:2346:A:H62   | 27:Ac:37:ARG:HH12 | 0.93                     | 0.93              |
| 3:AC:82:LYS:HD2   | 3:AC:116:THR:HG21 | 1.47                     | 0.93              |
| 4:AD:68:LYS:HB3   | 4:AD:70:TRP:NE1   | 1.84                     | 0.93              |
| 5:AE:37:ARG:O     | 5:AE:38:THR:HB    | 1.66                     | 0.93              |
| 6:AF:158:THR:HG21 | 6:AF:196:LEU:N    | 1.84                     | 0.93              |
| 9:AK:23:LEU:HD11  | 9:AK:63:THR:N     | 1.82                     | 0.93              |
| 15:AQ:70:VAL:HB   | 15:AQ:74:ARG:HH11 | 1.30                     | 0.93              |
| 24:AZ:6:VAL:O     | 24:AZ:35:ARG:HG2  | 1.68                     | 0.93              |
| 31:AI:54:ALA:HB1  | 31:AI:83:TYR:CA   | 1.99                     | 0.93              |
| 33:Ag:25:UNK:HA   | 33:Ag:130:UNK:CB  | 1.99                     | 0.93              |
| 34:BA:237:C:H5''  | 50:BU:25:ARG:CZ   | 1.99                     | 0.93              |
| 34:BA:273:A:C2    | 34:BA:274:A:H1'   | 2.04                     | 0.93              |
| 34:BA:994:A:N7    | 34:BA:1216:G:H4'  | 1.84                     | 0.93              |
| 34:BA:1278:U:H4'  | 34:BA:1279:A:O4'  | 1.69                     | 0.93              |
| 34:BA:1316:G:N2   | 34:BA:1319:A:N7   | 2.16                     | 0.93              |
| 34:BA:1440:C:C2   | 34:BA:1462:G:N2   | 2.37                     | 0.93              |
| 44:BO:58:PRO:O    | 44:BO:61:ALA:HB3  | 1.68                     | 0.93              |
| 45:BP:85:ILE:HD11 | 45:BP:98:TYR:CB   | 1.99                     | 0.93              |
| 46:BQ:81:LEU:HD22 | 46:BQ:82:MET:N    | 1.83                     | 0.93              |
| 57:BZ:251:VAL:O   | 57:BZ:261:GLU:HA  | 1.69                     | 0.93              |
| 1:AA:1063:G:C8    | 1:AA:1064:C:C5    | 2.57                     | 0.93              |
| 1:AA:1813:G:H4'   | 4:AD:46:GLN:HB2   | 1.50                     | 0.93              |
| 1:AA:2528:U:O2'   | 1:AA:2529:G:H3'   | 1.66                     | 0.93              |
| 1:AA:2807:G:N3    | 1:AA:2808:U:C5    | 2.35                     | 0.93              |
| 3:AC:67:GLY:N     | 3:AC:184:LYS:CE   | 2.31                     | 0.93              |
| 3:AC:122:ALA:HB1  | 3:AC:126:LYS:HD3  | 1.46                     | 0.93              |
| 10:AL:7:TYR:N     | 10:AL:7:TYR:CD1   | 2.25                     | 0.93              |
| 12:AN:27:VAL:HG22 | 12:AN:28:ALA:N    | 1.82                     | 0.93              |
| 18:AT:11:ARG:HA   | 18:AT:100:THR:HA  | 1.50                     | 0.93              |
| 22:AX:4:LYS:HZ2   | 56:BE:75:C:C3'    | 1.81                     | 0.93              |
| 29:Ae:29:LYS:HB3  | 29:Ae:34:TRP:CH2  | 2.02                     | 0.93              |
| 34:BA:376:G:H2'   | 34:BA:377:G:H8    | 1.33                     | 0.93              |
| 34:BA:633:G:H2'   | 34:BA:634:C:H6    | 1.34                     | 0.93              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:665:A:H2'    | 34:BA:725:G:H22    | 1.22                     | 0.93              |
| 34:BA:1084:G:C4    | 34:BA:1085:U:H5    | 1.87                     | 0.93              |
| 34:BA:1312:G:N1    | 34:BA:1326:C:C6    | 2.37                     | 0.93              |
| 36:BG:91:LEU:CD2   | 36:BG:98:ASN:HA    | 1.99                     | 0.93              |
| 37:BH:98:GLU:HA    | 37:BH:103:ASN:ND2  | 1.83                     | 0.93              |
| 40:BK:111:ARG:HB2  | 40:BK:119:ARG:HG2  | 1.51                     | 0.93              |
| 51:BV:72:ARG:O     | 51:BV:75:ILE:HB    | 1.68                     | 0.93              |
| 57:BZ:2:ILE:HG21   | 57:BZ:267:LEU:CD2  | 1.99                     | 0.93              |
| 57:BZ:13:HIS:HD2   | 57:BZ:108:GLN:HG2  | 1.18                     | 0.93              |
| 57:BZ:163:VAL:HG21 | 57:BZ:173:GLY:O    | 1.68                     | 0.93              |
| 57:BZ:207:MET:HB2  | 57:BZ:226:ILE:HD12 | 1.51                     | 0.93              |
| 57:BZ:253:LYS:HD2  | 57:BZ:262:ARG:NE   | 1.83                     | 0.93              |
| 57:BZ:543:LEU:CG   | 57:BZ:544:THR:HG23 | 1.99                     | 0.93              |
| 1:AA:72:U:H1'      | 23:AY:56:LEU:HD23  | 1.50                     | 0.93              |
| 1:AA:324:A:H62     | 1:AA:339:U:H1'     | 1.32                     | 0.93              |
| 1:AA:1138:G:H21    | 1:AA:1139:G:H1'    | 1.33                     | 0.93              |
| 1:AA:2571:C:H1'    | 5:AE:146:THR:HG23  | 1.51                     | 0.93              |
| 7:AG:91:ARG:HH21   | 7:AG:91:ARG:CB     | 1.82                     | 0.93              |
| 12:AN:32:TYR:HB2   | 12:AN:105:GLU:O    | 1.67                     | 0.93              |
| 25:Aa:68:ARG:HH11  | 25:Aa:68:ARG:H     | 1.08                     | 0.93              |
| 34:BA:198:G:H8     | 34:BA:198:G:OP2    | 1.52                     | 0.93              |
| 34:BA:1100:C:H2'   | 35:BF:98:LEU:CD1   | 1.98                     | 0.93              |
| 34:BA:1125:U:O5'   | 43:BN:38:ILE:HD11  | 1.69                     | 0.93              |
| 34:BA:1330:U:H5'   | 46:BQ:70:LEU:HD22  | 1.46                     | 0.93              |
| 46:BQ:27:LYS:HB2   | 54:BY:7:ARG:NH1    | 1.83                     | 0.93              |
| 49:BT:75:ARG:CG    | 49:BT:80:PHE:HB3   | 1.97                     | 0.93              |
| 56:BD:5:G:N3       | 56:BD:69:G:C8      | 2.35                     | 0.93              |
| 1:AA:280:C:OP2     | 1:AA:280:C:H6      | 1.50                     | 0.92              |
| 1:AA:371:A:N7      | 1:AA:424:G:O4'     | 2.02                     | 0.92              |
| 1:AA:954:G:H2'     | 1:AA:955:C:O4'     | 1.67                     | 0.92              |
| 1:AA:1058:G:C2     | 1:AA:1059:G:C8     | 2.57                     | 0.92              |
| 1:AA:1264:G:H3'    | 1:AA:1265:A:C5'    | 1.98                     | 0.92              |
| 1:AA:2161:C:H2'    | 1:AA:2162:G:H8     | 1.32                     | 0.92              |
| 1:AA:2533:A:C4'    | 1:AA:2664:G:O2'    | 2.16                     | 0.92              |
| 1:AA:2563:U:H4'    | 10:AL:28:SER:OG    | 1.69                     | 0.92              |
| 1:AA:2659:G:OP1    | 8:AH:158:HIS:CE1   | 2.22                     | 0.92              |
| 2:AB:100:G:H2'     | 2:AB:101:A:C8      | 2.03                     | 0.92              |
| 3:AC:117:PRO:HD3   | 3:AC:146:GLY:C     | 1.93                     | 0.92              |
| 4:AD:109:ASP:O     | 4:AD:111:LEU:HD22  | 1.68                     | 0.92              |
| 4:AD:111:LEU:HB3   | 4:AD:115:GLN:NE2   | 1.84                     | 0.92              |
| 7:AG:16:ARG:HG3    | 7:AG:16:ARG:HH21   | 1.32                     | 0.92              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 13:AO:33:ARG:HB2  | 13:AO:113:LEU:HD11 | 1.51                     | 0.92              |
| 13:AO:99:LYS:HD2  | 13:AO:99:LYS:N     | 1.83                     | 0.92              |
| 15:AQ:70:VAL:CG2  | 15:AQ:74:ARG:HD3   | 1.98                     | 0.92              |
| 19:AU:48:LYS:O    | 19:AU:88:LYS:HG3   | 1.69                     | 0.92              |
| 20:AV:1:MET:N     | 20:AV:33:LYS:HE3   | 1.84                     | 0.92              |
| 24:AZ:26:LEU:HG   | 24:AZ:47:VAL:HG22  | 1.50                     | 0.92              |
| 27:Ac:19:ARG:HH12 | 27:Ac:43:CYS:HB2   | 1.29                     | 0.92              |
| 27:Ac:37:ARG:O    | 27:Ac:38:LYS:HB2   | 1.65                     | 0.92              |
| 31:AI:51:LEU:O    | 31:AI:53:VAL:N     | 2.02                     | 0.92              |
| 31:AI:53:VAL:HA   | 31:AI:85:ASP:CA    | 1.99                     | 0.92              |
| 32:AJ:27:LEU:HD11 | 32:AJ:57:ILE:HB    | 1.51                     | 0.92              |
| 34:BA:20:U:H5'    | 34:BA:572:A:N6     | 1.84                     | 0.92              |
| 34:BA:939:G:C5'   | 40:BK:102:ARG:HH22 | 1.80                     | 0.92              |
| 34:BA:1229:A:H2'  | 34:BA:1230:C:C6    | 2.04                     | 0.92              |
| 46:BQ:14:ARG:HD3  | 46:BQ:41:PRO:HB3   | 1.48                     | 0.92              |
| 46:BQ:15:VAL:HG11 | 46:BQ:39:ILE:HD11  | 1.50                     | 0.92              |
| 56:BD:7:A:H2      | 56:BD:67:C:N3      | 1.66                     | 0.92              |
| 57:BZ:13:HIS:CG   | 57:BZ:108:GLN:HG3  | 2.02                     | 0.92              |
| 57:BZ:230:LYS:O   | 57:BZ:265:THR:O    | 1.86                     | 0.92              |
| 57:BZ:411:HIS:CD2 | 57:BZ:459:THR:HA   | 2.03                     | 0.92              |
| 57:BZ:560:PRO:CB  | 57:BZ:562:ARG:HB2  | 1.99                     | 0.92              |
| 57:BZ:575:ASP:O   | 57:BZ:590:ARG:N    | 2.00                     | 0.92              |
| 1:AA:530:G:N1     | 1:AA:2022:U:OP1    | 2.03                     | 0.92              |
| 1:AA:1055:G:N3    | 1:AA:1084:A:C2     | 2.36                     | 0.92              |
| 1:AA:1656:C:H2'   | 1:AA:1657:C:C5     | 2.03                     | 0.92              |
| 1:AA:2211:G:H3'   | 1:AA:2211:G:N3     | 1.83                     | 0.92              |
| 1:AA:2433:A:N6    | 25:Aa:32:TYR:HE2   | 1.68                     | 0.92              |
| 9:AK:58:ASP:O     | 9:AK:60:ILE:N      | 2.02                     | 0.92              |
| 9:AK:68:GLU:H     | 9:AK:70:LYS:HZ1    | 1.02                     | 0.92              |
| 19:AU:44:GLU:HG3  | 19:AU:51:VAL:CG2   | 1.98                     | 0.92              |
| 29:Ae:30:ARG:CZ   | 29:Ae:44:LYS:HB2   | 1.99                     | 0.92              |
| 31:AI:97:ALA:N    | 31:AI:132:ASP:O    | 2.02                     | 0.92              |
| 34:BA:266:G:H8    | 50:BU:67:LYS:HZ3   | 0.92                     | 0.92              |
| 34:BA:858:G:H22   | 34:BA:869:G:H3'    | 1.33                     | 0.92              |
| 34:BA:1263:C:H2'  | 34:BA:1264:C:H6    | 1.35                     | 0.92              |
| 34:BA:1486:G:C2'  | 34:BA:1487:G:H5''  | 1.98                     | 0.92              |
| 35:BF:102:LEU:HB2 | 35:BF:176:GLU:OE1  | 1.69                     | 0.92              |
| 37:BH:170:VAL:H   | 37:BH:176:LEU:HD22 | 1.34                     | 0.92              |
| 39:BJ:10:LEU:H    | 39:BJ:10:LEU:HD23  | 1.33                     | 0.92              |
| 39:BJ:14:LEU:HD11 | 39:BJ:19:LEU:N     | 1.84                     | 0.92              |
| 41:BL:24:THR:HG22 | 41:BL:61:VAL:O     | 1.68                     | 0.92              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:BZ:73:VAL:HG22  | 57:BZ:88:VAL:HG13  | 1.51                     | 0.92              |
| 57:BZ:206:GLN:CB   | 57:BZ:227:LYS:HB2  | 1.99                     | 0.92              |
| 57:BZ:250:LYS:HD2  | 57:BZ:275:ALA:HB2  | 1.48                     | 0.92              |
| 1:AA:1222:C:H42    | 1:AA:1227:A:H62    | 1.17                     | 0.92              |
| 1:AA:2027:G:H1'    | 1:AA:2037:G:N2     | 1.83                     | 0.92              |
| 1:AA:2252:G:C6     | 59:AA:3003:8AN:N1  | 2.27                     | 0.92              |
| 1:AA:2405:G:H2'    | 1:AA:2411:A:N6     | 1.84                     | 0.92              |
| 1:AA:2433:A:H62    | 25:Aa:32:TYR:HE2   | 0.95                     | 0.92              |
| 1:AA:2447:G:N7     | 1:AA:2500:U:C3'    | 2.25                     | 0.92              |
| 1:AA:2555:U:O4     | 57:BZ:547:ARG:CZ   | 2.17                     | 0.92              |
| 1:AA:2620:C:H4'    | 5:AE:156:MET:CB    | 2.00                     | 0.92              |
| 1:AA:2627:G:H2'    | 1:AA:2628:C:H5'    | 1.48                     | 0.92              |
| 2:AB:62:C:H2'      | 2:AB:63:G:H8       | 1.34                     | 0.92              |
| 2:AB:75:G:N3       | 21:AW:27:VAL:HG21  | 1.84                     | 0.92              |
| 4:AD:5:LYS:HB3     | 4:AD:82:ILE:HB     | 1.52                     | 0.92              |
| 6:AF:9:ILE:HG12    | 6:AF:124:LEU:HB2   | 1.52                     | 0.92              |
| 9:AK:45:ASN:O      | 9:AK:46:VAL:HG23   | 1.66                     | 0.92              |
| 9:AK:89:LYS:HE2    | 9:AK:89:LYS:N      | 1.85                     | 0.92              |
| 10:AL:10:VAL:HG13  | 10:AL:11:ALA:N     | 1.81                     | 0.92              |
| 17:AS:18:LEU:HD12  | 17:AS:66:ARG:HH12  | 1.33                     | 0.92              |
| 30:Af:7:VAL:HG11   | 30:Af:36:GLN:HE22  | 1.33                     | 0.92              |
| 33:Ag:323:UNK:O    | 33:Ag:325:UNK:N    | 2.01                     | 0.92              |
| 34:BA:761:G:H5'    | 50:BU:102:GLY:CA   | 1.99                     | 0.92              |
| 34:BA:1112:C:H1'   | 36:BG:179:ARG:CZ   | 1.99                     | 0.92              |
| 34:BA:1191:A:OP1   | 36:BG:4:LYS:HG2    | 1.69                     | 0.92              |
| 34:BA:1261:A:N6    | 34:BA:1274:G:H1'   | 1.83                     | 0.92              |
| 34:BA:1484:C:H2'   | 34:BA:1485:U:C5'   | 1.99                     | 0.92              |
| 34:BA:1486:G:O6    | 34:BA:1487:G:N7    | 1.95                     | 0.92              |
| 56:BD:7:A:C2       | 56:BD:67:C:C4      | 2.57                     | 0.92              |
| 57:BZ:67:ASP:HB3   | 57:BZ:191:VAL:HG13 | 0.93                     | 0.92              |
| 57:BZ:300:LEU:HD12 | 57:BZ:300:LEU:H    | 1.35                     | 0.92              |
| 1:AA:3:U:O2        | 1:AA:2900:A:H2     | 1.50                     | 0.92              |
| 1:AA:826:U:H5''    | 1:AA:2428:G:O3'    | 1.69                     | 0.92              |
| 1:AA:899:A:C2      | 1:AA:900:A:N1      | 2.36                     | 0.92              |
| 1:AA:1359:A:H62    | 1:AA:1371:G:H21    | 1.02                     | 0.92              |
| 1:AA:2659:G:H5''   | 1:AA:2660:A:OP2    | 1.67                     | 0.92              |
| 2:AB:29:A:H2'      | 2:AB:30:C:C6       | 2.04                     | 0.92              |
| 4:AD:13:ARG:NH1    | 4:AD:19:ALA:HB1    | 1.83                     | 0.92              |
| 4:AD:61:LEU:CB     | 4:AD:86:PRO:HG2    | 2.00                     | 0.92              |
| 7:AG:61:ALA:CB     | 7:AG:67:LYS:HE2    | 1.98                     | 0.92              |
| 20:AV:14:LEU:HD13  | 20:AV:20:TYR:C     | 1.95                     | 0.92              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 20:AV:47:LYS:HB2  | 20:AV:49:VAL:HG22  | 1.51                     | 0.92              |
| 28:Ad:5:TRP:CH2   | 28:Ad:7:PRO:HB3    | 2.04                     | 0.92              |
| 33:Ag:7:UNK:O     | 33:Ag:147:UNK:C    | 2.17                     | 0.92              |
| 34:BA:191:G:C4    | 53:BX:105:SER:HB3  | 2.04                     | 0.92              |
| 34:BA:817:C:O2'   | 34:BA:818:G:H5''   | 1.69                     | 0.92              |
| 34:BA:1062:U:H2'  | 34:BA:1063:C:C6    | 2.05                     | 0.92              |
| 34:BA:1320:C:O3'  | 52:BW:73:GLU:HB3   | 1.67                     | 0.92              |
| 35:BF:14:GLY:HA3  | 35:BF:209:ARG:HH21 | 1.33                     | 0.92              |
| 36:BG:33:LEU:CD1  | 47:BR:54:PRO:HD2   | 1.99                     | 0.92              |
| 36:BG:60:ALA:HB2  | 43:BN:92:THR:OG1   | 1.70                     | 0.92              |
| 41:BL:120:THR:O   | 41:BL:123:GLU:HB3  | 1.69                     | 0.92              |
| 45:BP:80:HIS:O    | 57:BZ:327:THR:HB   | 1.04                     | 0.92              |
| 49:BT:19:ILE:HB   | 49:BT:37:GLY:O     | 1.69                     | 0.92              |
| 50:BU:7:THR:CG2   | 50:BU:56:VAL:HG12  | 1.98                     | 0.92              |
| 57:BZ:303:ASP:HB2 | 57:BZ:343:VAL:O    | 1.67                     | 0.92              |
| 57:BZ:402:ASN:CB  | 57:BZ:441:TYR:C    | 2.42                     | 0.92              |
| 57:BZ:403:VAL:O   | 57:BZ:465:LEU:HB2  | 1.68                     | 0.92              |
| 1:AA:5:A:C5       | 1:AA:2899:G:N1     | 2.37                     | 0.92              |
| 1:AA:472:A:H2'    | 1:AA:473:G:C5'     | 1.99                     | 0.92              |
| 1:AA:789:A:OP1    | 1:AA:789:A:H3'     | 1.69                     | 0.92              |
| 1:AA:807:U:O2'    | 1:AA:808:G:H5'     | 1.67                     | 0.92              |
| 1:AA:1060:U:OP1   | 32:AJ:52:ILE:HG21  | 1.55                     | 0.92              |
| 1:AA:1071:G:C6    | 1:AA:1089:G:N2     | 2.14                     | 0.92              |
| 1:AA:1154:G:OP1   | 16:AR:62:ILE:HD11  | 1.70                     | 0.92              |
| 1:AA:1790:C:H4'   | 4:AD:213:ARG:NH1   | 1.84                     | 0.92              |
| 1:AA:1906:G:H8    | 1:AA:1929:G:C8     | 1.80                     | 0.92              |
| 1:AA:2083:G:H2'   | 1:AA:2084:C:H6     | 1.35                     | 0.92              |
| 1:AA:2175:C:N1    | 3:AC:219:GLY:C     | 2.17                     | 0.92              |
| 1:AA:2213:U:H5'   | 1:AA:2215:G:C5     | 2.04                     | 0.92              |
| 1:AA:2636:U:C4'   | 5:AE:79:ARG:HD3    | 1.99                     | 0.92              |
| 3:AC:71:GLN:HG2   | 3:AC:174:PRO:CG    | 1.99                     | 0.92              |
| 4:AD:8:PRO:HD2    | 4:AD:26:LYS:O      | 1.69                     | 0.92              |
| 6:AF:131:GLY:HA2  | 6:AF:138:GLU:CG    | 1.99                     | 0.92              |
| 10:AL:89:ASN:ND2  | 10:AL:91:LEU:HB2   | 1.85                     | 0.92              |
| 12:AN:67:ARG:HB2  | 12:AN:103:MET:SD   | 2.09                     | 0.92              |
| 12:AN:75:THR:HG22 | 12:AN:77:LYS:H     | 1.33                     | 0.92              |
| 15:AQ:51:ARG:C    | 15:AQ:66:VAL:HG12  | 1.95                     | 0.92              |
| 25:Aa:66:SER:O    | 25:Aa:69:LYS:HB2   | 1.70                     | 0.92              |
| 34:BA:275:G:O3'   | 50:BU:14:LYS:HD3   | 1.69                     | 0.92              |
| 34:BA:538:G:O3'   | 45:BP:114:LYS:HD3  | 1.68                     | 0.92              |
| 34:BA:1117:G:N2   | 34:BA:1184:G:H1'   | 1.83                     | 0.92              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 39:BJ:6:VAL:CG2    | 39:BJ:8:ILE:HD11   | 1.99                     | 0.92              |
| 41:BL:33:GLU:HG2   | 41:BL:59:LEU:HD11  | 1.49                     | 0.92              |
| 53:BX:13:LEU:HD12  | 53:BX:13:LEU:N     | 1.84                     | 0.92              |
| 1:AA:2:G:C4        | 1:AA:2902:C:N3     | 2.36                     | 0.92              |
| 1:AA:152:G:H22     | 1:AA:175:G:H1'     | 1.33                     | 0.92              |
| 1:AA:411:G:H21     | 1:AA:2408:U:H3     | 1.12                     | 0.92              |
| 1:AA:901:A:C5      | 1:AA:902:C:C5      | 2.58                     | 0.92              |
| 1:AA:1177:A:H2'    | 1:AA:1178:C:C6     | 2.03                     | 0.92              |
| 1:AA:1448:G:O3'    | 1:AA:1543:A:N1     | 2.02                     | 0.92              |
| 1:AA:1638:C:OP1    | 1:AA:2710:C:O2'    | 1.87                     | 0.92              |
| 1:AA:2459:A:C2'    | 1:AA:2460:U:O4'    | 2.18                     | 0.92              |
| 1:AA:2543:G:C2     | 1:AA:2765:A:C2     | 2.57                     | 0.92              |
| 3:AC:6:ARG:HD2     | 3:AC:6:ARG:C       | 1.95                     | 0.92              |
| 4:AD:57:GLY:H      | 4:AD:217:ARG:HD2   | 1.33                     | 0.92              |
| 9:AK:102:ALA:O     | 9:AK:105:GLY:HA3   | 1.68                     | 0.92              |
| 14:AP:78:LEU:HD13  | 14:AP:79:ALA:N     | 1.84                     | 0.92              |
| 16:AR:46:ALA:O     | 16:AR:50:ARG:HD3   | 1.70                     | 0.92              |
| 16:AR:112:ARG:HH12 | 17:AS:50:PRO:CG    | 1.83                     | 0.92              |
| 29:Ae:39:LYS:HB3   | 29:Ae:39:LYS:HZ3   | 1.34                     | 0.92              |
| 34:BA:781:A:C2'    | 34:BA:782:A:H5'    | 1.98                     | 0.92              |
| 37:BH:121:VAL:HA   | 37:BH:126:ILE:HD11 | 1.52                     | 0.92              |
| 46:BQ:65:LYS:CB    | 46:BQ:69:GLU:HB3   | 1.98                     | 0.92              |
| 46:BQ:81:LEU:HB2   | 46:BQ:86:CYS:SG    | 2.09                     | 0.92              |
| 50:BU:92:ARG:O     | 50:BU:95:TYR:HB2   | 1.69                     | 0.92              |
| 56:BD:67:C:C6      | 56:BD:68:C:C5      | 2.56                     | 0.92              |
| 57:BZ:240:ILE:HG13 | 57:BZ:286:ASP:CB   | 1.89                     | 0.92              |
| 1:AA:1264:G:H5''   | 1:AA:1265:A:H5''   | 1.50                     | 0.92              |
| 1:AA:1856:G:H2'    | 1:AA:1857:G:H5'    | 1.50                     | 0.92              |
| 1:AA:2051:A:C4'    | 5:AE:141:ILE:HD11  | 2.00                     | 0.92              |
| 1:AA:2051:A:H4'    | 5:AE:141:ILE:HD11  | 1.50                     | 0.92              |
| 1:AA:2076:U:H4'    | 1:AA:2077:A:OP1    | 1.70                     | 0.92              |
| 1:AA:2132:U:H3'    | 1:AA:2133:G:H5'    | 1.48                     | 0.92              |
| 5:AE:104:VAL:CG2   | 5:AE:198:VAL:HG13  | 1.98                     | 0.92              |
| 10:AL:122:LEU:H    | 15:AQ:70:VAL:CG1   | 1.81                     | 0.92              |
| 12:AN:6:ARG:HB2    | 12:AN:44:ALA:CB    | 2.00                     | 0.92              |
| 14:AP:69:VAL:O     | 14:AP:73:LEU:HD13  | 1.69                     | 0.92              |
| 16:AR:74:LEU:HD22  | 16:AR:78:THR:HG21  | 1.52                     | 0.92              |
| 18:AT:11:ARG:HH21  | 18:AT:11:ARG:H     | 1.10                     | 0.92              |
| 32:AJ:33:ASN:HB3   | 32:AJ:63:ARG:CB    | 1.95                     | 0.92              |
| 34:BA:475:G:H2'    | 34:BA:476:G:H8     | 1.26                     | 0.92              |
| 34:BA:1104:G:H4'   | 35:BF:111:ARG:HE   | 1.35                     | 0.92              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1109:C:H2'  | 34:BA:1110:A:H8    | 1.34                     | 0.92              |
| 34:BA:1320:C:C6   | 52:BW:36:ARG:CG    | 2.51                     | 0.92              |
| 41:BL:25:ASP:HB3  | 41:BL:58:TYR:HB3   | 1.51                     | 0.92              |
| 42:BM:16:ARG:HG2  | 42:BM:18:PHE:CE1   | 2.05                     | 0.92              |
| 56:BE:21:A:N7     | 56:BE:46:G:C5      | 2.38                     | 0.92              |
| 57:BZ:547:ARG:HD3 | 57:BZ:548:ALA:HB1  | 1.49                     | 0.92              |
| 1:AA:2:G:N9       | 1:AA:2902:C:C2     | 2.38                     | 0.92              |
| 1:AA:614:U:H3'    | 1:AA:615:G:H4'     | 1.48                     | 0.92              |
| 1:AA:1005:C:H5    | 1:AA:1143:A:OP1    | 1.51                     | 0.92              |
| 1:AA:1160:G:C6    | 1:AA:1161:C:N4     | 2.37                     | 0.92              |
| 1:AA:1270:C:H4'   | 1:AA:1271:G:H5'    | 1.50                     | 0.92              |
| 1:AA:1690:A:C2    | 1:AA:1691:C:H1'    | 2.04                     | 0.92              |
| 1:AA:1812:A:H2'   | 1:AA:1813:G:O4'    | 1.70                     | 0.92              |
| 1:AA:2266:A:H5'   | 1:AA:2267:A:N3     | 1.85                     | 0.92              |
| 1:AA:2589:A:O2'   | 1:AA:2590:A:H5'    | 1.68                     | 0.92              |
| 4:AD:181:GLU:HA   | 4:AD:270:ILE:HD12  | 1.52                     | 0.92              |
| 15:AQ:24:PRO:HG2  | 15:AQ:25:GLY:H     | 1.33                     | 0.92              |
| 23:AY:44:LYS:HG3  | 23:AY:48:LEU:HD22  | 1.52                     | 0.92              |
| 24:AZ:3:ARG:HH22  | 24:AZ:59:VAL:HG11  | 1.35                     | 0.92              |
| 31:AI:94:VAL:HA   | 31:AI:134:LEU:H    | 1.30                     | 0.92              |
| 34:BA:1111:A:H2'  | 34:BA:1112:C:C6    | 2.05                     | 0.92              |
| 34:BA:1308:U:H5'' | 46:BQ:110:ARG:NH1  | 1.76                     | 0.92              |
| 41:BL:85:ARG:HG2  | 41:BL:85:ARG:HH11  | 1.35                     | 0.92              |
| 42:BM:74:ILE:HA   | 42:BM:77:ILE:HD12  | 1.51                     | 0.92              |
| 44:BO:58:PRO:HB3  | 44:BO:90:GLY:HA3   | 1.50                     | 0.92              |
| 50:BU:5:VAL:HG22  | 50:BU:60:ILE:CA    | 2.00                     | 0.92              |
| 57:BZ:287:THR:O   | 57:BZ:297:LEU:CD2  | 2.16                     | 0.92              |
| 57:BZ:305:PRO:HB3 | 57:BZ:361:ARG:CG   | 1.99                     | 0.92              |
| 57:BZ:512:LEU:CD2 | 57:BZ:518:VAL:HG11 | 2.00                     | 0.92              |
| 1:AA:885:C:H3'    | 1:AA:886:C:C5'     | 1.99                     | 0.92              |
| 1:AA:1453:A:H61   | 13:AO:63:ARG:HH21  | 0.98                     | 0.92              |
| 1:AA:1774:C:C5    | 1:AA:1775:U:C5     | 2.57                     | 0.92              |
| 1:AA:1906:G:C4    | 1:AA:1929:G:O6     | 2.21                     | 0.92              |
| 1:AA:2075:U:H2'   | 1:AA:2076:U:C5'    | 2.00                     | 0.92              |
| 1:AA:2469:A:H8    | 1:AA:2469:A:H5'    | 1.34                     | 0.92              |
| 1:AA:2507:C:O2    | 59:AA:3002:8AN:N3  | 2.02                     | 0.92              |
| 1:AA:2602:A:N1    | 56:BD:74:C:C2'     | 2.32                     | 0.92              |
| 3:AC:43:VAL:CG1   | 3:AC:213:TYR:C     | 2.42                     | 0.92              |
| 3:AC:67:GLY:HA3   | 3:AC:184:LYS:HZ3   | 0.75                     | 0.92              |
| 9:AK:107:LEU:HD21 | 9:AK:113:GLY:HA3   | 1.51                     | 0.92              |
| 16:AR:111:GLU:HA  | 16:AR:114:LYS:NZ   | 1.85                     | 0.92              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 19:AU:27:THR:HB    | 19:AU:80:ILE:HD12  | 1.48                     | 0.92              |
| 21:AW:4:ARG:HE     | 21:AW:44:PHE:HZ    | 0.94                     | 0.92              |
| 21:AW:176:PRO:HB2  | 21:AW:179:ASP:CA   | 1.99                     | 0.92              |
| 24:AZ:54:VAL:HG22  | 24:AZ:55:ARG:N     | 1.81                     | 0.92              |
| 30:Af:10:ILE:HD13  | 30:Af:32:HIS:HD2   | 1.32                     | 0.92              |
| 34:BA:96:G:H2'     | 34:BA:97:U:C6      | 2.05                     | 0.92              |
| 35:BF:115:LEU:HD12 | 35:BF:118:LEU:HD13 | 1.50                     | 0.92              |
| 40:BK:50:ILE:O     | 40:BK:54:THR:HG23  | 1.70                     | 0.92              |
| 46:BQ:71:ARG:O     | 46:BQ:75:ALA:N     | 2.03                     | 0.92              |
| 57:BZ:8:ILE:HG23   | 57:BZ:72:ILE:HD13  | 1.52                     | 0.92              |
| 57:BZ:26:LEU:C     | 57:BZ:28:GLN:HB3   | 1.93                     | 0.92              |
| 57:BZ:379:GLU:CG   | 57:BZ:581:THR:CB   | 2.40                     | 0.92              |
| 57:BZ:512:LEU:HD21 | 57:BZ:524:ILE:CG2  | 1.99                     | 0.92              |
| 1:AA:6:A:N6        | 1:AA:2897:U:O4     | 2.02                     | 0.92              |
| 1:AA:34:C:H2'      | 1:AA:455:C:N4      | 1.84                     | 0.92              |
| 1:AA:1309:G:C2'    | 1:AA:1310:G:H5'    | 1.99                     | 0.92              |
| 1:AA:1697:G:H3'    | 1:AA:1698:A:H5'    | 1.52                     | 0.92              |
| 1:AA:2261:C:P      | 22:AX:17:GLN:HB2   | 2.09                     | 0.92              |
| 4:AD:258:LYS:HA    | 4:AD:261:LYS:NZ    | 1.85                     | 0.92              |
| 6:AF:103:LYS:HB3   | 6:AF:107:LYS:HE3   | 1.52                     | 0.92              |
| 6:AF:176:LEU:HG    | 6:AF:178:PRO:HD2   | 1.49                     | 0.92              |
| 8:AH:94:TYR:HA     | 8:AH:106:THR:O     | 1.70                     | 0.92              |
| 9:AK:7:LYS:HE3     | 9:AK:8:GLN:N       | 1.83                     | 0.92              |
| 13:AO:86:ARG:HB3   | 13:AO:86:ARG:NH1   | 1.85                     | 0.92              |
| 16:AR:93:LYS:H     | 17:AS:10:LYS:HZ2   | 0.96                     | 0.92              |
| 17:AS:11:GLN:NE2   | 17:AS:24:LYS:HZ3   | 1.67                     | 0.92              |
| 21:AW:53:ILE:HG12  | 21:AW:58:VAL:HG21  | 1.51                     | 0.92              |
| 34:BA:384:G:H2'    | 34:BA:385:C:H6     | 1.34                     | 0.92              |
| 34:BA:828:A:N1     | 34:BA:859:A:O4'    | 2.02                     | 0.92              |
| 35:BF:56:ARG:HB3   | 35:BF:56:ARG:HH11  | 1.33                     | 0.92              |
| 35:BF:77:ALA:HA    | 35:BF:208:ILE:HD11 | 1.50                     | 0.92              |
| 36:BG:38:ARG:HH11  | 36:BG:38:ARG:CB    | 1.82                     | 0.92              |
| 37:BH:20:TYR:HD1   | 37:BH:21:LEU:H     | 1.08                     | 0.92              |
| 38:BI:70:PRO:HB2   | 38:BI:143:ARG:HA   | 1.52                     | 0.92              |
| 44:BO:65:ALA:HB1   | 44:BO:98:LEU:HD23  | 1.48                     | 0.92              |
| 52:BW:3:ARG:NH2    | 52:BW:64:GLU:O     | 1.79                     | 0.92              |
| 52:BW:32:LYS:HA    | 52:BW:50:ALA:CB    | 2.00                     | 0.92              |
| 56:BE:18:G:O2'     | 56:BE:19:G:OP2     | 1.88                     | 0.92              |
| 57:BZ:27:GLN:OE1   | 57:BZ:183:MET:CB   | 2.18                     | 0.92              |
| 57:BZ:69:ARG:NH1   | 57:BZ:253:LYS:NZ   | 2.09                     | 0.92              |
| 57:BZ:487:VAL:HG21 | 57:BZ:576:GLU:OE2  | 1.70                     | 0.92              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:BZ:514:HIS:CG   | 57:BZ:515:GLY:HA2  | 2.05                     | 0.92              |
| 1:AA:49:A:H5'      | 1:AA:50:U:OP1      | 1.71                     | 0.91              |
| 1:AA:459:U:H3'     | 28:Ad:40:TRP:CH2   | 2.05                     | 0.91              |
| 1:AA:997:G:H5''    | 16:AR:92:ARG:NH1   | 1.83                     | 0.91              |
| 1:AA:1186:G:C8     | 1:AA:1187:G:C8     | 2.58                     | 0.91              |
| 1:AA:2152:G:C5'    | 3:AC:2:LYS:CB      | 2.43                     | 0.91              |
| 1:AA:2209:C:H4'    | 4:AD:150:LYS:HB3   | 1.51                     | 0.91              |
| 1:AA:2670:A:C2     | 1:AA:2671:A:C8     | 2.57                     | 0.91              |
| 3:AC:75:LEU:HD23   | 3:AC:77:ILE:HD11   | 1.49                     | 0.91              |
| 5:AE:33:VAL:HG22   | 5:AE:47:VAL:O      | 1.70                     | 0.91              |
| 12:AN:67:ARG:NH1   | 12:AN:103:MET:HB3  | 1.84                     | 0.91              |
| 17:AS:43:GLU:O     | 17:AS:44:LYS:HD3   | 1.68                     | 0.91              |
| 20:AV:12:THR:HG21  | 20:AV:71:LYS:C     | 1.95                     | 0.91              |
| 21:AW:96:VAL:HA    | 21:AW:128:VAL:HG13 | 1.52                     | 0.91              |
| 21:AW:110:GLY:O    | 21:AW:113:ALA:HB3  | 1.70                     | 0.91              |
| 32:AJ:122:ALA:HA   | 32:AJ:126:MET:HB2  | 1.50                     | 0.91              |
| 33:Ag:291:UNK:N    | 33:Ag:342:UNK:C    | 2.32                     | 0.91              |
| 34:BA:620:C:C2     | 37:BH:135:LEU:HD13 | 2.04                     | 0.91              |
| 34:BA:979:C:N4     | 47:BR:18:VAL:HB    | 1.85                     | 0.91              |
| 34:BA:1180:A:C2'   | 34:BA:1181:G:H5'   | 2.00                     | 0.91              |
| 37:BH:60:GLU:CD    | 37:BH:202:LEU:HD12 | 1.95                     | 0.91              |
| 39:BJ:3:ARG:HA     | 39:BJ:67:MET:CE    | 1.98                     | 0.91              |
| 39:BJ:8:ILE:CG2    | 39:BJ:88:VAL:HA    | 2.00                     | 0.91              |
| 45:BP:58:VAL:O     | 45:BP:65:GLU:HA    | 1.70                     | 0.91              |
| 50:BU:10:VAL:HG23  | 50:BU:55:ASP:O     | 1.69                     | 0.91              |
| 57:BZ:207:MET:HE3  | 57:BZ:224:GLY:CA   | 1.99                     | 0.91              |
| 57:BZ:382:VAL:HG23 | 57:BZ:578:VAL:HG21 | 1.52                     | 0.91              |
| 57:BZ:488:LEU:HD21 | 57:BZ:526:ILE:C    | 1.94                     | 0.91              |
| 1:AA:1773:A:C6     | 1:AA:1829:A:H1'    | 2.05                     | 0.91              |
| 1:AA:1774:C:C5     | 1:AA:1775:U:H5     | 1.89                     | 0.91              |
| 1:AA:2125:G:H5'    | 3:AC:40:THR:CG2    | 1.99                     | 0.91              |
| 1:AA:2329:G:H1     | 1:AA:2386:C:N4     | 1.67                     | 0.91              |
| 4:AD:117:VAL:HG22  | 4:AD:126:GLN:NE2   | 1.85                     | 0.91              |
| 4:AD:202:LYS:HD2   | 4:AD:202:LYS:N     | 1.83                     | 0.91              |
| 5:AE:36:ARG:HD2    | 5:AE:41:LYS:NZ     | 1.86                     | 0.91              |
| 6:AF:89:VAL:CG1    | 6:AF:90:PHE:H      | 1.84                     | 0.91              |
| 7:AG:57:ALA:C      | 7:AG:67:LYS:HB2    | 1.94                     | 0.91              |
| 8:AH:38:SER:H      | 8:AH:41:MET:CE     | 1.83                     | 0.91              |
| 8:AH:153:LYS:N     | 8:AH:154:PRO:HD2   | 1.82                     | 0.91              |
| 11:AM:91:PHE:H     | 11:AM:125:VAL:HG11 | 1.35                     | 0.91              |
| 15:AQ:111:ARG:O    | 15:AQ:114:LEU:HB2  | 1.70                     | 0.91              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 16:AR:55:ARG:HB3   | 16:AR:58:ARG:HE   | 1.35                     | 0.91              |
| 16:AR:83:LEU:HD12  | 16:AR:83:LEU:H    | 1.34                     | 0.91              |
| 17:AS:34:GLU:HA    | 17:AS:62:LEU:O    | 1.69                     | 0.91              |
| 23:AY:20:VAL:HA    | 23:AY:55:LEU:HD23 | 1.52                     | 0.91              |
| 25:Aa:56:VAL:HG12  | 25:Aa:57:GLU:H    | 1.32                     | 0.91              |
| 34:BA:356:A:O3'    | 34:BA:367:U:H2'   | 1.70                     | 0.91              |
| 34:BA:628:G:H2'    | 34:BA:629:G:C8    | 2.05                     | 0.91              |
| 34:BA:736:C:H5''   | 51:BV:72:ARG:NH2  | 1.82                     | 0.91              |
| 34:BA:776:G:H5''   | 34:BA:777:A:OP1   | 1.70                     | 0.91              |
| 34:BA:1310:G:O6    | 34:BA:1327:C:N4   | 2.02                     | 0.91              |
| 57:BZ:172:ALA:HB1  | 57:BZ:175:ASP:HA  | 1.51                     | 0.91              |
| 1:AA:569:U:H5'     | 1:AA:946:G:H1'    | 1.51                     | 0.91              |
| 1:AA:716:A:N3      | 48:BS:44:LYS:CE   | 2.33                     | 0.91              |
| 1:AA:920:G:O2'     | 1:AA:921:G:H5'    | 1.70                     | 0.91              |
| 3:AC:51:PRO:HB3    | 3:AC:165:ASN:HD21 | 1.35                     | 0.91              |
| 3:AC:62:VAL:CB     | 3:AC:192:PHE:N    | 2.32                     | 0.91              |
| 7:AG:94:LEU:HB2    | 7:AG:99:MET:HE3   | 1.52                     | 0.91              |
| 11:AM:46:LYS:HE3   | 11:AM:46:LYS:N    | 1.83                     | 0.91              |
| 12:AN:34:LEU:HD11  | 12:AN:105:GLU:HB2 | 1.51                     | 0.91              |
| 13:AO:79:LEU:HD23  | 13:AO:80:PHE:CA   | 1.99                     | 0.91              |
| 24:AZ:41:PRO:HA    | 24:AZ:44:ARG:HH11 | 1.35                     | 0.91              |
| 25:Aa:13:ARG:O     | 25:Aa:14:ILE:HG12 | 1.70                     | 0.91              |
| 25:Aa:52:THR:HG22  | 25:Aa:53:GLU:N    | 1.84                     | 0.91              |
| 34:BA:509:A:H2'    | 34:BA:510:A:C8    | 2.05                     | 0.91              |
| 34:BA:975:A:O2'    | 34:BA:1358:U:H1'  | 1.71                     | 0.91              |
| 34:BA:1307:U:OP1   | 46:BQ:101:GLN:CD  | 2.13                     | 0.91              |
| 34:BA:1308:U:H3    | 34:BA:1309:G:H8   | 1.11                     | 0.91              |
| 34:BA:1414:U:O2    | 34:BA:1487:G:N3   | 2.03                     | 0.91              |
| 34:BA:1441:G:H21   | 34:BA:1460:A:H62  | 0.93                     | 0.91              |
| 34:BA:1441:G:H21   | 34:BA:1460:A:N6   | 1.68                     | 0.91              |
| 36:BG:85:ARG:HH21  | 36:BG:89:GLU:HB2  | 1.33                     | 0.91              |
| 43:BN:24:VAL:HG22  | 43:BN:72:VAL:HG13 | 1.53                     | 0.91              |
| 43:BN:30:SER:CB    | 43:BN:81:THR:HA   | 1.99                     | 0.91              |
| 44:BO:84:VAL:HG21  | 51:BV:88:LYS:HD3  | 1.51                     | 0.91              |
| 52:BW:62:ILE:HD11  | 52:BW:67:VAL:HA   | 1.50                     | 0.91              |
| 56:BE:6:G:H3'      | 56:BE:7:A:H5''    | 1.51                     | 0.91              |
| 57:BZ:346:ARG:HH11 | 57:BZ:346:ARG:HG2 | 1.35                     | 0.91              |
| 1:AA:20:C:O2'      | 1:AA:21:A:H5'     | 1.70                     | 0.91              |
| 1:AA:532:A:OP1     | 1:AA:2021:C:N4    | 2.04                     | 0.91              |
| 1:AA:1047:G:H5''   | 1:AA:1110:G:O6    | 1.69                     | 0.91              |
| 1:AA:2533:A:H5'    | 1:AA:2664:G:O2'   | 1.70                     | 0.91              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 4:AD:106:ILE:HD12  | 4:AD:192:THR:HG21  | 1.52                     | 0.91              |
| 4:AD:129:ASN:O     | 4:AD:193:VAL:HB    | 1.69                     | 0.91              |
| 4:AD:134:ARG:C     | 4:AD:168:ARG:HH22  | 1.78                     | 0.91              |
| 8:AH:35:VAL:HG21   | 8:AH:72:ILE:HG23   | 1.52                     | 0.91              |
| 10:AL:97:ARG:HB2   | 10:AL:97:ARG:HH21  | 1.11                     | 0.91              |
| 13:AO:87:TYR:OH    | 13:AO:116:LEU:HB2  | 1.71                     | 0.91              |
| 14:AP:9:ARG:HD3    | 14:AP:12:PHE:HE2   | 1.35                     | 0.91              |
| 16:AR:102:GLU:O    | 16:AR:105:VAL:HG12 | 1.70                     | 0.91              |
| 20:AV:29:GLU:OE1   | 20:AV:32:PRO:HG2   | 1.70                     | 0.91              |
| 27:Ac:17:LYS:O     | 27:Ac:19:ARG:HD2   | 1.69                     | 0.91              |
| 34:BA:1048:G:H5''  | 47:BR:3:ARG:HH11   | 1.33                     | 0.91              |
| 34:BA:1417:G:H2'   | 34:BA:1482:G:H22   | 1.33                     | 0.91              |
| 35:BF:20:GLU:CD    | 35:BF:189:ASP:OD2  | 2.13                     | 0.91              |
| 35:BF:69:LEU:O     | 35:BF:162:ILE:HA   | 1.69                     | 0.91              |
| 40:BK:111:ARG:NH1  | 40:BK:112:PRO:HD2  | 1.85                     | 0.91              |
| 56:BD:52:G:C4      | 56:BD:63:G:C2      | 2.59                     | 0.91              |
| 57:BZ:407:VAL:N    | 57:BZ:436:ARG:HH12 | 1.59                     | 0.91              |
| 57:BZ:426:LEU:HD21 | 57:BZ:429:MET:HB3  | 1.52                     | 0.91              |
| 1:AA:529:A:O2'     | 1:AA:530:G:N7      | 2.02                     | 0.91              |
| 1:AA:1050:A:H1'    | 1:AA:2752:C:H5     | 1.24                     | 0.91              |
| 1:AA:1063:G:N7     | 1:AA:1064:C:H5     | 1.64                     | 0.91              |
| 1:AA:2791:C:H2'    | 1:AA:2792:G:H8     | 1.25                     | 0.91              |
| 5:AE:107:THR:O     | 5:AE:190:GLY:HA3   | 1.71                     | 0.91              |
| 9:AK:30:ILE:O      | 9:AK:33:LEU:HB3    | 1.71                     | 0.91              |
| 11:AM:137:LYS:HA   | 11:AM:137:LYS:HE3  | 1.49                     | 0.91              |
| 15:AQ:52:ILE:HA    | 15:AQ:66:VAL:CG1   | 2.01                     | 0.91              |
| 16:AR:44:ASN:HD21  | 17:AS:78:LYS:CG    | 1.83                     | 0.91              |
| 16:AR:89:GLU:CG    | 17:AS:52:VAL:HG23  | 2.01                     | 0.91              |
| 17:AS:62:LEU:HD12  | 17:AS:96:ILE:CB    | 1.98                     | 0.91              |
| 19:AU:92:LEU:HD12  | 19:AU:92:LEU:H     | 1.34                     | 0.91              |
| 30:Af:23:VAL:HB    | 30:Af:36:GLN:CG    | 2.01                     | 0.91              |
| 34:BA:1490:C:H5    | 58:BA:1601:NMY:O17 | 1.53                     | 0.91              |
| 37:BH:94:LEU:HA    | 37:BH:97:LEU:CD1   | 2.00                     | 0.91              |
| 38:BI:71:LEU:HD11  | 38:BI:74:GLY:HA2   | 1.52                     | 0.91              |
| 40:BK:98:SER:O     | 40:BK:101:LEU:HB3  | 1.71                     | 0.91              |
| 41:BL:5:PRO:O      | 41:BL:8:ASP:HB3    | 1.70                     | 0.91              |
| 52:BW:9:VAL:HG22   | 52:BW:42:PRO:CA    | 1.99                     | 0.91              |
| 56:BD:52:G:C8      | 56:BD:63:G:N2      | 2.39                     | 0.91              |
| 56:BE:4:C:N3       | 56:BE:6:G:N7       | 2.16                     | 0.91              |
| 57:BZ:54:ILE:HD11  | 57:BZ:211:GLN:HE22 | 1.35                     | 0.91              |
| 57:BZ:122:LYS:HZ1  | 57:BZ:156:GLU:HB3  | 0.76                     | 0.91              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:470:A:H4'    | 1:AA:470:A:OP1     | 1.68                     | 0.91              |
| 1:AA:904:C:O4'    | 21:AW:169:GLU:OE1  | 1.89                     | 0.91              |
| 1:AA:1270:C:O2'   | 1:AA:1648:C:OP2    | 1.87                     | 0.91              |
| 1:AA:1303:G:N2    | 1:AA:1626:G:O2'    | 2.04                     | 0.91              |
| 1:AA:1543:A:H3'   | 1:AA:1544:C:C4'    | 1.99                     | 0.91              |
| 1:AA:1906:G:C2    | 1:AA:1907:G:N7     | 2.38                     | 0.91              |
| 1:AA:1916:A:C5    | 34:BA:1409:C:H4'   | 2.05                     | 0.91              |
| 4:AD:95:LEU:HD22  | 4:AD:96:HIS:N      | 1.86                     | 0.91              |
| 5:AE:7:VAL:HG11   | 5:AE:196:VAL:HG23  | 1.52                     | 0.91              |
| 8:AH:126:PRO:O    | 8:AH:127:GLU:HG2   | 1.69                     | 0.91              |
| 10:AL:77:ILE:CG2  | 15:AQ:65:LYS:HE2   | 2.00                     | 0.91              |
| 14:AP:26:LEU:HD21 | 14:AP:37:ALA:HB1   | 1.51                     | 0.91              |
| 16:AR:57:PHE:HA   | 16:AR:60:LEU:CG    | 2.00                     | 0.91              |
| 17:AS:40:LEU:CA   | 17:AS:54:GLY:HA3   | 2.00                     | 0.91              |
| 19:AU:73:ARG:HG2  | 19:AU:74:PRO:HD2   | 1.53                     | 0.91              |
| 31:AI:53:VAL:HA   | 31:AI:85:ASP:C     | 1.96                     | 0.91              |
| 34:BA:529:G:H1    | 45:BP:49:ASN:HB3   | 1.35                     | 0.91              |
| 34:BA:600:C:OP1   | 41:BL:97:VAL:N     | 2.04                     | 0.91              |
| 34:BA:1116:C:N3   | 34:BA:1184:G:N1    | 2.16                     | 0.91              |
| 34:BA:1454:G:C6   | 34:BA:1455:G:C6    | 2.58                     | 0.91              |
| 35:BF:160:ASP:HB3 | 35:BF:182:ILE:HG21 | 1.50                     | 0.91              |
| 40:BK:125:MET:HG3 | 40:BK:126:ASP:H    | 1.35                     | 0.91              |
| 42:BM:127:LYS:HB2 | 56:BE:31:A:C5'     | 2.00                     | 0.91              |
| 46:BQ:8:GLU:CB    | 46:BQ:22:ILE:CG1   | 2.48                     | 0.91              |
| 50:BU:43:LEU:HD13 | 50:BU:43:LEU:C     | 1.94                     | 0.91              |
| 55:BC:16:U:C3'    | 55:BC:17:C:H5'     | 2.01                     | 0.91              |
| 56:BE:1:G:N9      | 56:BE:72:C:N3      | 1.75                     | 0.91              |
| 57:BZ:377:GLY:CA  | 57:BZ:582:PRO:CG   | 2.49                     | 0.91              |
| 57:BZ:407:VAL:N   | 57:BZ:436:ARG:NH1  | 2.08                     | 0.91              |
| 1:AA:621:A:N6     | 1:AA:622:G:N3      | 2.19                     | 0.91              |
| 1:AA:869:G:H2'    | 1:AA:870:A:C5'     | 2.01                     | 0.91              |
| 1:AA:897:C:O2'    | 1:AA:898:C:OP1     | 1.88                     | 0.91              |
| 1:AA:1655:A:H4'   | 5:AE:113:PHE:O     | 1.69                     | 0.91              |
| 1:AA:1809:A:H4'   | 1:AA:1809:A:OP1    | 1.66                     | 0.91              |
| 1:AA:2311:A:H3'   | 1:AA:2312:U:H5     | 1.34                     | 0.91              |
| 5:AE:133:LYS:HB3  | 5:AE:137:HIS:NE2   | 1.84                     | 0.91              |
| 6:AF:33:LEU:O     | 6:AF:36:VAL:HG12   | 1.71                     | 0.91              |
| 6:AF:164:ARG:HB2  | 6:AF:177:ALA:CB    | 2.01                     | 0.91              |
| 7:AG:61:ALA:HB2   | 7:AG:67:LYS:CB     | 2.01                     | 0.91              |
| 9:AK:78:TYR:HB3   | 9:AK:79:PRO:HD2    | 1.53                     | 0.91              |
| 10:AL:64:ARG:NH1  | 10:AL:77:ILE:HB    | 1.85                     | 0.91              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AL:122:LEU:HA   | 15:AQ:74:ARG:NH1   | 1.85                     | 0.91              |
| 12:AN:23:GLY:H     | 12:AN:99:PRO:HG3   | 1.34                     | 0.91              |
| 12:AN:75:THR:HG22  | 12:AN:77:LYS:HD2   | 1.50                     | 0.91              |
| 12:AN:134:ARG:NH2  | 12:AN:137:TYR:HD1  | 1.69                     | 0.91              |
| 17:AS:11:GLN:HE22  | 17:AS:24:LYS:HZ3   | 0.96                     | 0.91              |
| 21:AW:6:LYS:HG2    | 21:AW:7:ALA:N      | 1.86                     | 0.91              |
| 29:Ae:56:GLU:N     | 29:Ae:56:GLU:OE2   | 2.03                     | 0.91              |
| 34:BA:449:C:N3     | 34:BA:450:G:H1'    | 1.86                     | 0.91              |
| 34:BA:720:C:C5     | 34:BA:721:G:H2'    | 2.04                     | 0.91              |
| 34:BA:1521:G:H2'   | 34:BA:1522:U:H6    | 1.34                     | 0.91              |
| 35:BF:118:LEU:HD21 | 35:BF:142:LEU:HB2  | 1.52                     | 0.91              |
| 36:BG:108:ASN:HD22 | 36:BG:111:LEU:HD13 | 1.36                     | 0.91              |
| 37:BH:59:ARG:C     | 37:BH:63:LYS:HZ2   | 1.79                     | 0.91              |
| 45:BP:83:VAL:HG23  | 45:BP:104:VAL:HB   | 1.52                     | 0.91              |
| 52:BW:9:VAL:HA     | 52:BW:41:VAL:HB    | 1.51                     | 0.91              |
| 1:AA:637:A:C2      | 1:AA:651:G:H5''    | 2.05                     | 0.91              |
| 1:AA:821:A:H2'     | 1:AA:946:G:C8      | 2.06                     | 0.91              |
| 1:AA:1291:C:H5'    | 1:AA:1535:U:O2'    | 1.71                     | 0.91              |
| 3:AC:44:HIS:CE1    | 3:AC:215:THR:H     | 1.82                     | 0.91              |
| 7:AG:49:ASP:HA     | 7:AG:53:LEU:CD2    | 2.00                     | 0.91              |
| 8:AH:105:LEU:HB2   | 8:AH:113:VAL:HG11  | 1.51                     | 0.91              |
| 10:AL:15:GLY:CA    | 10:AL:52:VAL:HG21  | 2.01                     | 0.91              |
| 16:AR:88:ILE:N     | 17:AS:52:VAL:HG22  | 1.86                     | 0.91              |
| 17:AS:68:LYS:O     | 17:AS:69:LYS:HB2   | 1.71                     | 0.91              |
| 18:AT:5:ALA:HB3    | 18:AT:105:VAL:O    | 1.71                     | 0.91              |
| 32:AJ:51:ALA:HA    | 32:AJ:76:TYR:HD2   | 1.34                     | 0.91              |
| 34:BA:186(D):C:H2' | 34:BA:186(E):C:C6  | 2.05                     | 0.91              |
| 34:BA:272:C:H2'    | 34:BA:273:A:H8     | 1.36                     | 0.91              |
| 34:BA:275:G:H5'    | 50:BU:14:LYS:NZ    | 1.86                     | 0.91              |
| 34:BA:777:A:H2'    | 34:BA:778:G:H8     | 1.36                     | 0.91              |
| 34:BA:961:U:O2'    | 34:BA:962:C:H5'    | 1.70                     | 0.91              |
| 37:BH:191:ARG:HD3  | 37:BH:192:GLU:N    | 1.86                     | 0.91              |
| 56:BE:4:C:C5       | 56:BE:6:G:N7       | 2.34                     | 0.91              |
| 57:BZ:48:LEU:HD23  | 57:BZ:50:LYS:HG3   | 1.51                     | 0.91              |
| 57:BZ:55:THR:HG1   | 57:BZ:254:VAL:HG11 | 1.11                     | 0.91              |
| 57:BZ:240:ILE:CG2  | 57:BZ:286:ASP:HA   | 2.01                     | 0.91              |
| 1:AA:653:A:N6      | 1:AA:655:A:H1'     | 1.84                     | 0.91              |
| 1:AA:672:C:H3'     | 11:AM:38:GLN:HE22  | 1.35                     | 0.91              |
| 1:AA:673:C:H2'     | 1:AA:674:G:H5'     | 1.53                     | 0.91              |
| 1:AA:961:C:N4      | 1:AA:2031:A:N3     | 2.19                     | 0.91              |
| 1:AA:1075:C:H1'    | 32:AJ:90:LYS:HD3   | 0.91                     | 0.91              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1617:C:H4'   | 1:AA:1617:C:OP2    | 1.69                     | 0.91              |
| 1:AA:1646:C:C3'   | 1:AA:1647:G:H5'    | 2.01                     | 0.91              |
| 1:AA:2522:U:O2'   | 1:AA:2647:U:OP1    | 1.88                     | 0.91              |
| 1:AA:2581:G:H1    | 1:AA:2610:C:C2'    | 1.83                     | 0.91              |
| 4:AD:117:VAL:HG13 | 4:AD:129:ASN:OD1   | 1.71                     | 0.91              |
| 4:AD:155:LEU:HG   | 4:AD:157:ARG:NE    | 1.85                     | 0.91              |
| 5:AE:105:THR:CB   | 5:AE:166:THR:HB    | 1.99                     | 0.91              |
| 7:AG:75:LYS:HB3   | 7:AG:84:LYS:H      | 1.35                     | 0.91              |
| 14:AP:3:ARG:CG    | 14:AP:4:LEU:H      | 1.80                     | 0.91              |
| 15:AQ:91:ARG:O    | 15:AQ:93:ARG:NH2   | 2.04                     | 0.91              |
| 31:AI:152:VAL:C   | 31:AI:155:GLY:HA3  | 1.95                     | 0.91              |
| 34:BA:827:U:H4'   | 41:BL:19:VAL:HG21  | 1.51                     | 0.91              |
| 34:BA:1180:A:H2'  | 34:BA:1181:G:H5'   | 1.51                     | 0.91              |
| 34:BA:1245:A:H2'  | 34:BA:1246:C:C6    | 2.06                     | 0.91              |
| 34:BA:1317:C:C2   | 34:BA:1318:A:O4'   | 2.24                     | 0.91              |
| 34:BA:1459:C:OP2  | 53:BX:31:SER:HB2   | 1.70                     | 0.91              |
| 52:BW:3:ARG:O     | 52:BW:42:PRO:HD3   | 1.70                     | 0.91              |
| 57:BZ:11:ILE:HD11 | 57:BZ:95:VAL:HB    | 1.49                     | 0.91              |
| 57:BZ:37:GLU:HA   | 57:BZ:39:GLN:HB3   | 1.50                     | 0.91              |
| 57:BZ:309:MET:HA  | 57:BZ:383:SER:HG   | 0.88                     | 0.91              |
| 1:AA:68:G:H2'     | 1:AA:69:C:H6       | 1.34                     | 0.91              |
| 1:AA:390:A:H5''   | 1:AA:391:G:OP1     | 1.70                     | 0.91              |
| 1:AA:1059:G:H22   | 32:AJ:130:SER:HA   | 1.15                     | 0.91              |
| 1:AA:2425:A:OP2   | 1:AA:2427:C:H5''   | 1.71                     | 0.91              |
| 1:AA:2553:G:H21   | 1:AA:2554:U:H1'    | 1.24                     | 0.91              |
| 5:AE:50:GLY:H     | 5:AE:76:ARG:HG3    | 1.34                     | 0.91              |
| 5:AE:117:MET:CG   | 5:AE:136:ARG:HE    | 1.84                     | 0.91              |
| 5:AE:119:ARG:CZ   | 5:AE:155:LYS:HB3   | 2.00                     | 0.91              |
| 13:AO:41:ALA:HB1  | 13:AO:97:VAL:HG13  | 1.51                     | 0.91              |
| 16:AR:53:ARG:HA   | 16:AR:56:ASP:CG    | 1.95                     | 0.91              |
| 17:AS:15:GLU:HA   | 17:AS:100:ARG:HH12 | 1.33                     | 0.91              |
| 21:AW:104:PHE:HZ  | 21:AW:120:ILE:HG22 | 1.32                     | 0.91              |
| 34:BA:764:C:H2'   | 34:BA:765:G:N7     | 1.84                     | 0.91              |
| 34:BA:974:A:OP2   | 47:BR:31:ARG:HG2   | 1.70                     | 0.91              |
| 34:BA:1228:C:OP1  | 46:BQ:115:LYS:HB3  | 1.70                     | 0.91              |
| 34:BA:1317:C:C2   | 34:BA:1318:A:C1'   | 2.53                     | 0.91              |
| 34:BA:1459:C:P    | 53:BX:31:SER:CB    | 2.59                     | 0.91              |
| 35:BF:48:MET:SD   | 35:BF:48:MET:N     | 2.44                     | 0.91              |
| 37:BH:91:SER:HA   | 37:BH:94:LEU:HD12  | 1.53                     | 0.91              |
| 41:BL:104:ARG:HG2 | 41:BL:104:ARG:HH11 | 1.36                     | 0.91              |
| 46:BQ:10:PRO:CA   | 46:BQ:45:VAL:HG11  | 2.00                     | 0.91              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:BZ:400:TYR:HE1 | 57:BZ:444:PRO:N   | 1.65                     | 0.91              |
| 57:BZ:502:PHE:CE2 | 57:BZ:555:VAL:CG1 | 2.53                     | 0.91              |
| 1:AA:594:U:H2'    | 1:AA:595:C:C5     | 2.06                     | 0.90              |
| 1:AA:1005:C:H2'   | 1:AA:1006:C:H6    | 1.34                     | 0.90              |
| 1:AA:1677:A:H2'   | 1:AA:1678:G:H8    | 1.21                     | 0.90              |
| 1:AA:1697:G:C8    | 1:AA:1698:A:H5''  | 2.06                     | 0.90              |
| 1:AA:2341:G:H2'   | 1:AA:2342:C:C6    | 2.06                     | 0.90              |
| 1:AA:2574:G:H1'   | 5:AE:143:ASN:HD22 | 1.33                     | 0.90              |
| 5:AE:4:ILE:HD11   | 5:AE:76:ARG:CZ    | 2.01                     | 0.90              |
| 5:AE:80:GLU:HG2   | 5:AE:83:ASP:OD2   | 1.70                     | 0.90              |
| 8:AH:24:VAL:HG23  | 8:AH:35:VAL:HG23  | 1.50                     | 0.90              |
| 9:AK:34:LEU:HA    | 9:AK:49:GLY:O     | 1.71                     | 0.90              |
| 9:AK:38:HIS:HB3   | 9:AK:48:MET:HE3   | 1.54                     | 0.90              |
| 9:AK:54:VAL:HG12  | 9:AK:122:VAL:HB   | 1.52                     | 0.90              |
| 14:AP:51:ALA:HB1  | 14:AP:73:LEU:HG   | 1.51                     | 0.90              |
| 14:AP:62:LYS:C    | 14:AP:64:GLU:H    | 1.77                     | 0.90              |
| 20:AV:12:THR:HA   | 20:AV:73:ARG:HD2  | 1.52                     | 0.90              |
| 31:AI:97:ALA:HB2  | 31:AI:132:ASP:O   | 1.71                     | 0.90              |
| 33:Ag:309:UNK:CB  | 57:BZ:142:ASP:CA  | 2.47                     | 0.90              |
| 34:BA:1229:A:H2'  | 34:BA:1230:C:H6   | 1.33                     | 0.90              |
| 34:BA:1311:G:N3   | 34:BA:1327:C:C1'  | 2.35                     | 0.90              |
| 36:BG:11:ARG:HD3  | 36:BG:15:THR:HG23 | 1.53                     | 0.90              |
| 38:BI:23:GLY:HA3  | 38:BI:25:ARG:NH1  | 1.86                     | 0.90              |
| 38:BI:48:ALA:HB1  | 38:BI:53:LEU:HB3  | 1.51                     | 0.90              |
| 51:BV:74:ARG:HA   | 51:BV:79:LEU:CD1  | 2.01                     | 0.90              |
| 53:BX:73:HIS:H    | 53:BX:76:ALA:HB3  | 1.36                     | 0.90              |
| 54:BY:14:TRP:HZ3  | 54:BY:15:ARG:CZ   | 1.83                     | 0.90              |
| 56:BD:4:C:C2'     | 56:BD:5:G:H5'     | 2.01                     | 0.90              |
| 57:BZ:310:PHE:O   | 57:BZ:384:ARG:N   | 2.04                     | 0.90              |
| 57:BZ:496:ALA:HB3 | 57:BZ:514:HIS:HA  | 1.53                     | 0.90              |
| 1:AA:510:C:P      | 1:AA:512:G:H1     | 1.93                     | 0.90              |
| 1:AA:979:G:H3'    | 1:AA:980:A:C5'    | 1.99                     | 0.90              |
| 1:AA:1142:U:H3'   | 1:AA:1142(A):A:N7 | 1.86                     | 0.90              |
| 1:AA:2124:G:N7    | 3:AC:217:THR:CA   | 2.31                     | 0.90              |
| 1:AA:2128:C:H5''  | 3:AC:35:ALA:HB1   | 1.51                     | 0.90              |
| 1:AA:2881:C:H2'   | 1:AA:2882:A:H8    | 1.35                     | 0.90              |
| 7:AG:57:ALA:HA    | 7:AG:68:PRO:HD2   | 1.53                     | 0.90              |
| 14:AP:49:VAL:HG13 | 14:AP:76:LYS:HE3  | 1.50                     | 0.90              |
| 18:AT:33:ARG:HE   | 18:AT:33:ARG:HA   | 1.35                     | 0.90              |
| 34:BA:697:U:H2'   | 34:BA:698:G:C8    | 2.06                     | 0.90              |
| 35:BF:69:LEU:HD13 | 35:BF:92:TYR:HA   | 1.53                     | 0.90              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 37:BH:100:ARG:NH2  | 37:BH:137:SER:HA   | 1.86                     | 0.90              |
| 38:BI:9:LYS:HB2    | 38:BI:33:VAL:HB    | 1.51                     | 0.90              |
| 46:BQ:14:ARG:HD3   | 46:BQ:41:PRO:CB    | 1.98                     | 0.90              |
| 46:BQ:48:LEU:CD1   | 46:BQ:53:VAL:HG22  | 2.01                     | 0.90              |
| 47:BR:58:LYS:HD3   | 47:BR:59:ALA:H     | 1.33                     | 0.90              |
| 56:BE:21:A:C2'     | 56:BE:22:G:O4'     | 2.19                     | 0.90              |
| 57:BZ:310:PHE:N    | 57:BZ:385:PRO:CD   | 2.11                     | 0.90              |
| 57:BZ:380:LEU:CD1  | 57:BZ:580:VAL:HG21 | 2.00                     | 0.90              |
| 57:BZ:547:ARG:HH11 | 57:BZ:548:ALA:HB1  | 1.35                     | 0.90              |
| 1:AA:46:C:OP2      | 1:AA:215:G:H3'     | 1.71                     | 0.90              |
| 1:AA:270(I):G:C2   | 1:AA:270(J):G:H1'  | 2.07                     | 0.90              |
| 1:AA:917:A:C2'     | 1:AA:918:A:H5''    | 2.01                     | 0.90              |
| 1:AA:1068:G:H1'    | 1:AA:1096:A:H4'    | 1.54                     | 0.90              |
| 1:AA:1198:U:H2'    | 1:AA:1199:U:C5     | 2.07                     | 0.90              |
| 1:AA:1863:G:H2'    | 1:AA:1864:U:C6     | 2.06                     | 0.90              |
| 1:AA:2174:C:C2     | 3:AC:219:GLY:HA2   | 2.05                     | 0.90              |
| 1:AA:2332:U:H4'    | 1:AA:2336:A:N6     | 1.85                     | 0.90              |
| 1:AA:2408:U:O5'    | 1:AA:2408:U:H6     | 1.52                     | 0.90              |
| 1:AA:2670:A:C2     | 1:AA:2671:A:C5     | 2.60                     | 0.90              |
| 4:AD:11:PRO:HB2    | 4:AD:24:ILE:HB     | 1.53                     | 0.90              |
| 4:AD:226:MET:HE1   | 4:AD:237:GLU:H     | 1.33                     | 0.90              |
| 9:AK:73:THR:HB     | 9:AK:75:TYR:HE1    | 1.36                     | 0.90              |
| 13:AO:77:ARG:HH11  | 13:AO:77:ARG:CB    | 1.84                     | 0.90              |
| 14:AP:8:GLU:O      | 14:AP:9:ARG:C      | 2.11                     | 0.90              |
| 14:AP:99:LYS:O     | 14:AP:102:ALA:HB3  | 1.69                     | 0.90              |
| 17:AS:69:LYS:HG2   | 17:AS:70:ILE:HG13  | 1.52                     | 0.90              |
| 28:Ad:33:ARG:HG2   | 28:Ad:37:LYS:HD3   | 1.53                     | 0.90              |
| 31:AI:51:LEU:CB    | 31:AI:90:ALA:HB3   | 2.02                     | 0.90              |
| 34:BA:1135:U:H4'   | 34:BA:1136:U:H5    | 1.33                     | 0.90              |
| 34:BA:1404:C:O2'   | 34:BA:1499:A:H2    | 1.31                     | 0.90              |
| 37:BH:59:ARG:HA    | 37:BH:59:ARG:HH11  | 1.36                     | 0.90              |
| 37:BH:143:GLY:HA2  | 37:BH:185:PHE:HB3  | 1.50                     | 0.90              |
| 39:BJ:33:TYR:CG    | 39:BJ:75:LEU:HG    | 2.06                     | 0.90              |
| 39:BJ:76:ALA:HB3   | 39:BJ:80:ARG:HH22  | 1.35                     | 0.90              |
| 40:BK:69:VAL:HG21  | 40:BK:104:LEU:CD2  | 1.99                     | 0.90              |
| 41:BL:70:GLN:NE2   | 41:BL:72:PRO:HD2   | 1.85                     | 0.90              |
| 48:BS:36:ILE:HD11  | 48:BS:60:VAL:HG13  | 1.52                     | 0.90              |
| 52:BW:45:VAL:HG22  | 52:BW:67:VAL:HG21  | 1.53                     | 0.90              |
| 55:BC:16:U:N3      | 55:BC:19:G:OP2     | 2.04                     | 0.90              |
| 57:BZ:422:ARG:NH1  | 57:BZ:480:VAL:CG2  | 2.15                     | 0.90              |
| 1:AA:450:G:H5'     | 6:AF:52:LYS:HD3    | 1.50                     | 0.90              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:739:G:O3'     | 1:AA:1784:A:N1    | 2.04                     | 0.90              |
| 1:AA:880:G:C6      | 1:AA:897:C:O2'    | 2.15                     | 0.90              |
| 1:AA:1075:C:H1'    | 32:AJ:90:LYS:HD2  | 1.53                     | 0.90              |
| 1:AA:1081:U:H4'    | 32:AJ:125:ARG:CB  | 2.00                     | 0.90              |
| 1:AA:1762:A:H3'    | 1:AA:1762:A:H8    | 1.31                     | 0.90              |
| 1:AA:2117:A:N6     | 1:AA:2171:A:N1    | 2.19                     | 0.90              |
| 1:AA:2225:A:H5'    | 1:AA:2226:C:O4'   | 1.70                     | 0.90              |
| 1:AA:2305:A:H2'    | 1:AA:2306:C:H5''  | 1.51                     | 0.90              |
| 1:AA:2893:G:O5'    | 1:AA:2894:G:OP1   | 1.89                     | 0.90              |
| 3:AC:38:ASP:OD2    | 3:AC:178:ALA:HB3  | 1.71                     | 0.90              |
| 3:AC:77:ILE:HG21   | 3:AC:123:VAL:HG22 | 1.50                     | 0.90              |
| 4:AD:37:LEU:CD2    | 4:AD:64:ILE:HG22  | 2.01                     | 0.90              |
| 5:AE:91:VAL:HG22   | 5:AE:93:VAL:H     | 1.37                     | 0.90              |
| 5:AE:198:VAL:HG12  | 5:AE:200:GLU:OE2  | 1.71                     | 0.90              |
| 9:AK:3:THR:O       | 9:AK:4:TYR:HB2    | 1.69                     | 0.90              |
| 11:AM:122:PRO:HG3  | 11:AM:137:LYS:C   | 1.97                     | 0.90              |
| 12:AN:71:ASP:OD2   | 12:AN:95:ALA:HA   | 1.71                     | 0.90              |
| 22:AX:46:LYS:HG2   | 22:AX:77:ARG:O    | 1.72                     | 0.90              |
| 29:Ae:8:LYS:HD3    | 29:Ae:11:LYS:NZ   | 1.86                     | 0.90              |
| 31:AI:54:ALA:CB    | 31:AI:84:GLU:CA   | 2.39                     | 0.90              |
| 32:AJ:90:LYS:HB3   | 32:AJ:91:PRO:CD   | 2.02                     | 0.90              |
| 34:BA:363:A:OP2    | 45:BP:34:ARG:HB3  | 1.71                     | 0.90              |
| 34:BA:468:A:H4'    | 49:BT:82:GLN:HB3  | 1.53                     | 0.90              |
| 34:BA:787:A:H2'    | 34:BA:788:U:H5'   | 1.54                     | 0.90              |
| 34:BA:911:U:H2'    | 34:BA:912:C:C6    | 2.06                     | 0.90              |
| 34:BA:1412:C:N3    | 34:BA:1489:G:N1   | 2.17                     | 0.90              |
| 35:BF:102:LEU:HD22 | 35:BF:176:GLU:HB3 | 1.51                     | 0.90              |
| 46:BQ:37:THR:HG23  | 46:BQ:39:ILE:HG12 | 1.50                     | 0.90              |
| 57:BZ:9:ALA:HB2    | 57:BZ:73:VAL:HG22 | 0.91                     | 0.90              |
| 57:BZ:21:LEU:CD2   | 57:BZ:98:VAL:HG21 | 2.00                     | 0.90              |
| 57:BZ:62:ALA:HB3   | 57:BZ:63:ALA:C    | 1.96                     | 0.90              |
| 1:AA:64:A:O2'      | 1:AA:65:C:H5'     | 1.72                     | 0.90              |
| 1:AA:1325:G:H21    | 18:AT:86:LEU:HD13 | 1.35                     | 0.90              |
| 1:AA:1339:G:H5'    | 19:AU:16:LYS:HD3  | 1.54                     | 0.90              |
| 1:AA:1864:U:H2'    | 1:AA:1869:G:H5'   | 1.50                     | 0.90              |
| 1:AA:1903:G:H2'    | 1:AA:1904:G:H8    | 1.25                     | 0.90              |
| 1:AA:1935:G:H1     | 1:AA:1962:C:H2'   | 1.36                     | 0.90              |
| 1:AA:1981:A:H5''   | 1:AA:1982:C:OP2   | 1.71                     | 0.90              |
| 1:AA:2151:G:O3'    | 3:AC:2:LYS:O      | 1.90                     | 0.90              |
| 1:AA:2173:A:N3     | 3:AC:218:MET:HE3  | 1.86                     | 0.90              |
| 1:AA:2524:G:H5'    | 1:AA:2764:A:O2'   | 1.69                     | 0.90              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:2556:C:H2'    | 1:AA:2557:G:O4'    | 1.71                     | 0.90              |
| 1:AA:2602:A:O2'    | 1:AA:2603:G:OP2    | 1.90                     | 0.90              |
| 1:AA:2848:G:C8     | 15:AQ:99:LEU:HD11  | 2.06                     | 0.90              |
| 59:AA:3003:8AN:O2P | 22:AX:2:ALA:CB     | 2.20                     | 0.90              |
| 6:AF:41:LEU:HB2    | 6:AF:44:ARG:HH11   | 1.36                     | 0.90              |
| 6:AF:74:ARG:NH1    | 6:AF:75:HIS:HA     | 1.86                     | 0.90              |
| 6:AF:157:VAL:HG22  | 6:AF:194:MET:HB3   | 1.52                     | 0.90              |
| 7:AG:57:ALA:HA     | 7:AG:68:PRO:N      | 1.87                     | 0.90              |
| 9:AK:4:TYR:CB      | 16:AR:64:ARG:HH12  | 1.84                     | 0.90              |
| 15:AQ:68:TYR:CE2   | 15:AQ:70:VAL:HG22  | 2.05                     | 0.90              |
| 17:AS:17:GLY:HA3   | 17:AS:19:LYS:HZ2   | 1.27                     | 0.90              |
| 17:AS:62:LEU:HD11  | 17:AS:98:GLU:HG2   | 1.52                     | 0.90              |
| 18:AT:16:LYS:H     | 18:AT:16:LYS:CD    | 1.84                     | 0.90              |
| 21:AW:48:PHE:CZ    | 21:AW:86:VAL:HG11  | 2.05                     | 0.90              |
| 22:AX:37:LEU:HG    | 22:AX:59:LEU:O     | 1.72                     | 0.90              |
| 23:AY:2:ARG:O      | 23:AY:5:LEU:HB2    | 1.70                     | 0.90              |
| 25:Aa:5:ILE:HG22   | 25:Aa:7:PRO:CD     | 2.02                     | 0.90              |
| 27:Ac:7:ILE:O      | 27:Ac:9:LEU:N      | 2.04                     | 0.90              |
| 32:AJ:33:ASN:CB    | 32:AJ:63:ARG:CB    | 2.49                     | 0.90              |
| 32:AJ:74:ALA:O     | 32:AJ:78:ILE:HG13  | 1.72                     | 0.90              |
| 34:BA:571:U:H3'    | 34:BA:572:A:C5'    | 1.99                     | 0.90              |
| 51:BV:74:ARG:HG3   | 51:BV:79:LEU:HD22  | 1.52                     | 0.90              |
| 57:BZ:73:VAL:HG21  | 57:BZ:88:VAL:CG2   | 2.02                     | 0.90              |
| 57:BZ:395:ARG:CG   | 57:BZ:474:ASP:CG   | 2.30                     | 0.90              |
| 57:BZ:447:GLY:CA   | 57:BZ:480:VAL:HG21 | 2.02                     | 0.90              |
| 1:AA:198:C:O2'     | 1:AA:199:A:H8      | 1.54                     | 0.90              |
| 1:AA:265:A:H8      | 1:AA:265:A:C3'     | 1.84                     | 0.90              |
| 1:AA:323:G:H5'     | 1:AA:324:A:OP1     | 1.71                     | 0.90              |
| 1:AA:888:C:H1'     | 1:AA:889:C:C2      | 2.06                     | 0.90              |
| 1:AA:893:C:C5      | 1:AA:894:C:H5      | 1.89                     | 0.90              |
| 1:AA:1312:U:H2'    | 1:AA:1313:U:C6     | 2.07                     | 0.90              |
| 1:AA:1820:U:C2     | 4:AD:202:LYS:HG2   | 2.07                     | 0.90              |
| 1:AA:1841:U:H2'    | 1:AA:1842:G:C8     | 2.06                     | 0.90              |
| 1:AA:2056:G:N2     | 26:Ab:4:HIS:CD2    | 2.39                     | 0.90              |
| 1:AA:2122:U:C2'    | 1:AA:2123:G:H5''   | 1.99                     | 0.90              |
| 1:AA:2174:C:O2     | 3:AC:219:GLY:C     | 2.14                     | 0.90              |
| 1:AA:2468:G:H22    | 1:AA:2481:G:H2'    | 1.37                     | 0.90              |
| 1:AA:2636:U:H4'    | 5:AE:79:ARG:HH21   | 1.36                     | 0.90              |
| 6:AF:4:VAL:O       | 6:AF:20:LEU:HD13   | 1.72                     | 0.90              |
| 6:AF:131:GLY:HA2   | 6:AF:138:GLU:CB    | 2.02                     | 0.90              |
| 12:AN:75:THR:HG23  | 12:AN:91:GLU:OE1   | 1.69                     | 0.90              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 14:AP:89:ARG:HH11  | 14:AP:91:PRO:HA    | 1.34                     | 0.90              |
| 25:Aa:21:VAL:HG12  | 25:Aa:22:ILE:H     | 1.37                     | 0.90              |
| 31:AI:54:ALA:N     | 31:AI:85:ASP:HA    | 1.86                     | 0.90              |
| 34:BA:707:C:O2'    | 34:BA:708:C:H5'    | 1.72                     | 0.90              |
| 34:BA:857:C:H2'    | 34:BA:858:G:O4'    | 1.71                     | 0.90              |
| 46:BQ:85:GLY:O     | 52:BW:74:PHE:CA    | 2.19                     | 0.90              |
| 53:BX:85:MET:HB2   | 53:BX:104:LEU:HD21 | 1.52                     | 0.90              |
| 56:BE:1:G:C1'      | 56:BE:72:C:O2      | 2.18                     | 0.90              |
| 57:BZ:81:PHE:HB3   | 57:BZ:365:HIS:NE2  | 1.86                     | 0.90              |
| 57:BZ:250:LYS:N    | 57:BZ:275:ALA:HB3  | 1.81                     | 0.90              |
| 1:AA:234:C:H42     | 1:AA:430:G:N2      | 1.69                     | 0.90              |
| 1:AA:789:A:H4'     | 1:AA:790:C:OP1     | 1.69                     | 0.90              |
| 1:AA:988:A:H4'     | 1:AA:1155:A:H2     | 1.35                     | 0.90              |
| 1:AA:997:G:H5''    | 16:AR:92:ARG:HH11  | 1.37                     | 0.90              |
| 1:AA:1344:G:H4'    | 1:AA:1384:A:N1     | 1.86                     | 0.90              |
| 1:AA:1775:U:O2'    | 1:AA:1776:G:H5'    | 1.72                     | 0.90              |
| 1:AA:2630:G:N3     | 1:AA:2894:G:N7     | 2.19                     | 0.90              |
| 1:AA:2651:C:H2'    | 1:AA:2652:C:H5''   | 1.53                     | 0.90              |
| 1:AA:2754:U:H2'    | 1:AA:2755:C:H5''   | 1.51                     | 0.90              |
| 3:AC:156:ILE:HA    | 3:AC:160:ARG:HB2   | 0.90                     | 0.90              |
| 4:AD:183:ARG:CG    | 4:AD:268:ARG:HB2   | 2.01                     | 0.90              |
| 8:AH:8:PRO:HB3     | 8:AH:51:ARG:HH12   | 1.36                     | 0.90              |
| 11:AM:23:PRO:CB    | 11:AM:29:LYS:H     | 1.84                     | 0.90              |
| 11:AM:93:GLY:HA2   | 11:AM:112:LEU:CD1  | 2.01                     | 0.90              |
| 13:AO:57:ARG:HE    | 13:AO:62:ALA:HB2   | 1.35                     | 0.90              |
| 14:AP:62:LYS:HD2   | 14:AP:64:GLU:CB    | 2.01                     | 0.90              |
| 34:BA:346:G:H2'    | 34:BA:347:G:O4'    | 1.72                     | 0.90              |
| 34:BA:1198:G:H2'   | 34:BA:1199:U:O4'   | 1.72                     | 0.90              |
| 34:BA:1348:U:H4'   | 42:BM:120:ARG:NH1  | 1.85                     | 0.90              |
| 34:BA:1454:G:H2'   | 34:BA:1455:G:N7    | 1.86                     | 0.90              |
| 44:BO:82:VAL:HB    | 44:BO:108:ILE:HG12 | 1.53                     | 0.90              |
| 53:BX:13:LEU:HB2   | 53:BX:17:ARG:HH21  | 1.33                     | 0.90              |
| 57:BZ:6:ARG:HB3    | 57:BZ:69:ARG:O     | 1.71                     | 0.90              |
| 57:BZ:15:ASP:OD2   | 57:BZ:16:HIS:CD2   | 2.25                     | 0.90              |
| 57:BZ:377:GLY:HA2  | 57:BZ:582:PRO:CB   | 2.02                     | 0.90              |
| 57:BZ:564:THR:HG22 | 57:BZ:566:GLU:CG   | 2.02                     | 0.90              |
| 1:AA:468:G:H2'     | 1:AA:469:G:O4'     | 1.72                     | 0.90              |
| 1:AA:549:G:H2'     | 1:AA:550:G:C8      | 2.06                     | 0.90              |
| 1:AA:877:U:O2'     | 1:AA:899:A:N1      | 1.92                     | 0.90              |
| 1:AA:953:A:C2'     | 1:AA:954:G:H5'     | 2.02                     | 0.90              |
| 1:AA:1019:U:OP1    | 1:AA:1036:G:C1'    | 2.19                     | 0.90              |

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| Atom-1            | Atom-2              | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|---------------------|--------------------------|-------------------|
| 1:AA:1048:A:C2    | 1:AA:1113:U:O4'     | 2.25                     | 0.90              |
| 1:AA:1624:G:C2    | 1:AA:1625:C:N4      | 2.39                     | 0.90              |
| 1:AA:1908:C:H2'   | 1:AA:1909:C:C6      | 2.06                     | 0.90              |
| 1:AA:2320:A:H5'   | 1:AA:2321:G:C5      | 2.06                     | 0.90              |
| 1:AA:2731:G:H4'   | 5:AE:168:MET:SD     | 2.12                     | 0.90              |
| 2:AB:89(A):A:H2'  | 2:AB:90:C:C5'       | 2.00                     | 0.90              |
| 3:AC:97:GLU:HG2   | 3:AC:122:ALA:HB3    | 1.54                     | 0.90              |
| 4:AD:120:GLY:O    | 4:AD:122:ASP:N      | 2.05                     | 0.90              |
| 4:AD:246:PRO:CG   | 4:AD:250:TRP:HB3    | 2.02                     | 0.90              |
| 5:AE:66:HIS:CD2   | 5:AE:71:GLY:H       | 1.89                     | 0.90              |
| 6:AF:106:ARG:HG3  | 6:AF:107:LYS:N      | 1.87                     | 0.90              |
| 6:AF:130:ALA:CB   | 6:AF:142:TRP:HB2    | 1.99                     | 0.90              |
| 13:AO:20:LEU:HD13 | 13:AO:20:LEU:C      | 1.97                     | 0.90              |
| 15:AQ:3:ARG:O     | 15:AQ:7:ILE:HG12    | 1.70                     | 0.90              |
| 16:AR:28:ARG:HB2  | 16:AR:38:THR:HG21   | 1.52                     | 0.90              |
| 27:Ac:16:CYS:HB3  | 27:Ac:49:HIS:ND1    | 1.87                     | 0.90              |
| 27:Ac:20:ASN:HD21 | 27:Ac:43:CYS:N      | 1.70                     | 0.90              |
| 34:BA:789:U:C6    | 34:BA:790:A:H5''    | 2.07                     | 0.90              |
| 35:BF:82:ARG:N    | 35:BF:94:ASN:HD21   | 1.70                     | 0.90              |
| 43:BN:50:ILE:CA   | 43:BN:60:ARG:HG3    | 2.00                     | 0.90              |
| 45:BP:85:ILE:HG13 | 45:BP:87:GLY:H      | 1.36                     | 0.90              |
| 46:BQ:8:GLU:HG3   | 46:BQ:22:ILE:HG12   | 1.32                     | 0.90              |
| 47:BR:45:ARG:HB2  | 47:BR:45:ARG:NH1    | 1.85                     | 0.90              |
| 49:BT:6:LEU:HD23  | 49:BT:17:TYR:HD2    | 1.37                     | 0.90              |
| 51:BV:18:ARG:HH21 | 51:BV:21:LYS:HB2    | 1.36                     | 0.90              |
| 53:BX:50:GLU:HG3  | 53:BX:54:LYS:HE3    | 1.51                     | 0.90              |
| 56:BD:52:G:N7     | 56:BD:63:G:N2       | 2.19                     | 0.90              |
| 57:BZ:69:ARG:HA   | 57:BZ:70:ILE:HB     | 1.53                     | 0.90              |
| 57:BZ:322:GLU:OE1 | 57:BZ:581:THR:CB    | 2.20                     | 0.90              |
| 57:BZ:502:PHE:HE1 | 57:BZ:557:LEU:HB3   | 1.37                     | 0.90              |
| 1:AA:2:G:C5       | 1:AA:2902:C:N4      | 2.40                     | 0.90              |
| 1:AA:1034:G:C6    | 1:AA:1122:G:C6      | 2.59                     | 0.90              |
| 1:AA:1078:U:H5''  | 32:AJ:137:GLU:CD    | 1.96                     | 0.90              |
| 1:AA:1423:G:H2'   | 1:AA:1424:G:H8      | 1.35                     | 0.90              |
| 1:AA:1764:G:O2'   | 1:AA:1765:C:H5'     | 1.71                     | 0.90              |
| 1:AA:1789:A:OP1   | 4:AD:222:ARG:HG2    | 1.71                     | 0.90              |
| 1:AA:1910:G:N2    | 1:AA:1921:G:N9      | 2.20                     | 0.90              |
| 1:AA:2152:G:H5'   | 3:AC:2:LYS:O        | 1.70                     | 0.90              |
| 1:AA:2286:A:H2    | 27:Ac:27:LYS:CB     | 1.84                     | 0.90              |
| 1:AA:2506:U:C3'   | 59:AA:3002:8AN:HN3' | 1.75                     | 0.90              |
| 4:AD:211:ARG:O    | 4:AD:215:LEU:HD12   | 1.70                     | 0.90              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 4:AD:246:PRO:HD2   | 4:AD:250:TRP:CB    | 2.01                     | 0.90              |
| 8:AH:7:LEU:CB      | 8:AH:52:VAL:HG13   | 2.02                     | 0.90              |
| 8:AH:19:VAL:HG12   | 8:AH:24:VAL:HG12   | 1.51                     | 0.90              |
| 10:AL:112:MET:O    | 10:AL:115:VAL:HB   | 1.71                     | 0.90              |
| 12:AN:39:PRO:HG3   | 12:AN:127:ILE:HG12 | 1.54                     | 0.90              |
| 14:AP:11:LYS:C     | 14:AP:14:VAL:HB    | 1.97                     | 0.90              |
| 21:AW:57:ILE:HG12  | 21:AW:70:LEU:CB    | 2.01                     | 0.90              |
| 29:Ae:4:MET:HE1    | 29:Ae:62:LEU:HG    | 1.51                     | 0.90              |
| 32:AJ:84:LEU:CD1   | 32:AJ:86:LYS:HE3   | 2.02                     | 0.90              |
| 34:BA:362:G:H8     | 45:BP:34:ARG:HH22  | 0.98                     | 0.90              |
| 37:BH:100:ARG:HH22 | 37:BH:137:SER:HA   | 1.34                     | 0.90              |
| 41:BL:28:ALA:C     | 41:BL:32:LYS:HD2   | 1.97                     | 0.90              |
| 47:BR:26:ARG:HB2   | 47:BR:43:CYS:HB2   | 1.54                     | 0.90              |
| 50:BU:88:TYR:O     | 50:BU:92:ARG:HB2   | 1.71                     | 0.90              |
| 53:BX:44:ALA:CB    | 53:BX:91:LEU:HD12  | 2.02                     | 0.90              |
| 57:BZ:13:HIS:HB2   | 57:BZ:108:GLN:CG   | 2.01                     | 0.90              |
| 57:BZ:81:PHE:HD1   | 57:BZ:365:HIS:HD2  | 1.19                     | 0.90              |
| 57:BZ:575:ASP:HB3  | 57:BZ:590:ARG:CB   | 1.72                     | 0.90              |
| 1:AA:976:C:C5'     | 1:AA:1156:A:H62    | 1.85                     | 0.90              |
| 7:AG:8:LYS:NZ      | 7:AG:103:LEU:HG    | 1.87                     | 0.90              |
| 7:AG:96:ARG:O      | 7:AG:99:MET:HB2    | 1.72                     | 0.90              |
| 14:AP:62:LYS:HB3   | 14:AP:65:VAL:H     | 1.35                     | 0.90              |
| 15:AQ:21:GLU:O     | 15:AQ:23:ARG:HD3   | 1.72                     | 0.90              |
| 19:AU:62:LYS:O     | 19:AU:63:LYS:HB2   | 1.69                     | 0.90              |
| 21:AW:152:ALA:HA   | 21:AW:155:LEU:CD1  | 2.01                     | 0.90              |
| 34:BA:191(C):G:H2' | 34:BA:191(D):U:C6  | 2.06                     | 0.90              |
| 34:BA:599:C:C4'    | 41:BL:130:GLY:HA3  | 2.01                     | 0.90              |
| 34:BA:1221:G:O3'   | 52:BW:53:ASN:O     | 1.60                     | 0.90              |
| 37:BH:125:HIS:HB3  | 37:BH:152:SER:HB2  | 1.52                     | 0.90              |
| 39:BJ:23:LYS:HA    | 39:BJ:26:ILE:HD12  | 1.53                     | 0.90              |
| 45:BP:117:ARG:HG3  | 45:BP:117:ARG:HH11 | 1.37                     | 0.90              |
| 57:BZ:251:VAL:HA   | 57:BZ:274:VAL:HG22 | 1.51                     | 0.90              |
| 1:AA:636:G:H22     | 11:AM:75:ILE:CD1   | 1.83                     | 0.89              |
| 1:AA:847:U:H3      | 1:AA:933:A:H2      | 1.13                     | 0.89              |
| 1:AA:1237:A:O2'    | 1:AA:1238:G:O4'    | 1.89                     | 0.89              |
| 1:AA:1906:G:C8     | 1:AA:1929:G:C4     | 2.60                     | 0.89              |
| 1:AA:2326:C:N3     | 1:AA:2389:G:N1     | 2.19                     | 0.89              |
| 1:AA:2615:U:C1'    | 26:Ab:7:PRO:HB3    | 2.01                     | 0.89              |
| 7:AG:16:ARG:HD2    | 7:AG:20:ILE:HG13   | 1.54                     | 0.89              |
| 9:AK:23:LEU:HD12   | 9:AK:63:THR:CG2    | 2.01                     | 0.89              |
| 11:AM:72:PRO:CB    | 11:AM:111:ARG:HB3  | 2.00                     | 0.89              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 11:AM:76:LYS:HA    | 11:AM:101:VAL:HG11 | 1.52                     | 0.89              |
| 13:AO:102:GLU:CD   | 13:AO:103:ARG:H    | 1.80                     | 0.89              |
| 20:AV:95:LYS:HG3   | 20:AV:103:GLY:CA   | 2.02                     | 0.89              |
| 22:AX:68:GLU:HB3   | 22:AX:80:HIS:O     | 1.70                     | 0.89              |
| 32:AJ:14:ALA:CB    | 32:AJ:48:MET:O     | 2.20                     | 0.89              |
| 34:BA:573:A:H2'    | 34:BA:574:A:C8     | 2.07                     | 0.89              |
| 45:BP:84:LEU:CB    | 45:BP:104:VAL:HG11 | 2.02                     | 0.89              |
| 46:BQ:15:VAL:HB    | 46:BQ:34:LEU:HD21  | 1.34                     | 0.89              |
| 46:BQ:80:ARG:CB    | 52:BW:65:ASN:HD22  | 1.85                     | 0.89              |
| 57:BZ:14:VAL:H     | 57:BZ:108:GLN:HG3  | 0.73                     | 0.89              |
| 57:BZ:250:LYS:C    | 57:BZ:273:ILE:HD12 | 1.97                     | 0.89              |
| 1:AA:6:A:C2        | 1:AA:2897:U:H2'    | 2.08                     | 0.89              |
| 1:AA:242:G:H8      | 29:Ae:4:MET:HG3    | 1.37                     | 0.89              |
| 1:AA:665:C:H2'     | 1:AA:666:G:H8      | 1.35                     | 0.89              |
| 1:AA:902:C:H2'     | 1:AA:903:C:N3      | 1.87                     | 0.89              |
| 1:AA:931:G:H8      | 1:AA:932:G:H1'     | 1.27                     | 0.89              |
| 1:AA:1044:G:N3     | 1:AA:1046:A:N7     | 2.20                     | 0.89              |
| 1:AA:1255:U:H5'    | 1:AA:1256:G:O5'    | 1.72                     | 0.89              |
| 1:AA:1471:A:H62    | 1:AA:1519:G:N2     | 1.70                     | 0.89              |
| 1:AA:1996:C:H5''   | 1:AA:1996:C:C6     | 2.08                     | 0.89              |
| 1:AA:2051:A:H5''   | 1:AA:2578:G:H5''   | 1.52                     | 0.89              |
| 1:AA:2059:A:N1     | 1:AA:2503:A:N7     | 2.19                     | 0.89              |
| 1:AA:2472:G:OP1    | 57:BZ:529:ARG:HG2  | 1.73                     | 0.89              |
| 1:AA:2670:A:C5'    | 5:AE:206:LYS:HZ3   | 1.80                     | 0.89              |
| 1:AA:2786:U:O2     | 5:AE:61:ARG:HG3    | 1.72                     | 0.89              |
| 2:AB:116:G:C4      | 2:AB:117:G:H1'     | 2.07                     | 0.89              |
| 3:AC:18:LYS:HG2    | 3:AC:20:TYR:H      | 1.38                     | 0.89              |
| 5:AE:72:VAL:HG23   | 5:AE:74:PRO:HD3    | 1.53                     | 0.89              |
| 6:AF:4:VAL:C       | 6:AF:20:LEU:CD1    | 2.45                     | 0.89              |
| 7:AG:44:GLY:O      | 7:AG:47:LYS:HB3    | 1.71                     | 0.89              |
| 12:AN:106:VAL:CG2  | 12:AN:107:ALA:H    | 1.83                     | 0.89              |
| 18:AT:11:ARG:HB3   | 18:AT:11:ARG:NH2   | 1.88                     | 0.89              |
| 21:AW:157:LEU:HD21 | 21:AW:161:VAL:HA   | 1.50                     | 0.89              |
| 24:AZ:26:LEU:HB2   | 24:AZ:28:LEU:HD21  | 1.51                     | 0.89              |
| 29:Ae:34:TRP:C     | 29:Ae:36:LYS:N     | 2.20                     | 0.89              |
| 34:BA:108:G:H5''   | 34:BA:109:A:H5''   | 1.52                     | 0.89              |
| 34:BA:828:A:H2'    | 34:BA:829:G:O4'    | 1.71                     | 0.89              |
| 36:BG:108:ASN:ND2  | 36:BG:110:ASN:HB2  | 1.87                     | 0.89              |
| 39:BJ:81:ILE:HG22  | 39:BJ:82:ARG:N     | 1.86                     | 0.89              |
| 43:BN:68:HIS:HB3   | 43:BN:70:ARG:HH21  | 1.35                     | 0.89              |
| 46:BQ:14:ARG:HB3   | 46:BQ:41:PRO:C     | 1.79                     | 0.89              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:BZ:164:TYR:CA   | 57:BZ:172:ALA:O    | 2.18                     | 0.89              |
| 1:AA:691:C:H1'     | 4:AD:45:ASN:HD21   | 1.37                     | 0.89              |
| 1:AA:1095:A:O4'    | 57:BZ:416:MET:HE1  | 1.72                     | 0.89              |
| 1:AA:1180:C:OP2    | 1:AA:1180:C:H3'    | 1.71                     | 0.89              |
| 1:AA:1443:G:C2     | 1:AA:1444:G:H1'    | 2.07                     | 0.89              |
| 1:AA:1524:G:H2'    | 1:AA:1525:G:H8     | 1.37                     | 0.89              |
| 1:AA:1667:G:H2'    | 1:AA:1667:G:N3     | 1.87                     | 0.89              |
| 1:AA:1802:A:N3     | 1:AA:1802:A:H2'    | 1.87                     | 0.89              |
| 1:AA:1954:G:C2     | 1:AA:2551:C:H5''   | 2.08                     | 0.89              |
| 1:AA:2064:C:H1'    | 1:AA:2450:A:H62    | 1.36                     | 0.89              |
| 1:AA:2176:A:C1'    | 3:AC:215:THR:HB    | 2.02                     | 0.89              |
| 1:AA:2443:C:H2'    | 1:AA:2444:G:H8     | 1.36                     | 0.89              |
| 1:AA:2618:G:N3     | 5:AE:150:VAL:HG11  | 1.86                     | 0.89              |
| 1:AA:2700:C:H2'    | 1:AA:2701:C:H5''   | 1.51                     | 0.89              |
| 4:AD:9:TYR:OH      | 4:AD:91:ARG:NH2    | 2.04                     | 0.89              |
| 5:AE:44:TYR:HB3    | 5:AE:82:ARG:NH1    | 1.88                     | 0.89              |
| 6:AF:18:ARG:C      | 6:AF:19:GLU:HG3    | 1.98                     | 0.89              |
| 7:AG:76:SER:O      | 7:AG:83:ARG:HG3    | 1.71                     | 0.89              |
| 10:AL:59:LYS:HB2   | 10:AL:84:ALA:O     | 1.73                     | 0.89              |
| 13:AO:55:ALA:HB2   | 13:AO:79:LEU:HD11  | 1.55                     | 0.89              |
| 16:AR:114:LYS:HG2  | 16:AR:115:ALA:N    | 1.86                     | 0.89              |
| 18:AT:14:PRO:O     | 18:AT:17:VAL:HG22  | 1.73                     | 0.89              |
| 21:AW:104:PHE:CZ   | 21:AW:120:ILE:HG22 | 2.08                     | 0.89              |
| 22:AX:4:LYS:HZ1    | 56:BE:75:C:C2'     | 1.70                     | 0.89              |
| 33:Ag:315:UNK:CB   | 33:Ag:320:UNK:CB   | 2.48                     | 0.89              |
| 34:BA:1270:C:H1'   | 34:BA:1313:U:H4'   | 1.54                     | 0.89              |
| 34:BA:1455:G:C2'   | 34:BA:1459:C:H5'   | 2.02                     | 0.89              |
| 35:BF:118:LEU:HD13 | 35:BF:142:LEU:HD12 | 1.52                     | 0.89              |
| 36:BG:30:ARG:HB3   | 47:BR:36:PHE:O     | 1.71                     | 0.89              |
| 36:BG:40:ARG:HA    | 36:BG:43:LEU:HD13  | 1.55                     | 0.89              |
| 39:BJ:76:ALA:HB1   | 39:BJ:80:ARG:NH1   | 1.86                     | 0.89              |
| 40:BK:63:LYS:HA    | 40:BK:63:LYS:HE2   | 1.54                     | 0.89              |
| 41:BL:14:ARG:HB3   | 41:BL:14:ARG:HH11  | 1.32                     | 0.89              |
| 50:BU:75:ARG:HH22  | 50:BU:77:VAL:HG22  | 1.35                     | 0.89              |
| 1:AA:64:A:N3       | 19:AU:66:LEU:HD22  | 1.87                     | 0.89              |
| 1:AA:365:C:H2'     | 1:AA:366:C:C6      | 2.06                     | 0.89              |
| 1:AA:586:A:H5'     | 6:AF:89:VAL:CG2    | 2.03                     | 0.89              |
| 1:AA:1083:U:H1'    | 1:AA:1085:A:C6     | 2.07                     | 0.89              |
| 1:AA:1186:G:H3'    | 1:AA:1187:G:C8     | 2.05                     | 0.89              |
| 1:AA:1612:C:O2'    | 28:Ad:5:TRP:HB3    | 1.70                     | 0.89              |
| 1:AA:2020:A:H2'    | 1:AA:2021:C:H5''   | 1.53                     | 0.89              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2056:G:N2    | 26:Ab:4:HIS:HD2    | 1.70                     | 0.89              |
| 4:AD:142:VAL:C    | 4:AD:163:ALA:HB3   | 1.96                     | 0.89              |
| 7:AG:59:GLU:OE1   | 7:AG:152:LEU:HD22  | 1.72                     | 0.89              |
| 8:AH:6:ARG:HA     | 8:AH:6:ARG:NH1     | 1.88                     | 0.89              |
| 17:AS:68:LYS:HG2  | 17:AS:95:LEU:HD21  | 1.52                     | 0.89              |
| 18:AT:36:LEU:HD21 | 18:AT:47:VAL:HB    | 1.55                     | 0.89              |
| 19:AU:7:VAL:HG11  | 23:AY:31:ARG:HH22  | 1.37                     | 0.89              |
| 21:AW:10:ARG:CZ   | 21:AW:36:LYS:H     | 1.86                     | 0.89              |
| 30:Af:11:CYS:HB3  | 30:Af:32:HIS:NE2   | 1.87                     | 0.89              |
| 33:Ag:7:UNK:C     | 33:Ag:147:UNK:CB   | 2.50                     | 0.89              |
| 34:BA:307:C:C4    | 34:BA:308:C:H5     | 1.89                     | 0.89              |
| 34:BA:703:G:H4'   | 34:BA:704:A:O5'    | 1.70                     | 0.89              |
| 34:BA:790:A:N6    | 34:BA:791:G:C2     | 2.40                     | 0.89              |
| 34:BA:942:G:H21   | 42:BM:124:GLN:HE22 | 1.12                     | 0.89              |
| 34:BA:1225:A:H4'  | 52:BW:78:ARG:HB3   | 1.51                     | 0.89              |
| 34:BA:1312:G:C6   | 34:BA:1326:C:N4    | 2.40                     | 0.89              |
| 40:BK:135:VAL:O   | 40:BK:138:LYS:HB3  | 1.71                     | 0.89              |
| 41:BL:32:LYS:HG2  | 41:BL:33:GLU:H     | 1.37                     | 0.89              |
| 56:BE:21:A:H2'    | 56:BE:22:G:C5'     | 2.02                     | 0.89              |
| 57:BZ:240:ILE:CA  | 57:BZ:286:ASP:HB3  | 2.00                     | 0.89              |
| 57:BZ:499:PHE:HB2 | 57:BZ:540:GLY:O    | 1.71                     | 0.89              |
| 1:AA:554:U:H2'    | 1:AA:556:G:N7      | 1.87                     | 0.89              |
| 1:AA:751:A:H5'    | 18:AT:90:ARG:NH2   | 1.88                     | 0.89              |
| 1:AA:848:G:H2'    | 1:AA:849:A:C8      | 2.08                     | 0.89              |
| 1:AA:1036:G:H5'   | 8:AH:59:ARG:HH22   | 1.37                     | 0.89              |
| 1:AA:1375:C:H2'   | 1:AA:1376:C:H6     | 1.36                     | 0.89              |
| 1:AA:1475:G:N2    | 1:AA:1477:A:H62    | 1.70                     | 0.89              |
| 1:AA:1819:A:H1'   | 1:AA:1821:A:C2     | 2.07                     | 0.89              |
| 1:AA:2329:G:H22   | 1:AA:2386:C:H42    | 1.20                     | 0.89              |
| 4:AD:206:LEU:HD13 | 4:AD:206:LEU:N     | 1.87                     | 0.89              |
| 5:AE:53:PRO:HG3   | 5:AE:75:VAL:HG22   | 1.54                     | 0.89              |
| 6:AF:201:VAL:HG12 | 6:AF:205:ARG:HE    | 1.36                     | 0.89              |
| 10:AL:77:ILE:HG23 | 15:AQ:75:ILE:HD12  | 1.54                     | 0.89              |
| 10:AL:116:SER:N   | 34:BA:345:C:O2     | 2.05                     | 0.89              |
| 14:AP:20:ARG:HH21 | 14:AP:20:ARG:CB    | 1.84                     | 0.89              |
| 16:AR:93:LYS:N    | 17:AS:10:LYS:HZ2   | 1.69                     | 0.89              |
| 24:AZ:9:VAL:HG23  | 24:AZ:10:LYS:N     | 1.83                     | 0.89              |
| 34:BA:414:A:H2'   | 34:BA:415:A:H8     | 1.37                     | 0.89              |
| 35:BF:71:VAL:HG13 | 35:BF:93:VAL:O     | 1.71                     | 0.89              |
| 36:BG:134:ILE:O   | 36:BG:138:VAL:HG23 | 1.71                     | 0.89              |
| 37:BH:18:LYS:HA   | 37:BH:33:MET:HE2   | 1.54                     | 0.89              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 38:BI:121:LYS:NZ  | 38:BI:122:GLU:N    | 2.19                     | 0.89              |
| 38:BI:121:LYS:HZ2 | 38:BI:122:GLU:N    | 1.68                     | 0.89              |
| 41:BL:46:LYS:HZ2  | 41:BL:64:LYS:HA    | 1.34                     | 0.89              |
| 41:BL:83:ILE:HA   | 41:BL:137:VAL:HG22 | 1.54                     | 0.89              |
| 48:BS:28:GLN:O    | 48:BS:32:LEU:HD23  | 1.72                     | 0.89              |
| 48:BS:34:LEU:HG   | 48:BS:35:ARG:H     | 1.37                     | 0.89              |
| 49:BT:39:TYR:CZ   | 49:BT:41:PRO:HG3   | 2.08                     | 0.89              |
| 1:AA:223:A:N1     | 1:AA:407:G:O2'     | 2.06                     | 0.89              |
| 1:AA:852:G:H5'    | 24:AZ:45:GLY:HA3   | 1.54                     | 0.89              |
| 1:AA:1072:C:C2'   | 1:AA:1093:G:C6     | 2.54                     | 0.89              |
| 1:AA:1080:C:O2'   | 1:AA:1081:U:O4'    | 1.89                     | 0.89              |
| 1:AA:1138:G:N2    | 1:AA:1139:G:H1'    | 1.86                     | 0.89              |
| 1:AA:1454:U:H5'   | 1:AA:1455:G:OP2    | 1.72                     | 0.89              |
| 1:AA:1614:A:H3'   | 1:AA:1614:A:N3     | 1.85                     | 0.89              |
| 1:AA:1785:A:OP1   | 1:AA:1982:C:H5'    | 1.72                     | 0.89              |
| 1:AA:1943:U:N1    | 1:AA:1945:G:H5''   | 1.87                     | 0.89              |
| 1:AA:2512:C:H5''  | 5:AE:120:TRP:CH2   | 2.07                     | 0.89              |
| 1:AA:2749:A:H4'   | 8:AH:62:LYS:HG3    | 1.53                     | 0.89              |
| 2:AB:51:G:H5'     | 14:AP:60:GLY:HA2   | 1.50                     | 0.89              |
| 3:AC:116:THR:HA   | 3:AC:146:GLY:O     | 1.72                     | 0.89              |
| 5:AE:133:LYS:HB3  | 5:AE:137:HIS:CE1   | 2.08                     | 0.89              |
| 7:AG:5:VAL:HG12   | 7:AG:9:ARG:NH2     | 1.87                     | 0.89              |
| 7:AG:62:LEU:HD23  | 7:AG:143:GLU:CB    | 2.02                     | 0.89              |
| 9:AK:43:THR:HB    | 9:AK:44:PRO:HD2    | 0.91                     | 0.89              |
| 10:AL:107:ARG:O   | 10:AL:109:LYS:HE2  | 1.72                     | 0.89              |
| 11:AM:55:ARG:O    | 11:AM:56:SER:HB2   | 1.70                     | 0.89              |
| 14:AP:13:ARG:HD3  | 14:AP:90:GLY:O     | 1.72                     | 0.89              |
| 23:AY:23:LYS:O    | 23:AY:26:GLU:HB3   | 1.72                     | 0.89              |
| 28:Ad:34:ARG:NH2  | 28:Ad:42:LEU:HA    | 1.87                     | 0.89              |
| 34:BA:64:G:H4'    | 34:BA:65:U:C5'     | 2.02                     | 0.89              |
| 34:BA:587:G:H1'   | 34:BA:755:G:H22    | 1.29                     | 0.89              |
| 34:BA:1126:U:OP1  | 34:BA:1280:A:H8    | 1.49                     | 0.89              |
| 35:BF:82:ARG:HD2  | 35:BF:92:TYR:OH    | 1.70                     | 0.89              |
| 36:BG:83:ARG:HG3  | 36:BG:87:LEU:HD11  | 1.55                     | 0.89              |
| 38:BI:102:ALA:HB2 | 38:BI:120:THR:HG22 | 1.54                     | 0.89              |
| 40:BK:69:VAL:HG22 | 40:BK:135:VAL:CG2  | 2.00                     | 0.89              |
| 41:BL:37:ARG:HD2  | 41:BL:38:ILE:HD13  | 1.55                     | 0.89              |
| 46:BQ:36:LYS:CB   | 46:BQ:56:LEU:HD21  | 2.01                     | 0.89              |
| 56:BD:54:U:C2'    | 56:BD:55:U:H5'     | 2.02                     | 0.89              |
| 57:BZ:122:LYS:CG  | 57:BZ:158:LEU:O    | 2.21                     | 0.89              |
| 57:BZ:514:HIS:CD2 | 57:BZ:515:GLY:HA2  | 2.07                     | 0.89              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:30:G:H2'     | 1:AA:31:C:O4'      | 1.72                     | 0.89              |
| 1:AA:70:G:H5''    | 1:AA:71:A:OP1      | 1.73                     | 0.89              |
| 1:AA:310:A:H2'    | 1:AA:312:G:N7      | 1.87                     | 0.89              |
| 1:AA:350:U:H2'    | 1:AA:350:U:O2      | 1.72                     | 0.89              |
| 1:AA:669:G:N3     | 1:AA:669:G:H2'     | 1.85                     | 0.89              |
| 1:AA:1530:G:H2'   | 1:AA:1531:C:C6     | 2.06                     | 0.89              |
| 1:AA:1788:C:C4    | 1:AA:1789:A:C8     | 2.60                     | 0.89              |
| 1:AA:1824:G:H21   | 4:AD:253:GLN:HG2   | 1.38                     | 0.89              |
| 1:AA:2227:A:C1'   | 4:AD:262:ARG:HD2   | 2.03                     | 0.89              |
| 3:AC:91:ALA:HB2   | 3:AC:153:ILE:HG21  | 1.53                     | 0.89              |
| 7:AG:58:GLN:O     | 7:AG:61:ALA:HB3    | 1.71                     | 0.89              |
| 7:AG:110:ALA:HB1  | 7:AG:139:LEU:HG    | 1.55                     | 0.89              |
| 7:AG:111:LEU:HB3  | 7:AG:112:PRO:CD    | 2.02                     | 0.89              |
| 32:AJ:19:PRO:HG3  | 32:AJ:38:VAL:N     | 1.85                     | 0.89              |
| 34:BA:164:U:H2'   | 34:BA:165:C:H5     | 1.38                     | 0.89              |
| 34:BA:255:G:H4'   | 50:BU:16:GLN:O     | 1.71                     | 0.89              |
| 34:BA:975:A:O2'   | 34:BA:976:G:OP2    | 1.91                     | 0.89              |
| 34:BA:1329:A:P    | 46:BQ:29:ARG:HG2   | 2.12                     | 0.89              |
| 37:BH:20:TYR:O    | 37:BH:22:LYS:N     | 2.05                     | 0.89              |
| 38:BI:51:VAL:O    | 38:BI:55:VAL:HG23  | 1.71                     | 0.89              |
| 40:BK:15:ASP:CG   | 40:BK:23:VAL:HG11  | 1.96                     | 0.89              |
| 52:BW:9:VAL:CG1   | 52:BW:41:VAL:HG23  | 2.02                     | 0.89              |
| 56:BD:72:C:N3     | 56:BD:73:A:H2      | 1.71                     | 0.89              |
| 57:BZ:207:MET:HB2 | 57:BZ:226:ILE:CD1  | 2.01                     | 0.89              |
| 1:AA:70:G:H4'     | 1:AA:71:A:C5'      | 2.02                     | 0.89              |
| 1:AA:450:G:H5''   | 1:AA:451:C:OP2     | 1.73                     | 0.89              |
| 1:AA:1019:U:P     | 1:AA:1036:G:C1'    | 2.61                     | 0.89              |
| 1:AA:1048:A:N1    | 1:AA:1113:U:H5'    | 1.88                     | 0.89              |
| 1:AA:1637:A:H4'   | 1:AA:2711:A:O2'    | 0.71                     | 0.89              |
| 1:AA:1725:G:N2    | 1:AA:1726:G:C1'    | 2.36                     | 0.89              |
| 1:AA:2103:C:H2'   | 1:AA:2104:G:C8     | 2.08                     | 0.89              |
| 1:AA:2886:G:O2'   | 26:Ab:31:VAL:HB    | 1.73                     | 0.89              |
| 4:AD:156:ALA:O    | 4:AD:158:ALA:N     | 2.05                     | 0.89              |
| 10:AL:64:ARG:HG3  | 10:AL:65:THR:H     | 1.34                     | 0.89              |
| 11:AM:113:LYS:NZ  | 11:AM:115:LEU:HD12 | 1.88                     | 0.89              |
| 12:AN:34:LEU:CB   | 12:AN:67:ARG:HH22  | 1.86                     | 0.89              |
| 15:AQ:30:VAL:HG23 | 15:AQ:90:GLN:HA    | 1.54                     | 0.89              |
| 16:AR:85:LYS:HD3  | 16:AR:116:ALA:O    | 1.72                     | 0.89              |
| 23:AY:27:LEU:CA   | 23:AY:30:LEU:HG    | 2.01                     | 0.89              |
| 29:Ae:55:ALA:HA   | 29:Ae:58:ILE:HD11  | 1.54                     | 0.89              |
| 30:Af:23:VAL:HB   | 30:Af:36:GLN:HG2   | 1.54                     | 0.89              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:598:U:H4'    | 41:BL:94:TYR:HD2   | 1.37                     | 0.89              |
| 34:BA:958:A:C1'    | 52:BW:55:LYS:HZ2   | 1.86                     | 0.89              |
| 34:BA:1028:C:H2'   | 34:BA:1028(A):C:C6 | 2.08                     | 0.89              |
| 37:BH:127:THR:C    | 37:BH:146:ILE:HG22 | 1.98                     | 0.89              |
| 46:BQ:16:ASP:O     | 46:BQ:30:ALA:CB    | 2.20                     | 0.89              |
| 48:BS:75:PRO:HA    | 48:BS:78:TYR:HB3   | 1.53                     | 0.89              |
| 49:BT:3:LYS:HE2    | 49:BT:24:ALA:HB2   | 1.52                     | 0.89              |
| 53:BX:12:ALA:N     | 53:BX:13:LEU:HD12  | 1.86                     | 0.89              |
| 57:BZ:220:VAL:HG23 | 57:BZ:279:LEU:HB2  | 1.54                     | 0.89              |
| 57:BZ:382:VAL:CG2  | 57:BZ:578:VAL:CB   | 2.50                     | 0.89              |
| 57:BZ:426:LEU:HD12 | 57:BZ:441:TYR:CD1  | 2.06                     | 0.89              |
| 1:AA:95:G:H4'      | 23:AY:39:LEU:O     | 1.73                     | 0.89              |
| 1:AA:557:U:O2'     | 9:AK:112:LEU:HD11  | 1.73                     | 0.89              |
| 1:AA:640:C:C2'     | 1:AA:641:C:H5''    | 2.01                     | 0.89              |
| 1:AA:792:G:N2      | 1:AA:2072:G:H1'    | 1.88                     | 0.89              |
| 1:AA:1817:G:P      | 4:AD:88:ARG:HH12   | 1.96                     | 0.89              |
| 1:AA:1931:U:C6     | 1:AA:1932:A:N7     | 2.41                     | 0.89              |
| 1:AA:2028:U:H2'    | 1:AA:2029:G:C8     | 2.07                     | 0.89              |
| 1:AA:2329:G:N2     | 1:AA:2386:C:H42    | 1.69                     | 0.89              |
| 1:AA:2348:U:C3'    | 29:Ae:42:ARG:HH22  | 1.83                     | 0.89              |
| 1:AA:2564:A:OP1    | 1:AA:2648:C:O2'    | 1.89                     | 0.89              |
| 1:AA:2597:G:C4'    | 4:AD:242:ARG:HE    | 1.85                     | 0.89              |
| 1:AA:2681:C:N4     | 1:AA:2725:A:H62    | 1.71                     | 0.89              |
| 3:AC:43:VAL:HG21   | 3:AC:224:ILE:HD13  | 0.89                     | 0.89              |
| 8:AH:43:VAL:CG2    | 8:AH:52:VAL:HA     | 2.02                     | 0.89              |
| 8:AH:45:VAL:HG22   | 8:AH:50:VAL:HG13   | 1.55                     | 0.89              |
| 12:AN:33:GLY:O     | 12:AN:131:ILE:HG23 | 1.73                     | 0.89              |
| 12:AN:43:THR:HA    | 12:AN:94:VAL:HG11  | 1.52                     | 0.89              |
| 16:AR:67:ALA:HB1   | 16:AR:71:GLN:HE22  | 1.37                     | 0.89              |
| 17:AS:41:GLY:HA2   | 17:AS:51:VAL:HG22  | 1.55                     | 0.89              |
| 17:AS:49:THR:HG22  | 17:AS:50:PRO:HD2   | 1.53                     | 0.89              |
| 32:AJ:104:VAL:HG12 | 32:AJ:127:ILE:CG1  | 1.88                     | 0.89              |
| 34:BA:279:A:H1'    | 34:BA:281:G:C2     | 2.08                     | 0.89              |
| 34:BA:692:U:O2     | 34:BA:694:A:H3'    | 1.72                     | 0.89              |
| 34:BA:942:G:H21    | 42:BM:124:GLN:NE2  | 1.71                     | 0.89              |
| 35:BF:80:ILE:HD12  | 35:BF:208:ILE:HG12 | 1.53                     | 0.89              |
| 38:BI:94:ALA:HB1   | 38:BI:98:THR:HG21  | 1.52                     | 0.89              |
| 43:BN:50:ILE:HB    | 47:BR:41:ARG:NE    | 1.88                     | 0.89              |
| 1:AA:1179:C:O2'    | 1:AA:1180:C:H6     | 1.56                     | 0.89              |
| 1:AA:1265:A:H1'    | 1:AA:1267:U:C4     | 2.08                     | 0.89              |
| 1:AA:2659:G:C2'    | 1:AA:2663:G:H22    | 1.85                     | 0.89              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 2:AB:51:G:H2'      | 2:AB:52:A:O5'      | 1.72                     | 0.89              |
| 3:AC:76:ALA:HB2    | 3:AC:153:ILE:CD1   | 2.01                     | 0.89              |
| 4:AD:9:TYR:HH      | 4:AD:91:ARG:HH21   | 1.21                     | 0.89              |
| 4:AD:177:LEU:HD11  | 4:AD:268:ARG:NH2   | 1.87                     | 0.89              |
| 6:AF:121:GLY:HA3   | 6:AF:191:ARG:HE    | 1.37                     | 0.89              |
| 7:AG:47:LYS:HB2    | 7:AG:53:LEU:HD11   | 1.52                     | 0.89              |
| 11:AM:13:ASN:HD22  | 11:AM:14:LYS:N     | 1.71                     | 0.89              |
| 12:AN:12:GLN:HE21  | 12:AN:13:GLN:HG2   | 1.33                     | 0.89              |
| 12:AN:42:ILE:HD13  | 12:AN:43:THR:N     | 1.88                     | 0.89              |
| 12:AN:45:GLN:O     | 12:AN:48:GLU:HG2   | 1.73                     | 0.89              |
| 20:AV:2:ARG:HD2    | 20:AV:3:VAL:N      | 1.86                     | 0.89              |
| 21:AW:175:VAL:HG22 | 21:AW:176:PRO:HD2  | 1.54                     | 0.89              |
| 25:Aa:29:PRO:HG2   | 25:Aa:31:ILE:HG23  | 1.54                     | 0.89              |
| 32:AJ:78:ILE:CG2   | 32:AJ:127:ILE:HG12 | 2.02                     | 0.89              |
| 34:BA:61:G:H2'     | 34:BA:62:U:C6      | 2.08                     | 0.89              |
| 34:BA:1274:G:N2    | 34:BA:1275:A:H62   | 1.71                     | 0.89              |
| 34:BA:1346:A:H4'   | 34:BA:1347:G:O5'   | 1.72                     | 0.89              |
| 34:BA:1390:U:H2'   | 34:BA:1391:U:C6    | 2.08                     | 0.89              |
| 35:BF:61:LEU:HD11  | 35:BF:68:ILE:CD1   | 2.02                     | 0.89              |
| 38:BI:144:THR:HG22 | 38:BI:146:ALA:N    | 1.88                     | 0.89              |
| 42:BM:98:PRO:C     | 42:BM:100:GLY:H    | 1.79                     | 0.89              |
| 46:BQ:78:ILE:CA    | 46:BQ:81:LEU:HD11  | 2.03                     | 0.89              |
| 55:BC:57:G:H2'     | 55:BC:58:A:H5'     | 1.54                     | 0.89              |
| 56:BD:6:G:O6       | 56:BD:67:C:N4      | 2.06                     | 0.89              |
| 57:BZ:19:THR:HA    | 57:BZ:21:LEU:H     | 1.35                     | 0.89              |
| 57:BZ:509:LYS:CE   | 57:BZ:561:ILE:HD13 | 2.03                     | 0.89              |
| 1:AA:716:A:N3      | 48:BS:44:LYS:HE2   | 1.88                     | 0.88              |
| 1:AA:818:G:O2'     | 1:AA:819:A:H5''    | 1.71                     | 0.88              |
| 1:AA:1105:U:N3     | 1:AA:1107:G:C6     | 2.41                     | 0.88              |
| 1:AA:1406:U:H2'    | 1:AA:1407:C:H6     | 1.37                     | 0.88              |
| 1:AA:2052:G:H1'    | 5:AE:149:ARG:C     | 1.97                     | 0.88              |
| 1:AA:2122:U:C4'    | 3:AC:166:ASP:CG    | 2.46                     | 0.88              |
| 1:AA:2314:C:H2'    | 1:AA:2315:G:H8     | 1.37                     | 0.88              |
| 1:AA:2636:U:H4'    | 5:AE:79:ARG:HD3    | 1.55                     | 0.88              |
| 6:AF:110:LEU:CA    | 6:AF:183:VAL:HG22  | 2.03                     | 0.88              |
| 7:AG:173:LEU:HD12  | 7:AG:176:LEU:HD12  | 1.55                     | 0.88              |
| 12:AN:78:PRO:O     | 12:AN:79:LEU:HD23  | 1.73                     | 0.88              |
| 13:AO:46:GLY:C     | 13:AO:49:ASP:HB3   | 1.97                     | 0.88              |
| 19:AU:85:PRO:CG    | 19:AU:87:GLN:HG2   | 2.01                     | 0.88              |
| 31:AI:51:LEU:CB    | 31:AI:90:ALA:CB    | 2.50                     | 0.88              |
| 32:AJ:52:ILE:CG1   | 32:AJ:76:TYR:CD1   | 2.55                     | 0.88              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BA:1261:A:H61   | 34:BA:1274:G:C1'  | 1.85                     | 0.88              |
| 35:BF:95:GLN:HG3   | 35:BF:148:TYR:CB  | 2.02                     | 0.88              |
| 36:BG:38:ARG:HB2   | 36:BG:94:LEU:HD21 | 1.54                     | 0.88              |
| 37:BH:11:LEU:HA    | 37:BH:14:ARG:HB3  | 1.53                     | 0.88              |
| 41:BL:46:LYS:NZ    | 41:BL:64:LYS:HA   | 1.88                     | 0.88              |
| 46:BQ:15:VAL:CB    | 46:BQ:34:LEU:HD21 | 1.77                     | 0.88              |
| 57:BZ:226:ILE:HB   | 57:BZ:267:LEU:HA  | 1.55                     | 0.88              |
| 57:BZ:502:PHE:CE2  | 57:BZ:555:VAL:C   | 2.51                     | 0.88              |
| 1:AA:242:G:H8      | 29:Ae:4:MET:CG    | 1.86                     | 0.88              |
| 1:AA:392:C:H2'     | 1:AA:393:C:H6     | 1.38                     | 0.88              |
| 1:AA:1081:U:C5'    | 32:AJ:125:ARG:CB  | 2.40                     | 0.88              |
| 1:AA:1157:G:OP2    | 1:AA:1157:G:H3'   | 1.71                     | 0.88              |
| 1:AA:1376:C:H2'    | 1:AA:1377:G:O4'   | 1.73                     | 0.88              |
| 1:AA:1585:C:H5''   | 1:AA:1586:A:OP1   | 1.74                     | 0.88              |
| 1:AA:1824:G:H2'    | 1:AA:1825:A:O4'   | 1.72                     | 0.88              |
| 1:AA:1992:G:H1'    | 1:AA:1993:U:C5    | 2.07                     | 0.88              |
| 1:AA:2405:G:H2'    | 1:AA:2411:A:H61   | 1.38                     | 0.88              |
| 4:AD:13:ARG:CZ     | 4:AD:19:ALA:HB1   | 2.03                     | 0.88              |
| 4:AD:111:LEU:HB3   | 4:AD:115:GLN:HE22 | 1.37                     | 0.88              |
| 5:AE:41:LYS:C      | 5:AE:43:GLY:H     | 1.81                     | 0.88              |
| 17:AS:6:LYS:HE2    | 17:AS:10:LYS:O    | 1.73                     | 0.88              |
| 22:AX:12:ASN:HA    | 22:AX:14:ARG:NH2  | 1.88                     | 0.88              |
| 31:AI:51:LEU:HA    | 31:AI:89:ALA:O    | 1.73                     | 0.88              |
| 34:BA:43:C:C5'     | 49:BT:12:LYS:HB3  | 2.01                     | 0.88              |
| 34:BA:1302:U:H5    | 46:BQ:13:LYS:HZ2  | 1.21                     | 0.88              |
| 35:BF:130:ARG:HB3  | 35:BF:131:PRO:HD2 | 1.53                     | 0.88              |
| 37:BH:105:VAL:HG21 | 37:BH:121:VAL:CG2 | 2.03                     | 0.88              |
| 39:BJ:26:ILE:O     | 39:BJ:30:LEU:HG   | 1.72                     | 0.88              |
| 41:BL:51:VAL:HG21  | 41:BL:60:ARG:HH21 | 1.37                     | 0.88              |
| 46:BQ:13:LYS:HB3   | 46:BQ:17:VAL:HB   | 1.55                     | 0.88              |
| 51:BV:58:LEU:HD22  | 51:BV:62:GLU:HG3  | 1.56                     | 0.88              |
| 56:BD:5:G:C5       | 56:BD:69:G:C4     | 2.61                     | 0.88              |
| 1:AA:182:A:H2'     | 1:AA:183:C:C6     | 2.09                     | 0.88              |
| 1:AA:292:C:H3'     | 1:AA:293:U:N3     | 1.89                     | 0.88              |
| 1:AA:883:G:H2'     | 1:AA:884:C:H5''   | 1.54                     | 0.88              |
| 1:AA:951:C:O2'     | 1:AA:952:G:H5'    | 1.73                     | 0.88              |
| 1:AA:1206:G:H3'    | 1:AA:1206:G:C8    | 2.07                     | 0.88              |
| 1:AA:2305:A:H2'    | 7:AG:154:GLY:HA2  | 1.52                     | 0.88              |
| 1:AA:2660:A:N7     | 1:AA:2661:G:C5    | 2.41                     | 0.88              |
| 1:AA:2673:G:H2'    | 1:AA:2674:G:C8    | 2.08                     | 0.88              |
| 1:AA:2781:A:H3'    | 1:AA:2781:A:C8    | 2.08                     | 0.88              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2832:U:C1'   | 1:AA:2834:G:H21    | 1.86                     | 0.88              |
| 1:AA:2852:G:H2'   | 1:AA:2853:C:C6     | 2.08                     | 0.88              |
| 4:AD:133:LEU:O    | 4:AD:136:ILE:HG13  | 1.72                     | 0.88              |
| 4:AD:161:THR:HG23 | 4:AD:195:ALA:HB1   | 1.55                     | 0.88              |
| 5:AE:195:LEU:HD13 | 5:AE:196:VAL:H     | 1.37                     | 0.88              |
| 6:AF:66:PRO:O     | 6:AF:68:LYS:N      | 2.06                     | 0.88              |
| 7:AG:118:ARG:CG   | 7:AG:119:GLY:H     | 1.87                     | 0.88              |
| 9:AK:97:ARG:HA    | 9:AK:100:GLU:CG    | 2.03                     | 0.88              |
| 13:AO:97:VAL:HA   | 13:AO:114:VAL:HG13 | 1.55                     | 0.88              |
| 15:AQ:15:VAL:HG13 | 15:AQ:81:PRO:HB3   | 1.54                     | 0.88              |
| 21:AW:68:PRO:O    | 21:AW:90:VAL:HA    | 1.73                     | 0.88              |
| 28:Ad:33:ARG:O    | 28:Ad:37:LYS:HB2   | 1.73                     | 0.88              |
| 32:AJ:98:ARG:NH2  | 32:AJ:101:TRP:CD1  | 2.41                     | 0.88              |
| 34:BA:1319:A:C4'  | 52:BW:70:LYS:NZ    | 2.07                     | 0.88              |
| 36:BG:38:ARG:HB2  | 36:BG:94:LEU:HD11  | 1.52                     | 0.88              |
| 36:BG:53:ALA:HB2  | 36:BG:115:LEU:HD21 | 1.56                     | 0.88              |
| 57:BZ:4:LYS:O     | 57:BZ:68:TYR:CG    | 2.27                     | 0.88              |
| 57:BZ:512:LEU:CD2 | 57:BZ:518:VAL:CG1  | 2.51                     | 0.88              |
| 1:AA:6:A:N6       | 1:AA:2897:U:C4     | 2.42                     | 0.88              |
| 1:AA:259:G:H2'    | 1:AA:260:G:C8      | 2.08                     | 0.88              |
| 1:AA:728:G:C2     | 1:AA:762:U:H3'     | 2.06                     | 0.88              |
| 1:AA:893:C:H2'    | 1:AA:894:C:C6      | 2.09                     | 0.88              |
| 1:AA:914:C:H3'    | 1:AA:914:C:C6      | 2.09                     | 0.88              |
| 1:AA:1055:G:O6    | 1:AA:1056:G:N2     | 2.04                     | 0.88              |
| 1:AA:1470:G:H21   | 1:AA:1522:G:H1     | 0.92                     | 0.88              |
| 1:AA:1910:G:C8    | 1:AA:1921:G:N2     | 2.41                     | 0.88              |
| 1:AA:2244:U:H1'   | 1:AA:2434:A:C5     | 2.07                     | 0.88              |
| 1:AA:2253:G:N2    | 56:BE:75:C:H1'     | 1.87                     | 0.88              |
| 1:AA:2331:G:O3'   | 22:AX:43:THR:HB    | 1.73                     | 0.88              |
| 1:AA:2357:U:H2'   | 1:AA:2358:G:H5''   | 1.55                     | 0.88              |
| 1:AA:2361:A:H3'   | 1:AA:2362:G:H8     | 1.36                     | 0.88              |
| 1:AA:2551:C:H2'   | 1:AA:2552:U:H6     | 1.39                     | 0.88              |
| 1:AA:2637:U:C5'   | 5:AE:81:ILE:HD11   | 2.03                     | 0.88              |
| 3:AC:44:HIS:O     | 3:AC:213:TYR:CD1   | 1.93                     | 0.88              |
| 7:AG:7:LEU:HD22   | 7:AG:11:TYR:HE1    | 1.38                     | 0.88              |
| 7:AG:41:GLN:HE22  | 7:AG:155:MET:CG    | 1.87                     | 0.88              |
| 7:AG:116:ASP:HB3  | 7:AG:118:ARG:HH21  | 1.37                     | 0.88              |
| 9:AK:67:LEU:H     | 9:AK:87:LEU:HD21   | 1.35                     | 0.88              |
| 12:AN:137:TYR:OH  | 21:AW:124:ILE:HD11 | 1.73                     | 0.88              |
| 16:AR:108:GLU:OE1 | 16:AR:109:LEU:HG   | 1.73                     | 0.88              |
| 19:AU:64:LYS:O    | 19:AU:70:LEU:HG    | 1.72                     | 0.88              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:Aa:8:LYS:HG2    | 25:Aa:9:LEU:H      | 1.38                     | 0.88              |
| 28:Ad:20:ALA:HA    | 28:Ad:23:ARG:HD2   | 1.55                     | 0.88              |
| 31:Al:140:GLY:CA   | 33:Ag:137:UNK:N    | 2.35                     | 0.88              |
| 34:BA:650:G:O2'    | 34:BA:651:C:H5'    | 1.74                     | 0.88              |
| 34:BA:1455:G:H2'   | 34:BA:1459:C:H5'   | 1.56                     | 0.88              |
| 34:BA:1509:C:O2'   | 34:BA:1510:U:H5'   | 1.73                     | 0.88              |
| 35:BF:115:LEU:HD13 | 35:BF:145:LEU:HB3  | 1.56                     | 0.88              |
| 35:BF:223:ILE:O    | 35:BF:226:ARG:HB3  | 1.74                     | 0.88              |
| 37:BH:20:TYR:N     | 37:BH:33:MET:SD    | 2.47                     | 0.88              |
| 38:BI:43:LEU:HD23  | 38:BI:44:GLY:N     | 1.88                     | 0.88              |
| 41:BL:88:LYS:H     | 41:BL:88:LYS:HZ2   | 1.16                     | 0.88              |
| 49:BT:23:ASP:OD2   | 49:BT:33:ILE:HD11  | 1.71                     | 0.88              |
| 56:BD:54:U:H2'     | 56:BD:55:U:H5'     | 1.54                     | 0.88              |
| 56:BE:6:G:H3'      | 56:BE:7:A:C5'      | 2.04                     | 0.88              |
| 57:BZ:18:LYS:CB    | 60:BZ:701:GCP:PB   | 2.52                     | 0.88              |
| 1:AA:197:A:N6      | 1:AA:248:G:N2      | 2.21                     | 0.88              |
| 1:AA:1036:G:C2     | 1:AA:1120:G:N1     | 2.40                     | 0.88              |
| 1:AA:1241:A:H5''   | 1:AA:1241:A:C2     | 2.08                     | 0.88              |
| 1:AA:1996:C:O2'    | 5:AE:123:ALA:HB3   | 1.72                     | 0.88              |
| 1:AA:2239:G:C3'    | 1:AA:2240:C:H5''   | 2.03                     | 0.88              |
| 1:AA:2447:G:H8     | 1:AA:2500:U:C3'    | 1.73                     | 0.88              |
| 1:AA:2468:G:H3'    | 1:AA:2476:A:C2     | 2.08                     | 0.88              |
| 1:AA:2507:C:N1     | 59:AA:3002:8AN:C1' | 2.19                     | 0.88              |
| 1:AA:2809:A:H4'    | 1:AA:2811:G:N7     | 1.89                     | 0.88              |
| 4:AD:17:THR:O      | 4:AD:19:ALA:N      | 2.07                     | 0.88              |
| 4:AD:54:ARG:C      | 4:AD:219:PRO:HD2   | 1.99                     | 0.88              |
| 10:AL:96:THR:HG22  | 10:AL:97:ARG:N     | 1.86                     | 0.88              |
| 11:AM:107:LYS:HZ1  | 11:AM:110:TYR:HB3  | 1.36                     | 0.88              |
| 12:AN:22:LYS:HD2   | 12:AN:99:PRO:CG    | 2.04                     | 0.88              |
| 12:AN:25:ASP:HB3   | 12:AN:102:VAL:HG12 | 1.54                     | 0.88              |
| 18:AT:69:LEU:HD12  | 18:AT:109:GLU:OE1  | 1.72                     | 0.88              |
| 19:AU:7:VAL:HG23   | 23:AY:28:MET:HE3   | 1.54                     | 0.88              |
| 20:AV:82:PRO:CD    | 20:AV:97:ARG:H     | 1.87                     | 0.88              |
| 21:AW:24:LEU:O     | 21:AW:39:VAL:CB    | 2.21                     | 0.88              |
| 21:AW:151:HIS:HB3  | 21:AW:170:THR:N    | 1.89                     | 0.88              |
| 21:AW:151:HIS:CB   | 21:AW:170:THR:H    | 1.86                     | 0.88              |
| 31:Al:54:ALA:CA    | 31:Al:84:GLU:C     | 2.38                     | 0.88              |
| 34:BA:7:G:N2       | 38:BI:121:LYS:HG3  | 1.88                     | 0.88              |
| 34:BA:299:G:H2'    | 34:BA:300:A:N7     | 1.89                     | 0.88              |
| 34:BA:1154:G:H2'   | 34:BA:1155:G:H8    | 1.38                     | 0.88              |
| 34:BA:1346:A:C2    | 40:BK:10:ARG:HD3   | 2.08                     | 0.88              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1499:A:C8    | 34:BA:1500:A:C8    | 2.61                     | 0.88              |
| 41:BL:45:ILE:HD11  | 41:BL:48:TYR:HB3   | 1.54                     | 0.88              |
| 42:BM:127:LYS:CG   | 56:BE:31:A:OP1     | 2.22                     | 0.88              |
| 45:BP:54:LYS:HB3   | 45:BP:70:ILE:HB    | 1.54                     | 0.88              |
| 52:BW:11:VAL:CG1   | 52:BW:15:LEU:HB2   | 2.03                     | 0.88              |
| 56:BE:2:C:C6       | 56:BE:70:G:C6      | 2.60                     | 0.88              |
| 57:BZ:220:VAL:HG21 | 57:BZ:279:LEU:HB3  | 1.49                     | 0.88              |
| 57:BZ:400:TYR:CD1  | 57:BZ:444:PRO:N    | 2.42                     | 0.88              |
| 1:AA:370:G:C2      | 1:AA:424:G:N7      | 2.42                     | 0.88              |
| 1:AA:612:G:N2      | 1:AA:617:G:O6      | 2.06                     | 0.88              |
| 1:AA:748:G:H5'     | 18:AT:88:ARG:NH1   | 1.88                     | 0.88              |
| 1:AA:1064:C:H3'    | 1:AA:1065:U:C5     | 2.09                     | 0.88              |
| 1:AA:1672:C:H3'    | 1:AA:1673:U:H5''   | 1.56                     | 0.88              |
| 1:AA:2287:A:N7     | 1:AA:2289:G:C5     | 2.42                     | 0.88              |
| 1:AA:2674:G:O2'    | 1:AA:2675:A:H5'    | 1.74                     | 0.88              |
| 1:AA:2723:C:O2'    | 13:AO:2:ARG:HA     | 1.72                     | 0.88              |
| 3:AC:33:ALA:O      | 3:AC:39:GLU:HB2    | 1.72                     | 0.88              |
| 9:AK:127:ASP:H     | 9:AK:129:PRO:HD2   | 1.37                     | 0.88              |
| 13:AO:97:VAL:HA    | 13:AO:114:VAL:HG22 | 1.55                     | 0.88              |
| 16:AR:114:LYS:HG2  | 16:AR:115:ALA:H    | 1.39                     | 0.88              |
| 18:AT:76:VAL:HG23  | 18:AT:103:ILE:HA   | 1.53                     | 0.88              |
| 18:AT:95:ILE:HD12  | 18:AT:95:ILE:H     | 1.38                     | 0.88              |
| 21:AW:51:ALA:C     | 21:AW:53:ILE:N     | 2.24                     | 0.88              |
| 29:Ae:5:LYS:HB3    | 29:Ae:60:LEU:HA    | 1.56                     | 0.88              |
| 34:BA:27:G:N2      | 34:BA:557:G:H1'    | 1.89                     | 0.88              |
| 34:BA:655:A:H2'    | 34:BA:656:C:C6     | 2.09                     | 0.88              |
| 34:BA:1106:G:H2'   | 34:BA:1107:C:H6    | 1.30                     | 0.88              |
| 34:BA:1238:A:H62   | 34:BA:1301:U:H3    | 1.21                     | 0.88              |
| 34:BA:1440:C:O2    | 34:BA:1462:G:N2    | 2.06                     | 0.88              |
| 34:BA:1461:G:H2'   | 34:BA:1462:G:C8    | 2.08                     | 0.88              |
| 37:BH:13:ARG:HH21  | 37:BH:40:PRO:HA    | 1.39                     | 0.88              |
| 37:BH:191:ARG:NH2  | 37:BH:194:LEU:O    | 2.07                     | 0.88              |
| 46:BQ:37:THR:HA    | 46:BQ:56:LEU:HB2   | 1.53                     | 0.88              |
| 52:BW:20:LEU:O     | 52:BW:22:LEU:N     | 2.05                     | 0.88              |
| 57:BZ:8:ILE:C      | 57:BZ:72:ILE:CG2   | 2.46                     | 0.88              |
| 57:BZ:240:ILE:HB   | 57:BZ:286:ASP:CG   | 1.96                     | 0.88              |
| 57:BZ:499:PHE:CB   | 57:BZ:540:GLY:O    | 2.22                     | 0.88              |
| 57:BZ:499:PHE:CA   | 57:BZ:540:GLY:HA2  | 2.04                     | 0.88              |
| 1:AA:7:G:N1        | 1:AA:2896:C:H2'    | 1.88                     | 0.88              |
| 1:AA:853:G:H2'     | 1:AA:854:G:C8      | 2.09                     | 0.88              |
| 1:AA:1046:A:C5     | 31:AI:9:LEU:O      | 2.27                     | 0.88              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1492:G:N2    | 1:AA:1499:C:C4     | 2.41                     | 0.88              |
| 1:AA:1971:A:N3    | 4:AD:240:ALA:N     | 2.21                     | 0.88              |
| 1:AA:2207:C:H3'   | 1:AA:2208:U:H5''   | 1.56                     | 0.88              |
| 1:AA:2629:A:H3'   | 1:AA:2895:U:C5     | 2.06                     | 0.88              |
| 1:AA:2746:U:H5'   | 8:AH:139:GLN:HA    | 1.54                     | 0.88              |
| 1:AA:2788:C:H4'   | 1:AA:2810:A:H5'    | 1.54                     | 0.88              |
| 9:AK:78:TYR:O     | 9:AK:79:PRO:C      | 2.17                     | 0.88              |
| 11:AM:95:VAL:O    | 11:AM:97:PRO:HD2   | 1.74                     | 0.88              |
| 13:AO:74:LYS:O    | 13:AO:78:LYS:HB2   | 1.74                     | 0.88              |
| 13:AO:97:VAL:HG13 | 13:AO:114:VAL:HG21 | 1.56                     | 0.88              |
| 15:AQ:34:VAL:HG11 | 15:AQ:78:LEU:HD11  | 1.56                     | 0.88              |
| 20:AV:2:ARG:HH21  | 20:AV:4:LYS:HB2    | 1.37                     | 0.88              |
| 20:AV:26:LYS:HB2  | 20:AV:38:ILE:HD11  | 1.55                     | 0.88              |
| 20:AV:65:ALA:HB3  | 20:AV:66:PRO:HD3   | 1.55                     | 0.88              |
| 21:AW:48:PHE:HD2  | 21:AW:54:HIS:HE2   | 1.21                     | 0.88              |
| 29:Ae:38:GLY:O    | 29:Ae:40:GLU:N     | 2.06                     | 0.88              |
| 33:Ag:7:UNK:HA    | 33:Ag:144:UNK:C    | 2.04                     | 0.88              |
| 34:BA:322:C:O2'   | 34:BA:323:U:H5'    | 1.73                     | 0.88              |
| 35:BF:15:VAL:HG22 | 35:BF:209:ARG:NE   | 1.88                     | 0.88              |
| 36:BG:156:ARG:HB3 | 36:BG:193:TYR:HD1  | 1.39                     | 0.88              |
| 42:BM:26:VAL:O    | 42:BM:32:ASP:HA    | 1.73                     | 0.88              |
| 43:BN:79:ARG:HH22 | 43:BN:82:ILE:HD12  | 1.37                     | 0.88              |
| 57:BZ:17:GLY:HA2  | 60:BZ:701:GCP:O1A  | 1.73                     | 0.88              |
| 1:AA:84:A:H5''    | 20:AV:8:LYS:HG3    | 1.56                     | 0.88              |
| 1:AA:481:G:H1     | 1:AA:509:C:H42     | 1.21                     | 0.88              |
| 1:AA:574:C:O2'    | 1:AA:575:A:OP2     | 1.91                     | 0.88              |
| 1:AA:613:U:H5'    | 1:AA:614:U:C5      | 2.08                     | 0.88              |
| 1:AA:775:G:H4'    | 1:AA:777:A:C4      | 2.09                     | 0.88              |
| 1:AA:1443:G:N2    | 1:AA:1444:G:H1'    | 1.87                     | 0.88              |
| 1:AA:2393:A:OP2   | 29:Ae:32:LEU:HD11  | 1.72                     | 0.88              |
| 1:AA:2514:U:H2'   | 1:AA:2515:C:C6     | 2.08                     | 0.88              |
| 1:AA:2755:C:HO2'  | 1:AA:2756:U:H6     | 0.88                     | 0.88              |
| 3:AC:119:VAL:O    | 3:AC:123:VAL:HG23  | 1.74                     | 0.88              |
| 5:AE:147:PRO:HG2  | 5:AE:149:ARG:CD    | 2.04                     | 0.88              |
| 7:AG:47:LYS:CE    | 7:AG:73:ALA:HB3    | 2.04                     | 0.88              |
| 25:Aa:28:LYS:HE3  | 25:Aa:29:PRO:HD2   | 1.56                     | 0.88              |
| 32:AJ:72:PRO:CG   | 32:AJ:77:LEU:HD22  | 1.49                     | 0.88              |
| 34:BA:866:C:H5    | 34:BA:867:G:H1'    | 1.39                     | 0.88              |
| 34:BA:1066:C:H3'  | 34:BA:1067:A:C8    | 2.08                     | 0.88              |
| 34:BA:1101:A:H4'  | 34:BA:1102:A:O5'   | 1.73                     | 0.88              |
| 34:BA:1413:A:H2   | 34:BA:1487:G:N2    | 1.43                     | 0.88              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1455:G:OP1   | 53:BX:32:ALA:CA    | 2.21                     | 0.88              |
| 35:BF:69:LEU:HB3   | 35:BF:162:ILE:HG22 | 1.56                     | 0.88              |
| 35:BF:74:LYS:CE    | 35:BF:76:GLN:HB2   | 2.04                     | 0.88              |
| 50:BU:59:ILE:HD12  | 50:BU:72:ARG:O     | 1.74                     | 0.88              |
| 51:BV:70:ILE:HG22  | 51:BV:74:ARG:NE    | 1.89                     | 0.88              |
| 51:BV:73:ALA:O     | 51:BV:79:LEU:HD11  | 1.73                     | 0.88              |
| 57:BZ:11:ILE:CG2   | 57:BZ:112:VAL:CG1  | 2.42                     | 0.88              |
| 57:BZ:579:GLU:OE1  | 57:BZ:586:ARG:NH2  | 2.07                     | 0.88              |
| 1:AA:28:A:H1'      | 1:AA:513:A:C2      | 2.09                     | 0.88              |
| 1:AA:662:G:H4'     | 11:AM:18:ARG:N     | 1.87                     | 0.88              |
| 1:AA:832:G:H2'     | 1:AA:833:U:C5      | 2.09                     | 0.88              |
| 1:AA:966:G:C1'     | 1:AA:2267:A:N6     | 2.36                     | 0.88              |
| 1:AA:1153:C:C2     | 1:AA:1154:G:N7     | 2.42                     | 0.88              |
| 1:AA:1657:C:H2'    | 1:AA:1658:C:H6     | 1.37                     | 0.88              |
| 1:AA:1814:G:OP1    | 4:AD:43:ARG:HB2    | 1.73                     | 0.88              |
| 1:AA:1996:C:C5'    | 1:AA:1996:C:H6     | 1.86                     | 0.88              |
| 3:AC:157:LYS:CA    | 3:AC:159:GLY:N     | 2.37                     | 0.88              |
| 6:AF:65:TRP:HE1    | 6:AF:73:ALA:HB3    | 1.35                     | 0.88              |
| 8:AH:111:HIS:O     | 8:AH:113:VAL:HG23  | 1.73                     | 0.88              |
| 9:AK:57:ALA:HB3    | 9:AK:124:ALA:HA    | 1.53                     | 0.88              |
| 9:AK:96:GLU:O      | 9:AK:100:GLU:HG2   | 1.73                     | 0.88              |
| 9:AK:99:LEU:HD12   | 9:AK:100:GLU:N     | 1.89                     | 0.88              |
| 17:AS:18:LEU:H     | 17:AS:18:LEU:HD23  | 1.37                     | 0.88              |
| 18:AT:25:ARG:HD3   | 18:AT:74:ALA:HB3   | 1.55                     | 0.88              |
| 20:AV:28:LYS:HE2   | 20:AV:28:LYS:N     | 1.88                     | 0.88              |
| 32:AJ:123:ALA:HA   | 32:AJ:127:ILE:CG1  | 2.03                     | 0.88              |
| 34:BA:901:A:C2     | 34:BA:902:G:C1'    | 2.57                     | 0.88              |
| 34:BA:1192:C:H3'   | 34:BA:1192:C:C6    | 2.09                     | 0.88              |
| 34:BA:1310:G:N1    | 34:BA:1327:C:C6    | 1.92                     | 0.88              |
| 34:BA:1315:U:O4'   | 34:BA:1361:G:H5'   | 1.73                     | 0.88              |
| 34:BA:1338:G:H2'   | 34:BA:1339:A:C8    | 2.08                     | 0.88              |
| 34:BA:1413:A:O2'   | 34:BA:1414:U:H5'   | 1.74                     | 0.88              |
| 34:BA:1499:A:C2'   | 34:BA:1500:A:H5'   | 2.03                     | 0.88              |
| 38:BI:109:ILE:HD13 | 38:BI:135:THR:HB   | 1.53                     | 0.88              |
| 38:BI:109:ILE:CG2  | 38:BI:135:THR:HG21 | 2.04                     | 0.88              |
| 46:BQ:20:THR:CA    | 46:BQ:26:GLY:H     | 1.85                     | 0.88              |
| 57:BZ:405:LEU:CG   | 57:BZ:463:GLY:CA   | 2.51                     | 0.88              |
| 57:BZ:560:PRO:HA   | 57:BZ:561:ILE:CB   | 2.03                     | 0.88              |
| 57:BZ:580:VAL:HG12 | 57:BZ:585:ILE:HG23 | 1.56                     | 0.88              |
| 1:AA:6:A:N1        | 1:AA:2897:U:N3     | 2.22                     | 0.88              |
| 1:AA:210:C:H5''    | 28:Ad:29:LYS:HZ1   | 1.37                     | 0.88              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:722:A:H2'     | 1:AA:723:G:H8      | 1.39                     | 0.88              |
| 1:AA:924:C:H2'     | 1:AA:925:C:H6      | 1.38                     | 0.88              |
| 1:AA:943:U:OP1     | 1:AA:943:U:O4'     | 1.92                     | 0.88              |
| 1:AA:1024:G:N2     | 1:AA:1139:G:N1     | 2.20                     | 0.88              |
| 1:AA:1479:G:H2'    | 1:AA:1480:G:C8     | 2.09                     | 0.88              |
| 1:AA:1479:G:H2'    | 1:AA:1480:G:H8     | 1.37                     | 0.88              |
| 1:AA:2286:A:N6     | 27:Ac:29:ASN:O     | 2.05                     | 0.88              |
| 1:AA:2286:A:H62    | 27:Ac:32:ASN:N     | 1.70                     | 0.88              |
| 1:AA:2298:A:H2'    | 1:AA:2299:G:O4'    | 1.73                     | 0.88              |
| 1:AA:2496:C:OP1    | 12:AN:83:MET:HE1   | 1.73                     | 0.88              |
| 1:AA:2672:G:O2'    | 1:AA:2673:G:H5'    | 1.74                     | 0.88              |
| 1:AA:2787:C:O5'    | 5:AE:64:LYS:HD2    | 1.74                     | 0.88              |
| 3:AC:71:GLN:HE21   | 3:AC:174:PRO:CD    | 1.87                     | 0.88              |
| 3:AC:183:GLU:H     | 3:AC:183:GLU:CD    | 1.80                     | 0.88              |
| 8:AH:25:LYS:HZ3    | 8:AH:32:GLU:HB2    | 1.35                     | 0.88              |
| 8:AH:125:VAL:HA    | 8:AH:131:VAL:CG2   | 2.04                     | 0.88              |
| 10:AL:43:VAL:HG11  | 10:AL:54:GLU:CD    | 1.99                     | 0.88              |
| 10:AL:79:PHE:HB2   | 15:AQ:73:GLU:CG    | 2.04                     | 0.88              |
| 11:AM:81:GLN:HG2   | 11:AM:86:LYS:HE3   | 1.56                     | 0.88              |
| 14:AP:3:ARG:HG2    | 14:AP:4:LEU:N      | 1.89                     | 0.88              |
| 15:AQ:53:ARG:HH22  | 15:AQ:101:PHE:N    | 1.72                     | 0.88              |
| 16:AR:93:LYS:HG2   | 17:AS:10:LYS:NZ    | 1.89                     | 0.88              |
| 32:AJ:72:PRO:CG    | 32:AJ:77:LEU:HD21  | 1.52                     | 0.88              |
| 34:BA:770:C:C1'    | 34:BA:900:A:H2     | 1.87                     | 0.88              |
| 34:BA:1258:G:H2'   | 34:BA:1259:C:C6    | 2.09                     | 0.88              |
| 34:BA:1309:G:C6    | 34:BA:1328:C:N4    | 2.42                     | 0.88              |
| 34:BA:1329:A:O2'   | 46:BQ:70:LEU:HD13  | 1.72                     | 0.88              |
| 35:BF:97:TRP:HZ2   | 35:BF:102:LEU:HD13 | 1.38                     | 0.88              |
| 40:BK:69:VAL:CG2   | 40:BK:104:LEU:HD11 | 2.04                     | 0.88              |
| 40:BK:115:ARG:HB2  | 40:BK:118:VAL:CG2  | 2.04                     | 0.88              |
| 42:BM:25:LYS:O     | 42:BM:61:ALA:HB3   | 1.73                     | 0.88              |
| 44:BO:110:ASP:HB2  | 51:BV:88:LYS:HB2   | 1.56                     | 0.88              |
| 50:BU:86:GLU:OE2   | 50:BU:89:LEU:HD12  | 1.74                     | 0.88              |
| 53:BX:72:LEU:HD13  | 53:BX:77:ALA:HB2   | 1.54                     | 0.88              |
| 57:BZ:2:ILE:HG21   | 57:BZ:267:LEU:HD23 | 1.53                     | 0.88              |
| 57:BZ:564:THR:HG22 | 57:BZ:566:GLU:CD   | 1.99                     | 0.88              |
| 1:AA:640:C:H2'     | 1:AA:641:C:H5''    | 1.55                     | 0.87              |
| 1:AA:1047:G:N3     | 1:AA:1110:G:H3'    | 1.89                     | 0.87              |
| 1:AA:1052:C:N3     | 1:AA:1108:U:O2     | 2.06                     | 0.87              |
| 1:AA:1082:U:N3     | 1:AA:1086:A:C2     | 2.41                     | 0.87              |
| 1:AA:2346:A:H4'    | 1:AA:2383:G:H5''   | 1.56                     | 0.87              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:2581:G:N1     | 1:AA:2610:C:C6     | 2.42                     | 0.87              |
| 1:AA:2583:G:H2'    | 1:AA:2584:U:C2     | 2.08                     | 0.87              |
| 1:AA:2650:U:H2'    | 1:AA:2651:C:C6     | 2.09                     | 0.87              |
| 2:AB:43:C:H6       | 2:AB:43:C:O5'      | 1.56                     | 0.87              |
| 4:AD:234:GLY:H     | 4:AD:241:PRO:HG2   | 1.38                     | 0.87              |
| 4:AD:252:TRP:H     | 4:AD:255:LYS:NZ    | 1.73                     | 0.87              |
| 5:AE:36:ARG:HG3    | 5:AE:79:ARG:NH1    | 1.89                     | 0.87              |
| 12:AN:74:TYR:CZ    | 12:AN:94:VAL:HG22  | 2.09                     | 0.87              |
| 23:AY:20:VAL:O     | 23:AY:24:LYS:HG3   | 1.73                     | 0.87              |
| 34:BA:66:G:H4'     | 34:BA:173:U:C5     | 2.10                     | 0.87              |
| 34:BA:1048:G:H5''  | 47:BR:3:ARG:NH1    | 1.87                     | 0.87              |
| 34:BA:1465:C:C2'   | 34:BA:1466:C:H5'   | 2.04                     | 0.87              |
| 34:BA:1499:A:N7    | 34:BA:1500:A:N7    | 2.21                     | 0.87              |
| 41:BL:14:ARG:HA    | 41:BL:17:THR:OG1   | 1.72                     | 0.87              |
| 45:BP:71:PRO:HD2   | 45:BP:100:ILE:HG12 | 1.56                     | 0.87              |
| 49:BT:9:PHE:CZ     | 49:BT:18:ARG:HG3   | 2.09                     | 0.87              |
| 55:BC:6:G:H2'      | 55:BC:7:A:H5'      | 1.55                     | 0.87              |
| 57:BZ:239:ILE:HG12 | 57:BZ:244:GLY:CA   | 2.04                     | 0.87              |
| 57:BZ:250:LYS:H    | 57:BZ:275:ALA:HB3  | 1.38                     | 0.87              |
| 57:BZ:383:SER:H    | 57:BZ:384:ARG:HG2  | 1.35                     | 0.87              |
| 57:BZ:499:PHE:CB   | 57:BZ:540:GLY:C    | 2.47                     | 0.87              |
| 1:AA:1084:A:N7     | 1:AA:1085:A:C2     | 2.41                     | 0.87              |
| 1:AA:1255:U:C5'    | 1:AA:1256:G:H5''   | 2.04                     | 0.87              |
| 1:AA:1775:U:C6     | 4:AD:208:LYS:HD2   | 2.09                     | 0.87              |
| 1:AA:1931:U:C5     | 1:AA:1932:A:N7     | 2.41                     | 0.87              |
| 1:AA:1956:U:H2'    | 1:AA:1957:C:H6     | 1.32                     | 0.87              |
| 1:AA:2344:U:C5'    | 27:Ac:38:LYS:HG3   | 2.00                     | 0.87              |
| 3:AC:43:VAL:HG21   | 3:AC:189:ILE:CD1   | 2.04                     | 0.87              |
| 4:AD:89:SER:OG     | 4:AD:158:ALA:HB1   | 1.71                     | 0.87              |
| 6:AF:156:LEU:HD12  | 6:AF:167:ALA:CB    | 2.03                     | 0.87              |
| 8:AH:155:SER:HB2   | 8:AH:158:HIS:O     | 1.73                     | 0.87              |
| 15:AQ:39:ARG:HG3   | 15:AQ:42:ILE:HD12  | 1.56                     | 0.87              |
| 17:AS:62:LEU:HB2   | 17:AS:64:HIS:CE1   | 2.10                     | 0.87              |
| 18:AT:14:PRO:C     | 18:AT:16:LYS:HZ1   | 1.82                     | 0.87              |
| 20:AV:52:SER:HB3   | 20:AV:56:PRO:CB    | 2.03                     | 0.87              |
| 21:AW:57:ILE:CG2   | 21:AW:58:VAL:N     | 2.37                     | 0.87              |
| 34:BA:275:G:H5'    | 50:BU:14:LYS:HZ3   | 1.38                     | 0.87              |
| 34:BA:958:A:H1'    | 52:BW:55:LYS:HZ2   | 1.02                     | 0.87              |
| 34:BA:1158:C:C4    | 34:BA:1160:G:H1'   | 2.10                     | 0.87              |
| 34:BA:1188:A:H5'   | 43:BN:61:GLU:OE2   | 1.73                     | 0.87              |
| 34:BA:1309:G:N1    | 34:BA:1328:C:N4    | 2.22                     | 0.87              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BF:115:LEU:HD23 | 35:BF:149:LEU:HD22 | 1.55                     | 0.87              |
| 37:BH:31:CYS:SG    | 37:BH:31:CYS:O     | 2.32                     | 0.87              |
| 38:BI:43:LEU:H     | 38:BI:65:ASN:ND2   | 1.72                     | 0.87              |
| 38:BI:89:ILE:HG12  | 38:BI:131:ILE:CD1  | 2.03                     | 0.87              |
| 57:BZ:204:PRO:O    | 57:BZ:228:ARG:C    | 2.16                     | 0.87              |
| 57:BZ:526:ILE:HG12 | 57:BZ:571:PHE:HZ   | 1.07                     | 0.87              |
| 1:AA:387:U:OP2     | 25:Aa:31:ILE:HG21  | 1.73                     | 0.87              |
| 1:AA:592:G:H5'     | 1:AA:593:G:OP2     | 1.73                     | 0.87              |
| 1:AA:670:A:H2'     | 11:AM:41:ARG:CZ    | 2.04                     | 0.87              |
| 1:AA:670:A:H2'     | 11:AM:41:ARG:NH1   | 1.89                     | 0.87              |
| 1:AA:1605:C:H2'    | 1:AA:1606:G:O4'    | 1.72                     | 0.87              |
| 1:AA:1789:A:H3'    | 1:AA:1790:C:O4'    | 1.73                     | 0.87              |
| 1:AA:2124:G:H5''   | 3:AC:71:GLN:NE2    | 1.88                     | 0.87              |
| 1:AA:2161:C:H2'    | 1:AA:2162:G:C8     | 2.09                     | 0.87              |
| 1:AA:2178:C:C3'    | 3:AC:46:LYS:HZ3    | 1.83                     | 0.87              |
| 1:AA:2570:G:H5'    | 1:AA:2571:C:OP2    | 1.75                     | 0.87              |
| 1:AA:2690:C:H6     | 1:AA:2690:C:H3'    | 1.37                     | 0.87              |
| 2:AB:12:C:H5''     | 22:AX:74:ARG:HG2   | 1.56                     | 0.87              |
| 5:AE:100:GLU:H     | 5:AE:172:VAL:CG2   | 1.86                     | 0.87              |
| 7:AG:74:LYS:HD3    | 7:AG:87:PRO:HG3    | 1.53                     | 0.87              |
| 7:AG:181:ARG:HD2   | 7:AG:181:ARG:H     | 1.38                     | 0.87              |
| 8:AH:115:VAL:HG13  | 8:AH:116:GLU:H     | 1.35                     | 0.87              |
| 10:AL:10:VAL:H     | 10:AL:17:ARG:HG2   | 1.36                     | 0.87              |
| 18:AT:13:SER:O     | 18:AT:17:VAL:HG13  | 1.73                     | 0.87              |
| 18:AT:25:ARG:HH21  | 18:AT:74:ALA:H     | 0.88                     | 0.87              |
| 19:AU:4:ALA:HB3    | 23:AY:21:ARG:HH12  | 1.39                     | 0.87              |
| 23:AY:27:LEU:HD13  | 23:AY:52:ILE:HD11  | 1.56                     | 0.87              |
| 32:AJ:33:ASN:CB    | 32:AJ:63:ARG:HB3   | 2.04                     | 0.87              |
| 34:BA:429:U:H4'    | 34:BA:430:A:O5'    | 1.70                     | 0.87              |
| 34:BA:545:C:O2'    | 34:BA:546:G:H5'    | 1.74                     | 0.87              |
| 34:BA:1308:U:OP2   | 46:BQ:99:ARG:N     | 2.07                     | 0.87              |
| 41:BL:14:ARG:O     | 41:BL:17:THR:HB    | 1.73                     | 0.87              |
| 41:BL:38:ILE:HG13  | 41:BL:118:VAL:CG1  | 2.03                     | 0.87              |
| 45:BP:86:ARG:NH1   | 45:BP:119:LYS:HG3  | 1.88                     | 0.87              |
| 48:BS:7:GLU:HA     | 48:BS:10:LYS:HD3   | 1.54                     | 0.87              |
| 51:BV:68:LYS:O     | 51:BV:71:LYS:HB2   | 1.74                     | 0.87              |
| 56:BD:7:A:N1       | 56:BD:66:U:C2      | 2.42                     | 0.87              |
| 57:BZ:251:VAL:CG1  | 57:BZ:273:ILE:CA   | 1.84                     | 0.87              |
| 57:BZ:258:LEU:HD22 | 57:BZ:260:LEU:HD13 | 1.54                     | 0.87              |
| 1:AA:612:G:H4'     | 1:AA:616:A:C6      | 2.09                     | 0.87              |
| 1:AA:728:G:N1      | 1:AA:762:U:H3'     | 1.88                     | 0.87              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:988:A:H62     | 24:AZ:13:ILE:CG1   | 1.86                     | 0.87              |
| 1:AA:1069:A:H4'    | 1:AA:1070:A:C5'    | 2.04                     | 0.87              |
| 1:AA:2075:U:H2'    | 1:AA:2076:U:H5''   | 1.57                     | 0.87              |
| 1:AA:2206:C:H2'    | 1:AA:2207:C:C6     | 2.09                     | 0.87              |
| 1:AA:2841:C:H2'    | 1:AA:2842:G:C8     | 2.09                     | 0.87              |
| 1:AA:2900:A:H2'    | 1:AA:2901:C:C6     | 2.09                     | 0.87              |
| 3:AC:46:LYS:O      | 3:AC:210:ARG:HB2   | 1.75                     | 0.87              |
| 4:AD:76:PRO:HA     | 4:AD:118:VAL:CG2   | 2.05                     | 0.87              |
| 7:AG:47:LYS:HE2    | 7:AG:73:ALA:HB3    | 1.55                     | 0.87              |
| 34:BA:1339:A:C2'   | 34:BA:1340:A:H5'   | 2.03                     | 0.87              |
| 34:BA:1401:G:H2'   | 34:BA:1402:C:O4'   | 1.74                     | 0.87              |
| 34:BA:1462:G:O2'   | 34:BA:1463:C:H5'   | 1.75                     | 0.87              |
| 35:BF:213:LEU:HD22 | 35:BF:214:ILE:CD1  | 2.04                     | 0.87              |
| 38:BI:147:ASP:HA   | 38:BI:150:ARG:HB2  | 1.56                     | 0.87              |
| 41:BL:6:ILE:HG23   | 41:BL:7:ALA:N      | 1.86                     | 0.87              |
| 57:BZ:164:TYR:CZ   | 57:BZ:175:ASP:OD2  | 2.01                     | 0.87              |
| 57:BZ:165:ALA:H    | 57:BZ:172:ALA:C    | 1.81                     | 0.87              |
| 57:BZ:509:LYS:CE   | 57:BZ:561:ILE:CD1  | 2.53                     | 0.87              |
| 1:AA:606:U:OP1     | 6:AF:103:LYS:N     | 2.06                     | 0.87              |
| 1:AA:647:G:H2'     | 1:AA:648:G:C8      | 2.09                     | 0.87              |
| 1:AA:1046:A:C1'    | 31:AI:11:ALA:HB2   | 2.05                     | 0.87              |
| 1:AA:1063:G:C8     | 1:AA:1064:C:H5     | 1.92                     | 0.87              |
| 1:AA:1418:G:H1'    | 1:AA:1581:G:H21    | 1.38                     | 0.87              |
| 1:AA:1782:C:H42    | 1:AA:2587:A:N6     | 1.73                     | 0.87              |
| 1:AA:1790:C:H2'    | 1:AA:1791:A:N7     | 1.90                     | 0.87              |
| 1:AA:1814:G:H2'    | 1:AA:1815:A:C8     | 2.09                     | 0.87              |
| 1:AA:1954:G:O2'    | 1:AA:1955:U:H5'    | 1.74                     | 0.87              |
| 1:AA:2244:U:H1'    | 1:AA:2434:A:C6     | 2.09                     | 0.87              |
| 1:AA:2507:C:C5'    | 1:AA:2573:C:H41    | 1.87                     | 0.87              |
| 5:AE:66:HIS:ND1    | 5:AE:67:PHE:N      | 2.23                     | 0.87              |
| 6:AF:36:VAL:HG11   | 6:AF:183:VAL:CB    | 2.04                     | 0.87              |
| 7:AG:47:LYS:HD2    | 7:AG:49:ASP:OD2    | 1.74                     | 0.87              |
| 9:AK:39:ARG:HB3    | 9:AK:48:MET:CG     | 2.05                     | 0.87              |
| 10:AL:24:VAL:HG13  | 10:AL:30:ALA:HB1   | 1.56                     | 0.87              |
| 11:AM:96:THR:HG21  | 11:AM:112:LEU:HD13 | 1.53                     | 0.87              |
| 12:AN:101:ARG:HG3  | 12:AN:101:ARG:HH11 | 1.39                     | 0.87              |
| 19:AU:19:ALA:O     | 19:AU:22:ALA:HB3   | 1.74                     | 0.87              |
| 22:AX:68:GLU:OE2   | 22:AX:82:ARG:HB2   | 1.74                     | 0.87              |
| 25:Aa:41:PRO:HB3   | 25:Aa:58:ARG:HD2   | 1.56                     | 0.87              |
| 29:Ae:23:VAL:HG22  | 29:Ae:47:LYS:C     | 1.99                     | 0.87              |
| 30:Af:2:LYS:O      | 30:Af:3:VAL:HG23   | 1.74                     | 0.87              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 32:AJ:72:PRO:CD    | 32:AJ:77:LEU:HG    | 2.04                     | 0.87              |
| 34:BA:105:G:H2'    | 34:BA:106:C:C6     | 2.08                     | 0.87              |
| 34:BA:557:G:H3'    | 34:BA:558:G:C8     | 2.09                     | 0.87              |
| 35:BF:146:GLN:NE2  | 35:BF:150:SER:HB2  | 1.89                     | 0.87              |
| 37:BH:78:LEU:HD22  | 37:BH:96:LEU:HD13  | 1.56                     | 0.87              |
| 41:BL:50:ARG:HH11  | 41:BL:50:ARG:HG2   | 1.39                     | 0.87              |
| 44:BO:95:ILE:HA    | 44:BO:98:LEU:HG    | 1.54                     | 0.87              |
| 46:BQ:14:ARG:HH21  | 46:BQ:42:ALA:CA    | 1.87                     | 0.87              |
| 57:BZ:565:LEU:HD21 | 57:BZ:585:ILE:HG21 | 1.56                     | 0.87              |
| 1:AA:6:A:H2        | 1:AA:2897:U:C2'    | 1.88                     | 0.87              |
| 1:AA:152:G:C2'     | 1:AA:153:C:C5'     | 2.53                     | 0.87              |
| 1:AA:231:C:N4      | 1:AA:232:G:N2      | 2.21                     | 0.87              |
| 1:AA:482:A:N3      | 1:AA:482:A:H2'     | 1.88                     | 0.87              |
| 1:AA:974:G:H3'     | 1:AA:974(A):C:C5'  | 2.04                     | 0.87              |
| 1:AA:1081:U:H5     | 1:AA:1082:U:C4     | 1.92                     | 0.87              |
| 1:AA:2651:C:C2     | 1:AA:2670:A:C2     | 2.61                     | 0.87              |
| 1:AA:2667:C:H3'    | 1:AA:2668:G:C8     | 2.10                     | 0.87              |
| 2:AB:50:G:H4'      | 14:AP:61:ASN:OD1   | 1.73                     | 0.87              |
| 5:AE:100:GLU:O     | 5:AE:172:VAL:HG13  | 1.73                     | 0.87              |
| 10:AL:68:GLU:O     | 10:AL:68:GLU:HG3   | 1.73                     | 0.87              |
| 11:AM:55:ARG:HH21  | 11:AM:55:ARG:CB    | 1.87                     | 0.87              |
| 16:AR:59:ARG:HA    | 16:AR:62:ILE:HD12  | 1.55                     | 0.87              |
| 22:AX:49:LYS:H     | 22:AX:80:HIS:CE1   | 1.92                     | 0.87              |
| 35:BF:186:ALA:O    | 35:BF:201:ILE:HB   | 1.74                     | 0.87              |
| 35:BF:212:GLN:HB3  | 35:BF:235:SER:OG   | 1.74                     | 0.87              |
| 38:BI:50:GLU:O     | 38:BI:53:LEU:HB2   | 1.74                     | 0.87              |
| 46:BQ:14:ARG:HG3   | 46:BQ:17:VAL:HG23  | 1.56                     | 0.87              |
| 52:BW:6:LYS:CB     | 52:BW:41:VAL:CG1   | 2.47                     | 0.87              |
| 1:AA:6:A:C2        | 1:AA:2897:U:O2     | 2.27                     | 0.87              |
| 1:AA:546:C:H2'     | 1:AA:547:A:C8      | 2.10                     | 0.87              |
| 1:AA:746:A:N7      | 1:AA:2612:C:P      | 2.48                     | 0.87              |
| 1:AA:1793:C:N4     | 1:AA:1825:A:H61    | 1.71                     | 0.87              |
| 1:AA:2121:G:C2'    | 3:AC:167:LYS:HE2   | 2.04                     | 0.87              |
| 1:AA:2864:G:H2'    | 1:AA:2865:U:C6     | 2.09                     | 0.87              |
| 59:AA:3003:8AN:P   | 22:AX:2:ALA:CB     | 2.63                     | 0.87              |
| 5:AE:165:VAL:HG12  | 5:AE:166:THR:H     | 1.39                     | 0.87              |
| 8:AH:11:VAL:HG23   | 8:AH:50:VAL:HG21   | 1.56                     | 0.87              |
| 21:AW:78:LYS:HE2   | 21:AW:84:GLU:OE2   | 1.75                     | 0.87              |
| 23:AY:27:LEU:HA    | 23:AY:30:LEU:CG    | 2.05                     | 0.87              |
| 28:Ad:43:THR:N     | 28:Ad:44:PRO:HD2   | 1.89                     | 0.87              |
| 34:BA:197:A:N6     | 34:BA:221:C:H5'    | 1.90                     | 0.87              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 34:BA:256:U:H2'   | 34:BA:257:G:O4'   | 1.73                     | 0.87              |
| 34:BA:533:A:H2'   | 34:BA:535:A:OP2   | 1.74                     | 0.87              |
| 34:BA:598:U:H4'   | 41:BL:94:TYR:CD2  | 2.09                     | 0.87              |
| 34:BA:1117:G:N2   | 34:BA:1184:G:N9   | 2.23                     | 0.87              |
| 34:BA:1263:C:H2'  | 34:BA:1264:C:C6   | 2.09                     | 0.87              |
| 39:BJ:10:LEU:HD23 | 39:BJ:10:LEU:N    | 1.89                     | 0.87              |
| 45:BP:117:ARG:NH2 | 45:BP:124:LYS:HA  | 1.90                     | 0.87              |
| 46:BQ:15:VAL:CG2  | 46:BQ:39:ILE:HD13 | 1.39                     | 0.87              |
| 55:BC:31:A:C2'    | 55:BC:32:U:H5'    | 2.04                     | 0.87              |
| 55:BC:34:G:C2'    | 55:BC:35:A:H5'    | 2.05                     | 0.87              |
| 57:BZ:129:LYS:HZ3 | 60:BZ:701:GCP:C4  | 1.85                     | 0.87              |
| 57:BZ:247:ARG:O   | 57:BZ:276:ILE:HB  | 1.72                     | 0.87              |
| 1:AA:64:A:C2'     | 1:AA:65:C:H5'     | 2.05                     | 0.87              |
| 1:AA:152:G:H2'    | 1:AA:153:C:H5'    | 1.56                     | 0.87              |
| 1:AA:152:G:N2     | 1:AA:175:G:H1'    | 1.89                     | 0.87              |
| 1:AA:704:G:H21    | 1:AA:725:G:N2     | 1.72                     | 0.87              |
| 1:AA:775:G:H2'    | 1:AA:794:G:C5     | 2.08                     | 0.87              |
| 1:AA:1024:G:C5    | 1:AA:1025:G:C8    | 2.62                     | 0.87              |
| 1:AA:1039:G:H3'   | 1:AA:1039:G:P     | 2.15                     | 0.87              |
| 1:AA:1326:U:C2'   | 1:AA:1327:C:H5'   | 2.03                     | 0.87              |
| 1:AA:1470:G:N2    | 1:AA:1522:G:H1    | 1.73                     | 0.87              |
| 1:AA:1838:C:H2'   | 1:AA:1898:U:C4    | 2.10                     | 0.87              |
| 1:AA:2177:C:H5''  | 3:AC:223:ARG:HH12 | 1.37                     | 0.87              |
| 1:AA:2210:G:C8    | 4:AD:68:LYS:HD3   | 2.10                     | 0.87              |
| 3:AC:177:LYS:HB2  | 3:AC:180:PHE:HB2  | 1.57                     | 0.87              |
| 4:AD:145:VAL:HG13 | 4:AD:191:ALA:HB2  | 1.57                     | 0.87              |
| 11:AM:105:LEU:O   | 11:AM:106:LEU:HG  | 1.74                     | 0.87              |
| 14:AP:16:ASN:O    | 14:AP:20:ARG:HG2  | 1.74                     | 0.87              |
| 14:AP:57:LYS:HZ2  | 14:AP:65:VAL:HA   | 1.38                     | 0.87              |
| 16:AR:8:VAL:O     | 16:AR:11:ARG:HG2  | 1.75                     | 0.87              |
| 16:AR:40:PHE:HB3  | 17:AS:78:LYS:HD2  | 1.56                     | 0.87              |
| 22:AX:37:LEU:HD11 | 22:AX:59:LEU:HB3  | 1.55                     | 0.87              |
| 32:AJ:44:ALA:HB2  | 32:AJ:66:THR:HG22 | 1.57                     | 0.87              |
| 34:BA:713:G:H21   | 34:BA:777:A:C1'   | 1.88                     | 0.87              |
| 34:BA:735:C:H2'   | 34:BA:736:C:H6    | 1.37                     | 0.87              |
| 34:BA:1068:G:O2'  | 34:BA:1069:C:H5'  | 1.75                     | 0.87              |
| 34:BA:1125:U:H5'' | 43:BN:38:ILE:CD1  | 1.90                     | 0.87              |
| 34:BA:1302:U:OP2  | 46:BQ:21:TYR:CE2  | 2.28                     | 0.87              |
| 35:BF:139:LYS:HG3 | 35:BF:140:HIS:N   | 1.87                     | 0.87              |
| 36:BG:12:LEU:CD2  | 47:BR:57:ARG:HG3  | 2.05                     | 0.87              |
| 37:BH:58:LEU:HD13 | 37:BH:59:ARG:HH11 | 1.38                     | 0.87              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 38:BI:78:HIS:CB    | 41:BL:107:LEU:HD21 | 2.04                     | 0.87              |
| 46:BQ:37:THR:CB    | 46:BQ:56:LEU:CG    | 2.30                     | 0.87              |
| 50:BU:43:LEU:HD13  | 50:BU:43:LEU:O     | 1.75                     | 0.87              |
| 57:BZ:95:VAL:CG2   | 57:BZ:123:PRO:HA   | 2.05                     | 0.87              |
| 57:BZ:141:VAL:HG23 | 57:BZ:164:TYR:HH   | 1.38                     | 0.87              |
| 57:BZ:153:ALA:HB1  | 57:BZ:156:GLU:HB3  | 1.56                     | 0.87              |
| 57:BZ:483:ARG:CG   | 57:BZ:573:ASP:HB2  | 2.04                     | 0.87              |
| 1:AA:51:G:H1'      | 1:AA:118:A:N6      | 1.89                     | 0.87              |
| 1:AA:957:A:O3'     | 1:AA:958:U:H4'     | 1.75                     | 0.87              |
| 1:AA:1637:A:O2'    | 1:AA:2711:A:H1'    | 1.74                     | 0.87              |
| 1:AA:1810:A:H2'    | 1:AA:1811:G:H5'    | 1.57                     | 0.87              |
| 1:AA:2009:G:OP1    | 18:AT:41:LYS:HD2   | 1.75                     | 0.87              |
| 1:AA:2125:G:H5'    | 3:AC:40:THR:HG22   | 1.57                     | 0.87              |
| 1:AA:2218:G:H4'    | 4:AD:186:HIS:CE1   | 2.09                     | 0.87              |
| 2:AB:42:C:C2       | 7:AG:93:THR:HB     | 2.10                     | 0.87              |
| 2:AB:51:G:C5'      | 14:AP:60:GLY:HA2   | 2.05                     | 0.87              |
| 3:AC:50:ASP:OD1    | 3:AC:52:ARG:HG2    | 1.75                     | 0.87              |
| 3:AC:120:MET:HE1   | 3:AC:138:PRO:HB2   | 1.57                     | 0.87              |
| 4:AD:246:PRO:HG3   | 4:AD:252:TRP:HE3   | 1.36                     | 0.87              |
| 9:AK:128:HIS:N     | 9:AK:129:PRO:HD2   | 1.89                     | 0.87              |
| 10:AL:7:TYR:CA     | 10:AL:18:LYS:HE3   | 2.04                     | 0.87              |
| 10:AL:70:LYS:NZ    | 10:AL:102:VAL:HG13 | 1.89                     | 0.87              |
| 11:AM:55:ARG:HH21  | 11:AM:55:ARG:HB3   | 1.40                     | 0.87              |
| 12:AN:8:LYS:HZ3    | 12:AN:11:LYS:NZ    | 1.73                     | 0.87              |
| 12:AN:42:ILE:HD12  | 12:AN:47:ILE:CG1   | 2.03                     | 0.87              |
| 16:AR:111:GLU:HA   | 16:AR:114:LYS:CE   | 2.05                     | 0.87              |
| 24:AZ:10:LYS:HE2   | 24:AZ:31:LEU:HD21  | 1.55                     | 0.87              |
| 34:BA:287:U:H2'    | 34:BA:287:U:O2     | 1.74                     | 0.87              |
| 34:BA:878:G:C5'    | 41:BL:89:PRO:HG2   | 2.04                     | 0.87              |
| 34:BA:1321:C:C2    | 52:BW:36:ARG:NH1   | 2.43                     | 0.87              |
| 37:BH:26:CYS:O     | 37:BH:33:MET:HG3   | 1.75                     | 0.87              |
| 41:BL:18:ARG:HA    | 41:BL:18:ARG:HH11  | 1.40                     | 0.87              |
| 41:BL:86:ILE:CG2   | 41:BL:133:LEU:HB2  | 2.04                     | 0.87              |
| 43:BN:10:GLY:HA3   | 43:BN:94:VAL:HG22  | 1.57                     | 0.87              |
| 44:BO:80:VAL:O     | 44:BO:106:LYS:HB3  | 1.75                     | 0.87              |
| 48:BS:29:VAL:HG21  | 48:BS:81:LEU:HD11  | 1.55                     | 0.87              |
| 49:BT:20:VAL:HG13  | 49:BT:34:GLU:O     | 1.74                     | 0.87              |
| 56:BD:3:C:N3       | 56:BD:70:G:O6      | 2.08                     | 0.87              |
| 57:BZ:5:LEU:CG     | 57:BZ:269:GLU:HG3  | 1.72                     | 0.87              |
| 57:BZ:181:GLU:OE1  | 57:BZ:183:MET:HE2  | 1.74                     | 0.87              |
| 1:AA:64:A:O2'      | 19:AU:71:GLY:HA3   | 1.72                     | 0.86              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:263:C:H2'    | 1:AA:263:C:O2     | 1.74                     | 0.86              |
| 1:AA:511:U:H5     | 1:AA:512:G:N3     | 1.71                     | 0.86              |
| 1:AA:1071:G:O6    | 1:AA:1072:C:N4    | 2.07                     | 0.86              |
| 1:AA:1143:A:H2'   | 1:AA:1144:G:C8    | 2.09                     | 0.86              |
| 1:AA:1155:A:C2'   | 1:AA:1156:A:H5''  | 2.04                     | 0.86              |
| 1:AA:1291:C:H5''  | 1:AA:1536:A:H5'   | 1.52                     | 0.86              |
| 1:AA:1513:C:C4    | 1:AA:1514:U:O4    | 2.28                     | 0.86              |
| 1:AA:1725:G:H22   | 1:AA:1726:G:H1'   | 1.39                     | 0.86              |
| 1:AA:2169:A:C2    | 55:BC:56:C:C4     | 2.52                     | 0.86              |
| 1:AA:2174:C:C2    | 3:AC:219:GLY:CA   | 2.58                     | 0.86              |
| 1:AA:2209:C:C2'   | 1:AA:2210:G:H3'   | 2.05                     | 0.86              |
| 1:AA:2593:U:O4    | 4:AD:239:ARG:NH1  | 2.08                     | 0.86              |
| 4:AD:80:ALA:HB3   | 4:AD:94:LEU:O     | 1.73                     | 0.86              |
| 4:AD:181:GLU:CA   | 4:AD:270:ILE:HD12 | 2.05                     | 0.86              |
| 5:AE:58:ARG:NH2   | 5:AE:58:ARG:HB2   | 1.90                     | 0.86              |
| 6:AF:63:LYS:HA    | 6:AF:76:GLY:O     | 1.75                     | 0.86              |
| 6:AF:108:LYS:O    | 6:AF:111:ALA:HB3  | 1.75                     | 0.86              |
| 7:AG:57:ALA:HB2   | 7:AG:68:PRO:O     | 1.75                     | 0.86              |
| 9:AK:86:PRO:O     | 9:AK:89:LYS:HE3   | 1.74                     | 0.86              |
| 10:AL:64:ARG:HH12 | 10:AL:77:ILE:CB   | 1.84                     | 0.86              |
| 17:AS:32:THR:CA   | 17:AS:64:HIS:O    | 2.21                     | 0.86              |
| 19:AU:54:VAL:HG22 | 19:AU:81:VAL:HG23 | 1.55                     | 0.86              |
| 25:Aa:5:ILE:CG2   | 25:Aa:57:GLU:HB2  | 2.05                     | 0.86              |
| 32:AJ:23:VAL:HG12 | 32:AJ:37:PHE:HD1  | 1.31                     | 0.86              |
| 34:BA:559:A:H4'   | 34:BA:560:U:H5'   | 0.92                     | 0.86              |
| 34:BA:944:G:H21   | 34:BA:1339:A:N6   | 1.72                     | 0.86              |
| 34:BA:1308:U:C3'  | 46:BQ:92:HIS:HE2  | 1.84                     | 0.86              |
| 34:BA:1318:A:C2'  | 52:BW:37:ARG:N    | 2.38                     | 0.86              |
| 34:BA:1319:A:H5'' | 52:BW:70:LYS:HZ2  | 0.80                     | 0.86              |
| 34:BA:1461:G:O2'  | 34:BA:1462:G:H5'  | 1.74                     | 0.86              |
| 35:BF:42:ILE:HG12 | 35:BF:43:ASP:H    | 1.38                     | 0.86              |
| 42:BM:49:PRO:HD3  | 42:BM:78:LYS:HG2  | 1.56                     | 0.86              |
| 42:BM:106:ALA:O   | 42:BM:107:ARG:HG3 | 1.75                     | 0.86              |
| 51:BV:74:ARG:N    | 51:BV:79:LEU:HD21 | 1.89                     | 0.86              |
| 57:BZ:156:GLU:HA  | 57:BZ:158:LEU:H   | 1.40                     | 0.86              |
| 1:AA:187:G:H2'    | 1:AA:1365:A:H2    | 1.38                     | 0.86              |
| 1:AA:910:A:C6     | 12:AN:17:LEU:HD11 | 2.10                     | 0.86              |
| 1:AA:2296:U:H3'   | 1:AA:2296:U:H6    | 1.39                     | 0.86              |
| 1:AA:2492:U:H2'   | 1:AA:2492:U:O2    | 1.75                     | 0.86              |
| 1:AA:2532:G:O3'   | 1:AA:2657:A:H2    | 1.52                     | 0.86              |
| 1:AA:2673:G:O2'   | 1:AA:2674:G:H5'   | 1.74                     | 0.86              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2710:C:H2'   | 1:AA:2711:A:H5''   | 1.56                     | 0.86              |
| 1:AA:2791:C:C4    | 1:AA:2893:G:C8     | 0.88                     | 0.86              |
| 3:AC:180:PHE:HZ   | 3:AC:184:LYS:CD    | 1.84                     | 0.86              |
| 5:AE:23:VAL:HG23  | 5:AE:184:VAL:HG23  | 1.56                     | 0.86              |
| 5:AE:101:ARG:HH21 | 5:AE:171:GLU:HG2   | 1.40                     | 0.86              |
| 6:AF:41:LEU:O     | 6:AF:44:ARG:HG3    | 1.75                     | 0.86              |
| 7:AG:101:ILE:O    | 7:AG:104:GLU:HB3   | 1.73                     | 0.86              |
| 10:AL:62:VAL:CG2  | 10:AL:83:ALA:HA    | 2.05                     | 0.86              |
| 11:AM:45:LEU:HD13 | 29:Ae:59:LYS:HE3   | 1.57                     | 0.86              |
| 13:AO:45:ARG:O    | 13:AO:49:ASP:HB2   | 1.75                     | 0.86              |
| 14:AP:26:LEU:O    | 14:AP:88:ASP:HB2   | 1.74                     | 0.86              |
| 24:AZ:3:ARG:HB3   | 24:AZ:3:ARG:HH11   | 1.34                     | 0.86              |
| 32:AJ:17:ALA:CA   | 32:AJ:41:PHE:CB    | 2.41                     | 0.86              |
| 34:BA:529:G:C8    | 34:BA:529:G:H3'    | 2.10                     | 0.86              |
| 34:BA:907:A:H2'   | 34:BA:908:A:H8     | 1.40                     | 0.86              |
| 34:BA:1330:U:C4'  | 46:BQ:70:LEU:HD21  | 2.04                     | 0.86              |
| 34:BA:1336:C:H4'  | 34:BA:1337:G:C2    | 2.10                     | 0.86              |
| 35:BF:219:VAL:O   | 35:BF:223:ILE:HG13 | 1.75                     | 0.86              |
| 40:BK:31:MET:HG2  | 40:BK:32:ARG:H     | 1.40                     | 0.86              |
| 55:BC:37:A:O2'    | 55:BC:38:A:H5'     | 1.75                     | 0.86              |
| 57:BZ:165:ALA:CA  | 57:BZ:171:ILE:CG2  | 2.51                     | 0.86              |
| 1:AA:586:A:C2     | 1:AA:809:G:N2      | 2.43                     | 0.86              |
| 1:AA:764:A:H1'    | 4:AD:214:TRP:CD1   | 2.10                     | 0.86              |
| 1:AA:893:C:O2'    | 1:AA:894:C:H5'     | 1.74                     | 0.86              |
| 1:AA:1080:C:H5''  | 32:AJ:128:ALA:CA   | 2.06                     | 0.86              |
| 1:AA:1581:G:H2'   | 1:AA:1582:C:O4'    | 1.73                     | 0.86              |
| 1:AA:1935:G:O2'   | 1:AA:1937:A:H2     | 1.56                     | 0.86              |
| 1:AA:2127:G:C8    | 3:AC:36:LYS:HG2    | 2.10                     | 0.86              |
| 1:AA:2471:C:C5'   | 57:BZ:529:ARG:HH22 | 1.86                     | 0.86              |
| 1:AA:2821:A:OP2   | 1:AA:2821:A:H3'    | 1.76                     | 0.86              |
| 2:AB:80:U:HO2'    | 2:AB:81:G:H8       | 1.21                     | 0.86              |
| 2:AB:103:U:C2'    | 2:AB:104:A:H5'     | 2.04                     | 0.86              |
| 9:AK:23:LEU:CD1   | 9:AK:63:THR:N      | 2.38                     | 0.86              |
| 14:AP:49:VAL:HG22 | 14:AP:76:LYS:HZ1   | 1.40                     | 0.86              |
| 15:AQ:28:VAL:O    | 15:AQ:52:ILE:HG13  | 1.74                     | 0.86              |
| 17:AS:18:LEU:HB2  | 17:AS:66:ARG:HH22  | 1.39                     | 0.86              |
| 25:Aa:5:ILE:HD13  | 25:Aa:60:GLN:HE22  | 1.38                     | 0.86              |
| 27:Ac:50:ARG:CZ   | 27:Ac:52:VAL:HG21  | 2.05                     | 0.86              |
| 29:Ae:50:LEU:HD23 | 29:Ae:51:ALA:N     | 1.89                     | 0.86              |
| 32:AJ:17:ALA:HB3  | 32:AJ:42:ASN:ND2   | 1.89                     | 0.86              |
| 34:BA:1425:U:H2'  | 34:BA:1426:C:C6    | 2.08                     | 0.86              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 34:BA:1459:C:O2'  | 34:BA:1460:A:H5'  | 1.75                     | 0.86              |
| 34:BA:1484:C:O2'  | 34:BA:1485:U:H5'  | 1.75                     | 0.86              |
| 34:BA:1516:G:H22  | 34:BA:1518:A:H3'  | 1.41                     | 0.86              |
| 35:BF:145:LEU:O   | 35:BF:149:LEU:HB2 | 1.75                     | 0.86              |
| 46:BQ:48:LEU:HD22 | 46:BQ:53:VAL:CG2  | 2.06                     | 0.86              |
| 46:BQ:91:ARG:HD3  | 46:BQ:98:VAL:C    | 2.01                     | 0.86              |
| 56:BD:63:G:O2'    | 56:BD:64:A:H5'    | 1.75                     | 0.86              |
| 56:BE:3:C:N3      | 56:BE:70:G:C2'    | 2.37                     | 0.86              |
| 1:AA:154:G:O2'    | 1:AA:155:C:H5'    | 1.76                     | 0.86              |
| 1:AA:472:A:C2'    | 1:AA:473:G:H5''   | 2.06                     | 0.86              |
| 1:AA:931:G:H3'    | 1:AA:932:G:O4'    | 1.74                     | 0.86              |
| 1:AA:1061:U:O5'   | 32:AJ:52:ILE:CD1  | 2.24                     | 0.86              |
| 1:AA:1078:U:P     | 32:AJ:137:GLU:OE1 | 2.33                     | 0.86              |
| 1:AA:1202:C:H2'   | 1:AA:1203:G:H4'   | 1.57                     | 0.86              |
| 1:AA:1341:U:H2'   | 1:AA:1341:U:O2    | 1.73                     | 0.86              |
| 1:AA:1567:A:H4'   | 1:AA:1568:G:C2    | 2.10                     | 0.86              |
| 1:AA:2162:G:H2'   | 1:AA:2163:C:H5'   | 1.55                     | 0.86              |
| 1:AA:2332:U:C4'   | 1:AA:2336:A:N6    | 2.37                     | 0.86              |
| 1:AA:2646:C:C4    | 1:AA:2647:U:C4    | 2.63                     | 0.86              |
| 1:AA:2799:A:O4'   | 1:AA:2802:G:N1    | 2.08                     | 0.86              |
| 2:AB:97:G:H2'     | 2:AB:98:G:H5'     | 1.55                     | 0.86              |
| 5:AE:173:VAL:HG22 | 5:AE:174:ASP:N    | 1.90                     | 0.86              |
| 6:AF:74:ARG:NE    | 6:AF:75:HIS:N     | 2.23                     | 0.86              |
| 6:AF:122:LYS:NZ   | 6:AF:122:LYS:HA   | 1.90                     | 0.86              |
| 8:AH:102:ALA:C    | 8:AH:115:VAL:HG12 | 2.00                     | 0.86              |
| 9:AK:68:GLU:H     | 9:AK:70:LYS:NZ    | 1.72                     | 0.86              |
| 12:AN:81:VAL:HG12 | 12:AN:82:ARG:N    | 1.90                     | 0.86              |
| 20:AV:71:LYS:HD2  | 20:AV:71:LYS:H    | 1.38                     | 0.86              |
| 24:AZ:10:LYS:HZ3  | 24:AZ:12:PRO:CG   | 1.89                     | 0.86              |
| 27:Ac:19:ARG:O    | 27:Ac:43:CYS:SG   | 2.33                     | 0.86              |
| 30:Af:10:ILE:HD11 | 30:Af:34:GLN:HE21 | 1.41                     | 0.86              |
| 34:BA:47:C:H4'    | 34:BA:48:C:C5'    | 2.04                     | 0.86              |
| 34:BA:389:A:C6    | 34:BA:390:C:H1'   | 2.10                     | 0.86              |
| 34:BA:819:A:H5''  | 34:BA:820:U:OP2   | 1.75                     | 0.86              |
| 35:BF:82:ARG:HA   | 35:BF:92:TYR:CE1  | 2.11                     | 0.86              |
| 44:BO:110:ASP:HB2 | 51:BV:88:LYS:CB   | 2.05                     | 0.86              |
| 46:BQ:81:LEU:CD2  | 46:BQ:89:GLY:HA3  | 2.03                     | 0.86              |
| 50:BU:45:HIS:O    | 50:BU:73:VAL:HG23 | 1.75                     | 0.86              |
| 52:BW:9:VAL:C     | 52:BW:41:VAL:HG23 | 2.00                     | 0.86              |
| 53:BX:72:LEU:HD22 | 53:BX:77:ALA:N    | 1.89                     | 0.86              |
| 57:BZ:67:ASP:HB3  | 57:BZ:191:VAL:CB  | 2.04                     | 0.86              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 57:BZ:482:GLN:N    | 57:BZ:573:ASP:OD2 | 2.08                     | 0.86              |
| 57:BZ:488:LEU:CG   | 57:BZ:525:GLY:C   | 2.48                     | 0.86              |
| 1:AA:29:U:H2'      | 1:AA:30:G:C8      | 2.10                     | 0.86              |
| 1:AA:95:G:H2'      | 23:AY:43:HIS:NE2  | 1.91                     | 0.86              |
| 1:AA:228:A:H2'     | 1:AA:229:A:H5'    | 1.55                     | 0.86              |
| 1:AA:247:G:H5'     | 1:AA:386:G:H3'    | 1.57                     | 0.86              |
| 1:AA:270(Z):U:N3   | 1:AA:271(C):U:H1' | 1.90                     | 0.86              |
| 1:AA:1075:C:C1'    | 32:AJ:90:LYS:NZ   | 2.38                     | 0.86              |
| 1:AA:1179:C:O2'    | 1:AA:1180:C:O5'   | 1.93                     | 0.86              |
| 1:AA:1920:C:O2'    | 1:AA:1921:G:H3'   | 1.75                     | 0.86              |
| 1:AA:2539:C:O2'    | 1:AA:2540:C:H5'   | 1.76                     | 0.86              |
| 1:AA:2749:A:C5     | 1:AA:2750:A:N7    | 2.43                     | 0.86              |
| 2:AB:55:U:O2'      | 2:AB:56:G:H5'     | 1.74                     | 0.86              |
| 5:AE:8:LYS:HD3     | 5:AE:9:VAL:N      | 1.90                     | 0.86              |
| 7:AG:53:LEU:HG     | 7:AG:72:ARG:CD    | 2.04                     | 0.86              |
| 12:AN:56:ARG:CZ    | 12:AN:57:HIS:HB2  | 2.05                     | 0.86              |
| 20:AV:23:ARG:HD2   | 20:AV:39:VAL:HG22 | 1.56                     | 0.86              |
| 23:AY:52:ILE:O     | 23:AY:56:LEU:HD22 | 1.72                     | 0.86              |
| 33:Ag:332:UNK:HA   | 33:Ag:347:UNK:CB  | 2.04                     | 0.86              |
| 34:BA:20:U:H5'     | 34:BA:572:A:H61   | 1.38                     | 0.86              |
| 34:BA:21:G:H2'     | 34:BA:22:G:C8     | 2.10                     | 0.86              |
| 34:BA:938:A:O2'    | 34:BA:939:G:H5'   | 1.75                     | 0.86              |
| 34:BA:1128:C:O2    | 34:BA:1130:A:N6   | 2.08                     | 0.86              |
| 41:BL:111:ILE:HD12 | 41:BL:111:ILE:N   | 1.90                     | 0.86              |
| 42:BM:50:LEU:HD22  | 42:BM:51:ARG:HH12 | 1.40                     | 0.86              |
| 50:BU:91:ARG:HA    | 50:BU:94:ASN:HD22 | 1.40                     | 0.86              |
| 57:BZ:67:ASP:CG    | 57:BZ:68:TYR:HA   | 1.99                     | 0.86              |
| 57:BZ:547:ARG:CB   | 57:BZ:548:ALA:HB2 | 2.01                     | 0.86              |
| 1:AA:39:C:H2'      | 1:AA:40:C:C6      | 2.11                     | 0.86              |
| 1:AA:270(I):G:N3   | 1:AA:270(J):G:H1' | 1.90                     | 0.86              |
| 1:AA:780:G:H2'     | 1:AA:782:A:N7     | 1.89                     | 0.86              |
| 1:AA:851:U:H5''    | 24:AZ:49:LYS:HD2  | 1.58                     | 0.86              |
| 1:AA:948:G:C1'     | 1:AA:984:A:C2     | 2.58                     | 0.86              |
| 1:AA:1064:C:C5     | 1:AA:1065:U:C4    | 2.63                     | 0.86              |
| 1:AA:1105:U:O4'    | 1:AA:1106:G:O5'   | 1.93                     | 0.86              |
| 1:AA:1444:G:H3'    | 1:AA:1445:C:C5    | 2.10                     | 0.86              |
| 1:AA:1454:U:O2     | 1:AA:1454:U:H2'   | 1.75                     | 0.86              |
| 1:AA:1697:G:C3'    | 1:AA:1698:A:H5'   | 2.05                     | 0.86              |
| 1:AA:1786:A:O2'    | 1:AA:1787:A:H5'   | 1.75                     | 0.86              |
| 1:AA:2174:C:N3     | 3:AC:219:GLY:N    | 2.24                     | 0.86              |
| 1:AA:2348:U:O4     | 1:AA:2382:G:N2    | 2.08                     | 0.86              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 59:AA:3003:8AN:C8 | 22:AX:4:LYS:NZ    | 2.39                     | 0.86              |
| 4:AD:112:GLN:H    | 4:AD:115:GLN:NE2  | 1.74                     | 0.86              |
| 4:AD:130:ALA:HA   | 4:AD:193:VAL:HG23 | 1.55                     | 0.86              |
| 5:AE:33:VAL:HG13  | 5:AE:48:GLN:HA    | 1.54                     | 0.86              |
| 10:AL:19:ILE:HD12 | 10:AL:19:ILE:O    | 1.75                     | 0.86              |
| 16:AR:65:ILE:CD1  | 16:AR:96:ALA:HB2  | 2.05                     | 0.86              |
| 17:AS:5:VAL:N     | 17:AS:12:TYR:HD2  | 1.74                     | 0.86              |
| 24:AZ:9:VAL:HG13  | 24:AZ:54:VAL:HA   | 1.56                     | 0.86              |
| 32:AJ:21:PRO:CD   | 32:AJ:22:PRO:HD3  | 2.05                     | 0.86              |
| 34:BA:38:G:N2     | 34:BA:397:A:C5    | 2.43                     | 0.86              |
| 34:BA:854:G:H3'   | 34:BA:871:U:O4    | 1.76                     | 0.86              |
| 34:BA:1310:G:O6   | 34:BA:1327:C:C5   | 2.26                     | 0.86              |
| 35:BF:134:GLU:O   | 35:BF:138:LEU:HG  | 1.74                     | 0.86              |
| 38:BI:11:ILE:HB   | 38:BI:31:LEU:HD22 | 1.58                     | 0.86              |
| 49:BT:39:TYR:CB   | 49:BT:49:LEU:HD13 | 2.04                     | 0.86              |
| 55:BC:20:U:H2'    | 55:BC:21:A:H4'    | 1.58                     | 0.86              |
| 57:BZ:122:LYS:HE2 | 57:BZ:155:ASP:O   | 1.74                     | 0.86              |
| 57:BZ:253:LYS:HE3 | 57:BZ:269:GLU:HB3 | 1.55                     | 0.86              |
| 57:BZ:545:ASN:HB2 | 57:BZ:546:MET:HE3 | 1.58                     | 0.86              |
| 1:AA:389:G:C8     | 1:AA:2413:G:H4'   | 2.11                     | 0.86              |
| 1:AA:570:G:H1     | 1:AA:2498:C:H4'   | 1.34                     | 0.86              |
| 1:AA:901:A:N7     | 1:AA:902:C:C4     | 2.43                     | 0.86              |
| 1:AA:1176:G:H2'   | 1:AA:1177:A:H5'   | 1.56                     | 0.86              |
| 1:AA:1265:A:OP2   | 1:AA:2615:U:OP1   | 1.93                     | 0.86              |
| 1:AA:1476:C:N4    | 1:AA:1517:G:C8    | 2.44                     | 0.86              |
| 1:AA:1798:U:H5'   | 4:AD:257:LEU:HD12 | 1.57                     | 0.86              |
| 1:AA:2176:A:N3    | 3:AC:44:HIS:CD2   | 2.43                     | 0.86              |
| 1:AA:2652:C:C6    | 1:AA:2669:G:N2    | 2.19                     | 0.86              |
| 1:AA:2670:A:C4    | 1:AA:2671:A:N7    | 2.43                     | 0.86              |
| 59:AA:3003:8AN:H8 | 22:AX:4:LYS:NZ    | 1.90                     | 0.86              |
| 3:AC:157:LYS:N    | 3:AC:159:GLY:N    | 2.23                     | 0.86              |
| 4:AD:27:THR:HG22  | 4:AD:29:PRO:HD2   | 1.56                     | 0.86              |
| 4:AD:118:VAL:H    | 4:AD:129:ASN:ND2  | 1.74                     | 0.86              |
| 8:AH:94:TYR:C     | 8:AH:95:ARG:HD2   | 2.01                     | 0.86              |
| 10:AL:116:SER:CA  | 34:BA:345:C:O2    | 2.24                     | 0.86              |
| 10:AL:116:SER:CB  | 34:BA:345:C:C2    | 2.58                     | 0.86              |
| 17:AS:67:GLY:O    | 17:AS:68:LYS:HB2  | 1.73                     | 0.86              |
| 21:AW:111:VAL:CG2 | 21:AW:117:LEU:HG  | 2.06                     | 0.86              |
| 23:AY:33:GLN:O    | 23:AY:35:SER:N    | 2.08                     | 0.86              |
| 28:Ad:43:THR:O    | 28:Ad:46:VAL:N    | 2.09                     | 0.86              |
| 34:BA:1137:C:H4'  | 34:BA:1138:G:N2   | 1.89                     | 0.86              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1404:C:O2'   | 34:BA:1499:A:C2    | 2.20                     | 0.86              |
| 35:BF:200:ILE:O    | 35:BF:202:PRO:HD3  | 1.75                     | 0.86              |
| 41:BL:12:ARG:HD3   | 41:BL:26:VAL:CG2   | 2.04                     | 0.86              |
| 46:BQ:19:LEU:HB2   | 46:BQ:25:ILE:HG21  | 1.57                     | 0.86              |
| 51:BV:76:LEU:H     | 51:BV:76:LEU:HD22  | 1.41                     | 0.86              |
| 52:BW:18:LYS:HE2   | 52:BW:22:LEU:CD1   | 2.06                     | 0.86              |
| 53:BX:89:ARG:O     | 53:BX:93:GLU:HG3   | 1.74                     | 0.86              |
| 55:BC:16:U:O4      | 55:BC:18:G:C3'     | 2.20                     | 0.86              |
| 57:BZ:258:LEU:HB3  | 57:BZ:260:LEU:H    | 1.39                     | 0.86              |
| 1:AA:269:U:H3      | 1:AA:270:A:N6      | 1.73                     | 0.86              |
| 1:AA:729:G:C4      | 1:AA:730:C:H1'     | 2.11                     | 0.86              |
| 1:AA:764:A:N6      | 1:AA:1776:G:H1'    | 1.91                     | 0.86              |
| 1:AA:1059:G:C2'    | 32:AJ:75:SER:N     | 2.33                     | 0.86              |
| 1:AA:1687:G:C6     | 1:AA:1688:U:H5     | 1.92                     | 0.86              |
| 1:AA:1901:A:H4'    | 4:AD:244:ARG:HH12  | 1.40                     | 0.86              |
| 1:AA:1969:A:H4'    | 1:AA:1970:A:H5'    | 1.55                     | 0.86              |
| 1:AA:2129:C:C4'    | 3:AC:6:ARG:CG      | 2.09                     | 0.86              |
| 1:AA:2178:C:H5'    | 3:AC:46:LYS:CB     | 2.05                     | 0.86              |
| 1:AA:2399:G:C2     | 1:AA:2400:G:H1'    | 2.11                     | 0.86              |
| 2:AB:78:A:C5       | 2:AB:99:A:N6       | 2.43                     | 0.86              |
| 5:AE:5:LEU:HD21    | 5:AE:196:VAL:HB    | 1.55                     | 0.86              |
| 7:AG:75:LYS:O      | 7:AG:83:ARG:HA     | 1.75                     | 0.86              |
| 9:AK:74:ARG:O      | 9:AK:74:ARG:HG2    | 1.74                     | 0.86              |
| 9:AK:87:LEU:C      | 9:AK:90:MET:HB2    | 2.00                     | 0.86              |
| 9:AK:115:ARG:O     | 9:AK:118:LYS:HB2   | 1.74                     | 0.86              |
| 21:AW:118:GLN:HE21 | 21:AW:120:ILE:HG23 | 1.39                     | 0.86              |
| 22:AX:19:LYS:C     | 22:AX:20:ARG:HD2   | 2.01                     | 0.86              |
| 34:BA:1220:G:OP1   | 52:BW:34:TRP:CB    | 2.15                     | 0.86              |
| 34:BA:1309:G:N2    | 34:BA:1328:C:C4    | 2.43                     | 0.86              |
| 34:BA:1400:C:H4'   | 34:BA:1401:G:OP2   | 1.75                     | 0.86              |
| 35:BF:219:VAL:HG12 | 35:BF:223:ILE:CD1  | 2.03                     | 0.86              |
| 40:BK:45:ASP:HA    | 40:BK:48:LYS:NZ    | 1.90                     | 0.86              |
| 42:BM:19:LEU:HD21  | 42:BM:59:PHE:CB    | 2.01                     | 0.86              |
| 42:BM:55:ALA:HB1   | 42:BM:58:HIS:ND1   | 1.90                     | 0.86              |
| 46:BQ:29:ARG:HD3   | 46:BQ:64:TRP:HH2   | 1.30                     | 0.86              |
| 47:BR:24:CYS:HB2   | 47:BR:39:LEU:C     | 2.01                     | 0.86              |
| 48:BS:51:HIS:O     | 48:BS:54:ARG:HB3   | 1.74                     | 0.86              |
| 49:BT:31:LYS:HZ3   | 49:BT:31:LYS:HB3   | 1.40                     | 0.86              |
| 57:BZ:41:ARG:CA    | 57:BZ:42:VAL:HG13  | 2.04                     | 0.86              |
| 57:BZ:157:GLN:HG2  | 57:BZ:158:LEU:CD1  | 2.05                     | 0.86              |
| 1:AA:76:C:H2'      | 1:AA:77:C:H5'      | 1.55                     | 0.86              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:95:G:O5'     | 23:AY:39:LEU:HB3  | 1.76                     | 0.86              |
| 1:AA:273(B):C:H2' | 1:AA:273(C):C:C6  | 2.11                     | 0.86              |
| 1:AA:298:G:H8     | 1:AA:298:G:O5'    | 1.58                     | 0.86              |
| 1:AA:392:C:H2'    | 1:AA:393:C:C6     | 2.10                     | 0.86              |
| 1:AA:429:A:H2'    | 1:AA:430:G:C8     | 2.11                     | 0.86              |
| 1:AA:503:A:H4'    | 1:AA:504:U:C5'    | 2.05                     | 0.86              |
| 1:AA:1340:U:HO2'  | 1:AA:1394:U:HO2'  | 1.21                     | 0.86              |
| 1:AA:1527:G:H1'   | 1:AA:1528:A:C2    | 2.09                     | 0.86              |
| 1:AA:1655:A:H61   | 1:AA:2005:A:H1'   | 1.41                     | 0.86              |
| 1:AA:2171:A:H4'   | 1:AA:2172:U:OP1   | 1.73                     | 0.86              |
| 1:AA:2353:G:H4'   | 22:AX:32:ARG:NH2  | 1.90                     | 0.86              |
| 1:AA:2432:A:H2    | 25:Aa:30:GLU:HA   | 1.40                     | 0.86              |
| 1:AA:2456:C:O2'   | 1:AA:2457:U:H5'   | 1.75                     | 0.86              |
| 1:AA:2544:G:H2'   | 1:AA:2545:G:O4'   | 1.75                     | 0.86              |
| 1:AA:2742:C:OP1   | 30:Af:2:LYS:HE2   | 1.75                     | 0.86              |
| 3:AC:62:VAL:HB    | 3:AC:191:ALA:C    | 1.98                     | 0.86              |
| 10:AL:12:ASP:OD2  | 10:AL:85:VAL:N    | 2.08                     | 0.86              |
| 10:AL:52:VAL:HG22 | 10:AL:53:LYS:N    | 1.86                     | 0.86              |
| 15:AQ:65:LYS:HD3  | 15:AQ:75:ILE:HD13 | 1.56                     | 0.86              |
| 18:AT:47:VAL:O    | 18:AT:51:LEU:HD13 | 1.76                     | 0.86              |
| 22:AX:5:LYS:HG2   | 22:AX:6:GLY:N     | 1.89                     | 0.86              |
| 22:AX:21:LEU:HG   | 22:AX:22:GLY:H    | 1.40                     | 0.86              |
| 29:Ae:5:LYS:HB2   | 29:Ae:60:LEU:HA   | 1.55                     | 0.86              |
| 32:AJ:83:GLY:O    | 32:AJ:85:GLU:N    | 2.09                     | 0.86              |
| 34:BA:522:C:H5''  | 45:BP:120:TYR:OH  | 1.76                     | 0.86              |
| 34:BA:797:C:O2'   | 34:BA:798:G:H5'   | 1.75                     | 0.86              |
| 34:BA:983:A:H3'   | 34:BA:983:A:N3    | 1.91                     | 0.86              |
| 35:BF:75:LYS:HA   | 35:BF:75:LYS:HZ3  | 1.40                     | 0.86              |
| 48:BS:53:HIS:O    | 48:BS:57:LEU:HD13 | 1.76                     | 0.86              |
| 57:BZ:95:VAL:HG23 | 57:BZ:123:PRO:CA  | 2.05                     | 0.86              |
| 57:BZ:499:PHE:HB3 | 57:BZ:540:GLY:C   | 2.00                     | 0.86              |
| 57:BZ:604:PRO:CB  | 57:BZ:605:LYS:HB3 | 2.03                     | 0.86              |
| 1:AA:7:G:C6       | 1:AA:2896:C:C2    | 2.62                     | 0.86              |
| 1:AA:83:G:O6      | 1:AA:102:G:H1'    | 1.76                     | 0.86              |
| 1:AA:292:C:H2'    | 1:AA:293:U:O2     | 1.75                     | 0.86              |
| 1:AA:1151:G:H2'   | 1:AA:1152:C:C6    | 2.11                     | 0.86              |
| 1:AA:1902:C:H5'   | 4:AD:244:ARG:NE   | 1.91                     | 0.86              |
| 1:AA:2138:C:H2'   | 1:AA:2139:C:C6    | 2.10                     | 0.86              |
| 1:AA:2286:A:N6    | 27:Ac:32:ASN:N    | 2.23                     | 0.86              |
| 1:AA:2493:U:C6    | 1:AA:2493:U:H3'   | 2.11                     | 0.86              |
| 4:AD:181:GLU:HB3  | 4:AD:268:ARG:HE   | 1.37                     | 0.86              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 5:AE:136:ARG:O    | 5:AE:137:HIS:ND1   | 2.09                     | 0.86              |
| 7:AG:75:LYS:CG    | 7:AG:84:LYS:HB2    | 2.05                     | 0.86              |
| 9:AK:107:LEU:HD23 | 9:AK:107:LEU:C     | 2.00                     | 0.86              |
| 11:AM:91:PHE:O    | 11:AM:95:VAL:HB    | 1.75                     | 0.86              |
| 11:AM:128:HIS:HA  | 11:AM:147:LEU:CD2  | 2.06                     | 0.86              |
| 17:AS:5:VAL:HG13  | 17:AS:38:LEU:O     | 1.76                     | 0.86              |
| 18:AT:11:ARG:HB2  | 18:AT:98:LYS:CE    | 2.05                     | 0.86              |
| 20:AV:64:GLU:OE2  | 20:AV:64:GLU:HA    | 1.74                     | 0.86              |
| 34:BA:691:G:O6    | 44:BO:55:LYS:HE2   | 1.75                     | 0.86              |
| 34:BA:952:U:C5'   | 34:BA:972:C:H41    | 1.88                     | 0.86              |
| 35:BF:54:THR:O    | 35:BF:58:ILE:HG13  | 1.76                     | 0.86              |
| 35:BF:115:LEU:CD2 | 35:BF:149:LEU:HD13 | 2.06                     | 0.86              |
| 35:BF:176:GLU:O   | 35:BF:180:LEU:HG   | 1.76                     | 0.86              |
| 36:BG:67:THR:HA   | 36:BG:102:ASN:HB2  | 1.56                     | 0.86              |
| 46:BQ:10:PRO:O    | 46:BQ:45:VAL:HG11  | 1.69                     | 0.86              |
| 49:BT:55:ARG:HE   | 49:BT:55:ARG:HA    | 1.41                     | 0.86              |
| 53:BX:83:ARG:O    | 53:BX:86:ARG:HG2   | 1.75                     | 0.86              |
| 57:BZ:205:PHE:HD1 | 57:BZ:229:GLY:C    | 1.83                     | 0.86              |
| 57:BZ:236:GLN:CG  | 57:BZ:237:VAL:H    | 1.88                     | 0.86              |
| 57:BZ:491:ASN:OD1 | 57:BZ:536:ASN:HB2  | 1.75                     | 0.86              |
| 57:BZ:502:PHE:HZ  | 57:BZ:555:VAL:C    | 1.83                     | 0.86              |
| 1:AA:270(B):A:H1' | 1:AA:270(C):C:C5   | 2.11                     | 0.85              |
| 1:AA:280:C:N4     | 1:AA:283:A:H62     | 1.73                     | 0.85              |
| 1:AA:725:G:H2'    | 1:AA:726:G:O4'     | 1.76                     | 0.85              |
| 1:AA:1052:C:O2'   | 1:AA:1053:C:H5'    | 1.76                     | 0.85              |
| 1:AA:1651:G:H2'   | 1:AA:1652:A:C8     | 2.11                     | 0.85              |
| 1:AA:1934:C:C5'   | 1:AA:1974:C:H4'    | 2.06                     | 0.85              |
| 1:AA:2207:C:H2'   | 1:AA:2208:U:H4'    | 1.57                     | 0.85              |
| 1:AA:2644:G:H8    | 1:AA:2644:G:O5'    | 1.59                     | 0.85              |
| 1:AA:2748:A:H1'   | 8:AH:67:LEU:CD2    | 2.06                     | 0.85              |
| 2:AB:88:C:N4      | 2:AB:89:G:N3       | 2.23                     | 0.85              |
| 3:AC:22:ILE:HD11  | 3:AC:226:PRO:CA    | 2.05                     | 0.85              |
| 3:AC:43:VAL:HG21  | 3:AC:189:ILE:HD13  | 1.57                     | 0.85              |
| 5:AE:12:THR:HG23  | 5:AE:21:VAL:HB     | 1.56                     | 0.85              |
| 5:AE:49:LEU:HG    | 5:AE:74:PRO:CG     | 2.04                     | 0.85              |
| 6:AF:158:THR:HG21 | 6:AF:195:ASP:HB2   | 1.56                     | 0.85              |
| 8:AH:43:VAL:HG22  | 8:AH:52:VAL:CA     | 2.03                     | 0.85              |
| 8:AH:103:LEU:HB2  | 8:AH:115:VAL:CB    | 2.05                     | 0.85              |
| 9:AK:116:LEU:O    | 9:AK:116:LEU:HD23  | 1.76                     | 0.85              |
| 10:AL:37:ASP:H    | 10:AL:61:VAL:HB    | 1.40                     | 0.85              |
| 10:AL:97:ARG:HB2  | 10:AL:97:ARG:CZ    | 2.04                     | 0.85              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 11:AM:29:LYS:C     | 11:AM:30:THR:HG23  | 2.00                     | 0.85              |
| 14:AP:51:ALA:CB    | 14:AP:73:LEU:HG    | 2.06                     | 0.85              |
| 16:AR:108:GLU:HB2  | 16:AR:111:GLU:CD   | 2.01                     | 0.85              |
| 18:AT:74:ALA:CB    | 18:AT:105:VAL:HG23 | 2.04                     | 0.85              |
| 22:AX:51:VAL:HG11  | 22:AX:79:VAL:CG2   | 2.06                     | 0.85              |
| 27:Ac:33:LYS:HE2   | 27:Ac:34:LEU:N     | 1.91                     | 0.85              |
| 34:BA:562:C:O2'    | 45:BP:15:ARG:HD3   | 1.76                     | 0.85              |
| 34:BA:607:A:H2'    | 34:BA:608:A:O4'    | 1.75                     | 0.85              |
| 34:BA:611:A:H61    | 34:BA:629:G:H1     | 0.88                     | 0.85              |
| 34:BA:713:G:H2'    | 34:BA:714:G:C8     | 2.11                     | 0.85              |
| 34:BA:851:G:N2     | 34:BA:852:G:H1'    | 1.91                     | 0.85              |
| 35:BF:46:LYS:HA    | 35:BF:46:LYS:HE2   | 1.56                     | 0.85              |
| 35:BF:115:LEU:HD22 | 35:BF:149:LEU:HD13 | 1.56                     | 0.85              |
| 37:BH:133:VAL:HG11 | 37:BH:138:TYR:CD1  | 2.11                     | 0.85              |
| 38:BI:107:ARG:O    | 38:BI:111:GLU:HG3  | 1.76                     | 0.85              |
| 39:BJ:7:ASN:ND2    | 39:BJ:62:TRP:HD1   | 1.73                     | 0.85              |
| 40:BK:29:LYS:HD2   | 40:BK:101:LEU:HD22 | 1.57                     | 0.85              |
| 44:BO:58:PRO:HB3   | 44:BO:90:GLY:CA    | 2.06                     | 0.85              |
| 46:BQ:100:GLY:CA   | 46:BQ:101:GLN:HG2  | 2.05                     | 0.85              |
| 51:BV:78:LEU:C     | 51:BV:79:LEU:HD12  | 2.00                     | 0.85              |
| 56:BD:51:U:N3      | 56:BD:63:G:C2      | 2.43                     | 0.85              |
| 57:BZ:8:ILE:CG2    | 57:BZ:72:ILE:HD13  | 1.93                     | 0.85              |
| 1:AA:1044:G:N3     | 31:AI:6:ASN:CA     | 2.39                     | 0.85              |
| 1:AA:1275:A:N3     | 13:AO:12:ARG:NH2   | 2.24                     | 0.85              |
| 1:AA:1491:G:C2'    | 1:AA:1492:G:H4'    | 2.05                     | 0.85              |
| 1:AA:1579:A:N6     | 1:AA:1581:G:N2     | 2.24                     | 0.85              |
| 1:AA:1799:G:H1     | 4:AD:157:ARG:NH1   | 1.73                     | 0.85              |
| 1:AA:1906:G:N9     | 1:AA:1929:G:C5     | 2.34                     | 0.85              |
| 1:AA:2055:C:H2'    | 1:AA:2504:U:H5'    | 1.59                     | 0.85              |
| 1:AA:2121:G:H1'    | 3:AC:167:LYS:HE2   | 1.53                     | 0.85              |
| 1:AA:2331:G:N2     | 1:AA:2385:C:N4     | 2.24                     | 0.85              |
| 1:AA:2390:U:O2'    | 1:AA:2391:G:H5'    | 1.75                     | 0.85              |
| 1:AA:2447:G:N7     | 1:AA:2500:U:C2'    | 2.39                     | 0.85              |
| 4:AD:8:PRO:O       | 4:AD:25:THR:CA     | 2.17                     | 0.85              |
| 4:AD:89:SER:O      | 4:AD:159:ALA:HB2   | 1.76                     | 0.85              |
| 12:AN:112:GLU:HA   | 12:AN:115:MET:CG   | 2.06                     | 0.85              |
| 13:AO:61:HIS:HA    | 13:AO:64:ARG:HD3   | 1.59                     | 0.85              |
| 19:AU:21:PHE:HE2   | 19:AU:27:THR:H     | 1.19                     | 0.85              |
| 20:AV:31:LEU:HB3   | 20:AV:32:PRO:CD    | 2.06                     | 0.85              |
| 28:Ad:20:ALA:HB3   | 28:Ad:21:ARG:NH2   | 1.91                     | 0.85              |
| 29:Ae:15:LYS:O     | 29:Ae:22:VAL:HG13  | 1.75                     | 0.85              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 31:AI:140:GLY:C    | 33:Ag:136:UNK:O    | 2.18                     | 0.85              |
| 32:AJ:25:PRO:CB    | 57:BZ:429:MET:HE2  | 1.96                     | 0.85              |
| 32:AJ:98:ARG:NH1   | 32:AJ:100:THR:HA   | 1.91                     | 0.85              |
| 34:BA:309:G:O2'    | 34:BA:310:G:H5'    | 1.75                     | 0.85              |
| 34:BA:576:G:N7     | 34:BA:881:G:H1'    | 1.89                     | 0.85              |
| 34:BA:728:A:H8     | 48:BS:54:ARG:CZ    | 1.88                     | 0.85              |
| 34:BA:800:G:H8     | 34:BA:800:G:O5'    | 1.59                     | 0.85              |
| 34:BA:1226:C:C6    | 46:BQ:104:ARG:HA   | 2.12                     | 0.85              |
| 34:BA:1347:G:H8    | 42:BM:107:ARG:HB3  | 1.41                     | 0.85              |
| 34:BA:1454:G:P     | 53:BX:39:LYS:HD3   | 2.15                     | 0.85              |
| 37:BH:70:ILE:HD12  | 37:BH:100:ARG:HH21 | 1.41                     | 0.85              |
| 37:BH:145:GLU:HB3  | 37:BH:184:LYS:HG2  | 1.57                     | 0.85              |
| 38:BI:105:VAL:HG11 | 38:BI:131:ILE:HG22 | 1.58                     | 0.85              |
| 41:BL:18:ARG:HH11  | 41:BL:18:ARG:HG3   | 1.41                     | 0.85              |
| 44:BO:33:THR:HA    | 44:BO:39:PRO:HA    | 1.58                     | 0.85              |
| 44:BO:68:ALA:HA    | 44:BO:71:LYS:HD2   | 1.55                     | 0.85              |
| 45:BP:88:GLY:HA3   | 45:BP:99:HIS:NE2   | 1.91                     | 0.85              |
| 46:BQ:22:ILE:CG1   | 46:BQ:25:ILE:HD12  | 2.05                     | 0.85              |
| 57:BZ:6:ARG:CA     | 57:BZ:69:ARG:O     | 2.18                     | 0.85              |
| 1:AA:61:G:H2'      | 1:AA:62:C:C6       | 2.11                     | 0.85              |
| 1:AA:587:C:H5      | 11:AM:30:THR:HG21  | 1.41                     | 0.85              |
| 1:AA:714:U:H2'     | 1:AA:715:G:C8      | 2.11                     | 0.85              |
| 1:AA:1658:C:OP1    | 5:AE:134:ILE:HB    | 1.76                     | 0.85              |
| 1:AA:2416:C:H2'    | 1:AA:2417:C:C5'    | 2.05                     | 0.85              |
| 1:AA:2881:C:H2'    | 1:AA:2882:A:C8     | 2.10                     | 0.85              |
| 3:AC:100:ILE:HD11  | 3:AC:123:VAL:HG22  | 1.56                     | 0.85              |
| 4:AD:227:ASN:O     | 4:AD:229:VAL:HG12  | 1.75                     | 0.85              |
| 9:AK:35:ARG:N      | 9:AK:49:GLY:HA2    | 1.91                     | 0.85              |
| 9:AK:70:LYS:HD2    | 9:AK:86:PRO:HG3    | 1.57                     | 0.85              |
| 10:AL:64:ARG:HH22  | 10:AL:77:ILE:HA    | 1.41                     | 0.85              |
| 17:AS:49:THR:CB    | 17:AS:50:PRO:HD2   | 2.04                     | 0.85              |
| 31:AI:53:VAL:CA    | 31:AI:85:ASP:CA    | 2.48                     | 0.85              |
| 31:AI:141:VAL:C    | 33:Ag:134:UNK:HA   | 2.00                     | 0.85              |
| 32:AJ:72:PRO:CD    | 32:AJ:77:LEU:CG    | 2.40                     | 0.85              |
| 34:BA:363:A:N7     | 45:BP:30:ALA:HB1   | 1.91                     | 0.85              |
| 34:BA:520:A:N6     | 34:BA:529:G:H21    | 1.73                     | 0.85              |
| 34:BA:722:A:H2'    | 34:BA:724:G:C8     | 2.10                     | 0.85              |
| 34:BA:1342:C:O2'   | 42:BM:124:GLN:HB2  | 1.77                     | 0.85              |
| 34:BA:1350:A:OP2   | 42:BM:118:LYS:HG3  | 1.76                     | 0.85              |
| 34:BA:1413:A:N1    | 34:BA:1488:G:C4    | 2.24                     | 0.85              |
| 35:BF:217:ARG:O    | 35:BF:220:ASP:HB2  | 1.76                     | 0.85              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 37:BH:126:ILE:O   | 37:BH:149:ALA:HB2  | 1.76                     | 0.85              |
| 40:BK:69:VAL:HG11 | 40:BK:104:LEU:HG   | 1.58                     | 0.85              |
| 48:BS:36:ILE:CD1  | 48:BS:63:ARG:HD3   | 2.07                     | 0.85              |
| 52:BW:12:ASP:O    | 52:BW:14:HIS:N     | 2.09                     | 0.85              |
| 56:BD:1:G:C2      | 56:BD:2:C:C2       | 2.64                     | 0.85              |
| 57:BZ:181:GLU:OE2 | 57:BZ:183:MET:HG2  | 1.76                     | 0.85              |
| 57:BZ:507:ARG:C   | 57:BZ:528:SER:OG   | 2.20                     | 0.85              |
| 1:AA:88:G:H5'     | 1:AA:89:G:OP2      | 1.75                     | 0.85              |
| 1:AA:198:C:HO2'   | 1:AA:199:A:H8      | 0.91                     | 0.85              |
| 1:AA:326:G:H2'    | 1:AA:327:G:C8      | 2.10                     | 0.85              |
| 1:AA:451:C:H5     | 1:AA:453:C:H5'     | 1.41                     | 0.85              |
| 1:AA:740:U:O2'    | 1:AA:741:G:P       | 2.33                     | 0.85              |
| 1:AA:858:U:H2'    | 1:AA:2268:A:C8     | 2.11                     | 0.85              |
| 1:AA:1743:G:H3'   | 1:AA:1746:G:H8     | 1.42                     | 0.85              |
| 1:AA:1924:C:H2'   | 1:AA:1925:C:H6     | 1.42                     | 0.85              |
| 1:AA:2447:G:O2'   | 1:AA:2448:A:OP2    | 1.93                     | 0.85              |
| 1:AA:2658:C:H2'   | 1:AA:2659:G:O4'    | 1.74                     | 0.85              |
| 4:AD:9:TYR:HH     | 4:AD:91:ARG:NH2    | 1.74                     | 0.85              |
| 8:AH:126:PRO:HG2  | 8:AH:132:ARG:HH22  | 1.41                     | 0.85              |
| 10:AL:10:VAL:CG1  | 10:AL:17:ARG:HA    | 2.06                     | 0.85              |
| 10:AL:47:ILE:HD11 | 10:AL:52:VAL:HG13  | 1.57                     | 0.85              |
| 10:AL:97:ARG:C    | 10:AL:97:ARG:NE    | 2.34                     | 0.85              |
| 12:AN:28:ALA:O    | 12:AN:29:PHE:HB2   | 1.76                     | 0.85              |
| 16:AR:49:HIS:CD2  | 16:AR:52:ARG:NH2   | 2.44                     | 0.85              |
| 17:AS:67:GLY:HA2  | 17:AS:93:GLU:O     | 1.77                     | 0.85              |
| 18:AT:12:ILE:HG12 | 18:AT:101:SER:HB2  | 1.59                     | 0.85              |
| 21:AW:127:LYS:HD2 | 21:AW:163:LEU:CA   | 2.06                     | 0.85              |
| 23:AY:4:GLN:HA    | 23:AY:7:GLU:OE1    | 1.77                     | 0.85              |
| 27:Ac:19:ARG:HH12 | 27:Ac:41:PRO:CG    | 1.88                     | 0.85              |
| 32:AJ:28:GLY:O    | 57:BZ:431:PRO:HG2  | 1.76                     | 0.85              |
| 32:AJ:86:LYS:HD2  | 32:AJ:87:GLY:N     | 1.91                     | 0.85              |
| 32:AJ:123:ALA:CA  | 32:AJ:127:ILE:HG13 | 2.05                     | 0.85              |
| 34:BA:731:G:H2'   | 34:BA:732:C:H6     | 1.39                     | 0.85              |
| 34:BA:1268:A:C2   | 34:BA:1311:G:H1'   | 2.06                     | 0.85              |
| 34:BA:1288:A:N1   | 34:BA:1371:G:H1'   | 1.92                     | 0.85              |
| 44:BO:99:GLN:HB3  | 44:BO:105:VAL:HG11 | 1.56                     | 0.85              |
| 46:BQ:12:ASN:CA   | 46:BQ:44:ARG:O     | 2.25                     | 0.85              |
| 50:BU:44:ALA:HB1  | 50:BU:72:ARG:HA    | 1.57                     | 0.85              |
| 52:BW:16:LEU:O    | 52:BW:19:VAL:HG12  | 1.75                     | 0.85              |
| 54:BY:9:ARG:HH12  | 54:BY:21:TYR:HD2   | 1.21                     | 0.85              |
| 57:BZ:220:VAL:CG2 | 57:BZ:279:LEU:HB3  | 1.73                     | 0.85              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:BZ:382:VAL:CG2  | 57:BZ:569:LEU:HG   | 2.06                     | 0.85              |
| 57:BZ:601:ASN:HA   | 57:BZ:602:ARG:O    | 1.77                     | 0.85              |
| 1:AA:242:G:H2'     | 1:AA:254:G:C6      | 2.11                     | 0.85              |
| 1:AA:564:C:H1'     | 16:AR:37:GLU:CD    | 2.01                     | 0.85              |
| 1:AA:628:G:H8      | 1:AA:628:G:O5'     | 1.56                     | 0.85              |
| 1:AA:903:C:O2'     | 1:AA:904:C:H5'     | 1.77                     | 0.85              |
| 1:AA:1308:A:C2     | 1:AA:1309:G:H1'    | 2.10                     | 0.85              |
| 1:AA:1527:G:H1'    | 1:AA:1528:A:N3     | 1.91                     | 0.85              |
| 1:AA:1695:G:H2'    | 1:AA:1696:G:H5'    | 1.57                     | 0.85              |
| 1:AA:1820:U:C2'    | 4:AD:202:LYS:HG3   | 2.06                     | 0.85              |
| 1:AA:2213:U:H3'    | 1:AA:2213:U:O2     | 1.75                     | 0.85              |
| 1:AA:2650:U:O2'    | 1:AA:2651:C:H5'    | 1.76                     | 0.85              |
| 1:AA:2797:U:H4'    | 1:AA:2798:C:C4'    | 2.05                     | 0.85              |
| 2:AB:7:G:H4'       | 14:AP:29:PHE:HE2   | 1.37                     | 0.85              |
| 5:AE:158:GLY:O     | 5:AE:160:TYR:HD1   | 1.59                     | 0.85              |
| 10:AL:10:VAL:C     | 10:AL:17:ARG:HG3   | 2.01                     | 0.85              |
| 10:AL:106:LEU:HD22 | 15:AQ:39:ARG:NH1   | 1.90                     | 0.85              |
| 18:AT:55:ALA:O     | 18:AT:58:ALA:HB3   | 1.76                     | 0.85              |
| 19:AU:17:ALA:HB1   | 19:AU:27:THR:OG1   | 1.76                     | 0.85              |
| 22:AX:38:VAL:HB    | 22:AX:59:LEU:HD12  | 1.56                     | 0.85              |
| 32:AJ:27:LEU:CD2   | 32:AJ:57:ILE:O     | 2.15                     | 0.85              |
| 34:BA:118:U:O4     | 34:BA:288:A:H2'    | 1.74                     | 0.85              |
| 34:BA:1286:A:H5'   | 54:BY:25:LYS:CG    | 2.06                     | 0.85              |
| 34:BA:1293:G:H2'   | 34:BA:1294:G:H8    | 1.41                     | 0.85              |
| 34:BA:1298:C:C5    | 40:BK:114:ARG:HD3  | 2.11                     | 0.85              |
| 34:BA:1455:G:P     | 53:BX:32:ALA:O     | 2.34                     | 0.85              |
| 36:BG:191:THR:OG1  | 36:BG:196:LEU:HD11 | 1.75                     | 0.85              |
| 45:BP:106:ASP:CA   | 57:BZ:329:ARG:NE   | 2.39                     | 0.85              |
| 1:AA:1144:G:H2'    | 1:AA:1145:C:H6     | 1.38                     | 0.85              |
| 1:AA:1154:G:H5''   | 16:AR:58:ARG:HD3   | 1.59                     | 0.85              |
| 1:AA:1204:A:H5'    | 1:AA:1206:G:OP1    | 1.76                     | 0.85              |
| 1:AA:1257:C:H4'    | 6:AF:83:PHE:CD1    | 2.11                     | 0.85              |
| 1:AA:1351:C:O2'    | 1:AA:1571:A:H1'    | 1.77                     | 0.85              |
| 1:AA:1406:U:H2'    | 1:AA:1407:C:C6     | 2.11                     | 0.85              |
| 1:AA:2061:G:O2'    | 1:AA:2062:A:H5''   | 1.76                     | 0.85              |
| 1:AA:2176:A:N3     | 3:AC:44:HIS:HD2    | 1.73                     | 0.85              |
| 1:AA:2748:A:N3     | 8:AH:67:LEU:CD2    | 2.38                     | 0.85              |
| 3:AC:43:VAL:HG13   | 3:AC:213:TYR:C     | 2.02                     | 0.85              |
| 3:AC:64:LEU:CD1    | 3:AC:161:ILE:HG12  | 2.05                     | 0.85              |
| 4:AD:9:TYR:CZ      | 4:AD:25:THR:HG21   | 2.11                     | 0.85              |
| 4:AD:107:ALA:H     | 4:AD:108:PRO:HD3   | 1.39                     | 0.85              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 4:AD:136:ILE:HD13  | 4:AD:173:VAL:HG11 | 1.59                     | 0.85              |
| 6:AF:44:ARG:HG3    | 6:AF:45:ARG:H     | 1.41                     | 0.85              |
| 11:AM:37:GLY:C     | 11:AM:40:SER:HB3  | 2.00                     | 0.85              |
| 12:AN:7:MET:H      | 12:AN:70:PRO:CG   | 1.89                     | 0.85              |
| 12:AN:44:ALA:CA    | 12:AN:47:ILE:HD12 | 2.07                     | 0.85              |
| 16:AR:15:LYS:CA    | 16:AR:18:LEU:HD23 | 2.07                     | 0.85              |
| 16:AR:31:SER:O     | 16:AR:32:PHE:C    | 2.19                     | 0.85              |
| 16:AR:55:ARG:O     | 16:AR:58:ARG:HB3  | 1.75                     | 0.85              |
| 18:AT:48:ALA:O     | 18:AT:51:LEU:HB2  | 1.75                     | 0.85              |
| 20:AV:1:MET:H1     | 20:AV:33:LYS:HE3  | 1.40                     | 0.85              |
| 34:BA:668:G:H4'    | 48:BS:48:LYS:O    | 1.77                     | 0.85              |
| 34:BA:939:G:H2'    | 34:BA:940:C:C6    | 2.11                     | 0.85              |
| 34:BA:1100:C:O2    | 34:BA:1102:A:H5'  | 1.76                     | 0.85              |
| 35:BF:7:VAL:HG23   | 35:BF:8:LYS:H     | 1.42                     | 0.85              |
| 35:BF:187:LEU:HD21 | 35:BF:203:GLY:O   | 1.76                     | 0.85              |
| 39:BJ:95:GLU:H     | 39:BJ:96:PRO:CD   | 1.88                     | 0.85              |
| 40:BK:23:VAL:HG13  | 40:BK:43:PHE:CZ   | 2.12                     | 0.85              |
| 40:BK:74:GLU:O     | 40:BK:88:PRO:HA   | 1.75                     | 0.85              |
| 46:BQ:15:VAL:HG22  | 46:BQ:39:ILE:HD13 | 0.92                     | 0.85              |
| 49:BT:27:LYS:N     | 49:BT:27:LYS:HZ2  | 1.75                     | 0.85              |
| 56:BD:1:G:C2       | 56:BD:2:C:N3      | 2.44                     | 0.85              |
| 56:BD:5:G:O6       | 56:BD:69:G:C6     | 2.30                     | 0.85              |
| 57:BZ:236:GLN:HG2  | 57:BZ:237:VAL:N   | 1.89                     | 0.85              |
| 1:AA:271(B):G:H5'' | 1:AA:271(C):U:O4' | 1.77                     | 0.85              |
| 1:AA:295:G:C2      | 1:AA:344:G:H1'    | 2.12                     | 0.85              |
| 1:AA:1353:A:H2'    | 1:AA:1354:A:C8    | 2.12                     | 0.85              |
| 1:AA:2010:G:H2'    | 1:AA:2011:U:H5'   | 1.57                     | 0.85              |
| 1:AA:2507:C:C2'    | 59:AA:3002:8AN:N3 | 2.39                     | 0.85              |
| 1:AA:2514:U:H2'    | 1:AA:2515:C:H6    | 1.41                     | 0.85              |
| 3:AC:97:GLU:HG3    | 3:AC:119:VAL:HB   | 1.56                     | 0.85              |
| 5:AE:101:ARG:HD2   | 5:AE:169:ASN:HD21 | 1.42                     | 0.85              |
| 6:AF:36:VAL:HG21   | 6:AF:183:VAL:CG2  | 2.06                     | 0.85              |
| 9:AK:19:GLU:HB2    | 9:AK:56:ASN:CB    | 2.05                     | 0.85              |
| 11:AM:76:LYS:O     | 11:AM:115:LEU:HB2 | 1.75                     | 0.85              |
| 11:AM:81:GLN:HA    | 11:AM:86:LYS:HE3  | 1.56                     | 0.85              |
| 11:AM:149:GLU:CD   | 11:AM:150:ALA:H   | 1.84                     | 0.85              |
| 14:AP:93:LYS:HE2   | 14:AP:95:HIS:HB3  | 1.57                     | 0.85              |
| 14:AP:99:LYS:HG2   | 14:AP:103:GLU:OE1 | 1.76                     | 0.85              |
| 21:AW:79:ARG:C     | 21:AW:80:ARG:HD2  | 2.02                     | 0.85              |
| 23:AY:45:ILE:HG13  | 23:AY:46:ARG:H    | 1.41                     | 0.85              |
| 29:Ae:7:HIS:HB2    | 29:Ae:8:LYS:NZ    | 1.91                     | 0.85              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 30:Af:7:VAL:HB    | 30:Af:36:GLN:OE1  | 1.75                     | 0.85              |
| 34:BA:595:G:C8    | 34:BA:641:U:C4    | 2.64                     | 0.85              |
| 34:BA:1158:C:C1'  | 35:BF:133:LYS:NZ  | 2.40                     | 0.85              |
| 34:BA:1253:G:N1   | 34:BA:1285:A:N6   | 2.16                     | 0.85              |
| 34:BA:1329:A:OP1  | 46:BQ:29:ARG:CG   | 2.25                     | 0.85              |
| 34:BA:1453:G:O2'  | 53:BX:36:LEU:HD13 | 1.75                     | 0.85              |
| 46:BQ:22:ILE:O    | 46:BQ:25:ILE:HG13 | 1.76                     | 0.85              |
| 55:BC:69:G:C2'    | 55:BC:70:G:H5''   | 2.06                     | 0.85              |
| 57:BZ:15:ASP:OD2  | 57:BZ:16:HIS:NE2  | 2.10                     | 0.85              |
| 57:BZ:496:ALA:N   | 57:BZ:515:GLY:O   | 2.09                     | 0.85              |
| 57:BZ:520:GLU:OE1 | 57:BZ:593:THR:N   | 2.10                     | 0.85              |
| 1:AA:987:G:O2'    | 1:AA:1000:A:H1'   | 1.77                     | 0.85              |
| 1:AA:1061:U:H3    | 32:AJ:11:GLN:HE22 | 1.20                     | 0.85              |
| 1:AA:1534:G:H21   | 1:AA:1537:C:H5    | 1.21                     | 0.85              |
| 1:AA:1662:C:H2'   | 1:AA:1663:C:C6    | 2.11                     | 0.85              |
| 1:AA:1936:A:H5'   | 1:AA:1937:A:N3    | 1.92                     | 0.85              |
| 1:AA:2124:G:H5''  | 3:AC:71:GLN:HE22  | 1.39                     | 0.85              |
| 1:AA:2246:G:H2'   | 1:AA:2247:A:C8    | 2.11                     | 0.85              |
| 1:AA:2691:C:C4    | 1:AA:2719:G:N2    | 2.45                     | 0.85              |
| 1:AA:2714:G:C2'   | 1:AA:2715:C:H5'   | 2.07                     | 0.85              |
| 4:AD:234:GLY:N    | 4:AD:241:PRO:HG2  | 1.90                     | 0.85              |
| 5:AE:8:LYS:HE2    | 5:AE:8:LYS:CA     | 2.06                     | 0.85              |
| 7:AG:32:PRO:HB2   | 7:AG:163:ALA:HA   | 1.59                     | 0.85              |
| 10:AL:52:VAL:CG2  | 10:AL:53:LYS:N    | 2.39                     | 0.85              |
| 10:AL:57:VAL:HG21 | 10:AL:85:VAL:HG13 | 1.58                     | 0.85              |
| 16:AR:50:ARG:HB2  | 16:AR:50:ARG:HH11 | 1.39                     | 0.85              |
| 16:AR:91:ASP:O    | 16:AR:95:LEU:HD21 | 1.76                     | 0.85              |
| 20:AV:47:LYS:HZ2  | 20:AV:51:VAL:HG21 | 1.41                     | 0.85              |
| 32:AJ:99:ILE:O    | 32:AJ:100:THR:OG1 | 1.93                     | 0.85              |
| 34:BA:21:G:H2'    | 34:BA:22:G:H8     | 1.38                     | 0.85              |
| 34:BA:43:C:H5''   | 49:BT:12:LYS:CB   | 2.01                     | 0.85              |
| 34:BA:496:A:H4'   | 34:BA:497:U:OP1   | 1.74                     | 0.85              |
| 34:BA:1143:G:H2'  | 34:BA:1144:G:C8   | 2.11                     | 0.85              |
| 34:BA:1516:G:N2   | 34:BA:1518:A:H3'  | 1.92                     | 0.85              |
| 36:BG:150:LYS:HA  | 36:BG:169:ALA:HB2 | 1.58                     | 0.85              |
| 39:BJ:85:VAL:HG11 | 39:BJ:88:VAL:HG13 | 1.58                     | 0.85              |
| 42:BM:4:TYR:HE1   | 42:BM:59:PHE:HE2  | 1.22                     | 0.85              |
| 43:BN:61:GLU:HG2  | 43:BN:62:HIS:H    | 1.42                     | 0.85              |
| 53:BX:63:ILE:HD13 | 53:BX:80:ARG:HB3  | 1.56                     | 0.85              |
| 56:BD:5:G:H2'     | 56:BD:6:G:H8      | 1.38                     | 0.85              |
| 1:AA:51:G:H5'     | 1:AA:52:A:OP1     | 1.76                     | 0.85              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:449:A:H2'    | 1:AA:450:G:O4'     | 1.77                     | 0.85              |
| 1:AA:587:C:C5     | 11:AM:30:THR:HG21  | 2.11                     | 0.85              |
| 1:AA:893:C:C2'    | 1:AA:894:C:H5'     | 2.07                     | 0.85              |
| 1:AA:919:G:H2'    | 1:AA:920:G:H8      | 1.39                     | 0.85              |
| 1:AA:1057:A:N6    | 1:AA:1086:A:O2'    | 2.09                     | 0.85              |
| 1:AA:1105:U:H4'   | 1:AA:1106:G:H5''   | 1.57                     | 0.85              |
| 1:AA:1270:C:C5'   | 1:AA:1271:G:H5''   | 2.07                     | 0.85              |
| 1:AA:1526:G:H5''  | 1:AA:1527:G:OP1    | 1.76                     | 0.85              |
| 1:AA:2027:G:H2'   | 1:AA:2028:U:H6     | 1.41                     | 0.85              |
| 1:AA:2123:G:H4'   | 3:AC:172:HIS:CE1   | 2.10                     | 0.85              |
| 2:AB:27:C:N4      | 2:AB:56:G:N1       | 2.24                     | 0.85              |
| 6:AF:110:LEU:HD11 | 6:AF:181:LEU:HD23  | 1.57                     | 0.85              |
| 7:AG:74:LYS:HG2   | 7:AG:75:LYS:HD2    | 1.58                     | 0.85              |
| 7:AG:92:VAL:HG11  | 7:AG:94:LEU:HD22   | 1.58                     | 0.85              |
| 7:AG:135:LEU:HD22 | 7:AG:136:ARG:N     | 1.92                     | 0.85              |
| 8:AH:136:ILE:HG23 | 8:AH:137:ASP:H     | 1.42                     | 0.85              |
| 12:AN:35:VAL:HG23 | 12:AN:101:ARG:O    | 1.76                     | 0.85              |
| 12:AN:85:LYS:C    | 12:AN:87:LYS:H     | 1.81                     | 0.85              |
| 13:AO:51:LEU:HD21 | 13:AO:70:LEU:HD21  | 1.59                     | 0.85              |
| 14:AP:9:ARG:HH11  | 14:AP:9:ARG:CA     | 1.90                     | 0.85              |
| 14:AP:11:LYS:HD3  | 14:AP:11:LYS:H     | 1.42                     | 0.85              |
| 14:AP:97:ARG:O    | 14:AP:100:ALA:HB3  | 1.77                     | 0.85              |
| 18:AT:35:ILE:HG13 | 26:Ab:28:PRO:HG3   | 1.59                     | 0.85              |
| 19:AU:39:ILE:HG21 | 19:AU:54:VAL:HG13  | 1.57                     | 0.85              |
| 22:AX:44:ARG:O    | 22:AX:77:ARG:HB2   | 1.76                     | 0.85              |
| 25:Aa:68:ARG:HH11 | 25:Aa:68:ARG:CA    | 1.90                     | 0.85              |
| 34:BA:684:A:H2'   | 34:BA:685:G:C8     | 2.11                     | 0.85              |
| 34:BA:1165:C:O2'  | 34:BA:1166:G:H5'   | 1.75                     | 0.85              |
| 34:BA:1229:A:H4'  | 56:BE:29:G:O3'     | 1.74                     | 0.85              |
| 34:BA:1405:G:O6   | 34:BA:1496:C:N4    | 2.09                     | 0.85              |
| 35:BF:39:ILE:HG23 | 35:BF:41:ILE:HD11  | 1.55                     | 0.85              |
| 35:BF:61:LEU:HD23 | 35:BF:62:ALA:N     | 1.91                     | 0.85              |
| 35:BF:78:GLN:HE22 | 35:BF:96:ARG:HH12  | 1.25                     | 0.85              |
| 35:BF:157:ARG:C   | 35:BF:158:LEU:HD23 | 2.02                     | 0.85              |
| 40:BK:138:LYS:HE2 | 40:BK:142:GLU:OE1  | 1.75                     | 0.85              |
| 41:BL:18:ARG:HH11 | 41:BL:18:ARG:CA    | 1.90                     | 0.85              |
| 41:BL:21:LYS:O    | 41:BL:63:LEU:HB3   | 1.76                     | 0.85              |
| 44:BO:78:GLN:O    | 44:BO:104:GLN:HB3  | 1.76                     | 0.85              |
| 48:BS:49:ASP:CG   | 48:BS:49:ASP:O     | 2.18                     | 0.85              |
| 49:BT:35:LYS:NZ   | 49:BT:37:GLY:H     | 1.73                     | 0.85              |
| 52:BW:30:LEU:HA   | 52:BW:49:ILE:HA    | 1.58                     | 0.85              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 53:BX:43:LEU:HD22  | 53:BX:48:LYS:HB2   | 1.58                     | 0.85              |
| 56:BE:18:G:OP2     | 56:BE:60:U:O2'     | 1.92                     | 0.85              |
| 57:BZ:13:HIS:NE2   | 57:BZ:106:MET:CA   | 2.40                     | 0.85              |
| 57:BZ:83:GLY:O     | 57:BZ:85:VAL:N     | 2.10                     | 0.85              |
| 57:BZ:422:ARG:CZ   | 57:BZ:480:VAL:O    | 2.24                     | 0.85              |
| 1:AA:70:G:O2'      | 1:AA:71:A:H5'      | 1.75                     | 0.85              |
| 1:AA:319:C:H2'     | 1:AA:320:A:C8      | 2.11                     | 0.85              |
| 1:AA:388:G:O5'     | 25:Aa:23:GLU:HB3   | 1.76                     | 0.85              |
| 1:AA:411:G:N2      | 1:AA:2408:U:N3     | 2.24                     | 0.85              |
| 1:AA:976:C:O2'     | 1:AA:977:G:H5'     | 1.76                     | 0.85              |
| 1:AA:1241:A:N3     | 1:AA:1241:A:C3'    | 2.39                     | 0.85              |
| 1:AA:1582:C:H3'    | 1:AA:1583:A:H5''   | 1.59                     | 0.85              |
| 1:AA:2659:G:HO2'   | 1:AA:2663:G:N2     | 1.73                     | 0.85              |
| 4:AD:67:PHE:HD1    | 4:AD:153:ALA:HB3   | 1.42                     | 0.85              |
| 7:AG:82:LEU:CD2    | 56:BE:52:G:OP2     | 2.25                     | 0.85              |
| 10:AL:96:THR:O     | 10:AL:97:ARG:HB3   | 1.74                     | 0.85              |
| 16:AR:102:GLU:HB3  | 16:AR:105:VAL:HB   | 1.58                     | 0.85              |
| 18:AT:74:ALA:HB1   | 18:AT:105:VAL:HG23 | 1.58                     | 0.85              |
| 28:Ad:21:ARG:HG2   | 28:Ad:31:LEU:CD2   | 2.06                     | 0.85              |
| 32:AJ:33:ASN:HB3   | 32:AJ:63:ARG:N     | 1.92                     | 0.85              |
| 34:BA:186(B):C:H4' | 53:BX:89:ARG:NH1   | 1.92                     | 0.85              |
| 34:BA:451:A:N6     | 34:BA:480:U:H2'    | 1.92                     | 0.85              |
| 34:BA:1164:G:O2'   | 34:BA:1165:C:H5'   | 1.76                     | 0.85              |
| 34:BA:1312:G:O6    | 34:BA:1326:C:N4    | 2.10                     | 0.85              |
| 47:BR:13:THR:HG22  | 47:BR:15:LYS:HB2   | 1.59                     | 0.85              |
| 53:BX:25:ARG:HG2   | 53:BX:29:LYS:HE3   | 1.59                     | 0.85              |
| 57:BZ:89:MET:HE2   | 57:BZ:119:TYR:CZ   | 2.11                     | 0.85              |
| 57:BZ:378:PHE:N    | 57:BZ:582:PRO:CG   | 2.39                     | 0.85              |
| 57:BZ:400:TYR:O    | 57:BZ:442:VAL:HG13 | 1.77                     | 0.85              |
| 57:BZ:545:ASN:CB   | 57:BZ:546:MET:HA   | 2.06                     | 0.85              |
| 57:BZ:546:MET:HG2  | 57:BZ:547:ARG:NE   | 1.90                     | 0.85              |
| 1:AA:443:A:H4'     | 1:AA:1201:C:H5'    | 1.58                     | 0.84              |
| 1:AA:594:U:H5''    | 29:Ae:61:LEU:HD13  | 1.59                     | 0.84              |
| 1:AA:672:C:O5'     | 11:AM:38:GLN:NE2   | 2.10                     | 0.84              |
| 1:AA:723:G:N2      | 1:AA:724:U:H1'     | 1.92                     | 0.84              |
| 1:AA:756:C:H2'     | 1:AA:757:U:H5'     | 1.59                     | 0.84              |
| 1:AA:1037:G:N1     | 1:AA:1119:C:N3     | 2.24                     | 0.84              |
| 1:AA:1667:G:N2     | 1:AA:1991:U:C4     | 2.44                     | 0.84              |
| 1:AA:1784:A:O2'    | 1:AA:1785:A:P      | 2.35                     | 0.84              |
| 1:AA:1788:C:H2'    | 4:AD:222:ARG:CZ    | 2.06                     | 0.84              |
| 1:AA:1941:C:H2'    | 1:AA:1942:C:O5'    | 1.77                     | 0.84              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1996:C:H2'   | 1:AA:1997:G:H4'    | 1.59                     | 0.84              |
| 1:AA:2124:G:O2'   | 3:AC:216:THR:HG22  | 1.76                     | 0.84              |
| 1:AA:2142:C:H2'   | 1:AA:2143:C:C6     | 2.11                     | 0.84              |
| 2:AB:75:G:H4'     | 21:AW:36:LYS:HE2   | 1.56                     | 0.84              |
| 2:AB:114:G:H1'    | 14:AP:38:GLN:NE2   | 1.92                     | 0.84              |
| 4:AD:72:LYS:O     | 4:AD:74:GLY:N      | 2.10                     | 0.84              |
| 7:AG:36:LYS:CE    | 7:AG:38:VAL:HG13   | 2.06                     | 0.84              |
| 7:AG:39:ILE:HG23  | 7:AG:157:ILE:CB    | 2.05                     | 0.84              |
| 8:AH:7:LEU:H      | 8:AH:8:PRO:CD      | 1.90                     | 0.84              |
| 9:AK:57:ALA:HB3   | 9:AK:124:ALA:CA    | 2.07                     | 0.84              |
| 11:AM:108:LYS:HD3 | 11:AM:109:GLY:H    | 1.40                     | 0.84              |
| 12:AN:43:THR:O    | 12:AN:47:ILE:HG13  | 1.77                     | 0.84              |
| 13:AO:59:ASP:O    | 13:AO:63:ARG:HG3   | 1.77                     | 0.84              |
| 25:Aa:20:ASN:HB2  | 25:Aa:30:GLU:CD    | 2.01                     | 0.84              |
| 27:Ac:19:ARG:NH1  | 27:Ac:43:CYS:CB    | 2.40                     | 0.84              |
| 29:Ae:22:VAL:HG12 | 29:Ae:23:VAL:N     | 1.89                     | 0.84              |
| 34:BA:266:G:H2'   | 50:BU:67:LYS:NZ    | 1.91                     | 0.84              |
| 34:BA:453:A:C6    | 34:BA:454:C:N4     | 2.45                     | 0.84              |
| 34:BA:955:U:H1'   | 34:BA:1227:A:N6    | 1.90                     | 0.84              |
| 34:BA:1310:G:C5   | 34:BA:1327:C:C4    | 2.65                     | 0.84              |
| 34:BA:1388:C:H2'  | 34:BA:1389:C:H6    | 1.42                     | 0.84              |
| 35:BF:80:ILE:CD1  | 35:BF:208:ILE:HG23 | 2.08                     | 0.84              |
| 36:BG:21:ARG:HB2  | 36:BG:58:GLU:HG2   | 1.59                     | 0.84              |
| 48:BS:62:GLN:HA   | 48:BS:65:ARG:CZ    | 2.07                     | 0.84              |
| 52:BW:30:LEU:HD21 | 52:BW:50:ALA:HB2   | 1.59                     | 0.84              |
| 52:BW:41:VAL:HB   | 52:BW:42:PRO:CD    | 2.07                     | 0.84              |
| 57:BZ:29:SER:OG   | 57:BZ:60:ASN:OD1   | 1.94                     | 0.84              |
| 57:BZ:398:GLU:OE2 | 57:BZ:444:PRO:CB   | 2.24                     | 0.84              |
| 57:BZ:502:PHE:CE2 | 57:BZ:555:VAL:CA   | 2.60                     | 0.84              |
| 1:AA:239:U:H1'    | 1:AA:259:G:N2      | 1.90                     | 0.84              |
| 1:AA:365:C:H2'    | 1:AA:366:C:H6      | 1.41                     | 0.84              |
| 1:AA:501:A:H8     | 1:AA:501:A:O5'     | 1.59                     | 0.84              |
| 1:AA:1062:G:H1'   | 1:AA:1063:G:H5'    | 1.59                     | 0.84              |
| 1:AA:1113:U:H2'   | 1:AA:1114:G:H8     | 1.41                     | 0.84              |
| 1:AA:1137:G:O2'   | 9:AK:105:GLY:HA3   | 1.77                     | 0.84              |
| 1:AA:1213:A:N6    | 1:AA:1236:G:H1'    | 1.92                     | 0.84              |
| 1:AA:1814:G:H2'   | 1:AA:1815:A:N7     | 1.93                     | 0.84              |
| 1:AA:1906:G:C6    | 1:AA:1929:G:N1     | 2.45                     | 0.84              |
| 1:AA:2020:A:OP2   | 16:AR:27:LEU:HD13  | 1.76                     | 0.84              |
| 1:AA:2034:U:H3'   | 1:AA:2035:G:C5'    | 2.04                     | 0.84              |
| 1:AA:2533:A:H1'   | 1:AA:2664:G:H4'    | 1.57                     | 0.84              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:2657:A:H2'    | 1:AA:2658:C:H5'    | 1.57                     | 0.84              |
| 5:AE:22:PRO:HA     | 5:AE:185:LYS:HA    | 1.60                     | 0.84              |
| 5:AE:196:VAL:HG12  | 5:AE:197:ILE:N     | 1.91                     | 0.84              |
| 7:AG:114:ILE:HD12  | 7:AG:115:ARG:H     | 1.42                     | 0.84              |
| 19:AU:8:ILE:HD11   | 19:AU:42:ALA:HB2   | 1.59                     | 0.84              |
| 20:AV:86:ARG:HG2   | 20:AV:91:GLU:HB3   | 1.59                     | 0.84              |
| 22:AX:21:LEU:HD12  | 22:AX:39:ARG:HB3   | 1.59                     | 0.84              |
| 25:Aa:47:GLN:HA    | 25:Aa:52:THR:HG21  | 1.60                     | 0.84              |
| 34:BA:859:A:H2'    | 34:BA:860:A:O4'    | 1.77                     | 0.84              |
| 34:BA:949:A:H3'    | 46:BQ:102:ARG:CZ   | 2.04                     | 0.84              |
| 34:BA:1244:C:OP2   | 54:BY:9:ARG:HD3    | 1.74                     | 0.84              |
| 34:BA:1251:A:H2'   | 34:BA:1252:A:C8    | 2.11                     | 0.84              |
| 39:BJ:98:LEU:HD22  | 39:BJ:101:ALA:HB2  | 1.57                     | 0.84              |
| 41:BL:26:VAL:HG22  | 41:BL:27:PRO:CD    | 2.06                     | 0.84              |
| 46:BQ:73:GLU:O     | 46:BQ:77:ASN:CG    | 2.20                     | 0.84              |
| 48:BS:56:LEU:O     | 48:BS:60:VAL:HG23  | 1.77                     | 0.84              |
| 50:BU:76:LEU:HD11  | 50:BU:79:SER:OG    | 1.77                     | 0.84              |
| 53:BX:40:ALA:HA    | 53:BX:55:ILE:CD1   | 2.06                     | 0.84              |
| 57:BZ:81:PHE:CA    | 57:BZ:365:HIS:CD2  | 2.60                     | 0.84              |
| 57:BZ:314:ASN:HD21 | 57:BZ:379:GLU:C    | 1.85                     | 0.84              |
| 1:AA:6:A:C4        | 1:AA:2898:U:C2     | 2.65                     | 0.84              |
| 1:AA:511:U:C5      | 1:AA:512:G:N3      | 2.46                     | 0.84              |
| 1:AA:578:A:C2'     | 1:AA:2018:G:H5''   | 2.07                     | 0.84              |
| 1:AA:705:A:H2'     | 1:AA:705:A:N3      | 1.91                     | 0.84              |
| 1:AA:724:U:O2'     | 1:AA:725:G:H5'     | 1.77                     | 0.84              |
| 1:AA:727:A:N1      | 1:AA:729:G:C6      | 2.45                     | 0.84              |
| 1:AA:1033:U:O3'    | 1:AA:1034:G:P      | 2.34                     | 0.84              |
| 1:AA:1135:C:H2'    | 1:AA:1136:G:H8     | 1.42                     | 0.84              |
| 1:AA:2043:C:N4     | 1:AA:2777:G:N3     | 2.25                     | 0.84              |
| 1:AA:2453:A:H4'    | 1:AA:2572:A:O2'    | 1.76                     | 0.84              |
| 1:AA:2581:G:H1     | 1:AA:2610:C:H6     | 1.20                     | 0.84              |
| 1:AA:2789:C:H2'    | 1:AA:2893:G:N2     | 1.92                     | 0.84              |
| 6:AF:118:ALA:HB2   | 6:AF:122:LYS:HE2   | 1.59                     | 0.84              |
| 8:AH:28:GLY:HA3    | 8:AH:79:VAL:HB     | 1.56                     | 0.84              |
| 9:AK:37:LYS:HA     | 9:AK:42:TRP:HB2    | 1.59                     | 0.84              |
| 11:AM:52:GLU:HA    | 11:AM:55:ARG:HG3   | 1.60                     | 0.84              |
| 15:AQ:27:THR:HB    | 15:AQ:93:ARG:O     | 1.78                     | 0.84              |
| 15:AQ:44:ASP:O     | 15:AQ:46:GLU:N     | 2.10                     | 0.84              |
| 21:AW:152:ALA:O    | 21:AW:155:LEU:HD22 | 1.77                     | 0.84              |
| 34:BA:979:C:H42    | 47:BR:18:VAL:HB    | 1.39                     | 0.84              |
| 34:BA:1220:G:N3    | 52:BW:55:LYS:HA    | 1.92                     | 0.84              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 36:BG:84:ILE:HG13 | 36:BG:101:LEU:HD22 | 1.59                     | 0.84              |
| 37:BH:20:TYR:CD1  | 37:BH:21:LEU:N     | 2.45                     | 0.84              |
| 41:BL:12:ARG:HD3  | 41:BL:26:VAL:HG22  | 1.58                     | 0.84              |
| 41:BL:126:LYS:NZ  | 41:BL:127:LEU:HD23 | 1.91                     | 0.84              |
| 43:BN:24:VAL:HA   | 43:BN:34:VAL:HG21  | 1.59                     | 0.84              |
| 46:BQ:87:TYR:OH   | 52:BW:75:ALA:CB    | 2.25                     | 0.84              |
| 49:BT:53:VAL:O    | 49:BT:56:ALA:HB3   | 1.77                     | 0.84              |
| 51:BV:53:ARG:HA   | 51:BV:63:GLN:NE2   | 1.92                     | 0.84              |
| 52:BW:9:VAL:C     | 52:BW:41:VAL:HG21  | 1.99                     | 0.84              |
| 57:BZ:373:MET:CE  | 57:BZ:380:LEU:CD2  | 2.56                     | 0.84              |
| 57:BZ:481:GLY:HA2 | 57:BZ:482:GLN:HB2  | 1.57                     | 0.84              |
| 1:AA:5:A:N1       | 1:AA:2899:G:C4     | 2.44                     | 0.84              |
| 1:AA:31:C:O2'     | 1:AA:32:C:H5'      | 1.78                     | 0.84              |
| 1:AA:483:A:O3'    | 20:AV:48:ALA:HB2   | 1.77                     | 0.84              |
| 1:AA:1263:U:H5''  | 26:Ab:10:LYS:NZ    | 1.92                     | 0.84              |
| 1:AA:1359:A:H2'   | 1:AA:1360:A:H5'    | 1.56                     | 0.84              |
| 1:AA:1540:G:C5    | 1:AA:1541:U:H1'    | 2.12                     | 0.84              |
| 1:AA:1541:U:O2    | 1:AA:1541:U:H2'    | 1.77                     | 0.84              |
| 1:AA:1543:A:OP2   | 1:AA:1544:C:C6     | 2.31                     | 0.84              |
| 1:AA:1559:G:C4    | 1:AA:1559:G:H3'    | 2.11                     | 0.84              |
| 1:AA:1742:C:H3'   | 1:AA:1743:G:H5''   | 1.58                     | 0.84              |
| 1:AA:1904:G:H2'   | 1:AA:1905:C:H5'    | 1.58                     | 0.84              |
| 1:AA:2001:A:H2'   | 1:AA:2002:G:H8     | 1.42                     | 0.84              |
| 1:AA:2111:C:OP2   | 1:AA:2111:C:H6     | 1.60                     | 0.84              |
| 1:AA:2323:G:H2'   | 1:AA:2324:C:C6     | 2.11                     | 0.84              |
| 1:AA:2646:C:H2'   | 1:AA:2647:U:C6     | 2.11                     | 0.84              |
| 1:AA:2787:C:H1'   | 5:AE:61:ARG:HD2    | 1.60                     | 0.84              |
| 2:AB:46:A:H2'     | 2:AB:47:C:H6       | 1.41                     | 0.84              |
| 4:AD:7:LYS:HE2    | 4:AD:25:THR:HB     | 1.59                     | 0.84              |
| 4:AD:175:LEU:HD22 | 4:AD:176:ARG:N     | 1.92                     | 0.84              |
| 5:AE:136:ARG:O    | 5:AE:136:ARG:NH2   | 2.11                     | 0.84              |
| 6:AF:40:GLN:O     | 6:AF:44:ARG:HG2    | 1.75                     | 0.84              |
| 7:AG:84:LYS:NZ    | 56:BE:54:U:C6      | 2.45                     | 0.84              |
| 8:AH:121:ILE:HD11 | 8:AH:123:PHE:CE1   | 2.12                     | 0.84              |
| 10:AL:2:ILE:HG21  | 10:AL:32:TYR:HB3   | 1.58                     | 0.84              |
| 12:AN:81:VAL:CG1  | 12:AN:82:ARG:H     | 1.87                     | 0.84              |
| 13:AO:77:ARG:HB2  | 13:AO:77:ARG:NH1   | 1.92                     | 0.84              |
| 14:AP:37:ALA:O    | 14:AP:51:ALA:CB    | 2.25                     | 0.84              |
| 17:AS:11:GLN:O    | 17:AS:21:ARG:HD2   | 1.78                     | 0.84              |
| 20:AV:82:PRO:CG   | 20:AV:97:ARG:H     | 1.90                     | 0.84              |
| 32:AJ:95:LYS:HE2  | 32:AJ:95:LYS:HA    | 1.57                     | 0.84              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:448:A:H2'   | 34:BA:449:C:H6     | 1.39                     | 0.84              |
| 34:BA:872:A:O2'   | 34:BA:873:A:H5''   | 1.76                     | 0.84              |
| 34:BA:1271:G:OP1  | 34:BA:1314:C:H5''  | 1.77                     | 0.84              |
| 34:BA:1327:C:OP1  | 54:BY:20:LYS:HB3   | 1.76                     | 0.84              |
| 34:BA:1510:U:H2'  | 34:BA:1511:G:C8    | 2.12                     | 0.84              |
| 35:BF:91:PRO:HB3  | 35:BF:152:PHE:CD1  | 2.12                     | 0.84              |
| 35:BF:167:PRO:O   | 35:BF:169:LYS:N    | 2.09                     | 0.84              |
| 40:BK:69:VAL:HG21 | 40:BK:104:LEU:HD11 | 1.58                     | 0.84              |
| 44:BO:84:VAL:HG22 | 44:BO:109:VAL:O    | 1.77                     | 0.84              |
| 46:BQ:40:ASN:OD1  | 46:BQ:42:ALA:HB3   | 1.77                     | 0.84              |
| 49:BT:8:ARG:HH12  | 49:BT:11:SER:N     | 1.75                     | 0.84              |
| 57:BZ:238:THR:O   | 57:BZ:288:VAL:HA   | 1.75                     | 0.84              |
| 57:BZ:373:MET:SD  | 57:BZ:380:LEU:CD2  | 2.65                     | 0.84              |
| 57:BZ:400:TYR:CE1 | 57:BZ:444:PRO:CA   | 2.59                     | 0.84              |
| 57:BZ:560:PRO:HB2 | 57:BZ:562:ARG:CB   | 2.07                     | 0.84              |
| 1:AA:1079:C:H41   | 1:AA:1088:A:H5'    | 1.40                     | 0.84              |
| 1:AA:1263:U:C2    | 1:AA:1264:G:N2     | 2.46                     | 0.84              |
| 1:AA:1448:G:H4'   | 1:AA:1543:A:N6     | 1.91                     | 0.84              |
| 1:AA:1458:C:H4'   | 1:AA:1459:G:C8     | 2.12                     | 0.84              |
| 1:AA:2065:C:H2'   | 1:AA:2066:C:O4'    | 1.76                     | 0.84              |
| 1:AA:2132:U:H3'   | 1:AA:2133:G:H5''   | 1.58                     | 0.84              |
| 1:AA:2584:U:H2'   | 1:AA:2585:U:C6     | 2.12                     | 0.84              |
| 4:AD:232:PRO:HG2  | 4:AD:247:ALA:HA    | 1.57                     | 0.84              |
| 5:AE:127:ASP:HB2  | 5:AE:135:HIS:CA    | 2.07                     | 0.84              |
| 5:AE:173:VAL:HG22 | 5:AE:174:ASP:H     | 1.40                     | 0.84              |
| 7:AG:139:LEU:HB3  | 7:AG:142:PRO:HB3   | 1.60                     | 0.84              |
| 11:AM:45:LEU:HD13 | 29:Ae:59:LYS:NZ    | 1.91                     | 0.84              |
| 12:AN:96:VAL:HG12 | 12:AN:98:LYS:NZ    | 1.92                     | 0.84              |
| 21:AW:42:VAL:HG12 | 21:AW:46:LYS:HZ3   | 1.43                     | 0.84              |
| 21:AW:79:ARG:HB2  | 21:AW:80:ARG:NH1   | 1.92                     | 0.84              |
| 32:AJ:55:VAL:HB   | 32:AJ:56:GLU:HA    | 1.59                     | 0.84              |
| 32:AJ:122:ALA:O   | 32:AJ:126:MET:HB3  | 1.78                     | 0.84              |
| 34:BA:6:G:H1      | 38:BI:96:PRO:HG2   | 1.38                     | 0.84              |
| 34:BA:327:A:H4'   | 34:BA:328:C:OP1    | 1.77                     | 0.84              |
| 34:BA:363:A:O2'   | 34:BA:364:A:H5'    | 1.76                     | 0.84              |
| 34:BA:399:G:H2'   | 34:BA:400:C:H6     | 1.42                     | 0.84              |
| 34:BA:610:G:O2'   | 34:BA:611:A:H5'    | 1.76                     | 0.84              |
| 34:BA:817:C:O2'   | 34:BA:818:G:C5'    | 2.26                     | 0.84              |
| 34:BA:910:C:O2'   | 34:BA:911:U:H5'    | 1.78                     | 0.84              |
| 34:BA:1158:C:C2'  | 35:BF:133:LYS:HZ1  | 1.60                     | 0.84              |
| 34:BA:1231:G:OP1  | 42:BM:127:LYS:HG2  | 1.78                     | 0.84              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BF:213:LEU:CD2 | 35:BF:214:ILE:HD13 | 2.08                     | 0.84              |
| 42:BM:63:ILE:HD12 | 42:BM:63:ILE:N     | 1.92                     | 0.84              |
| 57:BZ:15:ASP:OD1  | 57:BZ:106:MET:CG   | 2.24                     | 0.84              |
| 57:BZ:146:ASP:HA  | 57:BZ:149:VAL:HG12 | 1.58                     | 0.84              |
| 1:AA:34:C:H2'     | 1:AA:455:C:H41     | 1.40                     | 0.84              |
| 1:AA:673:C:H4'    | 6:AF:82:ILE:CD1    | 2.07                     | 0.84              |
| 1:AA:860:U:C5     | 1:AA:2267:A:H4'    | 2.12                     | 0.84              |
| 1:AA:873:G:H4'    | 12:AN:65:PHE:CE2   | 2.12                     | 0.84              |
| 1:AA:885:C:N4     | 1:AA:890:A:O5'     | 2.10                     | 0.84              |
| 1:AA:1059:G:C4'   | 32:AJ:74:ALA:H     | 1.89                     | 0.84              |
| 1:AA:1638:C:H5''  | 1:AA:2710:C:O2'    | 1.78                     | 0.84              |
| 1:AA:1700:A:H3'   | 1:AA:1701:A:H8     | 1.41                     | 0.84              |
| 1:AA:1971:A:H3'   | 1:AA:1971:A:H8     | 1.41                     | 0.84              |
| 1:AA:2652:C:C2    | 1:AA:2670:A:H1'    | 2.12                     | 0.84              |
| 1:AA:2674:G:H4'   | 10:AL:26:LYS:NZ    | 1.91                     | 0.84              |
| 1:AA:2714:G:C6    | 1:AA:2715:C:C4     | 2.65                     | 0.84              |
| 2:AB:32:C:H2'     | 2:AB:33:G:C8       | 2.13                     | 0.84              |
| 3:AC:180:PHE:CZ   | 3:AC:184:LYS:CD    | 2.55                     | 0.84              |
| 4:AD:61:LEU:HD13  | 4:AD:86:PRO:HD3    | 1.58                     | 0.84              |
| 4:AD:175:LEU:O    | 4:AD:182:LEU:HA    | 1.78                     | 0.84              |
| 5:AE:91:VAL:CG1   | 5:AE:93:VAL:HG22   | 2.08                     | 0.84              |
| 5:AE:133:LYS:HD2  | 5:AE:137:HIS:CG    | 2.13                     | 0.84              |
| 10:AL:119:PRO:CB  | 34:BA:347:G:OP2    | 2.26                     | 0.84              |
| 19:AU:63:LYS:N    | 19:AU:63:LYS:HE2   | 1.91                     | 0.84              |
| 21:AW:122:ARG:HG2 | 21:AW:171:ILE:HA   | 1.56                     | 0.84              |
| 21:AW:166:SER:OG  | 21:AW:167:PRO:HD2  | 1.76                     | 0.84              |
| 25:Aa:21:VAL:HG12 | 25:Aa:22:ILE:N     | 1.92                     | 0.84              |
| 27:Ac:8:LYS:O     | 27:Ac:28:ARG:HB3   | 1.75                     | 0.84              |
| 32:AJ:62:ASP:HB3  | 32:AJ:63:ARG:C     | 2.03                     | 0.84              |
| 34:BA:163:C:H2'   | 34:BA:164:U:O4'    | 1.77                     | 0.84              |
| 34:BA:310:G:H2'   | 34:BA:311:C:C6     | 2.12                     | 0.84              |
| 34:BA:1064:G:H1'  | 34:BA:1066:C:N3    | 1.91                     | 0.84              |
| 34:BA:1129:C:N4   | 34:BA:1139:G:C6    | 2.45                     | 0.84              |
| 34:BA:1378:C:N3   | 34:BA:1379:G:H1'   | 1.91                     | 0.84              |
| 34:BA:1472:U:O2'  | 34:BA:1473:A:H5'   | 1.77                     | 0.84              |
| 35:BF:95:GLN:NE2  | 35:BF:148:TYR:HB3  | 1.90                     | 0.84              |
| 35:BF:180:LEU:O   | 35:BF:181:PHE:HB2  | 1.78                     | 0.84              |
| 35:BF:222:ILE:HB  | 35:BF:226:ARG:HH21 | 1.42                     | 0.84              |
| 38:BI:31:LEU:HD12 | 38:BI:129:ILE:CG2  | 2.07                     | 0.84              |
| 41:BL:97:VAL:HG22 | 41:BL:98:LYS:H     | 1.41                     | 0.84              |
| 42:BM:8:GLY:O     | 42:BM:76:ALA:HB1   | 1.77                     | 0.84              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 56:BE:7:A:C4      | 56:BE:49:C:OP2     | 2.31                     | 0.84              |
| 57:BZ:10:ILE:N    | 57:BZ:74:ASP:N     | 1.90                     | 0.84              |
| 57:BZ:62:ALA:HB1  | 57:BZ:187:TYR:CD2  | 2.07                     | 0.84              |
| 57:BZ:82:GLY:O    | 57:BZ:111:PHE:CE2  | 2.31                     | 0.84              |
| 57:BZ:230:LYS:HB2 | 57:BZ:265:THR:HB   | 1.60                     | 0.84              |
| 57:BZ:311:PHE:H   | 57:BZ:356:PHE:N    | 1.75                     | 0.84              |
| 57:BZ:400:TYR:HB2 | 57:BZ:442:VAL:CG1  | 2.04                     | 0.84              |
| 1:AA:269:U:H3     | 1:AA:270:A:H62     | 1.20                     | 0.84              |
| 1:AA:896:A:C2     | 1:AA:897:C:N1      | 2.42                     | 0.84              |
| 1:AA:901:A:C6     | 1:AA:902:C:C4      | 2.64                     | 0.84              |
| 1:AA:1144:G:H2'   | 1:AA:1145:C:C5     | 2.11                     | 0.84              |
| 1:AA:1222:C:H42   | 1:AA:1227:A:H61    | 1.23                     | 0.84              |
| 1:AA:2226:C:O2    | 1:AA:2226:C:H2'    | 1.76                     | 0.84              |
| 1:AA:2530:A:C3'   | 1:AA:2531:A:H5''   | 2.07                     | 0.84              |
| 1:AA:2794:C:N3    | 1:AA:2799:A:N3     | 2.25                     | 0.84              |
| 3:AC:75:LEU:HD22  | 3:AC:110:PHE:CZ    | 2.12                     | 0.84              |
| 9:AK:39:ARG:HB3   | 9:AK:48:MET:HG3    | 1.60                     | 0.84              |
| 9:AK:68:GLU:N     | 9:AK:70:LYS:HZ1    | 1.75                     | 0.84              |
| 10:AL:12:ASP:HB3  | 10:AL:93:PRO:HG2   | 1.59                     | 0.84              |
| 10:AL:39:ILE:C    | 10:AL:59:LYS:NZ    | 2.35                     | 0.84              |
| 12:AN:96:VAL:HG12 | 12:AN:98:LYS:HZ3   | 1.41                     | 0.84              |
| 13:AO:38:VAL:HB   | 13:AO:39:PRO:CD    | 2.06                     | 0.84              |
| 17:AS:27:ALA:O    | 17:AS:33:VAL:HG21  | 1.78                     | 0.84              |
| 18:AT:14:PRO:CD   | 18:AT:78:GLU:OE1   | 2.26                     | 0.84              |
| 20:AV:16:ALA:HB3  | 20:AV:68:HIS:ND1   | 1.91                     | 0.84              |
| 20:AV:95:LYS:HG3  | 20:AV:103:GLY:HA3  | 1.59                     | 0.84              |
| 21:AW:39:VAL:HG21 | 21:AW:86:VAL:HG23  | 1.59                     | 0.84              |
| 21:AW:144:LEU:C   | 21:AW:174:VAL:HG21 | 2.01                     | 0.84              |
| 32:AJ:34:ILE:HD13 | 32:AJ:35:MET:N     | 1.90                     | 0.84              |
| 34:BA:65:U:H4'    | 34:BA:66:G:C5'     | 2.06                     | 0.84              |
| 34:BA:524:G:H2'   | 34:BA:525:C:C6     | 2.13                     | 0.84              |
| 34:BA:1227:A:H4'  | 46:BQ:115:LYS:HZ1  | 1.42                     | 0.84              |
| 34:BA:1348:U:H4'  | 42:BM:120:ARG:HH11 | 1.43                     | 0.84              |
| 36:BG:84:ILE:HA   | 36:BG:87:LEU:HD12  | 1.59                     | 0.84              |
| 42:BM:101:PHE:C   | 42:BM:102:LEU:HD23 | 2.01                     | 0.84              |
| 43:BN:60:ARG:N    | 43:BN:60:ARG:HH11  | 1.76                     | 0.84              |
| 48:BS:75:PRO:C    | 48:BS:78:TYR:HB3   | 2.02                     | 0.84              |
| 49:BT:3:LYS:HB3   | 49:BT:3:LYS:NZ     | 1.92                     | 0.84              |
| 50:BU:4:LYS:HE2   | 50:BU:5:VAL:O      | 1.78                     | 0.84              |
| 51:BV:45:SER:HB3  | 51:BV:51:LEU:HD11  | 1.56                     | 0.84              |
| 51:BV:74:ARG:HG2  | 51:BV:74:ARG:HH11  | 1.43                     | 0.84              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 53:BX:56:MET:HG2   | 53:BX:88:VAL:HG21 | 1.55                     | 0.84              |
| 54:BY:18:TYR:HB3   | 54:BY:22:ARG:O    | 1.76                     | 0.84              |
| 56:BD:25:C:H2'     | 56:BD:26:A:H8     | 1.40                     | 0.84              |
| 57:BZ:55:THR:C     | 57:BZ:56:ILE:CD1  | 2.49                     | 0.84              |
| 57:BZ:300:LEU:HB2  | 57:BZ:301:SER:HA  | 1.59                     | 0.84              |
| 1:AA:6:A:H4'       | 9:AK:132:ALA:O    | 1.78                     | 0.84              |
| 1:AA:514:A:H2      | 1:AA:515:A:N9     | 1.75                     | 0.84              |
| 1:AA:530:G:H22     | 1:AA:2021:C:H3'   | 1.41                     | 0.84              |
| 1:AA:813:U:OP2     | 11:AM:26:GLY:HA2  | 1.77                     | 0.84              |
| 1:AA:1006:C:O2'    | 9:AK:106:MET:HB3  | 1.78                     | 0.84              |
| 1:AA:1006:C:O2     | 9:AK:106:MET:HG2  | 1.78                     | 0.84              |
| 1:AA:1196:C:H2'    | 1:AA:1197:G:C8    | 2.13                     | 0.84              |
| 1:AA:1542:G:H1'    | 1:AA:1543:A:N1    | 1.91                     | 0.84              |
| 1:AA:1660:C:N4     | 1:AA:2001:A:N6    | 2.26                     | 0.84              |
| 1:AA:2176:A:H1'    | 3:AC:215:THR:CB   | 2.06                     | 0.84              |
| 1:AA:2809:A:C4'    | 1:AA:2811:G:N7    | 2.41                     | 0.84              |
| 1:AA:2821:A:H5''   | 5:AE:110:GLY:HA3  | 1.58                     | 0.84              |
| 3:AC:42:GLU:C      | 3:AC:214:VAL:C    | 2.24                     | 0.84              |
| 3:AC:64:LEU:HD12   | 3:AC:188:ASN:ND2  | 1.92                     | 0.84              |
| 3:AC:163:PHE:HZ    | 3:AC:192:PHE:CA   | 1.81                     | 0.84              |
| 4:AD:108:PRO:HA    | 4:AD:195:ALA:O    | 1.76                     | 0.84              |
| 4:AD:117:VAL:HG22  | 4:AD:126:GLN:HE21 | 1.40                     | 0.84              |
| 4:AD:147:LEU:CG    | 4:AD:154:LYS:HD2  | 2.07                     | 0.84              |
| 6:AF:4:VAL:O       | 6:AF:20:LEU:HD12  | 1.76                     | 0.84              |
| 7:AG:82:LEU:HD22   | 56:BE:52:G:P      | 2.16                     | 0.84              |
| 8:AH:97:ARG:HB3    | 8:AH:104:GLU:HG3  | 1.60                     | 0.84              |
| 8:AH:121:ILE:HG13  | 8:AH:133:VAL:HG21 | 1.59                     | 0.84              |
| 9:AK:70:LYS:HZ2    | 9:AK:86:PRO:HB3   | 1.41                     | 0.84              |
| 11:AM:72:PRO:HG3   | 11:AM:110:TYR:CD2 | 2.11                     | 0.84              |
| 11:AM:138:LEU:HD21 | 11:AM:145:PRO:HD3 | 1.58                     | 0.84              |
| 16:AR:94:ASN:ND2   | 17:AS:6:LYS:HE3   | 1.92                     | 0.84              |
| 18:AT:64:MET:HG2   | 18:AT:109:GLU:CG  | 2.08                     | 0.84              |
| 20:AV:81:LYS:HG2   | 20:AV:96:ILE:HG23 | 1.60                     | 0.84              |
| 21:AW:73:GLN:O     | 21:AW:87:ASP:HB2  | 1.77                     | 0.84              |
| 22:AX:7:LEU:N      | 56:BE:74:C:N4     | 2.25                     | 0.84              |
| 24:AZ:26:LEU:HG    | 24:AZ:35:ARG:NH1  | 1.91                     | 0.84              |
| 24:AZ:54:VAL:HG22  | 24:AZ:55:ARG:H    | 1.38                     | 0.84              |
| 29:Ae:54:GLU:N     | 29:Ae:56:GLU:OE2  | 2.11                     | 0.84              |
| 34:BA:915:A:C2'    | 34:BA:916:G:H5'   | 2.08                     | 0.84              |
| 34:BA:959:A:H2'    | 34:BA:960:U:H4'   | 1.59                     | 0.84              |
| 34:BA:1270:C:C2'   | 34:BA:1313:U:H4'  | 2.06                     | 0.84              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1311:G:N3   | 34:BA:1327:C:N1    | 2.25                     | 0.84              |
| 34:BA:1327:C:H5'' | 54:BY:20:LYS:CD    | 2.07                     | 0.84              |
| 37:BH:13:ARG:NH2  | 37:BH:40:PRO:HA    | 1.92                     | 0.84              |
| 37:BH:20:TYR:CA   | 37:BH:33:MET:SD    | 2.66                     | 0.84              |
| 55:BC:27:G:H2'    | 55:BC:28:G:C8      | 2.13                     | 0.84              |
| 57:BZ:11:ILE:HD13 | 57:BZ:95:VAL:HB    | 1.60                     | 0.84              |
| 1:AA:665:C:H2'    | 1:AA:666:G:C8      | 2.12                     | 0.84              |
| 1:AA:704:G:N2     | 1:AA:726:G:O2'     | 2.10                     | 0.84              |
| 1:AA:892:G:O2'    | 1:AA:893:C:O4'     | 1.96                     | 0.84              |
| 1:AA:917:A:H2'    | 1:AA:918:A:H5''    | 1.58                     | 0.84              |
| 1:AA:1106:G:C6    | 1:AA:1107:G:C6     | 2.64                     | 0.84              |
| 1:AA:1125:G:H4'   | 30:Af:4:ARG:HB3    | 1.60                     | 0.84              |
| 1:AA:1312:U:H2'   | 1:AA:1313:U:H6     | 1.40                     | 0.84              |
| 3:AC:182:PRO:HG2  | 3:AC:183:GLU:OE2   | 1.76                     | 0.84              |
| 9:AK:33:LEU:HD13  | 9:AK:34:LEU:HG     | 1.60                     | 0.84              |
| 10:AL:117:LEU:C   | 10:AL:117:LEU:HD23 | 2.03                     | 0.84              |
| 16:AR:13:LYS:O    | 16:AR:17:ILE:HG12  | 1.78                     | 0.84              |
| 24:AZ:7:LYS:O     | 24:AZ:54:VAL:HG23  | 1.76                     | 0.84              |
| 28:Ad:41:ARG:HH11 | 28:Ad:41:ARG:CB    | 1.90                     | 0.84              |
| 34:BA:1109:C:O2'  | 34:BA:1110:A:H5'   | 1.78                     | 0.84              |
| 35:BF:192:SER:C   | 35:BF:194:PRO:HD3  | 2.03                     | 0.84              |
| 41:BL:95:VAL:CG2  | 41:BL:133:LEU:HD21 | 2.07                     | 0.84              |
| 53:BX:75:ASN:O    | 53:BX:78:ALA:HB3   | 1.78                     | 0.84              |
| 57:BZ:396:LYS:HB2 | 57:BZ:474:ASP:O    | 1.77                     | 0.84              |
| 57:BZ:499:PHE:HB2 | 57:BZ:540:GLY:HA2  | 1.58                     | 0.84              |
| 1:AA:221:A:N6     | 1:AA:265:A:H62     | 1.74                     | 0.84              |
| 1:AA:371:A:H5''   | 1:AA:423:A:C8      | 2.12                     | 0.84              |
| 1:AA:775:G:N2     | 1:AA:787:U:C2'     | 2.41                     | 0.84              |
| 1:AA:806:C:H2'    | 1:AA:807:U:C6      | 2.12                     | 0.84              |
| 1:AA:1064:C:C4    | 1:AA:1065:U:N3     | 2.46                     | 0.84              |
| 1:AA:1068:G:C5'   | 1:AA:1096:A:H1'    | 2.07                     | 0.84              |
| 1:AA:1085:A:O5'   | 1:AA:1106:G:P      | 2.31                     | 0.84              |
| 1:AA:1178:C:H2'   | 1:AA:1179:C:H6     | 1.37                     | 0.84              |
| 1:AA:1180:C:H2'   | 1:AA:1181:C:C6     | 2.12                     | 0.84              |
| 1:AA:1342:A:H2'   | 1:AA:1345:C:H41    | 1.42                     | 0.84              |
| 1:AA:1625:C:H2'   | 1:AA:1626:G:C4'    | 2.03                     | 0.84              |
| 1:AA:1626:G:N2    | 1:AA:1634:A:H1'    | 1.92                     | 0.84              |
| 1:AA:2197:U:H2'   | 1:AA:2224:G:H22    | 1.42                     | 0.84              |
| 1:AA:2305:A:O2'   | 7:AG:136:ARG:HA    | 1.77                     | 0.84              |
| 1:AA:2327:A:C2'   | 1:AA:2328:A:H8     | 1.90                     | 0.84              |
| 1:AA:2498:C:H2'   | 1:AA:2499:C:H5''   | 1.59                     | 0.84              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2533:A:O4'   | 1:AA:2664:G:O2'   | 1.96                     | 0.84              |
| 1:AA:2667:C:H2'   | 1:AA:2668:G:H5'   | 1.59                     | 0.84              |
| 2:AB:102:G:C2'    | 21:AW:73:GLN:HE21 | 1.91                     | 0.84              |
| 3:AC:171:ILE:HD13 | 3:AC:192:PHE:HE2  | 1.07                     | 0.84              |
| 4:AD:140:THR:O    | 4:AD:165:ILE:HD13 | 1.77                     | 0.84              |
| 4:AD:143:HIS:C    | 4:AD:145:VAL:H    | 1.86                     | 0.84              |
| 5:AE:1:MET:C      | 5:AE:2:LYS:HG3    | 2.02                     | 0.84              |
| 6:AF:82:ILE:HD13  | 6:AF:82:ILE:N     | 1.93                     | 0.84              |
| 12:AN:40:ALA:HA   | 12:AN:98:LYS:HG3  | 1.60                     | 0.84              |
| 13:AO:8:ARG:NE    | 13:AO:10:LEU:HD11 | 1.91                     | 0.84              |
| 13:AO:98:LEU:HD23 | 13:AO:99:LYS:HZ1  | 1.42                     | 0.84              |
| 14:AP:12:PHE:CD1  | 14:AP:13:ARG:N    | 2.45                     | 0.84              |
| 24:AZ:17:LYS:HA   | 24:AZ:20:LYS:CE   | 2.08                     | 0.84              |
| 34:BA:34:C:O2'    | 34:BA:35:G:H5'    | 1.77                     | 0.84              |
| 34:BA:52:G:H2'    | 34:BA:53:A:H8     | 1.43                     | 0.84              |
| 34:BA:482:A:N3    | 34:BA:482:A:H2'   | 1.93                     | 0.84              |
| 34:BA:734:G:H2'   | 34:BA:735:C:C6    | 2.13                     | 0.84              |
| 34:BA:754:C:H3'   | 34:BA:754:C:O2    | 1.78                     | 0.84              |
| 34:BA:1308:U:N3   | 34:BA:1309:G:C8   | 2.43                     | 0.84              |
| 35:BF:97:TRP:HH2  | 35:BF:176:GLU:CD  | 1.84                     | 0.84              |
| 36:BG:33:LEU:O    | 36:BG:36:ASP:HB3  | 1.77                     | 0.84              |
| 38:BI:102:ALA:CB  | 38:BI:106:PRO:HB2 | 2.07                     | 0.84              |
| 42:BM:55:ALA:CB   | 42:BM:58:HIS:HE1  | 1.78                     | 0.84              |
| 43:BN:34:VAL:HA   | 43:BN:74:ILE:HG12 | 1.59                     | 0.84              |
| 44:BO:58:PRO:HB2  | 44:BO:93:GLN:CB   | 2.07                     | 0.84              |
| 46:BQ:64:TRP:CE2  | 46:BQ:66:LEU:HD22 | 2.13                     | 0.84              |
| 49:BT:4:ILE:N     | 49:BT:4:ILE:HD13  | 1.92                     | 0.84              |
| 49:BT:74:LEU:O    | 49:BT:77:ALA:HB3  | 1.77                     | 0.84              |
| 52:BW:15:LEU:HD11 | 52:BW:71:LEU:HD12 | 1.58                     | 0.84              |
| 55:BC:6:G:C2'     | 55:BC:7:A:H5'     | 2.07                     | 0.84              |
| 57:BZ:322:GLU:CD  | 57:BZ:581:THR:HB  | 2.02                     | 0.84              |
| 1:AA:90:U:O2'     | 1:AA:91:A:H5''    | 1.77                     | 0.83              |
| 1:AA:718:A:H3'    | 1:AA:719:C:H6     | 1.42                     | 0.83              |
| 1:AA:1438:U:C2'   | 1:AA:1439:A:H5'   | 2.08                     | 0.83              |
| 1:AA:2369:A:H2'   | 1:AA:2370:G:H8    | 1.39                     | 0.83              |
| 1:AA:2399:G:N2    | 1:AA:2400:G:H1'   | 1.93                     | 0.83              |
| 1:AA:2416:C:OP1   | 11:AM:59:LEU:CA   | 2.25                     | 0.83              |
| 1:AA:2660:A:N1    | 57:BZ:453:SER:O   | 2.11                     | 0.83              |
| 2:AB:13:A:H2      | 2:AB:69:G:H21     | 1.24                     | 0.83              |
| 3:AC:44:HIS:HE1   | 3:AC:215:THR:O    | 1.59                     | 0.83              |
| 6:AF:157:VAL:O    | 6:AF:194:MET:HB2  | 1.78                     | 0.83              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AH:124:GLU:OE1   | 8:AH:133:VAL:HA    | 1.78                     | 0.83              |
| 8:AH:125:VAL:HA    | 8:AH:131:VAL:HG22  | 1.59                     | 0.83              |
| 10:AL:7:TYR:HD1    | 10:AL:7:TYR:H      | 0.88                     | 0.83              |
| 10:AL:64:ARG:HH21  | 10:AL:64:ARG:CG    | 1.90                     | 0.83              |
| 10:AL:77:ILE:HD13  | 15:AQ:65:LYS:HE2   | 1.60                     | 0.83              |
| 13:AO:83:ILE:HD12  | 13:AO:86:ARG:HE    | 1.42                     | 0.83              |
| 15:AQ:6:LEU:HD23   | 15:AQ:7:ILE:H      | 1.39                     | 0.83              |
| 15:AQ:112:ARG:CZ   | 34:BA:1464:G:P     | 2.66                     | 0.83              |
| 16:AR:55:ARG:HG2   | 16:AR:55:ARG:NH1   | 1.87                     | 0.83              |
| 17:AS:49:THR:CG2   | 17:AS:50:PRO:HD2   | 2.08                     | 0.83              |
| 17:AS:96:ILE:HD12  | 17:AS:96:ILE:O     | 1.78                     | 0.83              |
| 22:AX:54:GLY:O     | 22:AX:56:ASP:N     | 2.10                     | 0.83              |
| 25:Aa:1:MET:HE1    | 25:Aa:9:LEU:HD21   | 1.57                     | 0.83              |
| 27:Ac:20:ASN:ND2   | 27:Ac:43:CYS:N     | 2.25                     | 0.83              |
| 32:AJ:106:GLU:HA   | 32:AJ:109:LYS:HG3  | 1.58                     | 0.83              |
| 34:BA:474:G:H5'    | 49:BT:81:ARG:HG3   | 1.60                     | 0.83              |
| 34:BA:944:G:C3'    | 34:BA:945:G:H5''   | 2.08                     | 0.83              |
| 34:BA:949:A:H3'    | 46:BQ:102:ARG:HH11 | 1.42                     | 0.83              |
| 34:BA:1073:U:H2'   | 34:BA:1074:G:H8    | 1.41                     | 0.83              |
| 34:BA:1268:A:N3    | 34:BA:1311:G:N3    | 2.25                     | 0.83              |
| 34:BA:1269:A:C4'   | 34:BA:1312:G:H21   | 1.89                     | 0.83              |
| 34:BA:1415:G:O6    | 34:BA:1486:G:O6    | 1.95                     | 0.83              |
| 34:BA:1494:G:OP2   | 34:BA:1494:G:H3'   | 1.77                     | 0.83              |
| 35:BF:88:ALA:CB    | 35:BF:219:VAL:HG22 | 2.05                     | 0.83              |
| 35:BF:215:LEU:O    | 35:BF:218:ALA:HB3  | 1.78                     | 0.83              |
| 35:BF:219:VAL:HG13 | 35:BF:222:ILE:HD11 | 1.60                     | 0.83              |
| 37:BH:57:ARG:HG3   | 37:BH:202:LEU:O    | 1.77                     | 0.83              |
| 43:BN:30:SER:HB3   | 43:BN:80:LYS:HG3   | 1.59                     | 0.83              |
| 43:BN:94:VAL:HG12  | 43:BN:95:GLU:N     | 1.93                     | 0.83              |
| 45:BP:83:VAL:CG2   | 45:BP:104:VAL:HB   | 2.07                     | 0.83              |
| 48:BS:64:ARG:HA    | 48:BS:67:LEU:HD12  | 1.58                     | 0.83              |
| 52:BW:11:VAL:O     | 52:BW:15:LEU:HG    | 1.77                     | 0.83              |
| 56:BD:47:U:OP1     | 56:BD:47:U:H2'     | 1.78                     | 0.83              |
| 57:BZ:39:GLN:N     | 57:BZ:40:GLU:HA    | 1.92                     | 0.83              |
| 57:BZ:75:THR:CG2   | 57:BZ:84:GLU:OE1   | 2.26                     | 0.83              |
| 57:BZ:172:ALA:CB   | 57:BZ:179:MET:HE1  | 2.04                     | 0.83              |
| 57:BZ:210:SER:CA   | 57:BZ:284:ILE:HG23 | 2.06                     | 0.83              |
| 57:BZ:426:LEU:HD13 | 57:BZ:441:TYR:HE1  | 1.09                     | 0.83              |
| 1:AA:422:A:H2'     | 1:AA:422:A:N3      | 1.92                     | 0.83              |
| 1:AA:533:G:OP2     | 16:AR:25:TRP:HB2   | 1.77                     | 0.83              |
| 1:AA:775:G:H5'     | 1:AA:777:A:H1'     | 1.59                     | 0.83              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1061:U:O5'    | 32:AJ:52:ILE:HD11  | 1.77                     | 0.83              |
| 1:AA:1066:U:H1'    | 1:AA:1069:A:OP2    | 1.77                     | 0.83              |
| 1:AA:1068:G:O4'    | 1:AA:1096:A:C1'    | 2.18                     | 0.83              |
| 1:AA:1794:U:O2'    | 1:AA:1795:C:H5'    | 1.78                     | 0.83              |
| 1:AA:2052:G:H2'    | 1:AA:2053:G:H8     | 1.41                     | 0.83              |
| 1:AA:2533:A:C5'    | 1:AA:2664:G:O2'    | 2.26                     | 0.83              |
| 4:AD:172:TYR:HB3   | 4:AD:184:LYS:HG2   | 1.60                     | 0.83              |
| 5:AE:131:ALA:HB1   | 5:AE:134:ILE:HG13  | 1.60                     | 0.83              |
| 8:AH:29:PRO:HD3    | 8:AH:79:VAL:O      | 1.78                     | 0.83              |
| 8:AH:66:GLY:O      | 8:AH:69:ARG:HG2    | 1.79                     | 0.83              |
| 10:AL:7:TYR:HB3    | 10:AL:18:LYS:HZ1   | 1.43                     | 0.83              |
| 13:AO:99:LYS:HG2   | 26:Ab:43:HIS:NE2   | 1.93                     | 0.83              |
| 14:AP:11:LYS:HA    | 14:AP:14:VAL:CG2   | 2.08                     | 0.83              |
| 14:AP:106:ARG:HH22 | 14:AP:110:LEU:HD13 | 1.39                     | 0.83              |
| 24:AZ:8:LEU:HD12   | 24:AZ:31:LEU:O     | 1.78                     | 0.83              |
| 24:AZ:13:ILE:HG23  | 24:AZ:14:GLY:N     | 1.93                     | 0.83              |
| 24:AZ:40:THR:HG22  | 24:AZ:42:ALA:H     | 1.41                     | 0.83              |
| 34:BA:37:U:OP2     | 45:BP:123:LYS:HD2  | 1.76                     | 0.83              |
| 34:BA:317:G:O2'    | 34:BA:318:G:H5'    | 1.78                     | 0.83              |
| 34:BA:789:U:H6     | 34:BA:790:A:H5''   | 1.43                     | 0.83              |
| 34:BA:872:A:C2'    | 34:BA:873:A:H5''   | 2.08                     | 0.83              |
| 34:BA:1058:G:H2'   | 34:BA:1059:C:O4'   | 1.75                     | 0.83              |
| 34:BA:1085:U:H5'   | 34:BA:1094:G:N2    | 1.93                     | 0.83              |
| 34:BA:1466:C:H3'   | 34:BA:1467:G:C8    | 2.12                     | 0.83              |
| 39:BJ:97:PHE:CD2   | 51:BV:31:LEU:HD13  | 2.13                     | 0.83              |
| 41:BL:40:ALA:CA    | 41:BL:45:ILE:HG23  | 2.08                     | 0.83              |
| 41:BL:41:ARG:HB3   | 41:BL:41:ARG:NH1   | 1.93                     | 0.83              |
| 46:BQ:15:VAL:HB    | 46:BQ:34:LEU:CG    | 2.05                     | 0.83              |
| 57:BZ:572:ILE:HA   | 57:BZ:576:GLU:OE1  | 1.76                     | 0.83              |
| 1:AA:397:G:OP2     | 25:Aa:41:PRO:HG3   | 1.77                     | 0.83              |
| 1:AA:414:C:H1'     | 1:AA:1864:U:H1'    | 1.61                     | 0.83              |
| 1:AA:456:C:H5      | 19:AU:68:ARG:NH1   | 1.76                     | 0.83              |
| 1:AA:558:G:P       | 9:AK:112:LEU:HG    | 2.18                     | 0.83              |
| 1:AA:640:C:H2'     | 1:AA:641:C:H5'     | 1.58                     | 0.83              |
| 1:AA:702:G:O2'     | 1:AA:703:U:H5'     | 1.78                     | 0.83              |
| 1:AA:775:G:C2'     | 1:AA:794:G:N7      | 2.41                     | 0.83              |
| 1:AA:784:A:OP1     | 1:AA:2588:G:H5''   | 1.78                     | 0.83              |
| 1:AA:811:U:C4      | 11:AM:22:GLY:HA3   | 2.13                     | 0.83              |
| 1:AA:996:A:H2'     | 1:AA:997:G:H8      | 1.43                     | 0.83              |
| 1:AA:1028:A:OP2    | 1:AA:1126:A:N6     | 2.11                     | 0.83              |
| 1:AA:1315:C:H2'    | 1:AA:1316:U:C6     | 2.13                     | 0.83              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1349:A:H2     | 1:AA:1598:C:N3     | 1.75                     | 0.83              |
| 1:AA:1375:C:H2'    | 1:AA:1376:C:C6     | 2.13                     | 0.83              |
| 1:AA:1783:A:H5''   | 1:AA:1784:A:OP1    | 1.78                     | 0.83              |
| 1:AA:2334:G:H22    | 2:AB:12:C:H42      | 1.23                     | 0.83              |
| 1:AA:2658:C:N4     | 1:AA:2664:G:N2     | 2.25                     | 0.83              |
| 1:AA:2847:U:H3'    | 15:AQ:99:LEU:HD11  | 1.59                     | 0.83              |
| 1:AA:2847:U:H3'    | 15:AQ:99:LEU:HD12  | 1.58                     | 0.83              |
| 5:AE:54:GLN:CD     | 5:AE:56:PRO:HD2    | 2.03                     | 0.83              |
| 5:AE:118:LYS:HE2   | 5:AE:118:LYS:CA    | 2.08                     | 0.83              |
| 7:AG:141:PHE:C     | 7:AG:143:GLU:H     | 1.81                     | 0.83              |
| 7:AG:163:ALA:HB2   | 7:AG:172:LEU:CD2   | 2.08                     | 0.83              |
| 9:AK:18:ALA:HB3    | 9:AK:55:VAL:O      | 1.77                     | 0.83              |
| 14:AP:57:LYS:HZ2   | 14:AP:65:VAL:CA    | 1.90                     | 0.83              |
| 15:AQ:15:VAL:HG12  | 15:AQ:16:ARG:O     | 1.78                     | 0.83              |
| 16:AR:32:PHE:O     | 16:AR:35:ALA:HB3   | 1.78                     | 0.83              |
| 27:Ac:20:ASN:ND2   | 27:Ac:42:TRP:HD1   | 1.75                     | 0.83              |
| 32:AJ:15:GLY:H     | 32:AJ:45:THR:CB    | 1.88                     | 0.83              |
| 33:Ag:289:UNK:O    | 33:Ag:343:UNK:C    | 2.27                     | 0.83              |
| 34:BA:91:C:H2'     | 34:BA:92:G:C8      | 2.13                     | 0.83              |
| 34:BA:233:C:O2'    | 34:BA:234:C:H5'    | 1.78                     | 0.83              |
| 34:BA:1394:A:H62   | 34:BA:1501:C:H5'   | 1.41                     | 0.83              |
| 36:BG:11:ARG:HG3   | 36:BG:16:ARG:HH21  | 1.40                     | 0.83              |
| 37:BH:197:PRO:O    | 37:BH:198:VAL:HG13 | 1.78                     | 0.83              |
| 41:BL:75:ARG:CZ    | 41:BL:75:ARG:HB2   | 2.07                     | 0.83              |
| 46:BQ:19:LEU:CG    | 46:BQ:30:ALA:HA    | 2.07                     | 0.83              |
| 46:BQ:70:LEU:HD12  | 46:BQ:70:LEU:O     | 1.77                     | 0.83              |
| 49:BT:21:VAL:HG13  | 49:BT:36:ILE:CD1   | 2.07                     | 0.83              |
| 52:BW:11:VAL:HG12  | 52:BW:15:LEU:HB2   | 1.58                     | 0.83              |
| 56:BE:18:G:OP2     | 56:BE:61:C:O5'     | 1.96                     | 0.83              |
| 57:BZ:122:LYS:CE   | 57:BZ:155:ASP:O    | 2.26                     | 0.83              |
| 57:BZ:239:ILE:HG12 | 57:BZ:244:GLY:HA2  | 1.58                     | 0.83              |
| 1:AA:281:G:N2      | 1:AA:282:A:N7      | 2.25                     | 0.83              |
| 1:AA:623:G:C8      | 11:AM:105:LEU:HD13 | 2.14                     | 0.83              |
| 1:AA:883:G:H2'     | 1:AA:884:C:C5'     | 2.07                     | 0.83              |
| 1:AA:1156:A:OP1    | 16:AR:55:ARG:CZ    | 2.26                     | 0.83              |
| 1:AA:1312:U:H5''   | 19:AU:62:LYS:HB3   | 1.59                     | 0.83              |
| 1:AA:1692:U:H1'    | 1:AA:1696:G:N2     | 1.93                     | 0.83              |
| 1:AA:2026:C:O2'    | 1:AA:2027:G:H5'    | 1.79                     | 0.83              |
| 1:AA:2152:G:OP1    | 3:AC:3:HIS:CA      | 2.27                     | 0.83              |
| 1:AA:2557:G:H2'    | 1:AA:2558:C:H6     | 1.43                     | 0.83              |
| 1:AA:2660:A:C2     | 57:BZ:456:MET:C    | 2.55                     | 0.83              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2675:A:O2'   | 1:AA:2676:C:H5'    | 1.78                     | 0.83              |
| 1:AA:2808:U:C3'   | 1:AA:2809:A:H5''   | 2.08                     | 0.83              |
| 3:AC:43:VAL:HG13  | 3:AC:224:ILE:HG12  | 1.59                     | 0.83              |
| 4:AD:221:VAL:O    | 4:AD:222:ARG:HG3   | 1.77                     | 0.83              |
| 6:AF:41:LEU:HA    | 6:AF:44:ARG:NE     | 1.92                     | 0.83              |
| 6:AF:103:LYS:CA   | 6:AF:106:ARG:HG2   | 2.08                     | 0.83              |
| 7:AG:91:ARG:HB2   | 7:AG:91:ARG:NH2    | 1.91                     | 0.83              |
| 7:AG:169:ALA:O    | 7:AG:172:LEU:HB3   | 1.78                     | 0.83              |
| 9:AK:23:LEU:CD2   | 9:AK:61:ARG:O      | 2.26                     | 0.83              |
| 9:AK:104:LYS:HA   | 9:AK:117:PHE:CZ    | 2.13                     | 0.83              |
| 13:AO:18:LEU:HB3  | 13:AO:22:ARG:HH21  | 1.42                     | 0.83              |
| 15:AQ:5:ALA:O     | 15:AQ:9:LEU:HG     | 1.79                     | 0.83              |
| 15:AQ:48:ILE:HD13 | 15:AQ:50:ILE:CD1   | 2.09                     | 0.83              |
| 20:AV:50:ARG:HG3  | 20:AV:54:LYS:HB2   | 1.60                     | 0.83              |
| 20:AV:74:PRO:C    | 20:AV:76:CYS:H     | 1.86                     | 0.83              |
| 30:Af:20:HIS:C    | 30:Af:22:ARG:H     | 1.81                     | 0.83              |
| 31:AI:52:PHE:C    | 31:AI:86:PRO:N     | 2.35                     | 0.83              |
| 34:BA:564:C:C5    | 50:BU:31:LEU:HD21  | 2.14                     | 0.83              |
| 34:BA:628:G:H2'   | 34:BA:629:G:H8     | 1.42                     | 0.83              |
| 34:BA:915:A:H2'   | 34:BA:916:G:H5'    | 1.59                     | 0.83              |
| 34:BA:1221:G:P    | 52:BW:52:TYR:O     | 2.36                     | 0.83              |
| 35:BF:188:ALA:HB1 | 35:BF:192:SER:OG   | 1.78                     | 0.83              |
| 38:BI:72:GLN:NE2  | 38:BI:144:THR:HG23 | 1.93                     | 0.83              |
| 38:BI:91:LEU:HD23 | 38:BI:91:LEU:C     | 2.03                     | 0.83              |
| 40:BK:69:VAL:HG21 | 40:BK:104:LEU:CD1  | 2.09                     | 0.83              |
| 40:BK:155:ARG:HA  | 40:BK:155:ARG:NH1  | 1.93                     | 0.83              |
| 44:BO:40:ILE:HD13 | 44:BO:40:ILE:N     | 1.93                     | 0.83              |
| 44:BO:126:ARG:NH1 | 44:BO:126:ARG:HB3  | 1.93                     | 0.83              |
| 50:BU:29:HIS:ND1  | 50:BU:31:LEU:N     | 2.26                     | 0.83              |
| 51:BV:53:ARG:HH22 | 51:BV:60:ALA:N     | 1.76                     | 0.83              |
| 57:BZ:13:HIS:HB3  | 57:BZ:109:THR:CG2  | 2.09                     | 0.83              |
| 57:BZ:170:GLY:O   | 57:BZ:179:MET:HB2  | 1.75                     | 0.83              |
| 57:BZ:379:GLU:HA  | 57:BZ:580:VAL:O    | 1.77                     | 0.83              |
| 1:AA:931:G:H21    | 24:AZ:24:LYS:HB3   | 1.39                     | 0.83              |
| 1:AA:1139:G:H2'   | 1:AA:1140:C:H5''   | 1.59                     | 0.83              |
| 1:AA:1775:U:H2'   | 1:AA:1776:G:O4'    | 1.78                     | 0.83              |
| 1:AA:1971:A:H3'   | 1:AA:1971:A:C8     | 2.13                     | 0.83              |
| 1:AA:2329:G:H22   | 1:AA:2386:C:N4     | 1.75                     | 0.83              |
| 1:AA:2791:C:H3'   | 1:AA:2791:C:P      | 2.18                     | 0.83              |
| 3:AC:44:HIS:CE1   | 3:AC:215:THR:O     | 2.31                     | 0.83              |
| 4:AD:51:VAL:HB    | 4:AD:52:ARG:NE     | 1.93                     | 0.83              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 6:AF:18:ARG:HG2    | 6:AF:18:ARG:HH11   | 1.43                     | 0.83              |
| 6:AF:38:ARG:NH1    | 11:AM:10:PRO:HA    | 1.93                     | 0.83              |
| 8:AH:11:VAL:CG2    | 8:AH:50:VAL:HG21   | 2.07                     | 0.83              |
| 8:AH:175:LYS:HG3   | 8:AH:176:ALA:H     | 1.42                     | 0.83              |
| 9:AK:3:THR:HG22    | 9:AK:4:TYR:H       | 1.42                     | 0.83              |
| 9:AK:15:LEU:HD21   | 9:AK:137:LYS:C     | 2.04                     | 0.83              |
| 10:AL:122:LEU:HG   | 15:AQ:71:GLY:C     | 2.03                     | 0.83              |
| 15:AQ:30:VAL:HG21  | 15:AQ:90:GLN:HA    | 1.59                     | 0.83              |
| 16:AR:99:ALA:HA    | 16:AR:106:PHE:CG   | 2.14                     | 0.83              |
| 17:AS:9:GLY:O      | 17:AS:10:LYS:HB2   | 1.76                     | 0.83              |
| 17:AS:27:ALA:HB1   | 17:AS:33:VAL:CG1   | 2.09                     | 0.83              |
| 18:AT:59:VAL:CA    | 18:AT:63:ASP:HA    | 2.07                     | 0.83              |
| 21:AW:113:ALA:HB1  | 21:AW:145:GLU:OE1  | 1.79                     | 0.83              |
| 21:AW:177:PRO:HG2  | 21:AW:178:GLU:H    | 1.44                     | 0.83              |
| 32:AJ:37:PHE:HZ    | 32:AJ:63:ARG:HD3   | 1.04                     | 0.83              |
| 32:AJ:75:SER:HA    | 32:AJ:130:SER:HB3  | 1.60                     | 0.83              |
| 32:AJ:99:ILE:CG2   | 32:AJ:103:GLN:OE1  | 2.26                     | 0.83              |
| 34:BA:186(A):C:H1' | 53:BX:104:LEU:HD23 | 1.59                     | 0.83              |
| 35:BF:71:VAL:HG22  | 35:BF:93:VAL:HB    | 1.60                     | 0.83              |
| 35:BF:209:ARG:NH1  | 35:BF:213:LEU:HD12 | 1.94                     | 0.83              |
| 36:BG:190:ARG:HE   | 36:BG:190:ARG:HA   | 1.43                     | 0.83              |
| 40:BK:111:ARG:HD2  | 40:BK:123:GLU:HB2  | 1.60                     | 0.83              |
| 46:BQ:25:ILE:CD1   | 46:BQ:66:LEU:HD21  | 2.08                     | 0.83              |
| 46:BQ:91:ARG:CB    | 46:BQ:98:VAL:HA    | 2.08                     | 0.83              |
| 55:BC:16:U:H3'     | 55:BC:17:C:C5'     | 2.08                     | 0.83              |
| 57:BZ:52:ARG:NE    | 57:BZ:52:ARG:HA    | 1.92                     | 0.83              |
| 1:AA:197:A:H62     | 1:AA:248:G:H22     | 1.24                     | 0.83              |
| 1:AA:949:C:H2'     | 1:AA:950:G:H8      | 1.42                     | 0.83              |
| 1:AA:1046:A:N3     | 31:AI:11:ALA:HB3   | 1.92                     | 0.83              |
| 1:AA:1069:A:O2'    | 1:AA:1071:G:OP1    | 1.96                     | 0.83              |
| 1:AA:1460:A:H5'    | 1:AA:1461:G:OP2    | 1.79                     | 0.83              |
| 1:AA:1559:G:N1     | 1:AA:1560:G:C4'    | 2.39                     | 0.83              |
| 1:AA:2089:U:H2'    | 1:AA:2090:G:H8     | 1.42                     | 0.83              |
| 1:AA:2416:C:C5'    | 11:AM:59:LEU:HB2   | 2.05                     | 0.83              |
| 1:AA:2438:U:H4'    | 1:AA:2440:C:OP1    | 1.78                     | 0.83              |
| 1:AA:2862:G:H2'    | 1:AA:2863:C:C6     | 2.12                     | 0.83              |
| 4:AD:21:PHE:O      | 4:AD:205:VAL:HG22  | 1.79                     | 0.83              |
| 4:AD:51:VAL:CB     | 4:AD:52:ARG:CZ     | 2.53                     | 0.83              |
| 4:AD:106:ILE:HG13  | 4:AD:108:PRO:HD3   | 1.58                     | 0.83              |
| 6:AF:8:GLN:C       | 6:AF:9:ILE:HD12    | 2.04                     | 0.83              |
| 7:AG:52:ILE:HG12   | 7:AG:148:MET:SD    | 2.19                     | 0.83              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AH:7:LEU:HG      | 8:AH:51:ARG:NH2   | 1.93                     | 0.83              |
| 10:AL:121:VAL:HG12 | 15:AQ:70:VAL:O    | 1.78                     | 0.83              |
| 11:AM:88:LEU:HD11  | 11:AM:124:LYS:HZ1 | 1.44                     | 0.83              |
| 13:AO:20:LEU:HD21  | 13:AO:24:GLN:CG   | 2.07                     | 0.83              |
| 23:AY:12:SER:HB3   | 23:AY:13:PRO:CD   | 2.09                     | 0.83              |
| 32:AJ:17:ALA:HB3   | 32:AJ:42:ASN:CG   | 2.03                     | 0.83              |
| 33:Ag:7:UNK:CA     | 33:Ag:144:UNK:HA  | 2.08                     | 0.83              |
| 34:BA:228:A:H2'    | 34:BA:229:U:H5'   | 1.61                     | 0.83              |
| 34:BA:370:C:O2'    | 34:BA:371:G:H5'   | 1.78                     | 0.83              |
| 34:BA:1454:G:C4    | 34:BA:1455:G:N7   | 2.47                     | 0.83              |
| 35:BF:16:HIS:C     | 35:BF:204:ASN:HB2 | 2.02                     | 0.83              |
| 36:BG:12:LEU:CG    | 47:BR:57:ARG:HG3  | 2.08                     | 0.83              |
| 36:BG:73:PRO:HB3   | 36:BG:105:GLU:OE1 | 1.78                     | 0.83              |
| 37:BH:7:PRO:O      | 37:BH:10:ARG:HB3  | 1.77                     | 0.83              |
| 37:BH:31:CYS:O     | 37:BH:33:MET:HG2  | 1.78                     | 0.83              |
| 39:BJ:50:TYR:OH    | 51:BV:77:GLY:HA2  | 1.77                     | 0.83              |
| 48:BS:39:LEU:CD2   | 48:BS:56:LEU:HD22 | 2.08                     | 0.83              |
| 56:BD:4:C:N4       | 56:BD:69:G:C6     | 2.41                     | 0.83              |
| 57:BZ:153:ALA:CB   | 57:BZ:156:GLU:HB3 | 2.07                     | 0.83              |
| 1:AA:24:G:H2'      | 1:AA:25:U:C6      | 2.13                     | 0.83              |
| 1:AA:251:A:H2'     | 1:AA:252:G:C4'    | 2.08                     | 0.83              |
| 1:AA:270(A):A:H5'  | 1:AA:270(B):A:OP2 | 1.78                     | 0.83              |
| 1:AA:387:U:O5'     | 25:Aa:29:PRO:HG3  | 1.77                     | 0.83              |
| 1:AA:824:A:H5''    | 1:AA:825:C:OP2    | 1.78                     | 0.83              |
| 1:AA:904:C:O2'     | 1:AA:905:U:H5'    | 1.77                     | 0.83              |
| 1:AA:1041:C:O2     | 1:AA:1115:G:C6    | 2.32                     | 0.83              |
| 1:AA:1068:G:O2'    | 1:AA:1096:A:O3'   | 1.95                     | 0.83              |
| 1:AA:1113:U:H2'    | 1:AA:1114:G:C8    | 2.12                     | 0.83              |
| 1:AA:1202:C:C4     | 1:AA:1203:G:C1'   | 2.57                     | 0.83              |
| 1:AA:1700:A:H2'    | 1:AA:1701:A:C5'   | 2.07                     | 0.83              |
| 1:AA:2176:A:OP1    | 3:AC:222:VAL:CG2  | 2.25                     | 0.83              |
| 1:AA:2253:G:N2     | 56:BE:75:C:C1'    | 2.17                     | 0.83              |
| 1:AA:2305:A:H8     | 1:AA:2306:C:C5'   | 1.91                     | 0.83              |
| 4:AD:232:PRO:CD    | 4:AD:247:ALA:HA   | 2.08                     | 0.83              |
| 6:AF:4:VAL:C       | 6:AF:20:LEU:HD13  | 2.03                     | 0.83              |
| 6:AF:52:LYS:O      | 6:AF:53:THR:HG23  | 1.78                     | 0.83              |
| 7:AG:53:LEU:HD23   | 7:AG:71:THR:N     | 1.92                     | 0.83              |
| 12:AN:112:GLU:HA   | 12:AN:115:MET:HG3 | 1.60                     | 0.83              |
| 14:AP:73:LEU:HD13  | 14:AP:73:LEU:H    | 1.44                     | 0.83              |
| 18:AT:4:LYS:HA     | 18:AT:106:ILE:CD1 | 2.08                     | 0.83              |
| 18:AT:18:ARG:HD3   | 18:AT:76:VAL:HG12 | 1.59                     | 0.83              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:279:A:C5'    | 34:BA:280:C:H3'    | 2.08                     | 0.83              |
| 34:BA:761:G:C5'    | 50:BU:102:GLY:HA3  | 2.07                     | 0.83              |
| 34:BA:1247:U:H2'   | 34:BA:1248:A:H8    | 1.42                     | 0.83              |
| 34:BA:1342:C:H4'   | 42:BM:125:TYR:HB2  | 1.57                     | 0.83              |
| 34:BA:1405:G:N2    | 34:BA:1517:G:N2    | 2.22                     | 0.83              |
| 35:BF:165:VAL:HG23 | 35:BF:166:ASP:H    | 1.43                     | 0.83              |
| 37:BH:18:LYS:HA    | 37:BH:33:MET:CE    | 2.07                     | 0.83              |
| 37:BH:29:PRO:HA    | 37:BH:34:GLU:HG2   | 1.59                     | 0.83              |
| 38:BI:115:VAL:HG21 | 38:BI:118:ILE:HD12 | 1.61                     | 0.83              |
| 40:BK:99:LEU:O     | 40:BK:103:TRP:HB2  | 1.76                     | 0.83              |
| 49:BT:72:ARG:HH21  | 49:BT:73:LEU:HD23  | 1.43                     | 0.83              |
| 56:BE:2:C:C6       | 56:BE:71:G:C6      | 2.67                     | 0.83              |
| 56:BE:15:G:C2      | 56:BE:16:U:C5      | 2.67                     | 0.83              |
| 57:BZ:13:HIS:CB    | 57:BZ:108:GLN:CG   | 2.55                     | 0.83              |
| 57:BZ:163:VAL:HG12 | 57:BZ:164:TYR:N    | 1.91                     | 0.83              |
| 1:AA:111:A:H2'     | 1:AA:112:U:C6      | 2.14                     | 0.83              |
| 1:AA:606:U:H6      | 1:AA:606:U:O5'     | 1.60                     | 0.83              |
| 1:AA:727:A:H2'     | 1:AA:727:A:N3      | 1.91                     | 0.83              |
| 1:AA:1299:G:N2     | 1:AA:1640:C:H5'    | 1.94                     | 0.83              |
| 1:AA:1359:A:N6     | 1:AA:1371:G:H21    | 1.76                     | 0.83              |
| 1:AA:1530:G:H22    | 1:AA:1541:U:H2'    | 1.43                     | 0.83              |
| 1:AA:1943:U:C1'    | 1:AA:1945:G:H5''   | 2.09                     | 0.83              |
| 1:AA:2037:G:H2'    | 1:AA:2038:G:C8     | 2.13                     | 0.83              |
| 1:AA:2670:A:C2     | 1:AA:2671:A:C4     | 2.67                     | 0.83              |
| 2:AB:12:C:C5'      | 22:AX:74:ARG:HG2   | 2.08                     | 0.83              |
| 2:AB:75:G:H2'      | 21:AW:85:HIS:HE1   | 1.43                     | 0.83              |
| 6:AF:128:ALA:HA    | 6:AF:142:TRP:CH2   | 2.14                     | 0.83              |
| 6:AF:157:VAL:CG1   | 6:AF:176:LEU:HD23  | 2.07                     | 0.83              |
| 7:AG:77:ILE:CA     | 7:AG:83:ARG:HE     | 1.91                     | 0.83              |
| 10:AL:116:SER:HB3  | 34:BA:345:C:C2     | 2.14                     | 0.83              |
| 12:AN:53:ALA:O     | 12:AN:56:ARG:HG3   | 1.79                     | 0.83              |
| 14:AP:57:LYS:HZ3   | 14:AP:62:LYS:HG3   | 1.43                     | 0.83              |
| 14:AP:78:LEU:C     | 14:AP:78:LEU:HD22  | 2.03                     | 0.83              |
| 18:AT:6:ILE:CG1    | 18:AT:104:THR:HA   | 2.08                     | 0.83              |
| 18:AT:33:ARG:HH12  | 18:AT:48:ALA:HB2   | 1.43                     | 0.83              |
| 21:AW:127:LYS:HD3  | 21:AW:165:VAL:HG23 | 1.60                     | 0.83              |
| 23:AY:28:MET:HA    | 23:AY:31:ARG:HG3   | 1.61                     | 0.83              |
| 27:Ac:20:ASN:ND2   | 27:Ac:41:PRO:HB2   | 1.92                     | 0.83              |
| 28:Ad:21:ARG:CG    | 28:Ad:31:LEU:HD21  | 2.08                     | 0.83              |
| 31:AI:153:LEU:C    | 31:AI:155:GLY:H    | 1.84                     | 0.83              |
| 34:BA:179:A:H3'    | 34:BA:180:U:C5     | 2.13                     | 0.83              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:264:U:O2    | 34:BA:264:U:H2'    | 1.78                     | 0.83              |
| 34:BA:570:G:N1    | 34:BA:866:C:N4     | 2.26                     | 0.83              |
| 34:BA:657:G:H2'   | 34:BA:658:G:H5'    | 1.61                     | 0.83              |
| 34:BA:1225:A:C4'  | 52:BW:78:ARG:CB    | 2.54                     | 0.83              |
| 35:BF:82:ARG:HB2  | 35:BF:94:ASN:ND2   | 1.94                     | 0.83              |
| 36:BG:12:LEU:HD21 | 47:BR:57:ARG:CG    | 2.07                     | 0.83              |
| 38:BI:136:MET:O   | 38:BI:139:LEU:HB2  | 1.79                     | 0.83              |
| 44:BO:41:THR:OG1  | 44:BO:71:LYS:HD3   | 1.78                     | 0.83              |
| 44:BO:95:ILE:HA   | 44:BO:98:LEU:CD1   | 2.08                     | 0.83              |
| 50:BU:25:ARG:NH2  | 50:BU:40:LYS:HD3   | 1.92                     | 0.83              |
| 52:BW:9:VAL:HG21  | 52:BW:43:GLU:N     | 1.93                     | 0.83              |
| 57:BZ:40:GLU:N    | 57:BZ:41:ARG:O     | 2.11                     | 0.83              |
| 57:BZ:392:ILE:C   | 57:BZ:394:GLY:HA3  | 2.04                     | 0.83              |
| 1:AA:176:G:H2'    | 1:AA:177:G:C8      | 2.13                     | 0.83              |
| 1:AA:576:U:H2'    | 1:AA:577:G:C8      | 2.13                     | 0.83              |
| 1:AA:806:C:H2'    | 1:AA:807:U:H6      | 1.41                     | 0.83              |
| 1:AA:811:U:O4     | 11:AM:22:GLY:CA    | 2.25                     | 0.83              |
| 1:AA:873:G:C5     | 1:AA:874:G:C8      | 2.67                     | 0.83              |
| 1:AA:1079:C:OP1   | 32:AJ:137:GLU:OE2  | 1.97                     | 0.83              |
| 1:AA:1266:G:N7    | 18:AT:16:LYS:HD2   | 1.93                     | 0.83              |
| 1:AA:1547:C:O2'   | 1:AA:1548:C:H5'    | 1.77                     | 0.83              |
| 1:AA:1913:A:C4'   | 1:AA:1914:C:H5'    | 2.08                     | 0.83              |
| 1:AA:1983:C:O2'   | 1:AA:1984:G:H5'    | 1.79                     | 0.83              |
| 1:AA:2756:U:N3    | 1:AA:2758:A:C6     | 2.46                     | 0.83              |
| 2:AB:76:G:H4'     | 21:AW:85:HIS:HB2   | 1.58                     | 0.83              |
| 4:AD:5:LYS:HB3    | 4:AD:29:PRO:HD3    | 1.59                     | 0.83              |
| 4:AD:96:HIS:CE1   | 4:AD:102:LYS:HD3   | 2.12                     | 0.83              |
| 4:AD:118:VAL:O    | 4:AD:129:ASN:HA    | 1.79                     | 0.83              |
| 5:AE:12:THR:HG21  | 5:AE:19:ARG:NH2    | 1.93                     | 0.83              |
| 5:AE:49:LEU:HD13  | 5:AE:76:ARG:CG     | 2.09                     | 0.83              |
| 7:AG:68:PRO:CB    | 7:AG:72:ARG:HH22   | 1.90                     | 0.83              |
| 8:AH:110:SER:C    | 8:AH:112:PRO:HD2   | 2.04                     | 0.83              |
| 10:AL:77:ILE:HD13 | 15:AQ:65:LYS:CE    | 2.09                     | 0.83              |
| 11:AM:92:GLU:OE1  | 11:AM:126:VAL:HG13 | 1.79                     | 0.83              |
| 11:AM:107:LYS:HZ3 | 11:AM:110:TYR:HB3  | 1.40                     | 0.83              |
| 12:AN:42:ILE:CG2  | 12:AN:95:ALA:HB3   | 2.09                     | 0.83              |
| 18:AT:90:ARG:NH2  | 18:AT:90:ARG:H     | 1.76                     | 0.83              |
| 20:AV:74:PRO:HG2  | 20:AV:76:CYS:HB3   | 1.61                     | 0.83              |
| 21:AW:42:VAL:HG12 | 21:AW:46:LYS:NZ    | 1.93                     | 0.83              |
| 25:Aa:5:ILE:HD13  | 25:Aa:60:GLN:NE2   | 1.93                     | 0.83              |
| 26:Ab:35:GLU:HB3  | 26:Ab:49:CYS:HB3   | 1.61                     | 0.83              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 31:AI:140:GLY:HA3  | 33:Ag:137:UNK:HA   | 0.94                     | 0.83              |
| 34:BA:523:A:H61    | 45:BP:53:ARG:HH22  | 1.23                     | 0.83              |
| 35:BF:81:VAL:HG12  | 35:BF:92:TYR:CD1   | 2.13                     | 0.83              |
| 38:BI:74:GLY:C     | 38:BI:115:VAL:HG12 | 2.04                     | 0.83              |
| 39:BJ:48:LEU:HD12  | 39:BJ:50:TYR:O     | 1.79                     | 0.83              |
| 41:BL:33:GLU:HA    | 41:BL:36:LEU:HD21  | 1.61                     | 0.83              |
| 41:BL:115:SER:C    | 41:BL:116:LYS:HD2  | 2.04                     | 0.83              |
| 45:BP:25:PRO:C     | 45:BP:27:LEU:H     | 1.84                     | 0.83              |
| 46:BQ:19:LEU:HD13  | 46:BQ:29:ARG:C     | 2.04                     | 0.83              |
| 46:BQ:60:VAL:HG12  | 46:BQ:64:TRP:CD1   | 2.14                     | 0.83              |
| 49:BT:20:VAL:HA    | 49:BT:36:ILE:CG1   | 2.08                     | 0.83              |
| 49:BT:54:GLU:C     | 49:BT:54:GLU:CD    | 2.46                     | 0.83              |
| 50:BU:75:ARG:NH2   | 50:BU:77:VAL:HG22  | 1.94                     | 0.83              |
| 57:BZ:379:GLU:CB   | 57:BZ:581:THR:HG22 | 2.08                     | 0.83              |
| 57:BZ:406:ASP:HA   | 57:BZ:407:VAL:CB   | 2.08                     | 0.83              |
| 57:BZ:407:VAL:C    | 57:BZ:436:ARG:HG2  | 2.03                     | 0.83              |
| 57:BZ:447:GLY:HA3  | 57:BZ:480:VAL:HG21 | 1.60                     | 0.83              |
| 1:AA:295:G:O2'     | 1:AA:296:C:H5'     | 1.78                     | 0.83              |
| 1:AA:448:U:H2'     | 1:AA:448:U:O2      | 1.79                     | 0.83              |
| 1:AA:576:U:H2'     | 1:AA:577:G:H8      | 1.42                     | 0.83              |
| 1:AA:895:U:O3'     | 1:AA:897:C:OP2     | 1.97                     | 0.83              |
| 1:AA:960:A:H5''    | 1:AA:961:C:OP1     | 1.79                     | 0.83              |
| 1:AA:1075:C:H1'    | 32:AJ:90:LYS:NZ    | 1.94                     | 0.83              |
| 1:AA:1864:U:H4'    | 1:AA:2409:G:H22    | 1.44                     | 0.83              |
| 1:AA:2091:U:C2'    | 1:AA:2092:U:H5'    | 2.09                     | 0.83              |
| 1:AA:2152:G:H5'    | 3:AC:2:LYS:HB2     | 1.61                     | 0.83              |
| 1:AA:2246:G:C2     | 1:AA:2247:A:C5     | 2.67                     | 0.83              |
| 1:AA:2446:G:O2'    | 1:AA:2448:A:H5''   | 1.79                     | 0.83              |
| 1:AA:2602:A:N3     | 22:AX:1:MET:HA     | 1.91                     | 0.83              |
| 1:AA:2688:U:O2     | 1:AA:2688:U:H2'    | 1.78                     | 0.83              |
| 2:AB:12:C:O4'      | 22:AX:74:ARG:NE    | 2.10                     | 0.83              |
| 3:AC:46:LYS:HG3    | 3:AC:211:SER:CA    | 2.07                     | 0.83              |
| 4:AD:117:VAL:HG11  | 4:AD:128:GLY:C     | 2.04                     | 0.83              |
| 5:AE:14:ILE:HD12   | 5:AE:14:ILE:H      | 1.42                     | 0.83              |
| 5:AE:91:VAL:HG11   | 5:AE:93:VAL:HG22   | 1.61                     | 0.83              |
| 5:AE:154:LYS:NZ    | 5:AE:156:MET:HB2   | 1.94                     | 0.83              |
| 6:AF:9:ILE:HG21    | 6:AF:124:LEU:HB3   | 1.60                     | 0.83              |
| 6:AF:178:PRO:C     | 6:AF:180:GLY:H     | 1.82                     | 0.83              |
| 7:AG:87:PRO:O      | 7:AG:88:ILE:HG13   | 1.79                     | 0.83              |
| 10:AL:115:VAL:HG12 | 34:BA:345:C:C2'    | 2.09                     | 0.83              |
| 11:AM:117:GLU:O    | 11:AM:121:LYS:HG2  | 1.77                     | 0.83              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 14:AP:33:LYS:HE2  | 14:AP:54:LEU:HD21  | 1.60                     | 0.83              |
| 15:AQ:87:ASP:C    | 15:AQ:88:ILE:HG13  | 2.03                     | 0.83              |
| 16:AR:81:HIS:O    | 16:AR:84:LYS:HB2   | 1.78                     | 0.83              |
| 20:AV:2:ARG:CD    | 20:AV:3:VAL:H      | 1.91                     | 0.83              |
| 26:Ab:10:LYS:HE3  | 26:Ab:15:ARG:CZ    | 2.08                     | 0.83              |
| 26:Ab:25:LEU:HG   | 26:Ab:25:LEU:O     | 1.79                     | 0.83              |
| 34:BA:713:G:N2    | 34:BA:777:A:H1'    | 1.93                     | 0.83              |
| 34:BA:1344:C:H4'  | 42:BM:120:ARG:HB3  | 1.59                     | 0.83              |
| 35:BF:168:THR:OG1 | 35:BF:192:SER:HA   | 1.79                     | 0.83              |
| 36:BG:3:ASN:ND2   | 36:BG:4:LYS:H      | 1.77                     | 0.83              |
| 42:BM:47:LEU:HD12 | 42:BM:51:ARG:NH2   | 1.93                     | 0.83              |
| 44:BO:84:VAL:HG21 | 44:BO:110:ASP:HA   | 1.61                     | 0.83              |
| 49:BT:21:VAL:HG21 | 49:BT:59:TRP:HE1   | 1.43                     | 0.83              |
| 55:BC:31:A:H2'    | 55:BC:32:U:H5'     | 1.61                     | 0.83              |
| 57:BZ:6:ARG:HH12  | 57:BZ:196:ALA:HB2  | 1.44                     | 0.83              |
| 57:BZ:15:ASP:HB3  | 57:BZ:16:HIS:CE1   | 2.08                     | 0.83              |
| 57:BZ:150:ASN:ND2 | 57:BZ:151:LEU:HD22 | 1.94                     | 0.83              |
| 57:BZ:403:VAL:O   | 57:BZ:465:LEU:CB   | 2.26                     | 0.83              |
| 57:BZ:604:PRO:HB2 | 57:BZ:605:LYS:CB   | 2.04                     | 0.83              |
| 1:AA:216:A:H2'    | 1:AA:217:G:C8      | 2.13                     | 0.82              |
| 1:AA:239:U:O2'    | 1:AA:240:G:H5'     | 1.79                     | 0.82              |
| 1:AA:336:C:C2'    | 1:AA:337:C:H5'     | 2.09                     | 0.82              |
| 1:AA:1299:G:H21   | 1:AA:1640:C:H6     | 1.27                     | 0.82              |
| 1:AA:1451:C:H5'   | 1:AA:1453:A:OP2    | 1.79                     | 0.82              |
| 1:AA:1966:A:H1'   | 1:AA:2593:U:C5'    | 2.08                     | 0.82              |
| 1:AA:2185:C:H2'   | 1:AA:2186:G:H8     | 1.43                     | 0.82              |
| 1:AA:2525:G:N2    | 1:AA:2539:C:C4     | 2.46                     | 0.82              |
| 1:AA:2629:A:C5'   | 1:AA:2895:U:C6     | 2.62                     | 0.82              |
| 1:AA:2790:A:C4'   | 1:AA:2893:G:N2     | 2.41                     | 0.82              |
| 3:AC:181:PRO:HD2  | 3:AC:184:LYS:HD2   | 1.59                     | 0.82              |
| 5:AE:4:ILE:O      | 5:AE:27:LEU:HD22   | 1.78                     | 0.82              |
| 5:AE:173:VAL:CG2  | 5:AE:174:ASP:N     | 2.42                     | 0.82              |
| 6:AF:38:ARG:HH12  | 11:AM:10:PRO:HA    | 1.44                     | 0.82              |
| 7:AG:55:LYS:HE3   | 7:AG:152:LEU:HD21  | 1.59                     | 0.82              |
| 10:AL:43:VAL:HG11 | 10:AL:54:GLU:HA    | 1.61                     | 0.82              |
| 12:AN:25:ASP:CB   | 12:AN:102:VAL:H    | 1.92                     | 0.82              |
| 16:AR:88:ILE:N    | 16:AR:88:ILE:HD13  | 1.94                     | 0.82              |
| 16:AR:88:ILE:O    | 17:AS:52:VAL:HA    | 1.79                     | 0.82              |
| 18:AT:88:ARG:NE   | 18:AT:88:ARG:HA    | 1.92                     | 0.82              |
| 21:AW:45:ASP:O    | 21:AW:46:LYS:C     | 2.22                     | 0.82              |
| 21:AW:127:LYS:HB3 | 21:AW:162:GLU:O    | 1.79                     | 0.82              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 24:AZ:10:LYS:HG2   | 24:AZ:12:PRO:HD3   | 1.60                     | 0.82              |
| 27:Ac:15:GLU:HA    | 27:Ac:21:TYR:HA    | 1.59                     | 0.82              |
| 30:Af:11:CYS:HB3   | 30:Af:32:HIS:CE1   | 2.13                     | 0.82              |
| 33:Ag:293:UNK:O    | 33:Ag:295:UNK:N    | 2.11                     | 0.82              |
| 34:BA:128:G:H5''   | 50:BU:2:PRO:HA     | 1.61                     | 0.82              |
| 34:BA:1100:C:H2'   | 35:BF:98:LEU:HD11  | 1.59                     | 0.82              |
| 34:BA:1202:G:C4    | 47:BR:42:ILE:HD13  | 2.13                     | 0.82              |
| 34:BA:1226:C:C1'   | 52:BW:80:TYR:CE2   | 2.57                     | 0.82              |
| 34:BA:1271:G:OP1   | 34:BA:1314:C:C5'   | 2.26                     | 0.82              |
| 34:BA:1339:A:H4'   | 56:BE:41:C:C4'     | 1.99                     | 0.82              |
| 34:BA:1481:U:H2'   | 34:BA:1482:G:C8    | 2.13                     | 0.82              |
| 34:BA:1483:A:O5'   | 34:BA:1483:A:H8    | 1.61                     | 0.82              |
| 34:BA:1486:G:H2'   | 34:BA:1487:G:C4'   | 2.09                     | 0.82              |
| 35:BF:102:LEU:H    | 35:BF:102:LEU:HD12 | 1.43                     | 0.82              |
| 38:BI:118:ILE:C    | 38:BI:119:LEU:HD23 | 2.03                     | 0.82              |
| 40:BK:73:MET:HE1   | 40:BK:149:ARG:HH21 | 1.44                     | 0.82              |
| 42:BM:6:GLY:HA3    | 42:BM:80:GLY:O     | 1.79                     | 0.82              |
| 43:BN:27:ALA:HB2   | 43:BN:85:LEU:CG    | 2.08                     | 0.82              |
| 45:BP:32:PHE:HB2   | 45:BP:84:LEU:HD11  | 1.61                     | 0.82              |
| 57:BZ:54:ILE:HD11  | 57:BZ:211:GLN:NE2  | 1.93                     | 0.82              |
| 57:BZ:422:ARG:HH12 | 57:BZ:480:VAL:HG22 | 1.42                     | 0.82              |
| 57:BZ:496:ALA:HB3  | 57:BZ:513:GLY:O    | 1.78                     | 0.82              |
| 1:AA:190:A:H2'     | 1:AA:191:A:C8      | 2.14                     | 0.82              |
| 1:AA:270(P):C:H2'  | 1:AA:270(Q):C:C6   | 2.15                     | 0.82              |
| 1:AA:570:G:H1      | 1:AA:2498:C:C4'    | 1.92                     | 0.82              |
| 1:AA:672:C:H2'     | 1:AA:673:C:C6      | 2.14                     | 0.82              |
| 1:AA:1909:C:C2     | 1:AA:1922:G:N1     | 2.30                     | 0.82              |
| 1:AA:2434:A:O2'    | 1:AA:2435:A:H5''   | 1.78                     | 0.82              |
| 1:AA:2468:G:N2     | 1:AA:2481:G:H2'    | 1.94                     | 0.82              |
| 1:AA:2658:C:N4     | 1:AA:2664:G:H1     | 1.74                     | 0.82              |
| 3:AC:43:VAL:HG22   | 3:AC:224:ILE:CG2   | 2.10                     | 0.82              |
| 3:AC:180:PHE:CE2   | 3:AC:184:LYS:HD2   | 2.14                     | 0.82              |
| 4:AD:63:ARG:NH1    | 4:AD:87:ASN:HD21   | 1.75                     | 0.82              |
| 5:AE:13:ARG:CG     | 5:AE:22:PRO:HD3    | 2.07                     | 0.82              |
| 5:AE:44:TYR:HB3    | 5:AE:82:ARG:HH11   | 1.41                     | 0.82              |
| 5:AE:179:GLU:HB2   | 5:AE:181:LEU:HD11  | 1.61                     | 0.82              |
| 6:AF:139:PHE:O     | 6:AF:142:TRP:HB3   | 1.78                     | 0.82              |
| 9:AK:37:LYS:HD2    | 9:AK:43:THR:HA     | 1.58                     | 0.82              |
| 10:AL:4:PRO:HG2    | 10:AL:5:GLN:N      | 1.91                     | 0.82              |
| 12:AN:43:THR:HA    | 12:AN:94:VAL:CG1   | 2.07                     | 0.82              |
| 14:AP:62:LYS:C     | 14:AP:64:GLU:N     | 2.21                     | 0.82              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 14:AP:103:GLU:O    | 14:AP:106:ARG:HB3  | 1.79                     | 0.82              |
| 16:AR:88:ILE:CG1   | 17:AS:52:VAL:HG13  | 2.08                     | 0.82              |
| 16:AR:112:ARG:HH22 | 17:AS:49:THR:HG22  | 1.43                     | 0.82              |
| 19:AU:4:ALA:HB3    | 23:AY:21:ARG:NH1   | 1.94                     | 0.82              |
| 24:AZ:19:GLN:NE2   | 24:AZ:50:VAL:HA    | 1.94                     | 0.82              |
| 25:Aa:7:PRO:HG2    | 25:Aa:60:GLN:OE1   | 1.79                     | 0.82              |
| 25:Aa:38:LYS:O     | 25:Aa:39:CYS:HB2   | 1.75                     | 0.82              |
| 27:Ac:11:LEU:HD22  | 29:Ae:35:GLN:OE1   | 1.78                     | 0.82              |
| 27:Ac:19:ARG:NH1   | 27:Ac:19:ARG:HG2   | 1.80                     | 0.82              |
| 34:BA:42:G:H2'     | 34:BA:43:C:C6      | 2.14                     | 0.82              |
| 34:BA:174:C:H2'    | 34:BA:175:C:C6     | 2.14                     | 0.82              |
| 34:BA:762:C:H2'    | 34:BA:763:G:C8     | 2.14                     | 0.82              |
| 35:BF:102:LEU:CD2  | 35:BF:176:GLU:HB3  | 2.09                     | 0.82              |
| 38:BI:94:ALA:CB    | 38:BI:98:THR:HG21  | 2.07                     | 0.82              |
| 39:BJ:89:MET:HB2   | 51:BV:76:LEU:HD11  | 1.60                     | 0.82              |
| 40:BK:64:GLN:HG3   | 40:BK:128:ALA:O    | 1.77                     | 0.82              |
| 48:BS:35:ARG:NH1   | 48:BS:59:MET:HE2   | 1.94                     | 0.82              |
| 48:BS:67:LEU:O     | 48:BS:70:LEU:HB3   | 1.79                     | 0.82              |
| 50:BU:19:VAL:HG21  | 50:BU:46:ASP:HB2   | 1.58                     | 0.82              |
| 50:BU:31:LEU:O     | 50:BU:32:TYR:HD2   | 1.62                     | 0.82              |
| 56:BD:16:U:H3'     | 56:BD:17:C:H5'     | 1.62                     | 0.82              |
| 56:BE:72:C:H2'     | 56:BE:73:A:H5''    | 1.61                     | 0.82              |
| 57:BZ:81:PHE:O     | 57:BZ:361:ARG:HB2  | 1.76                     | 0.82              |
| 57:BZ:407:VAL:O    | 57:BZ:436:ARG:HA   | 1.79                     | 0.82              |
| 57:BZ:488:LEU:CD1  | 57:BZ:525:GLY:C    | 2.51                     | 0.82              |
| 1:AA:752:A:N6      | 1:AA:1781:C:H1'    | 1.94                     | 0.82              |
| 1:AA:876:C:O2'     | 1:AA:877:U:H5'     | 1.77                     | 0.82              |
| 1:AA:901:A:N6      | 1:AA:902:C:N3      | 2.26                     | 0.82              |
| 1:AA:1095:A:H5'    | 57:BZ:416:MET:HE3  | 1.60                     | 0.82              |
| 1:AA:1334:G:H5''   | 19:AU:65:ARG:NH1   | 1.93                     | 0.82              |
| 1:AA:1394:U:H4'    | 1:AA:1603:A:H4'    | 1.60                     | 0.82              |
| 1:AA:1791:A:O4'    | 4:AD:209:ALA:HB2   | 1.80                     | 0.82              |
| 1:AA:1826:G:H2'    | 1:AA:1827:C:H5'    | 1.61                     | 0.82              |
| 1:AA:1922:G:O6     | 58:AA:3001:NMY:H62 | 1.79                     | 0.82              |
| 1:AA:1943:U:H4'    | 1:AA:1944:U:O5'    | 1.78                     | 0.82              |
| 1:AA:2415:G:OP1    | 11:AM:61:ARG:HD2   | 1.78                     | 0.82              |
| 1:AA:2484:G:H1'    | 12:AN:124:LYS:HZ1  | 1.44                     | 0.82              |
| 1:AA:2597:G:C1'    | 4:AD:242:ARG:HH21  | 1.93                     | 0.82              |
| 1:AA:2660:A:N7     | 57:BZ:457:THR:HG23 | 1.94                     | 0.82              |
| 5:AE:77:ILE:HG12   | 5:AE:78:LEU:N      | 1.94                     | 0.82              |
| 5:AE:124:GLY:HA3   | 5:AE:136:ARG:CB    | 2.10                     | 0.82              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 12:AN:8:LYS:NZ    | 12:AN:93:TYR:HD2  | 1.76                     | 0.82              |
| 17:AS:26:ASP:C    | 17:AS:29:PRO:HD2  | 2.04                     | 0.82              |
| 19:AU:27:THR:CB   | 19:AU:80:ILE:HD12 | 2.09                     | 0.82              |
| 20:AV:82:PRO:HG3  | 20:AV:97:ARG:H    | 1.43                     | 0.82              |
| 24:AZ:37:LEU:HD21 | 24:AZ:39:ASP:HA   | 1.60                     | 0.82              |
| 30:Af:9:ARG:HA    | 30:Af:34:GLN:HE22 | 1.42                     | 0.82              |
| 34:BA:50:A:H5''   | 34:BA:51:A:C5'    | 2.06                     | 0.82              |
| 37:BH:30:LYS:N    | 37:BH:34:GLU:HB3  | 1.95                     | 0.82              |
| 41:BL:22:GLU:O    | 41:BL:62:TYR:HA   | 1.79                     | 0.82              |
| 41:BL:103:VAL:HB  | 41:BL:108:GLY:CA  | 2.08                     | 0.82              |
| 44:BO:95:ILE:HA   | 44:BO:98:LEU:CG   | 2.09                     | 0.82              |
| 48:BS:17:ARG:NH1  | 48:BS:77:ARG:HD3  | 1.94                     | 0.82              |
| 48:BS:60:VAL:HA   | 48:BS:63:ARG:HD3  | 1.62                     | 0.82              |
| 49:BT:14:ASN:HA   | 49:BT:42:ARG:CZ   | 2.10                     | 0.82              |
| 50:BU:10:VAL:HG21 | 50:BU:55:ASP:HB2  | 1.61                     | 0.82              |
| 53:BX:64:ASP:O    | 53:BX:67:ALA:N    | 2.12                     | 0.82              |
| 56:BE:21:A:C3'    | 56:BE:22:G:H5''   | 2.09                     | 0.82              |
| 57:BZ:27:GLN:CA   | 57:BZ:28:GLN:HB2  | 1.97                     | 0.82              |
| 57:BZ:180:ALA:HB3 | 57:BZ:181:GLU:HB3 | 1.59                     | 0.82              |
| 57:BZ:546:MET:HG2 | 57:BZ:547:ARG:CZ  | 2.08                     | 0.82              |
| 1:AA:150:C:H2'    | 1:AA:150:C:O2     | 1.79                     | 0.82              |
| 1:AA:269:U:H5''   | 1:AA:270(Y):G:C2' | 2.08                     | 0.82              |
| 1:AA:627:A:H5''   | 11:AM:75:ILE:HB   | 1.59                     | 0.82              |
| 1:AA:898:C:H2'    | 1:AA:899:A:C4'    | 2.09                     | 0.82              |
| 1:AA:1802:A:H3'   | 1:AA:1803:A:C8    | 2.15                     | 0.82              |
| 1:AA:1809:A:N6    | 25:Aa:3:GLU:HG3   | 1.95                     | 0.82              |
| 1:AA:1842:G:H2'   | 1:AA:1843:C:C6    | 2.12                     | 0.82              |
| 1:AA:2178:C:C5'   | 3:AC:46:LYS:CB    | 2.57                     | 0.82              |
| 1:AA:2275:C:H4'   | 1:AA:2276:G:O5'   | 1.77                     | 0.82              |
| 1:AA:2312:U:HO2'  | 7:AG:40:ASN:CG    | 1.87                     | 0.82              |
| 1:AA:2781:A:H2'   | 1:AA:2782:G:O2'   | 1.78                     | 0.82              |
| 1:AA:2807:G:C5    | 1:AA:2808:U:C5    | 2.67                     | 0.82              |
| 1:AA:2875:C:H4'   | 15:AQ:4:GLY:H     | 1.44                     | 0.82              |
| 3:AC:56:GLN:O     | 3:AC:58:VAL:HG22  | 1.80                     | 0.82              |
| 4:AD:106:ILE:HD12 | 4:AD:192:THR:CG2  | 2.08                     | 0.82              |
| 4:AD:133:LEU:HD11 | 4:AD:185:VAL:CG1  | 2.08                     | 0.82              |
| 5:AE:44:TYR:HD2   | 5:AE:45:THR:N     | 1.76                     | 0.82              |
| 7:AG:50:ALA:N     | 7:AG:70:VAL:HG13  | 1.93                     | 0.82              |
| 8:AH:149:ARG:CZ   | 8:AH:164:TYR:HD1  | 1.91                     | 0.82              |
| 8:AH:163:TYR:HB3  | 8:AH:166:GLY:HA2  | 1.62                     | 0.82              |
| 9:AK:4:TYR:OH     | 16:AR:101:ARG:HB3 | 1.80                     | 0.82              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 9:AK:23:LEU:CD1    | 9:AK:63:THR:HG23   | 2.09                     | 0.82              |
| 10:AL:97:ARG:HG3   | 10:AL:117:LEU:CD2  | 2.10                     | 0.82              |
| 11:AM:95:VAL:C     | 11:AM:97:PRO:HD2   | 2.03                     | 0.82              |
| 12:AN:63:LYS:HD3   | 12:AN:64:ILE:N     | 1.94                     | 0.82              |
| 15:AQ:3:ARG:O      | 15:AQ:6:LEU:HD23   | 1.79                     | 0.82              |
| 19:AU:60:ARG:HD3   | 19:AU:62:LYS:NZ    | 1.93                     | 0.82              |
| 32:AJ:72:PRO:CG    | 32:AJ:77:LEU:CD2   | 0.83                     | 0.82              |
| 34:BA:319:G:O2'    | 34:BA:320:C:H5'    | 1.79                     | 0.82              |
| 34:BA:684:A:C4'    | 44:BO:12:ARG:HH22  | 1.89                     | 0.82              |
| 34:BA:761:G:H5'    | 50:BU:103:GLY:H    | 1.40                     | 0.82              |
| 34:BA:932:C:C3'    | 40:BK:3:ARG:HG3    | 2.10                     | 0.82              |
| 34:BA:1327:C:C5'   | 54:BY:20:LYS:HD3   | 2.08                     | 0.82              |
| 35:BF:224:GLN:HG2  | 35:BF:229:VAL:HG21 | 1.61                     | 0.82              |
| 38:BI:32:VAL:O     | 38:BI:43:LEU:HG    | 1.77                     | 0.82              |
| 44:BO:54:ARG:HG3   | 44:BO:54:ARG:HH11  | 1.44                     | 0.82              |
| 45:BP:28:LYS:HE3   | 45:BP:33:ARG:HH12  | 1.43                     | 0.82              |
| 45:BP:92:ASP:C     | 45:BP:93:LEU:HD23  | 2.04                     | 0.82              |
| 46:BQ:29:ARG:CD    | 46:BQ:64:TRP:CH2   | 2.61                     | 0.82              |
| 52:BW:3:ARG:NE     | 52:BW:45:VAL:CG1   | 2.39                     | 0.82              |
| 56:BD:50:U:C4      | 56:BD:64:A:C2      | 2.67                     | 0.82              |
| 56:BE:5:G:C4'      | 56:BE:6:G:H5'      | 2.08                     | 0.82              |
| 57:BZ:6:ARG:HB2    | 57:BZ:68:TYR:O     | 1.79                     | 0.82              |
| 57:BZ:62:ALA:HB3   | 57:BZ:64:ILE:HG13  | 1.60                     | 0.82              |
| 57:BZ:327:THR:O    | 57:BZ:331:ILE:HG13 | 1.80                     | 0.82              |
| 1:AA:221:A:N6      | 1:AA:265:A:N6      | 2.27                     | 0.82              |
| 1:AA:783:A:H3'     | 4:AD:227:ASN:ND2   | 1.94                     | 0.82              |
| 1:AA:833:U:O4'     | 11:AM:48:PRO:HD2   | 1.78                     | 0.82              |
| 1:AA:1183:G:H1'    | 1:AA:1184:G:C8     | 2.13                     | 0.82              |
| 1:AA:1423:G:H2'    | 1:AA:1424:G:C8     | 2.14                     | 0.82              |
| 1:AA:1493:C:N4     | 1:AA:1499:C:N3     | 2.26                     | 0.82              |
| 1:AA:1642:G:O2'    | 1:AA:1643:G:H5'    | 1.79                     | 0.82              |
| 1:AA:1716:U:H2'    | 1:AA:1716:U:O2     | 1.77                     | 0.82              |
| 1:AA:2286:A:H4'    | 1:AA:2287:A:C1'    | 2.08                     | 0.82              |
| 1:AA:2384:G:OP2    | 1:AA:2384:G:H8     | 1.63                     | 0.82              |
| 1:AA:2497:A:H2'    | 1:AA:2498:C:OP2    | 1.79                     | 0.82              |
| 1:AA:2690:C:C5     | 13:AO:14:SER:HB2   | 2.15                     | 0.82              |
| 2:AB:102:G:N3      | 21:AW:73:GLN:NE2   | 2.27                     | 0.82              |
| 5:AE:147:PRO:HG2   | 5:AE:149:ARG:HD3   | 1.60                     | 0.82              |
| 5:AE:173:VAL:HG22  | 5:AE:183:LEU:O     | 1.80                     | 0.82              |
| 10:AL:21:CYS:HA    | 10:AL:41:ALA:HB2   | 1.62                     | 0.82              |
| 11:AM:114:ILE:HG12 | 11:AM:130:PHE:HA   | 1.60                     | 0.82              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 12:AN:42:ILE:HG12 | 12:AN:46:GLN:NE2  | 1.93                     | 0.82              |
| 12:AN:69:PHE:HB3  | 12:AN:71:ASP:OD1  | 1.79                     | 0.82              |
| 15:AQ:30:VAL:HG22 | 15:AQ:32:TYR:CZ   | 2.13                     | 0.82              |
| 16:AR:69:CYS:SG   | 16:AR:70:ARG:HG3  | 2.20                     | 0.82              |
| 17:AS:26:ASP:O    | 17:AS:29:PRO:HD2  | 1.79                     | 0.82              |
| 22:AX:19:LYS:O    | 22:AX:20:ARG:HD2  | 1.79                     | 0.82              |
| 25:Aa:46:GLN:NE2  | 25:Aa:69:LYS:HE2  | 1.93                     | 0.82              |
| 33:Ag:7:UNK:CA    | 33:Ag:144:UNK:C   | 2.57                     | 0.82              |
| 34:BA:296:U:H2'   | 34:BA:297:G:C8    | 2.13                     | 0.82              |
| 34:BA:854:G:H5''  | 34:BA:871:U:H3    | 1.42                     | 0.82              |
| 34:BA:1075:C:H4'  | 34:BA:1101:A:N6   | 1.93                     | 0.82              |
| 34:BA:1314:C:H42  | 34:BA:1324:A:N6   | 1.77                     | 0.82              |
| 34:BA:1318:A:O3'  | 52:BW:38:SER:HA   | 1.69                     | 0.82              |
| 35:BF:150:SER:HA  | 35:BF:153:ARG:CB  | 2.09                     | 0.82              |
| 40:BK:109:ASN:O   | 40:BK:119:ARG:CZ  | 2.28                     | 0.82              |
| 42:BM:52:ALA:O    | 42:BM:95:LYS:HD2  | 1.80                     | 0.82              |
| 45:BP:60:LEU:N    | 45:BP:60:LEU:CD1  | 2.42                     | 0.82              |
| 45:BP:93:LEU:CD1  | 45:BP:96:VAL:HG21 | 2.08                     | 0.82              |
| 52:BW:6:LYS:HE3   | 52:BW:10:PHE:CB   | 2.07                     | 0.82              |
| 53:BX:58:LYS:O    | 53:BX:61:SER:OG   | 1.97                     | 0.82              |
| 57:BZ:2:ILE:HG21  | 57:BZ:199:VAL:CG1 | 2.10                     | 0.82              |
| 57:BZ:400:TYR:CE1 | 57:BZ:444:PRO:HG3 | 2.14                     | 0.82              |
| 1:AA:678:C:H2'    | 1:AA:679:C:H6     | 1.42                     | 0.82              |
| 1:AA:864:G:H2'    | 1:AA:865:C:C1'    | 2.08                     | 0.82              |
| 1:AA:917:A:C3'    | 1:AA:917:A:C8     | 2.62                     | 0.82              |
| 1:AA:1046:A:N1    | 31:AI:9:LEU:N     | 2.28                     | 0.82              |
| 1:AA:1056:G:H4'   | 1:AA:1057:A:H5'   | 1.62                     | 0.82              |
| 1:AA:1119:C:H2'   | 1:AA:1120:G:C8    | 2.15                     | 0.82              |
| 1:AA:1206:G:H2'   | 1:AA:1207:C:C1'   | 2.09                     | 0.82              |
| 1:AA:2074:U:O2'   | 1:AA:2598:A:H1'   | 1.80                     | 0.82              |
| 1:AA:2572:A:C4'   | 1:AA:2573:C:H5''  | 2.08                     | 0.82              |
| 1:AA:2659:G:H1'   | 1:AA:2663:G:H22   | 1.44                     | 0.82              |
| 1:AA:2789:C:O2'   | 1:AA:2893:G:N2    | 2.11                     | 0.82              |
| 3:AC:44:HIS:CE1   | 3:AC:215:THR:C    | 2.43                     | 0.82              |
| 5:AE:8:LYS:O      | 5:AE:192:ASN:HB2  | 1.79                     | 0.82              |
| 8:AH:26:VAL:HG12  | 8:AH:79:VAL:HG11  | 1.62                     | 0.82              |
| 9:AK:37:LYS:CD    | 9:AK:43:THR:HA    | 2.10                     | 0.82              |
| 11:AM:45:LEU:HD13 | 29:Ae:59:LYS:HZ1  | 1.44                     | 0.82              |
| 13:AO:53:HIS:O    | 13:AO:56:LYS:HG3  | 1.80                     | 0.82              |
| 13:AO:100:LEU:HB2 | 13:AO:112:ALA:HA  | 1.61                     | 0.82              |
| 14:AP:11:LYS:HA   | 14:AP:14:VAL:HG21 | 1.60                     | 0.82              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 17:AS:18:LEU:HB2  | 17:AS:66:ARG:NH2   | 1.95                     | 0.82              |
| 17:AS:43:GLU:H    | 17:AS:44:LYS:HZ1   | 1.24                     | 0.82              |
| 17:AS:88:ARG:O    | 17:AS:90:PRO:HD3   | 1.79                     | 0.82              |
| 18:AT:76:VAL:HG22 | 18:AT:77:ASP:H     | 1.44                     | 0.82              |
| 19:AU:7:VAL:HG21  | 23:AY:31:ARG:NH2   | 1.94                     | 0.82              |
| 19:AU:43:VAL:CG1  | 19:AU:51:VAL:HG22  | 2.09                     | 0.82              |
| 21:AW:48:PHE:HB3  | 21:AW:54:HIS:HE1   | 1.42                     | 0.82              |
| 24:AZ:3:ARG:HH12  | 24:AZ:59:VAL:CB    | 1.91                     | 0.82              |
| 25:Aa:47:GLN:HA   | 25:Aa:52:THR:CG2   | 2.10                     | 0.82              |
| 31:AI:140:GLY:HA3 | 33:Ag:137:UNK:N    | 1.92                     | 0.82              |
| 32:AJ:64:SER:CB   | 32:AJ:65:PHE:HB3   | 2.09                     | 0.82              |
| 34:BA:37:U:C6     | 34:BA:37:U:C3'     | 2.59                     | 0.82              |
| 34:BA:166:G:O2'   | 34:BA:167:G:H5'    | 1.80                     | 0.82              |
| 34:BA:1005:A:H5'' | 34:BA:1006:C:C6    | 2.13                     | 0.82              |
| 34:BA:1339:A:C5'  | 56:BE:41:C:H4'     | 2.09                     | 0.82              |
| 35:BF:181:PHE:CD1 | 41:BL:71:GLY:HA3   | 2.15                     | 0.82              |
| 41:BL:36:LEU:HD12 | 41:BL:48:TYR:HB2   | 1.60                     | 0.82              |
| 50:BU:62:SER:HB3  | 50:BU:72:ARG:HE    | 1.40                     | 0.82              |
| 51:BV:55:ARG:HB3  | 51:BV:55:ARG:HH11  | 1.44                     | 0.82              |
| 56:BE:41:C:C3'    | 56:BE:42:C:H5''    | 2.09                     | 0.82              |
| 57:BZ:234:ASN:CG  | 57:BZ:247:ARG:HB3  | 2.04                     | 0.82              |
| 57:BZ:305:PRO:CG  | 57:BZ:360:GLY:O    | 2.23                     | 0.82              |
| 57:BZ:537:CYS:C   | 57:BZ:538:LEU:HD22 | 2.04                     | 0.82              |
| 1:AA:75:G:H4'     | 23:AY:50:ARG:NH1   | 1.94                     | 0.82              |
| 1:AA:247:G:N2     | 29:Ae:8:LYS:HD2    | 1.95                     | 0.82              |
| 1:AA:574:C:C2     | 1:AA:2055:C:H5     | 1.98                     | 0.82              |
| 1:AA:704:G:N2     | 1:AA:725:G:N2      | 2.27                     | 0.82              |
| 1:AA:783:A:H2'    | 1:AA:784:A:C4'     | 2.09                     | 0.82              |
| 1:AA:997:G:C5'    | 16:AR:92:ARG:HH11  | 1.93                     | 0.82              |
| 1:AA:1062:G:C8    | 1:AA:1063:G:N7     | 2.47                     | 0.82              |
| 1:AA:1264:G:O6    | 1:AA:1265:A:N7     | 2.13                     | 0.82              |
| 1:AA:1355:G:N2    | 1:AA:1377:G:H1'    | 1.95                     | 0.82              |
| 1:AA:1906:G:C6    | 58:AA:3001:NMY:H7  | 2.15                     | 0.82              |
| 1:AA:1960:A:C4'   | 34:BA:1483:A:H2    | 1.80                     | 0.82              |
| 1:AA:2012:G:OP1   | 18:AT:98:LYS:HG3   | 1.80                     | 0.82              |
| 1:AA:2152:G:P     | 3:AC:3:HIS:HA      | 2.20                     | 0.82              |
| 1:AA:2208:U:H4'   | 4:AD:151:LYS:NZ    | 1.94                     | 0.82              |
| 1:AA:2234:G:O2'   | 1:AA:2235:G:H5'    | 1.79                     | 0.82              |
| 1:AA:2277:G:C3'   | 1:AA:2278:A:H5''   | 2.09                     | 0.82              |
| 1:AA:2607:G:C2'   | 1:AA:2608:G:H5'    | 2.08                     | 0.82              |
| 3:AC:89:ALA:HA    | 3:AC:154:ARG:HG3   | 1.60                     | 0.82              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 4:AD:169:GLU:HB3   | 4:AD:184:LYS:NZ    | 1.94                     | 0.82              |
| 5:AE:201:THR:C     | 5:AE:202:LYS:HD3   | 2.04                     | 0.82              |
| 6:AF:25:PRO:O      | 6:AF:28:ILE:HG22   | 1.78                     | 0.82              |
| 7:AG:6:ALA:HA      | 7:AG:9:ARG:NH2     | 1.94                     | 0.82              |
| 7:AG:118:ARG:HG3   | 7:AG:119:GLY:H     | 1.43                     | 0.82              |
| 8:AH:17:VAL:HG22   | 8:AH:45:VAL:HG21   | 1.61                     | 0.82              |
| 26:Ab:15:ARG:HG3   | 26:Ab:16:ARG:N     | 1.95                     | 0.82              |
| 26:Ab:15:ARG:HG3   | 26:Ab:16:ARG:H     | 1.44                     | 0.82              |
| 32:AJ:19:PRO:CG    | 32:AJ:38:VAL:N     | 2.42                     | 0.82              |
| 34:BA:218:C:H5'    | 34:BA:466:C:N4     | 1.94                     | 0.82              |
| 34:BA:246:A:O2'    | 34:BA:247:G:O4'    | 1.97                     | 0.82              |
| 34:BA:1135:U:H4'   | 34:BA:1136:U:C5    | 2.13                     | 0.82              |
| 34:BA:1404:C:HO2'  | 34:BA:1499:A:H2    | 0.82                     | 0.82              |
| 35:BF:187:LEU:HD22 | 35:BF:188:ALA:N    | 1.95                     | 0.82              |
| 36:BG:11:ARG:HB3   | 36:BG:15:THR:O     | 1.78                     | 0.82              |
| 36:BG:15:THR:O     | 36:BG:16:ARG:HB3   | 1.79                     | 0.82              |
| 37:BH:166:LYS:HE2  | 37:BH:178:VAL:HG12 | 1.62                     | 0.82              |
| 37:BH:200:GLU:O    | 37:BH:204:ILE:HD12 | 1.80                     | 0.82              |
| 45:BP:12:ARG:HB3   | 45:BP:12:ARG:NH1   | 1.95                     | 0.82              |
| 57:BZ:6:ARG:CG     | 57:BZ:68:TYR:O     | 2.26                     | 0.82              |
| 57:BZ:57:LEU:HD12  | 57:BZ:255:LEU:CA   | 2.09                     | 0.82              |
| 57:BZ:379:GLU:OE1  | 57:BZ:581:THR:CB   | 2.26                     | 0.82              |
| 57:BZ:383:SER:CB   | 57:BZ:384:ARG:HA   | 2.10                     | 0.82              |
| 57:BZ:398:GLU:HA   | 57:BZ:472:TYR:CE1  | 2.14                     | 0.82              |
| 1:AA:697:C:H2'     | 1:AA:698:C:H5''    | 1.62                     | 0.82              |
| 1:AA:1487:G:O2'    | 1:AA:1488:G:H5'    | 1.79                     | 0.82              |
| 1:AA:1523:U:C2     | 1:AA:1524:G:C8     | 2.67                     | 0.82              |
| 1:AA:1906:G:O6     | 58:AA:3001:NMY:H7  | 1.79                     | 0.82              |
| 1:AA:2123:G:C4'    | 3:AC:172:HIS:ND1   | 2.22                     | 0.82              |
| 1:AA:2177:C:O2'    | 3:AC:211:SER:HB2   | 1.80                     | 0.82              |
| 1:AA:2333:A:H2'    | 1:AA:2333:A:N3     | 1.94                     | 0.82              |
| 6:AF:34:TRP:CD2    | 11:AM:8:PRO:HB2    | 2.15                     | 0.82              |
| 9:AK:76:SER:C      | 9:AK:78:TYR:H      | 1.85                     | 0.82              |
| 11:AM:15:ARG:NH2   | 11:AM:16:ARG:HB2   | 1.94                     | 0.82              |
| 11:AM:101:VAL:HG23 | 11:AM:112:LEU:HD22 | 1.61                     | 0.82              |
| 19:AU:12:VAL:HG23  | 19:AU:28:PHE:HA    | 1.61                     | 0.82              |
| 21:AW:129:SER:HB3  | 21:AW:133:ILE:HG22 | 1.59                     | 0.82              |
| 28:Ad:21:ARG:HB2   | 28:Ad:21:ARG:NH1   | 1.94                     | 0.82              |
| 33:Ag:8:UNK:CB     | 33:Ag:147:UNK:CB   | 2.58                     | 0.82              |
| 34:BA:410:G:N3     | 34:BA:432:A:N6     | 2.28                     | 0.82              |
| 34:BA:764:C:C2'    | 34:BA:765:G:C8     | 2.61                     | 0.82              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 34:BA:1014:A:H1'  | 52:BW:34:TRP:HH2  | 1.01                     | 0.82              |
| 34:BA:1329:A:HO2' | 46:BQ:70:LEU:HD22 | 1.43                     | 0.82              |
| 34:BA:1455:G:OP1  | 53:BX:31:SER:C    | 2.22                     | 0.82              |
| 34:BA:1459:C:H2'  | 34:BA:1460:A:H8   | 1.42                     | 0.82              |
| 35:BF:16:HIS:O    | 35:BF:204:ASN:HB2 | 1.79                     | 0.82              |
| 35:BF:17:PHE:O    | 35:BF:42:ILE:HG22 | 1.79                     | 0.82              |
| 35:BF:69:LEU:HD22 | 35:BF:91:PRO:C    | 2.05                     | 0.82              |
| 36:BG:48:TYR:HA   | 36:BG:52:LEU:HD22 | 1.59                     | 0.82              |
| 46:BQ:14:ARG:NH2  | 46:BQ:42:ALA:HA   | 1.93                     | 0.82              |
| 56:BE:5:G:O2'     | 56:BE:7:A:O4'     | 1.97                     | 0.82              |
| 57:BZ:27:GLN:CD   | 57:BZ:183:MET:SD  | 2.63                     | 0.82              |
| 57:BZ:123:PRO:CD  | 57:BZ:156:GLU:OE2 | 2.27                     | 0.82              |
| 57:BZ:244:GLY:HA2 | 57:BZ:245:LYS:CB  | 2.09                     | 0.82              |
| 57:BZ:374:ARG:O   | 57:BZ:582:PRO:HB3 | 1.80                     | 0.82              |
| 57:BZ:543:LEU:HB3 | 57:BZ:544:THR:OG1 | 1.78                     | 0.82              |
| 1:AA:241:A:H1'    | 1:AA:243:U:C1'    | 2.10                     | 0.82              |
| 1:AA:572:A:H2'    | 1:AA:573:G:H1'    | 1.62                     | 0.82              |
| 1:AA:931:G:N2     | 24:AZ:24:LYS:HB3  | 1.93                     | 0.82              |
| 1:AA:1300:U:H4'   | 1:AA:1301:A:O5'   | 1.79                     | 0.82              |
| 1:AA:1324:G:C3'   | 1:AA:1325:G:H4'   | 2.07                     | 0.82              |
| 1:AA:1708:C:H2'   | 1:AA:1709:U:H5''  | 1.61                     | 0.82              |
| 1:AA:1813:G:O2'   | 4:AD:52:ARG:NH2   | 2.12                     | 0.82              |
| 1:AA:1910:G:N9    | 1:AA:1921:G:C2    | 2.37                     | 0.82              |
| 1:AA:2297:C:H2'   | 1:AA:2298:A:C8    | 2.15                     | 0.82              |
| 2:AB:9:G:H4'      | 14:AP:43:GLU:OE2  | 1.80                     | 0.82              |
| 4:AD:159:ALA:C    | 4:AD:196:VAL:HG21 | 2.05                     | 0.82              |
| 20:AV:98:VAL:O    | 20:AV:100:ALA:O   | 1.98                     | 0.82              |
| 23:AY:51:GLN:HA   | 23:AY:54:ARG:NE   | 1.94                     | 0.82              |
| 31:AI:53:VAL:HA   | 31:AI:86:PRO:N    | 1.94                     | 0.82              |
| 34:BA:132:C:H5'   | 34:BA:262:A:C1'   | 2.10                     | 0.82              |
| 34:BA:399:G:H2'   | 34:BA:400:C:C6    | 2.15                     | 0.82              |
| 34:BA:451:A:H1'   | 34:BA:452:A:C4    | 2.15                     | 0.82              |
| 34:BA:917:G:O2'   | 34:BA:918:A:H5'   | 1.80                     | 0.82              |
| 34:BA:1108:G:O2'  | 34:BA:1109:C:H5'  | 1.78                     | 0.82              |
| 41:BL:18:ARG:NH1  | 41:BL:18:ARG:CA   | 2.43                     | 0.82              |
| 46:BQ:22:ILE:C    | 46:BQ:25:ILE:HG13 | 2.05                     | 0.82              |
| 56:BD:28:G:H1     | 56:BD:42:C:N4     | 1.76                     | 0.82              |
| 56:BE:73:A:H5'    | 56:BE:73:A:N3     | 1.94                     | 0.82              |
| 57:BZ:250:LYS:H   | 57:BZ:275:ALA:CB  | 1.89                     | 0.82              |
| 57:BZ:539:THR:HA  | 57:BZ:541:LYS:N   | 1.95                     | 0.82              |
| 1:AA:141:A:C2     | 1:AA:1596:A:O2'   | 2.32                     | 0.82              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:541:C:H2'     | 1:AA:542:C:C6      | 2.14                     | 0.82              |
| 1:AA:729:G:P       | 4:AD:13:ARG:HH22   | 2.03                     | 0.82              |
| 1:AA:764:A:N6      | 1:AA:1789:A:C2     | 2.47                     | 0.82              |
| 1:AA:1341:U:OP2    | 1:AA:1397:U:N3     | 2.13                     | 0.82              |
| 1:AA:1431:U:H2'    | 1:AA:1432:C:O4'    | 1.80                     | 0.82              |
| 1:AA:1742:C:H2'    | 1:AA:1743:G:H4'    | 1.61                     | 0.82              |
| 1:AA:2055:C:H4'    | 1:AA:2056:G:H5''   | 1.62                     | 0.82              |
| 1:AA:2232:U:O2'    | 1:AA:2233:U:H5'    | 1.78                     | 0.82              |
| 1:AA:2409:G:N2     | 1:AA:2410:G:H1'    | 1.95                     | 0.82              |
| 1:AA:2459:A:C5     | 1:AA:2493:U:O4     | 2.33                     | 0.82              |
| 1:AA:2537:U:H2'    | 1:AA:2538:C:C6     | 2.15                     | 0.82              |
| 1:AA:2548:G:H8     | 1:AA:2548:G:H5'    | 1.43                     | 0.82              |
| 1:AA:2576:G:H5''   | 1:AA:2577:A:OP1    | 1.78                     | 0.82              |
| 2:AB:76:G:H5'      | 21:AW:85:HIS:ND1   | 1.95                     | 0.82              |
| 3:AC:130:ILE:HD12  | 3:AC:130:ILE:N     | 1.94                     | 0.82              |
| 5:AE:4:ILE:HG13    | 5:AE:27:LEU:HD13   | 1.62                     | 0.82              |
| 5:AE:11:MET:O      | 5:AE:21:VAL:HG23   | 1.79                     | 0.82              |
| 9:AK:70:LYS:NZ     | 9:AK:86:PRO:HB3    | 1.93                     | 0.82              |
| 13:AO:88:ARG:HH11  | 13:AO:88:ARG:CB    | 1.88                     | 0.82              |
| 17:AS:6:LYS:HG2    | 17:AS:12:TYR:N     | 1.93                     | 0.82              |
| 18:AT:39:THR:HG23  | 26:Ab:28:PRO:HB3   | 1.62                     | 0.82              |
| 20:AV:49:VAL:CG2   | 20:AV:51:VAL:HB    | 2.10                     | 0.82              |
| 34:BA:389:A:H2'    | 34:BA:390:C:C5'    | 2.10                     | 0.82              |
| 34:BA:1226:C:C5    | 46:BQ:104:ARG:CG   | 2.59                     | 0.82              |
| 34:BA:1414:U:H2'   | 34:BA:1415:G:H8    | 1.44                     | 0.82              |
| 35:BF:134:GLU:HG3  | 35:BF:138:LEU:HD11 | 1.62                     | 0.82              |
| 37:BH:132:ARG:HG2  | 37:BH:132:ARG:NH1  | 1.92                     | 0.82              |
| 38:BI:151:LEU:HD21 | 41:BL:67:PRO:HG3   | 1.60                     | 0.82              |
| 41:BL:103:VAL:HB   | 41:BL:108:GLY:HA3  | 1.58                     | 0.82              |
| 43:BN:8:LEU:HD13   | 43:BN:16:LEU:HD13  | 1.61                     | 0.82              |
| 49:BT:44:THR:HG23  | 49:BT:45:THR:N     | 1.93                     | 0.82              |
| 50:BU:97:SER:O     | 50:BU:98:LEU:HD22  | 1.80                     | 0.82              |
| 55:BC:56:C:H2'     | 55:BC:57:G:O4'     | 1.79                     | 0.82              |
| 57:BZ:40:GLU:H     | 57:BZ:41:ARG:C     | 1.88                     | 0.82              |
| 57:BZ:398:GLU:CD   | 57:BZ:444:PRO:HB2  | 2.04                     | 0.82              |
| 1:AA:24:G:H2'      | 1:AA:25:U:H6       | 1.42                     | 0.81              |
| 1:AA:174:C:H2'     | 1:AA:175:G:H5'     | 1.62                     | 0.81              |
| 1:AA:189:G:H2'     | 1:AA:205:G:H22     | 1.42                     | 0.81              |
| 1:AA:450:G:C5'     | 6:AF:52:LYS:HD3    | 2.10                     | 0.81              |
| 1:AA:924:C:H2'     | 1:AA:925:C:C6      | 2.14                     | 0.81              |
| 1:AA:1045:A:H1'    | 1:AA:1047:G:C8     | 2.14                     | 0.81              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1179:C:HO2'   | 1:AA:1180:C:H6     | 0.84                     | 0.81              |
| 1:AA:1475:G:H21    | 1:AA:1476:C:C5'    | 1.93                     | 0.81              |
| 1:AA:1670:C:H3'    | 1:AA:1671:U:C6     | 2.15                     | 0.81              |
| 1:AA:1770:G:O2'    | 1:AA:1771:C:H5'    | 1.79                     | 0.81              |
| 1:AA:1813:G:H4'    | 4:AD:46:GLN:HB3    | 1.60                     | 0.81              |
| 1:AA:2102:U:H2'    | 1:AA:2103:C:C6     | 2.15                     | 0.81              |
| 1:AA:2122:U:H4'    | 3:AC:166:ASP:CG    | 2.03                     | 0.81              |
| 1:AA:2152:G:OP1    | 3:AC:3:HIS:C       | 2.23                     | 0.81              |
| 1:AA:2330:G:H1     | 1:AA:2385:C:N4     | 1.78                     | 0.81              |
| 1:AA:2346:A:H62    | 27:Ac:37:ARG:NH1   | 1.77                     | 0.81              |
| 1:AA:2375:G:N2     | 1:AA:2378:A:N6     | 2.26                     | 0.81              |
| 1:AA:2402:C:H5''   | 1:AA:2403:C:OP1    | 1.79                     | 0.81              |
| 1:AA:2590:A:H2'    | 1:AA:2591:C:C6     | 2.15                     | 0.81              |
| 4:AD:57:GLY:N      | 4:AD:217:ARG:HD2   | 1.94                     | 0.81              |
| 5:AE:81:ILE:HG22   | 5:AE:82:ARG:N      | 1.95                     | 0.81              |
| 5:AE:170:LEU:N     | 5:AE:170:LEU:HD23  | 1.95                     | 0.81              |
| 8:AH:42:ARG:O      | 8:AH:53:GLU:HG2    | 1.78                     | 0.81              |
| 10:AL:18:LYS:HZ1   | 10:AL:44:LYS:HZ2   | 1.24                     | 0.81              |
| 10:AL:24:VAL:CG2   | 10:AL:26:LYS:HG2   | 2.10                     | 0.81              |
| 10:AL:122:LEU:HG   | 15:AQ:71:GLY:O     | 1.80                     | 0.81              |
| 11:AM:47:ASP:HB3   | 11:AM:48:PRO:CD    | 2.09                     | 0.81              |
| 11:AM:72:PRO:O     | 11:AM:111:ARG:HB3  | 1.80                     | 0.81              |
| 15:AQ:54:ARG:HD3   | 15:AQ:55:ASN:ND2   | 1.94                     | 0.81              |
| 16:AR:13:LYS:O     | 16:AR:16:LYS:HB3   | 1.80                     | 0.81              |
| 16:AR:89:GLU:OE1   | 17:AS:50:PRO:HB3   | 1.79                     | 0.81              |
| 17:AS:6:LYS:HZ3    | 17:AS:10:LYS:HB3   | 1.44                     | 0.81              |
| 21:AW:24:LEU:HD23  | 21:AW:25:PRO:HD2   | 1.62                     | 0.81              |
| 25:Aa:68:ARG:NH1   | 25:Aa:68:ARG:HB2   | 1.95                     | 0.81              |
| 28:Ad:19:ARG:HB3   | 28:Ad:23:ARG:NH2   | 1.95                     | 0.81              |
| 34:BA:1316:G:O2'   | 34:BA:1318:A:N6    | 2.12                     | 0.81              |
| 37:BH:21:LEU:HD13  | 37:BH:67:ILE:HG22  | 1.62                     | 0.81              |
| 38:BI:109:ILE:HD13 | 38:BI:135:THR:CG2  | 2.09                     | 0.81              |
| 42:BM:97:LYS:NZ    | 42:BM:102:LEU:HD13 | 1.95                     | 0.81              |
| 45:BP:8:ASN:ND2    | 45:BP:8:ASN:H      | 1.77                     | 0.81              |
| 46:BQ:25:ILE:HD11  | 46:BQ:66:LEU:HD21  | 1.62                     | 0.81              |
| 46:BQ:88:ARG:N     | 52:BW:73:GLU:OE1   | 2.13                     | 0.81              |
| 49:BT:26:ARG:HD2   | 49:BT:31:LYS:N     | 1.94                     | 0.81              |
| 52:BW:9:VAL:HG13   | 52:BW:41:VAL:O     | 1.75                     | 0.81              |
| 57:BZ:7:ASN:HB3    | 57:BZ:71:ASN:O     | 1.80                     | 0.81              |
| 1:AA:242:G:C3'     | 29:Ae:4:MET:HG3    | 2.06                     | 0.81              |
| 1:AA:880:G:H3'     | 1:AA:881:G:H4'     | 1.61                     | 0.81              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1123:C:H2'    | 1:AA:1124:C:H6     | 1.45                     | 0.81              |
| 1:AA:1203:G:N3     | 1:AA:1203:G:C2'    | 2.42                     | 0.81              |
| 1:AA:1312:U:C2'    | 1:AA:1313:U:O4'    | 2.23                     | 0.81              |
| 1:AA:1510:A:H2'    | 1:AA:1511:A:C2     | 2.15                     | 0.81              |
| 1:AA:1819:A:H1'    | 1:AA:1821:A:N3     | 1.94                     | 0.81              |
| 1:AA:1924:C:C6     | 1:AA:1925:C:H5     | 1.98                     | 0.81              |
| 1:AA:1960:A:C4'    | 34:BA:1483:A:C2    | 2.62                     | 0.81              |
| 1:AA:2063:C:H1'    | 1:AA:2451:A:H2     | 1.43                     | 0.81              |
| 1:AA:2123:G:C1'    | 3:AC:215:THR:HG21  | 2.05                     | 0.81              |
| 1:AA:2345:G:O2'    | 1:AA:2346:A:OP2    | 1.98                     | 0.81              |
| 1:AA:2715:C:H2'    | 1:AA:2716:U:C6     | 2.13                     | 0.81              |
| 1:AA:2767:C:C2     | 1:AA:2768:C:C5     | 2.68                     | 0.81              |
| 3:AC:150:GLY:O     | 3:AC:154:ARG:HB2   | 1.80                     | 0.81              |
| 5:AE:154:LYS:HD2   | 5:AE:154:LYS:C     | 2.05                     | 0.81              |
| 7:AG:8:LYS:HZ1     | 7:AG:176:LEU:HD11  | 1.44                     | 0.81              |
| 7:AG:82:LEU:CD2    | 56:BE:52:G:P       | 2.68                     | 0.81              |
| 10:AL:70:LYS:HZ3   | 10:AL:102:VAL:HG13 | 1.42                     | 0.81              |
| 13:AO:74:LYS:HZ2   | 13:AO:74:LYS:HB2   | 1.45                     | 0.81              |
| 14:AP:74:ALA:HB1   | 14:AP:108:GLY:HA3  | 1.61                     | 0.81              |
| 20:AV:41:GLY:HA3   | 20:AV:61:ILE:O     | 1.79                     | 0.81              |
| 26:Ab:55:ARG:HD3   | 26:Ab:55:ARG:H     | 1.45                     | 0.81              |
| 27:Ac:52:VAL:HG12  | 27:Ac:53:LYS:N     | 1.92                     | 0.81              |
| 31:AI:54:ALA:HB2   | 31:AI:84:GLU:N     | 1.79                     | 0.81              |
| 34:BA:82:U:H2'     | 34:BA:85:U:C5      | 2.13                     | 0.81              |
| 34:BA:114:U:H2'    | 34:BA:115:G:C8     | 2.15                     | 0.81              |
| 34:BA:795:C:C4'    | 34:BA:1506:U:O2    | 2.28                     | 0.81              |
| 34:BA:1003:G:C5    | 34:BA:1004:A:H1'   | 2.15                     | 0.81              |
| 34:BA:1145:C:H1'   | 34:BA:1146:A:C8    | 2.15                     | 0.81              |
| 35:BF:223:ILE:CG2  | 35:BF:229:VAL:HA   | 2.08                     | 0.81              |
| 36:BG:182:ILE:HG23 | 36:BG:202:ILE:O    | 1.79                     | 0.81              |
| 37:BH:26:CYS:HA    | 37:BH:31:CYS:HB3   | 1.61                     | 0.81              |
| 42:BM:117:HIS:O    | 42:BM:119:ALA:N    | 2.12                     | 0.81              |
| 43:BN:9:ARG:O      | 43:BN:94:VAL:HG13  | 1.79                     | 0.81              |
| 46:BQ:19:LEU:O     | 46:BQ:25:ILE:HG21  | 1.78                     | 0.81              |
| 51:BV:33:ASP:CG    | 51:BV:34:TYR:N     | 2.33                     | 0.81              |
| 56:BD:6:G:N2       | 56:BD:67:C:C2      | 2.48                     | 0.81              |
| 1:AA:47:C:H6       | 1:AA:47:C:O5'      | 1.64                     | 0.81              |
| 1:AA:303:U:H2'     | 1:AA:304:G:O4'     | 1.78                     | 0.81              |
| 1:AA:457:A:H1'     | 1:AA:459:U:N3      | 1.94                     | 0.81              |
| 1:AA:535:C:H5'     | 16:AR:49:HIS:CB    | 2.10                     | 0.81              |
| 1:AA:746:A:O2'     | 1:AA:747:U:P       | 2.37                     | 0.81              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:972:G:H5''    | 1:AA:973:A:O3'     | 1.80                     | 0.81              |
| 1:AA:1058:G:C1'    | 32:AJ:116:ASN:ND2  | 2.43                     | 0.81              |
| 1:AA:1059:G:C1'    | 32:AJ:75:SER:H     | 1.92                     | 0.81              |
| 1:AA:1077:A:N6     | 1:AA:1088:A:O2'    | 2.13                     | 0.81              |
| 1:AA:1153:C:H2'    | 1:AA:1154:G:H8     | 1.45                     | 0.81              |
| 1:AA:1430:C:H2'    | 1:AA:1431:U:C6     | 2.15                     | 0.81              |
| 1:AA:1464:C:H5'    | 1:AA:1528:A:O2'    | 1.78                     | 0.81              |
| 1:AA:1531:C:H2'    | 1:AA:1532:C:C5     | 2.15                     | 0.81              |
| 1:AA:1555:G:OP2    | 1:AA:1555:G:H3'    | 1.80                     | 0.81              |
| 1:AA:1664:A:H3'    | 1:AA:1664:A:H8     | 1.44                     | 0.81              |
| 1:AA:1780:A:C3'    | 1:AA:1781:C:H5'    | 2.09                     | 0.81              |
| 1:AA:1834:U:H1'    | 1:AA:1969:A:C2     | 2.14                     | 0.81              |
| 1:AA:1944:U:H1'    | 1:AA:1955:U:C1'    | 2.09                     | 0.81              |
| 1:AA:2059:A:N1     | 1:AA:2503:A:C5     | 2.48                     | 0.81              |
| 1:AA:2135:A:H4'    | 1:AA:2136:C:H5     | 1.43                     | 0.81              |
| 1:AA:2227:A:H4'    | 4:AD:262:ARG:HG3   | 1.61                     | 0.81              |
| 1:AA:2269:A:OP1    | 1:AA:2269:A:H3'    | 1.81                     | 0.81              |
| 1:AA:2458:G:N7     | 1:AA:2490:G:C6     | 2.47                     | 0.81              |
| 1:AA:2555:U:O4     | 57:BZ:547:ARG:NH1  | 2.13                     | 0.81              |
| 1:AA:2659:G:OP1    | 8:AH:158:HIS:NE2   | 2.13                     | 0.81              |
| 1:AA:2709:G:C2'    | 1:AA:2710:C:H5'    | 2.09                     | 0.81              |
| 1:AA:2747:G:O6     | 1:AA:2755:C:H5'    | 1.80                     | 0.81              |
| 1:AA:2880:C:H4'    | 13:AO:90:ARG:HD2   | 1.62                     | 0.81              |
| 4:AD:8:PRO:HD2     | 4:AD:26:LYS:C      | 2.04                     | 0.81              |
| 5:AE:51:PHE:CE1    | 5:AE:53:PRO:HD3    | 2.14                     | 0.81              |
| 5:AE:52:LEU:HB2    | 5:AE:73:GLU:O      | 1.81                     | 0.81              |
| 6:AF:158:THR:CG2   | 6:AF:196:LEU:H     | 1.88                     | 0.81              |
| 7:AG:44:GLY:O      | 7:AG:72:ARG:HB3    | 1.80                     | 0.81              |
| 7:AG:92:VAL:HG13   | 7:AG:94:LEU:CD1    | 2.09                     | 0.81              |
| 8:AH:118:PRO:HG3   | 8:AH:144:VAL:HG21  | 1.61                     | 0.81              |
| 9:AK:10:GLU:OE2    | 9:AK:39:ARG:HD2    | 1.79                     | 0.81              |
| 9:AK:91:LEU:HD23   | 9:AK:98:VAL:HG21   | 1.61                     | 0.81              |
| 13:AO:54:LEU:HA    | 13:AO:57:ARG:HG3   | 1.61                     | 0.81              |
| 19:AU:84:ALA:HB3   | 19:AU:85:PRO:HD3   | 1.62                     | 0.81              |
| 20:AV:7:VAL:HG13   | 20:AV:71:LYS:HB3   | 1.59                     | 0.81              |
| 21:AW:152:ALA:HB3  | 21:AW:168:GLU:CA   | 2.10                     | 0.81              |
| 24:AZ:22:ALA:O     | 24:AZ:26:LEU:HD22  | 1.81                     | 0.81              |
| 25:Aa:59:PHE:HA    | 25:Aa:62:ARG:CD    | 2.10                     | 0.81              |
| 29:Ae:20:GLY:O     | 29:Ae:21:LYS:HG3   | 1.81                     | 0.81              |
| 32:AJ:44:ALA:CB    | 32:AJ:66:THR:HG22  | 2.09                     | 0.81              |
| 32:AJ:104:VAL:HG12 | 32:AJ:127:ILE:HD11 | 0.82                     | 0.81              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:232:G:H2'   | 34:BA:233:C:H6     | 1.45                     | 0.81              |
| 34:BA:1112:C:H1'  | 36:BG:179:ARG:HH22 | 1.45                     | 0.81              |
| 34:BA:1118:C:P    | 42:BM:103:THR:HG23 | 2.19                     | 0.81              |
| 34:BA:1202:G:H2'  | 34:BA:1203:C:C6    | 2.15                     | 0.81              |
| 34:BA:1323:G:H2'  | 34:BA:1324:A:C8    | 2.15                     | 0.81              |
| 34:BA:1435:G:C2   | 34:BA:1436:U:C4    | 2.69                     | 0.81              |
| 35:BF:59:GLU:CB   | 35:BF:221:LEU:HD21 | 2.09                     | 0.81              |
| 35:BF:150:SER:CA  | 35:BF:153:ARG:HB2  | 2.09                     | 0.81              |
| 38:BI:121:LYS:HZ2 | 38:BI:122:GLU:H    | 0.83                     | 0.81              |
| 39:BJ:3:ARG:HG3   | 39:BJ:65:VAL:O     | 1.78                     | 0.81              |
| 41:BL:82:HIS:O    | 41:BL:137:VAL:HG13 | 1.80                     | 0.81              |
| 41:BL:123:GLU:CD  | 41:BL:124:ALA:N    | 2.38                     | 0.81              |
| 44:BO:57:THR:HG23 | 44:BO:60:ALA:N     | 1.95                     | 0.81              |
| 45:BP:77:LEU:HD11 | 45:BP:107:ALA:HB2  | 1.61                     | 0.81              |
| 46:BQ:98:VAL:HG23 | 46:BQ:110:ARG:NH1  | 1.95                     | 0.81              |
| 48:BS:33:THR:O    | 48:BS:36:ILE:HG22  | 1.79                     | 0.81              |
| 50:BU:4:LYS:HD2   | 50:BU:5:VAL:N      | 1.95                     | 0.81              |
| 52:BW:18:LYS:HE3  | 52:BW:18:LYS:CA    | 2.10                     | 0.81              |
| 53:BX:21:LYS:HA   | 53:BX:24:LEU:HD12  | 1.63                     | 0.81              |
| 53:BX:77:ALA:O    | 53:BX:80:ARG:HB2   | 1.79                     | 0.81              |
| 55:BC:36:A:H2'    | 55:BC:37:A:O4'     | 1.81                     | 0.81              |
| 56:BE:21:A:C2     | 56:BE:46:G:C2      | 2.68                     | 0.81              |
| 57:BZ:13:HIS:CB   | 57:BZ:109:THR:CG2  | 2.58                     | 0.81              |
| 57:BZ:283:ASN:O   | 57:BZ:285:SER:N    | 2.11                     | 0.81              |
| 1:AA:146:G:H3'    | 1:AA:147:U:H5''    | 1.61                     | 0.81              |
| 1:AA:558:G:H5'    | 9:AK:112:LEU:CD1   | 2.09                     | 0.81              |
| 1:AA:880:G:C2'    | 1:AA:881:G:H4'     | 2.10                     | 0.81              |
| 1:AA:1114:G:C2    | 1:AA:1115:G:H1'    | 2.15                     | 0.81              |
| 1:AA:1319:G:O2'   | 1:AA:1320:C:H5'    | 1.80                     | 0.81              |
| 1:AA:1503:U:H2'   | 1:AA:1504:C:C6     | 2.15                     | 0.81              |
| 1:AA:1790:C:H2'   | 1:AA:1791:A:C8     | 2.15                     | 0.81              |
| 1:AA:2129:C:C5'   | 3:AC:6:ARG:HG3     | 2.10                     | 0.81              |
| 1:AA:2637:U:H5''  | 5:AE:81:ILE:CD1    | 2.09                     | 0.81              |
| 1:AA:2876:G:H4'   | 15:AQ:1:MET:N      | 1.95                     | 0.81              |
| 4:AD:157:ARG:HB3  | 4:AD:160:GLY:O     | 1.80                     | 0.81              |
| 5:AE:197:ILE:N    | 5:AE:197:ILE:HD12  | 1.95                     | 0.81              |
| 7:AG:78:SER:HB2   | 7:AG:82:LEU:CB     | 2.10                     | 0.81              |
| 10:AL:10:VAL:HG12 | 10:AL:17:ARG:HA    | 1.60                     | 0.81              |
| 15:AQ:51:ARG:O    | 15:AQ:66:VAL:HA    | 1.80                     | 0.81              |
| 17:AS:5:VAL:HG22  | 17:AS:39:LEU:HA    | 1.61                     | 0.81              |
| 17:AS:41:GLY:CA   | 17:AS:51:VAL:HG22  | 2.09                     | 0.81              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 19:AU:55:ASN:N     | 19:AU:55:ASN:HD22  | 1.76                     | 0.81              |
| 27:Ac:12:GLU:CG    | 27:Ac:13:CYS:H     | 1.93                     | 0.81              |
| 32:AJ:53:VAL:HG22  | 32:AJ:71:THR:C     | 2.04                     | 0.81              |
| 34:BA:55:A:C2'     | 34:BA:56:U:H5'     | 2.09                     | 0.81              |
| 34:BA:87:A:N7      | 34:BA:88:C:C4      | 2.48                     | 0.81              |
| 34:BA:129(A):G:N2  | 34:BA:191(A):G:C5  | 2.49                     | 0.81              |
| 34:BA:659:U:H2'    | 34:BA:660:G:H8     | 1.42                     | 0.81              |
| 34:BA:1104:G:C4'   | 35:BF:111:ARG:HE   | 1.93                     | 0.81              |
| 34:BA:1117:G:N1    | 34:BA:1184:G:C4    | 2.44                     | 0.81              |
| 34:BA:1454:G:P     | 53:BX:39:LYS:CD    | 2.68                     | 0.81              |
| 34:BA:1507:A:O2'   | 34:BA:1508:G:H5'   | 1.79                     | 0.81              |
| 34:BA:1514:C:H2'   | 34:BA:1515:C:C6    | 2.15                     | 0.81              |
| 36:BG:120:VAL:O    | 36:BG:123:GLN:HB2  | 1.79                     | 0.81              |
| 37:BH:10:ARG:C     | 37:BH:10:ARG:HD3   | 2.05                     | 0.81              |
| 46:BQ:16:ASP:H     | 46:BQ:34:LEU:CD2   | 1.94                     | 0.81              |
| 48:BS:75:PRO:CA    | 48:BS:78:TYR:HB3   | 2.11                     | 0.81              |
| 49:BT:56:ALA:HB3   | 49:BT:79:VAL:HG11  | 1.62                     | 0.81              |
| 52:BW:9:VAL:HG11   | 52:BW:41:VAL:O     | 1.79                     | 0.81              |
| 53:BX:81:LYS:HB3   | 53:BX:85:MET:HE3   | 1.62                     | 0.81              |
| 56:BE:5:G:H4'      | 56:BE:6:G:C5'      | 2.11                     | 0.81              |
| 57:BZ:258:LEU:HD13 | 57:BZ:260:LEU:HD22 | 1.60                     | 0.81              |
| 57:BZ:400:TYR:CZ   | 57:BZ:444:PRO:HG3  | 2.14                     | 0.81              |
| 1:AA:386:G:H2'     | 1:AA:386:G:N3      | 1.95                     | 0.81              |
| 1:AA:607:U:H2'     | 1:AA:607:U:O2      | 1.78                     | 0.81              |
| 1:AA:663:G:H4'     | 11:AM:18:ARG:HH11  | 1.45                     | 0.81              |
| 1:AA:759:G:H2'     | 1:AA:760:G:C8      | 2.16                     | 0.81              |
| 1:AA:970:C:H2'     | 1:AA:971:C:C6      | 2.15                     | 0.81              |
| 1:AA:1105:U:C6     | 1:AA:1107:G:O6     | 2.33                     | 0.81              |
| 1:AA:2121:G:C1'    | 3:AC:167:LYS:HE2   | 2.11                     | 0.81              |
| 1:AA:2195:C:H2'    | 1:AA:2196:C:O4'    | 1.81                     | 0.81              |
| 1:AA:2289:G:H5'    | 1:AA:2384:G:H1'    | 1.61                     | 0.81              |
| 1:AA:2459:A:H2     | 1:AA:2492:U:O4     | 1.62                     | 0.81              |
| 1:AA:2630:G:N3     | 1:AA:2894:G:C8     | 2.47                     | 0.81              |
| 1:AA:2740:A:H2'    | 1:AA:2741:A:C8     | 2.15                     | 0.81              |
| 2:AB:11:C:H3'      | 22:AX:74:ARG:CZ    | 2.11                     | 0.81              |
| 2:AB:30:C:H2'      | 2:AB:31:C:H5'      | 1.61                     | 0.81              |
| 2:AB:40:U:H1'      | 2:AB:45:A:H62      | 1.44                     | 0.81              |
| 3:AC:89:ALA:HB1    | 3:AC:154:ARG:CA    | 2.10                     | 0.81              |
| 4:AD:60:ARG:HD3    | 4:AD:62:TYR:CE2    | 2.15                     | 0.81              |
| 4:AD:155:LEU:O     | 4:AD:155:LEU:HD23  | 1.81                     | 0.81              |
| 5:AE:33:VAL:HG21   | 5:AE:77:ILE:CD1    | 2.10                     | 0.81              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 5:AE:104:VAL:HG12 | 5:AE:105:THR:N    | 1.94                     | 0.81              |
| 6:AF:104:LYS:HG3  | 6:AF:108:LYS:NZ   | 1.94                     | 0.81              |
| 11:AM:65:ARG:NH1  | 11:AM:68:GLN:NE2  | 2.28                     | 0.81              |
| 15:AQ:11:GLU:CD   | 15:AQ:11:GLU:N    | 2.38                     | 0.81              |
| 18:AT:64:MET:O    | 18:AT:66:GLU:N    | 2.13                     | 0.81              |
| 34:BA:582:U:H5'   | 48:BS:64:ARG:HH21 | 1.43                     | 0.81              |
| 34:BA:677:U:H2'   | 34:BA:678:U:C6    | 2.13                     | 0.81              |
| 34:BA:761:G:H5'   | 50:BU:103:GLY:N   | 1.96                     | 0.81              |
| 34:BA:859:A:O2'   | 34:BA:860:A:H5'   | 1.81                     | 0.81              |
| 34:BA:988:G:H2'   | 34:BA:989:C:O4'   | 1.80                     | 0.81              |
| 34:BA:1117:G:H21  | 34:BA:1184:G:H1'  | 1.46                     | 0.81              |
| 34:BA:1237:C:O2   | 34:BA:1335:C:H5'  | 1.80                     | 0.81              |
| 34:BA:1313:U:C4   | 34:BA:1325:C:C2   | 2.69                     | 0.81              |
| 35:BF:74:LYS:HE2  | 35:BF:76:GLN:HB2  | 1.59                     | 0.81              |
| 35:BF:97:TRP:CH2  | 35:BF:176:GLU:HG3 | 2.15                     | 0.81              |
| 41:BL:14:ARG:HH11 | 41:BL:14:ARG:CB   | 1.94                     | 0.81              |
| 44:BO:80:VAL:H    | 44:BO:104:GLN:NE2 | 1.77                     | 0.81              |
| 45:BP:27:LEU:O    | 45:BP:29:GLY:N    | 2.12                     | 0.81              |
| 46:BQ:48:LEU:HD13 | 46:BQ:53:VAL:CG2  | 2.11                     | 0.81              |
| 48:BS:6:GLU:HG2   | 48:BS:7:GLU:N     | 1.94                     | 0.81              |
| 50:BU:8:GLY:O     | 50:BU:56:VAL:HG13 | 1.80                     | 0.81              |
| 53:BX:51:GLU:HB3  | 53:BX:54:LYS:NZ   | 1.95                     | 0.81              |
| 53:BX:62:LEU:HA   | 53:BX:65:LYS:CG   | 2.10                     | 0.81              |
| 57:BZ:2:ILE:HG21  | 57:BZ:199:VAL:HB  | 1.62                     | 0.81              |
| 57:BZ:17:GLY:CA   | 57:BZ:20:THR:HG21 | 2.10                     | 0.81              |
| 57:BZ:19:THR:N    | 57:BZ:20:THR:OG1  | 2.13                     | 0.81              |
| 57:BZ:82:GLY:O    | 57:BZ:111:PHE:HE2 | 1.64                     | 0.81              |
| 57:BZ:250:LYS:C   | 57:BZ:273:ILE:CD1 | 2.52                     | 0.81              |
| 1:AA:871:U:H5''   | 12:AN:9:TYR:CZ    | 2.16                     | 0.81              |
| 1:AA:1048:A:N1    | 1:AA:1112:G:O2'   | 2.14                     | 0.81              |
| 1:AA:1079:C:O2    | 32:AJ:132:ARG:HB2 | 1.32                     | 0.81              |
| 1:AA:1203:G:N1    | 1:AA:1241:A:H8    | 1.78                     | 0.81              |
| 1:AA:1302:A:H5''  | 1:AA:1303:G:OP2   | 1.79                     | 0.81              |
| 1:AA:1778:U:H2'   | 1:AA:1779:U:C6    | 2.15                     | 0.81              |
| 1:AA:2125:G:OP1   | 3:AC:71:GLN:HB2   | 1.79                     | 0.81              |
| 1:AA:2226:C:H2'   | 1:AA:2227:A:O4'   | 1.80                     | 0.81              |
| 1:AA:2394:C:OP1   | 11:AM:57:THR:HA   | 1.81                     | 0.81              |
| 1:AA:2620:C:H4'   | 5:AE:156:MET:HB3  | 1.62                     | 0.81              |
| 1:AA:2629:A:C4'   | 1:AA:2895:U:C6    | 2.62                     | 0.81              |
| 1:AA:2756:U:N3    | 1:AA:2758:A:N6    | 2.29                     | 0.81              |
| 6:AF:156:LEU:HG   | 6:AF:173:VAL:HG23 | 1.60                     | 0.81              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 7:AG:11:TYR:O      | 7:AG:15:VAL:HG13   | 1.81                     | 0.81              |
| 7:AG:49:ASP:CA     | 7:AG:53:LEU:HD22   | 2.09                     | 0.81              |
| 10:AL:18:LYS:HE2   | 10:AL:44:LYS:HD3   | 1.60                     | 0.81              |
| 10:AL:67:LYS:HA    | 10:AL:67:LYS:HE2   | 1.61                     | 0.81              |
| 17:AS:62:LEU:HD22  | 17:AS:99:ILE:N     | 1.96                     | 0.81              |
| 18:AT:44:ALA:O     | 18:AT:47:VAL:HG23  | 1.79                     | 0.81              |
| 24:AZ:35:ARG:HH12  | 24:AZ:47:VAL:HG22  | 1.45                     | 0.81              |
| 27:Ac:11:LEU:HD13  | 29:Ae:35:GLN:HE22  | 1.45                     | 0.81              |
| 32:AJ:51:ALA:O     | 32:AJ:76:TYR:HB3   | 1.81                     | 0.81              |
| 32:AJ:98:ARG:HH12  | 32:AJ:101:TRP:H    | 1.28                     | 0.81              |
| 32:AJ:103:GLN:O    | 32:AJ:106:GLU:HG3  | 1.78                     | 0.81              |
| 34:BA:55:A:O2'     | 34:BA:56:U:H5'     | 1.81                     | 0.81              |
| 34:BA:423:G:H2'    | 34:BA:424:G:O4'    | 1.80                     | 0.81              |
| 34:BA:520:A:H62    | 34:BA:529:G:N2     | 1.79                     | 0.81              |
| 34:BA:994:A:C2     | 47:BR:5:ALA:HA     | 2.16                     | 0.81              |
| 34:BA:1151:A:N6    | 34:BA:1152:A:C5    | 2.48                     | 0.81              |
| 34:BA:1164:G:C5    | 34:BA:1165:C:C4    | 2.68                     | 0.81              |
| 37:BH:129:ASN:OD1  | 37:BH:144:ASP:HB3  | 1.79                     | 0.81              |
| 40:BK:29:LYS:HE3   | 40:BK:101:LEU:HD13 | 1.62                     | 0.81              |
| 40:BK:45:ASP:HA    | 40:BK:48:LYS:HZ3   | 1.43                     | 0.81              |
| 42:BM:19:LEU:HD23  | 42:BM:60:ASP:O     | 1.81                     | 0.81              |
| 46:BQ:65:LYS:HD3   | 46:BQ:65:LYS:N     | 1.95                     | 0.81              |
| 46:BQ:97:PRO:CG    | 46:BQ:101:GLN:HG3  | 2.11                     | 0.81              |
| 51:BV:74:ARG:HG2   | 51:BV:74:ARG:NH1   | 1.95                     | 0.81              |
| 57:BZ:382:VAL:HG23 | 57:BZ:578:VAL:CB   | 2.10                     | 0.81              |
| 57:BZ:397:GLN:CB   | 57:BZ:472:TYR:HB3  | 2.00                     | 0.81              |
| 57:BZ:495:LYS:CA   | 57:BZ:517:GLU:HA   | 2.04                     | 0.81              |
| 57:BZ:526:ILE:CG1  | 57:BZ:571:PHE:HZ   | 1.90                     | 0.81              |
| 1:AA:220:G:H4'     | 1:AA:234:C:C4'     | 2.09                     | 0.81              |
| 1:AA:281:G:N2      | 1:AA:283:A:H5''    | 1.96                     | 0.81              |
| 1:AA:339:U:H2'     | 1:AA:340:A:C8      | 2.16                     | 0.81              |
| 1:AA:508:G:O2'     | 1:AA:509:C:H5''    | 1.81                     | 0.81              |
| 1:AA:620:G:H5'     | 1:AA:621:A:OP1     | 1.79                     | 0.81              |
| 1:AA:860:U:C6      | 1:AA:2267:A:H4'    | 2.15                     | 0.81              |
| 1:AA:987:G:OP1     | 24:AZ:13:ILE:HG21  | 1.81                     | 0.81              |
| 1:AA:1299:G:O6     | 1:AA:1639:U:H5''   | 1.80                     | 0.81              |
| 1:AA:1343:G:H1'    | 1:AA:1597:A:C2     | 2.15                     | 0.81              |
| 1:AA:1508:A:H5''   | 1:AA:1510:A:C5     | 2.16                     | 0.81              |
| 1:AA:2393:A:P      | 29:Ae:32:LEU:HD11  | 2.21                     | 0.81              |
| 1:AA:2627:G:C2'    | 1:AA:2628:C:H5'    | 2.11                     | 0.81              |
| 1:AA:2629:A:N1     | 1:AA:2801:A:C2     | 2.49                     | 0.81              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AH:7:LEU:HB2     | 8:AH:52:VAL:HG13   | 1.61                     | 0.81              |
| 9:AK:33:LEU:O      | 9:AK:35:ARG:N      | 2.13                     | 0.81              |
| 10:AL:117:LEU:HD23 | 10:AL:118:ALA:N    | 1.96                     | 0.81              |
| 13:AO:104:ARG:HB2  | 13:AO:111:LEU:HD11 | 1.61                     | 0.81              |
| 15:AQ:7:ILE:HG13   | 15:AQ:8:LYS:N      | 1.96                     | 0.81              |
| 15:AQ:111:ARG:HA   | 15:AQ:114:LEU:CD1  | 2.10                     | 0.81              |
| 16:AR:88:ILE:HG22  | 17:AS:55:ALA:CB    | 2.10                     | 0.81              |
| 32:AJ:53:VAL:HG13  | 32:AJ:71:THR:H     | 1.45                     | 0.81              |
| 32:AJ:108:ALA:N    | 32:AJ:109:LYS:HB2  | 1.96                     | 0.81              |
| 34:BA:450:G:O6     | 34:BA:481:G:H2'    | 1.81                     | 0.81              |
| 34:BA:558:G:H3'    | 34:BA:559:A:C5'    | 2.09                     | 0.81              |
| 34:BA:558:G:H2'    | 34:BA:559:A:H2     | 1.45                     | 0.81              |
| 34:BA:1104:G:H4'   | 35:BF:111:ARG:NE   | 1.95                     | 0.81              |
| 34:BA:1155:G:N2    | 34:BA:1179:A:H61   | 1.77                     | 0.81              |
| 35:BF:61:LEU:HA    | 35:BF:64:ARG:HD3   | 1.61                     | 0.81              |
| 37:BH:13:ARG:HE    | 37:BH:40:PRO:HB3   | 1.45                     | 0.81              |
| 37:BH:61:LYS:HG3   | 37:BH:207:TYR:HE1  | 1.45                     | 0.81              |
| 55:BC:16:U:O4      | 55:BC:18:G:H3'     | 1.80                     | 0.81              |
| 57:BZ:73:VAL:CG1   | 57:BZ:88:VAL:HG22  | 2.11                     | 0.81              |
| 1:AA:269:U:C5'     | 1:AA:270(Y):G:H2'  | 2.09                     | 0.81              |
| 1:AA:270:A:C2      | 1:AA:370:G:H1'     | 2.14                     | 0.81              |
| 1:AA:287:C:C2'     | 1:AA:288:C:C5      | 2.64                     | 0.81              |
| 1:AA:336:C:H2'     | 1:AA:337:C:H5'     | 1.62                     | 0.81              |
| 1:AA:464:U:O5'     | 1:AA:464:U:H6      | 1.63                     | 0.81              |
| 1:AA:663:G:H4'     | 11:AM:18:ARG:NH1   | 1.96                     | 0.81              |
| 1:AA:963:U:H1'     | 1:AA:2250:G:H21    | 1.44                     | 0.81              |
| 1:AA:1049:C:C5     | 1:AA:2751:G:O6     | 2.16                     | 0.81              |
| 1:AA:1062:G:N7     | 1:AA:1063:G:N7     | 2.29                     | 0.81              |
| 1:AA:1142(A):A:H3' | 1:AA:1143:A:C5'    | 2.11                     | 0.81              |
| 1:AA:1238:G:O2'    | 1:AA:1239:G:H5'    | 1.80                     | 0.81              |
| 1:AA:1312:U:C3'    | 1:AA:1313:U:C6     | 2.63                     | 0.81              |
| 1:AA:1416:G:C2     | 1:AA:1583:A:N6     | 2.49                     | 0.81              |
| 1:AA:2733:A:H2'    | 1:AA:2734:A:O5'    | 1.81                     | 0.81              |
| 1:AA:2839:G:H4'    | 13:AO:49:ASP:OD1   | 1.81                     | 0.81              |
| 3:AC:156:ILE:C     | 3:AC:159:GLY:N     | 2.39                     | 0.81              |
| 4:AD:175:LEU:HD13  | 4:AD:175:LEU:C     | 2.06                     | 0.81              |
| 4:AD:177:LEU:HD23  | 4:AD:181:GLU:O     | 1.81                     | 0.81              |
| 5:AE:92:THR:C      | 5:AE:94:GLU:H      | 1.88                     | 0.81              |
| 5:AE:92:THR:H      | 5:AE:95:ILE:HD13   | 1.43                     | 0.81              |
| 7:AG:94:LEU:CB     | 7:AG:99:MET:HE3    | 2.10                     | 0.81              |
| 8:AH:99:VAL:CG2    | 8:AH:104:GLU:HG2   | 2.11                     | 0.81              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AL:11:ALA:HB3   | 10:AL:97:ARG:HH12  | 1.43                     | 0.81              |
| 11:AM:16:ARG:CD    | 11:AM:19:VAL:HG22  | 2.10                     | 0.81              |
| 12:AN:26:TYR:HD1   | 12:AN:27:VAL:N     | 1.79                     | 0.81              |
| 12:AN:42:ILE:CD1   | 12:AN:47:ILE:HG13  | 2.10                     | 0.81              |
| 16:AR:7:GLY:O      | 16:AR:8:VAL:C      | 2.24                     | 0.81              |
| 22:AX:7:LEU:H      | 56:BE:74:C:N4      | 1.79                     | 0.81              |
| 22:AX:32:ARG:NH1   | 22:AX:32:ARG:HB2   | 1.95                     | 0.81              |
| 23:AY:52:ILE:O     | 23:AY:55:LEU:HB2   | 1.80                     | 0.81              |
| 24:AZ:22:ALA:HB1   | 24:AZ:46:ASN:OD1   | 1.80                     | 0.81              |
| 32:AJ:92:GLY:HA3   | 32:AJ:93:ARG:CB    | 2.07                     | 0.81              |
| 33:Ag:7:UNK:CB     | 33:Ag:143:UNK:O    | 2.29                     | 0.81              |
| 34:BA:867:G:H2'    | 34:BA:868:C:C6     | 2.16                     | 0.81              |
| 34:BA:1135:U:H2'   | 34:BA:1137:C:C6    | 2.16                     | 0.81              |
| 35:BF:80:ILE:HD12  | 35:BF:208:ILE:CG1  | 2.11                     | 0.81              |
| 35:BF:84:GLU:CG    | 35:BF:234:PRO:HD2  | 2.10                     | 0.81              |
| 35:BF:104:ASN:OD1  | 35:BF:108:ILE:HG12 | 1.80                     | 0.81              |
| 37:BH:155:LEU:HD23 | 37:BH:158:ILE:HD11 | 1.61                     | 0.81              |
| 41:BL:14:ARG:HG2   | 41:BL:18:ARG:HE    | 1.46                     | 0.81              |
| 43:BN:6:ILE:CG2    | 43:BN:98:ILE:HG13  | 2.11                     | 0.81              |
| 44:BO:18:ARG:HA    | 44:BO:80:VAL:HG23  | 1.63                     | 0.81              |
| 57:BZ:27:GLN:OE1   | 57:BZ:183:MET:HB2  | 1.79                     | 0.81              |
| 57:BZ:206:GLN:O    | 57:BZ:227:LYS:CG   | 2.28                     | 0.81              |
| 57:BZ:309:MET:CG   | 57:BZ:358:VAL:HB   | 2.10                     | 0.81              |
| 57:BZ:538:LEU:HB2  | 57:BZ:539:THR:CB   | 2.11                     | 0.81              |
| 1:AA:292:C:H2'     | 1:AA:293:U:C2      | 2.16                     | 0.81              |
| 1:AA:477:A:H2'     | 1:AA:478:A:C8      | 2.15                     | 0.81              |
| 1:AA:894:C:C2'     | 1:AA:895:U:H5'     | 2.10                     | 0.81              |
| 1:AA:935:C:H2'     | 1:AA:936:C:H6      | 1.46                     | 0.81              |
| 1:AA:1062:G:H1'    | 1:AA:1063:G:C5'    | 2.10                     | 0.81              |
| 1:AA:1263:U:O3'    | 26:Ab:10:LYS:HD3   | 1.81                     | 0.81              |
| 1:AA:1453:A:N6     | 13:AO:63:ARG:HH21  | 1.77                     | 0.81              |
| 1:AA:1958:C:O2'    | 1:AA:1959:G:H5'    | 1.81                     | 0.81              |
| 1:AA:2021:C:H2'    | 1:AA:2022:U:OP1    | 1.80                     | 0.81              |
| 1:AA:2022:U:H5'    | 1:AA:2023:G:OP2    | 1.81                     | 0.81              |
| 1:AA:2352:A:H2'    | 1:AA:2353:G:O4'    | 1.81                     | 0.81              |
| 1:AA:2447:G:C5'    | 1:AA:2500:U:OP2    | 2.28                     | 0.81              |
| 1:AA:2597:G:H5'    | 4:AD:242:ARG:HG2   | 1.62                     | 0.81              |
| 1:AA:2734:A:N6     | 1:AA:2770:G:H1'    | 1.96                     | 0.81              |
| 1:AA:2865:U:C4     | 1:AA:2866:U:C5     | 2.69                     | 0.81              |
| 4:AD:258:LYS:HA    | 4:AD:261:LYS:CE    | 2.11                     | 0.81              |
| 5:AE:91:VAL:CG2    | 5:AE:93:VAL:HG13   | 2.09                     | 0.81              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 5:AE:104:VAL:HG22  | 5:AE:198:VAL:CG1   | 2.10                     | 0.81              |
| 8:AH:11:VAL:HG12   | 8:AH:11:VAL:O      | 1.80                     | 0.81              |
| 9:AK:42:TRP:O      | 9:AK:43:THR:HG23   | 1.81                     | 0.81              |
| 9:AK:89:LYS:HG2    | 9:AK:90:MET:N      | 1.96                     | 0.81              |
| 10:AL:116:SER:CB   | 34:BA:345:C:O2     | 2.29                     | 0.81              |
| 11:AM:16:ARG:HD3   | 11:AM:19:VAL:HG22  | 1.62                     | 0.81              |
| 17:AS:35:LEU:H     | 17:AS:61:VAL:HG13  | 1.45                     | 0.81              |
| 17:AS:73:SER:OG    | 17:AS:89:GLN:HB2   | 1.80                     | 0.81              |
| 18:AT:41:LYS:HB3   | 18:AT:41:LYS:NZ    | 1.94                     | 0.81              |
| 20:AV:12:THR:HG23  | 20:AV:73:ARG:HG3   | 1.63                     | 0.81              |
| 22:AX:72:ARG:HG3   | 22:AX:78:TYR:HB2   | 1.63                     | 0.81              |
| 24:AZ:31:LEU:HD12  | 24:AZ:32:GLN:NE2   | 1.95                     | 0.81              |
| 26:Ab:55:ARG:O     | 26:Ab:56:LYS:HG2   | 1.79                     | 0.81              |
| 32:AJ:22:PRO:C     | 32:AJ:24:GLY:HA3   | 2.06                     | 0.81              |
| 32:AJ:75:SER:HB3   | 32:AJ:130:SER:CA   | 2.10                     | 0.81              |
| 32:AJ:108:ALA:HB2  | 32:AJ:111:LYS:HB3  | 1.63                     | 0.81              |
| 34:BA:29:G:H5'     | 34:BA:296:U:OP1    | 1.80                     | 0.81              |
| 34:BA:573:A:N3     | 34:BA:883:C:O2'    | 2.13                     | 0.81              |
| 34:BA:1433:A:H2'   | 34:BA:1434:A:O4'   | 1.81                     | 0.81              |
| 34:BA:1480:G:O2'   | 34:BA:1481:U:H5'   | 1.81                     | 0.81              |
| 35:BF:208:ILE:HA   | 35:BF:211:ILE:HB   | 1.63                     | 0.81              |
| 35:BF:221:LEU:HD13 | 35:BF:221:LEU:C    | 2.06                     | 0.81              |
| 35:BF:234:PRO:HA   | 35:BF:238:LEU:HD13 | 1.60                     | 0.81              |
| 36:BG:181:ASN:ND2  | 36:BG:206:GLU:HG2  | 1.96                     | 0.81              |
| 39:BJ:48:LEU:HD23  | 39:BJ:48:LEU:N     | 1.94                     | 0.81              |
| 44:BO:87:THR:HA    | 44:BO:91:ARG:NH1   | 1.96                     | 0.81              |
| 51:BV:49:LYS:H     | 51:BV:49:LYS:HE3   | 1.43                     | 0.81              |
| 51:BV:55:ARG:HB3   | 51:BV:55:ARG:NH1   | 1.96                     | 0.81              |
| 53:BX:51:GLU:HA    | 53:BX:54:LYS:HD2   | 1.61                     | 0.81              |
| 56:BD:7:A:N1       | 56:BD:67:C:C4      | 2.48                     | 0.81              |
| 56:BD:51:U:N3      | 56:BD:64:A:C6      | 2.47                     | 0.81              |
| 57:BZ:545:ASN:CB   | 57:BZ:546:MET:HE3  | 2.11                     | 0.81              |
| 1:AA:245:G:N2      | 1:AA:254:G:H1'     | 1.96                     | 0.81              |
| 1:AA:531:C:N4      | 16:AR:38:THR:HA    | 1.95                     | 0.81              |
| 1:AA:728:G:C6      | 1:AA:762:U:H2'     | 2.16                     | 0.81              |
| 1:AA:828:U:C2'     | 1:AA:829:A:H8      | 1.90                     | 0.81              |
| 1:AA:930:U:O5'     | 1:AA:930:U:C6      | 2.35                     | 0.81              |
| 1:AA:1001:A:H2'    | 1:AA:1002:G:O4'    | 1.81                     | 0.81              |
| 1:AA:1624:G:H2'    | 1:AA:1625:C:H5     | 1.46                     | 0.81              |
| 1:AA:1964:G:C2     | 1:AA:1967:C:C5     | 2.69                     | 0.81              |
| 1:AA:2331:G:N2     | 1:AA:2385:C:C4     | 2.49                     | 0.81              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2715:C:O2'    | 1:AA:2716:U:H5'   | 1.80                     | 0.81              |
| 1:AA:2788:C:C4     | 1:AA:2789:C:C5    | 2.68                     | 0.81              |
| 1:AA:2789:C:O2'    | 1:AA:2791:C:H5''  | 1.80                     | 0.81              |
| 1:AA:2816:C:O2'    | 1:AA:2817:G:H5'   | 1.80                     | 0.81              |
| 3:AC:29:VAL:HA     | 3:AC:32:LEU:HD12  | 1.61                     | 0.81              |
| 3:AC:131:LEU:HB3   | 3:AC:136:LEU:C    | 2.06                     | 0.81              |
| 4:AD:18:VAL:C      | 4:AD:20:ASP:H     | 1.86                     | 0.81              |
| 4:AD:121:PRO:C     | 4:AD:135:PHE:HE2  | 1.89                     | 0.81              |
| 7:AG:26:GLN:NE2    | 7:AG:31:VAL:HG21  | 1.96                     | 0.81              |
| 9:AK:127:ASP:C     | 9:AK:129:PRO:HD2  | 2.06                     | 0.81              |
| 17:AS:20:LEU:HD13  | 17:AS:68:LYS:NZ   | 1.96                     | 0.81              |
| 19:AU:47:PHE:CE2   | 19:AU:89:ILE:HA   | 2.14                     | 0.81              |
| 21:AW:102:LEU:HD13 | 21:AW:137:ILE:O   | 1.80                     | 0.81              |
| 22:AX:19:LYS:HZ1   | 22:AX:41:ARG:HE   | 1.26                     | 0.81              |
| 34:BA:9:G:H5''     | 38:BI:126:ARG:CD  | 2.10                     | 0.81              |
| 34:BA:582:U:H5'    | 48:BS:64:ARG:NH2  | 1.96                     | 0.81              |
| 34:BA:692:U:H1'    | 34:BA:694:A:C8    | 2.16                     | 0.81              |
| 34:BA:1037:C:H2'   | 34:BA:1038:C:C6   | 2.16                     | 0.81              |
| 34:BA:1117:G:N1    | 34:BA:1184:G:C8   | 2.49                     | 0.81              |
| 34:BA:1277:C:H4'   | 34:BA:1282:C:C1'  | 2.11                     | 0.81              |
| 35:BF:10:LEU:HD23  | 35:BF:11:LEU:CD2  | 2.11                     | 0.81              |
| 36:BG:24:ALA:HB1   | 36:BG:28:GLN:OE1  | 1.80                     | 0.81              |
| 36:BG:156:ARG:HD2  | 36:BG:163:ALA:HB2 | 1.63                     | 0.81              |
| 37:BH:25:ARG:C     | 37:BH:27:TYR:H    | 1.89                     | 0.81              |
| 39:BJ:6:VAL:HG22   | 39:BJ:8:ILE:CD1   | 2.11                     | 0.81              |
| 40:BK:35:LYS:HZ1   | 40:BK:38:LEU:HD22 | 1.41                     | 0.81              |
| 41:BL:103:VAL:HB   | 41:BL:108:GLY:C   | 2.06                     | 0.81              |
| 43:BN:96:ILE:O     | 43:BN:96:ILE:HG13 | 1.79                     | 0.81              |
| 45:BP:105:TYR:O    | 57:BZ:329:ARG:NH1 | 2.14                     | 0.81              |
| 48:BS:31:LEU:HA    | 48:BS:34:LEU:CD2  | 2.09                     | 0.81              |
| 48:BS:42:HIS:CG    | 48:BS:43:LEU:N    | 2.48                     | 0.81              |
| 51:BV:47:THR:H     | 51:BV:49:LYS:HZ3  | 1.25                     | 0.81              |
| 57:BZ:26:LEU:HD12  | 57:BZ:29:SER:HB3  | 1.61                     | 0.81              |
| 57:BZ:63:ALA:HB1   | 57:BZ:65:LYS:CG   | 2.11                     | 0.81              |
| 57:BZ:82:GLY:CA    | 57:BZ:361:ARG:HB3 | 2.11                     | 0.81              |
| 57:BZ:491:ASN:OD1  | 57:BZ:536:ASN:CB  | 2.27                     | 0.81              |
| 1:AA:120:U:O2'     | 1:AA:121:G:H5''   | 1.81                     | 0.80              |
| 1:AA:312:G:N3      | 1:AA:312:G:H2'    | 1.95                     | 0.80              |
| 1:AA:609:A:C6      | 1:AA:609(A):G:O6  | 2.35                     | 0.80              |
| 1:AA:624:C:H3'     | 1:AA:624:C:C6     | 2.15                     | 0.80              |
| 1:AA:775:G:N2      | 1:AA:787:U:H2'    | 1.95                     | 0.80              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1064:C:H3'   | 1:AA:1065:U:H5     | 1.45                     | 0.80              |
| 1:AA:1161:C:H1'   | 17:AS:22:VAL:HG11  | 1.60                     | 0.80              |
| 1:AA:1387:C:H2'   | 1:AA:1388:G:C8     | 2.16                     | 0.80              |
| 1:AA:1460:A:N1    | 1:AA:1732:A:N1     | 2.28                     | 0.80              |
| 1:AA:2177:C:O2'   | 3:AC:211:SER:CB    | 2.29                     | 0.80              |
| 1:AA:2254:C:H2'   | 1:AA:2255:G:C5'    | 2.11                     | 0.80              |
| 1:AA:2394:C:N4    | 1:AA:2422:A:H61    | 1.79                     | 0.80              |
| 1:AA:2453:A:O2'   | 1:AA:2572:A:H1'    | 1.80                     | 0.80              |
| 1:AA:2468:G:O2'   | 1:AA:2469:A:H5'    | 1.79                     | 0.80              |
| 1:AA:2553:G:N2    | 1:AA:2554:U:C1'    | 2.35                     | 0.80              |
| 1:AA:2820:A:H5'   | 1:AA:2821:A:N7     | 1.95                     | 0.80              |
| 2:AB:82:G:H2'     | 2:AB:83:G:H8       | 1.46                     | 0.80              |
| 5:AE:133:LYS:HZ1  | 5:AE:137:HIS:HB3   | 1.45                     | 0.80              |
| 7:AG:36:LYS:HB2   | 7:AG:95:ARG:HD3    | 1.61                     | 0.80              |
| 7:AG:102:PHE:CD2  | 7:AG:106:LEU:HD12  | 2.15                     | 0.80              |
| 8:AH:41:MET:SD    | 8:AH:68:THR:OG1    | 2.38                     | 0.80              |
| 14:AP:95:HIS:HA   | 14:AP:99:LYS:HD2   | 1.63                     | 0.80              |
| 20:AV:45:VAL:HG12 | 20:AV:57:GLN:OE1   | 1.81                     | 0.80              |
| 32:AJ:16:LYS:O    | 32:AJ:45:THR:OG1   | 1.98                     | 0.80              |
| 34:BA:265:G:H2'   | 34:BA:267:C:C5     | 2.14                     | 0.80              |
| 34:BA:280:C:H5''  | 34:BA:281:G:OP2    | 1.81                     | 0.80              |
| 34:BA:333:G:H4'   | 53:BX:16:HIS:CD2   | 2.16                     | 0.80              |
| 34:BA:449:C:O2    | 49:BT:42:ARG:HG2   | 1.81                     | 0.80              |
| 34:BA:1068:G:N7   | 34:BA:1094:G:C8    | 2.49                     | 0.80              |
| 34:BA:1151:A:C6   | 34:BA:1152:A:C5    | 2.68                     | 0.80              |
| 34:BA:1154:G:O2'  | 34:BA:1155:G:H5'   | 1.80                     | 0.80              |
| 34:BA:1317:C:C4   | 34:BA:1318:A:C5    | 2.68                     | 0.80              |
| 45:BP:85:ILE:HD11 | 45:BP:98:TYR:HB2   | 1.63                     | 0.80              |
| 57:BZ:20:THR:N    | 57:BZ:23:ASP:OD1   | 2.14                     | 0.80              |
| 57:BZ:406:ASP:CA  | 57:BZ:407:VAL:HG13 | 2.11                     | 0.80              |
| 57:BZ:499:PHE:HB3 | 57:BZ:540:GLY:CA   | 2.10                     | 0.80              |
| 1:AA:371:A:O2'    | 1:AA:372:G:OP1     | 1.99                     | 0.80              |
| 1:AA:855:G:H21    | 22:AX:27:GLU:CB    | 1.93                     | 0.80              |
| 1:AA:917:A:H3'    | 1:AA:918:A:H5''    | 1.62                     | 0.80              |
| 1:AA:1609:A:C8    | 1:AA:1616:A:H1'    | 2.16                     | 0.80              |
| 1:AA:2415:G:H5''  | 11:AM:61:ARG:HD2   | 1.62                     | 0.80              |
| 1:AA:2519:U:H5''  | 1:AA:2520:C:OP1    | 1.81                     | 0.80              |
| 1:AA:2776:A:H4'   | 1:AA:2777:G:C5'    | 2.12                     | 0.80              |
| 3:AC:30:LYS:HG2   | 3:AC:178:ALA:O     | 1.81                     | 0.80              |
| 3:AC:75:LEU:HD11  | 3:AC:99:ILE:HD13   | 1.60                     | 0.80              |
| 3:AC:175:VAL:HG12 | 3:AC:189:ILE:CA    | 2.04                     | 0.80              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 6:AF:43:LYS:HA     | 6:AF:97:TYR:O      | 1.81                     | 0.80              |
| 6:AF:64:ILE:HD13   | 6:AF:65:TRP:H      | 1.43                     | 0.80              |
| 7:AG:53:LEU:HB3    | 7:AG:69:ALA:O      | 1.80                     | 0.80              |
| 7:AG:59:GLU:OE2    | 7:AG:152:LEU:HD13  | 1.80                     | 0.80              |
| 7:AG:113:ARG:HD3   | 7:AG:139:LEU:CD2   | 2.11                     | 0.80              |
| 8:AH:103:LEU:HG    | 8:AH:105:LEU:HD11  | 1.62                     | 0.80              |
| 9:AK:100:GLU:O     | 9:AK:103:VAL:HG13  | 1.82                     | 0.80              |
| 12:AN:51:ARG:HD3   | 12:AN:52:VAL:N     | 1.96                     | 0.80              |
| 13:AO:36:THR:O     | 13:AO:111:LEU:HB3  | 1.80                     | 0.80              |
| 21:AW:144:LEU:CB   | 21:AW:174:VAL:HG11 | 2.10                     | 0.80              |
| 24:AZ:23:LEU:O     | 24:AZ:28:LEU:HG    | 1.81                     | 0.80              |
| 27:Ac:15:GLU:CD    | 27:Ac:21:TYR:HB3   | 2.06                     | 0.80              |
| 32:AJ:27:LEU:HD11  | 32:AJ:57:ILE:CB    | 2.11                     | 0.80              |
| 32:AJ:27:LEU:HB3   | 32:AJ:59:ILE:HG23  | 1.63                     | 0.80              |
| 34:BA:112:G:O2'    | 34:BA:113:G:H5'    | 1.81                     | 0.80              |
| 34:BA:262:A:H2'    | 34:BA:263:A:N7     | 1.97                     | 0.80              |
| 34:BA:477:G:H2'    | 34:BA:478:A:C8     | 2.16                     | 0.80              |
| 34:BA:952:U:O2'    | 34:BA:965:A:N6     | 2.14                     | 0.80              |
| 34:BA:1255:G:H21   | 34:BA:1276:G:N2    | 1.79                     | 0.80              |
| 34:BA:1256:A:N1    | 34:BA:1278:U:O2'   | 2.13                     | 0.80              |
| 34:BA:1405:G:C6    | 34:BA:1497:G:C6    | 2.69                     | 0.80              |
| 35:BF:97:TRP:HZ2   | 35:BF:102:LEU:CD1  | 1.94                     | 0.80              |
| 35:BF:196:LEU:HD12 | 35:BF:197:VAL:N    | 1.97                     | 0.80              |
| 37:BH:127:THR:O    | 37:BH:146:ILE:HA   | 1.81                     | 0.80              |
| 43:BN:49:VAL:HG13  | 47:BR:41:ARG:CD    | 2.11                     | 0.80              |
| 45:BP:9:GLN:HA     | 45:BP:12:ARG:HH12  | 1.46                     | 0.80              |
| 51:BV:45:SER:OG    | 51:BV:51:LEU:HD11  | 1.80                     | 0.80              |
| 53:BX:23:ARG:HA    | 53:BX:26:ASN:OD1   | 1.81                     | 0.80              |
| 57:BZ:2:ILE:CG2    | 57:BZ:199:VAL:CB   | 2.58                     | 0.80              |
| 57:BZ:6:ARG:HG2    | 57:BZ:68:TYR:O     | 1.81                     | 0.80              |
| 57:BZ:169:ASN:HD21 | 57:BZ:183:MET:HB3  | 1.46                     | 0.80              |
| 57:BZ:240:ILE:HD13 | 57:BZ:287:THR:HG23 | 0.84                     | 0.80              |
| 1:AA:475:U:H4'     | 1:AA:510:C:OP2     | 1.80                     | 0.80              |
| 1:AA:601:C:C1'     | 6:AF:104:LYS:HZ3   | 1.95                     | 0.80              |
| 1:AA:825:C:H1'     | 1:AA:2428:G:N2     | 1.96                     | 0.80              |
| 1:AA:1039:G:O2'    | 1:AA:1040:C:O5'    | 1.98                     | 0.80              |
| 1:AA:1068:G:H5'    | 1:AA:1096:A:H1'    | 1.61                     | 0.80              |
| 1:AA:1542:G:C1'    | 1:AA:1543:A:C6     | 2.63                     | 0.80              |
| 1:AA:1617:C:H2'    | 1:AA:1617:C:O2     | 1.79                     | 0.80              |
| 1:AA:1638:C:H5''   | 1:AA:2710:C:H1'    | 1.63                     | 0.80              |
| 1:AA:1664:A:H2'    | 1:AA:1665:A:C8     | 2.15                     | 0.80              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1889:A:H2'   | 1:AA:1890:A:C8     | 2.16                     | 0.80              |
| 1:AA:2051:A:H4'   | 5:AE:141:ILE:CD1   | 2.11                     | 0.80              |
| 1:AA:2123:G:O4'   | 3:AC:172:HIS:CB    | 2.28                     | 0.80              |
| 1:AA:2676:C:H2'   | 1:AA:2677:G:H8     | 1.45                     | 0.80              |
| 2:AB:24:G:H2'     | 2:AB:56:G:O6       | 1.81                     | 0.80              |
| 3:AC:62:VAL:HB    | 3:AC:192:PHE:HA    | 1.63                     | 0.80              |
| 4:AD:172:TYR:O    | 4:AD:184:LYS:HE2   | 1.80                     | 0.80              |
| 6:AF:171:PRO:HB2  | 6:AF:172:TRP:HE3   | 1.46                     | 0.80              |
| 7:AG:55:LYS:HE2   | 7:AG:151:ALA:HB1   | 1.61                     | 0.80              |
| 7:AG:73:ALA:N     | 7:AG:88:ILE:HD11   | 1.96                     | 0.80              |
| 7:AG:131:TYR:CZ   | 7:AG:157:ILE:O     | 2.34                     | 0.80              |
| 9:AK:85:ILE:HB    | 9:AK:90:MET:CE     | 2.11                     | 0.80              |
| 10:AL:59:LYS:N    | 10:AL:59:LYS:HE2   | 1.96                     | 0.80              |
| 12:AN:74:TYR:HD2  | 12:AN:74:TYR:N     | 1.78                     | 0.80              |
| 13:AO:54:LEU:O    | 13:AO:57:ARG:HB2   | 1.80                     | 0.80              |
| 15:AQ:32:TYR:N    | 15:AQ:32:TYR:CD1   | 2.48                     | 0.80              |
| 18:AT:3:ALA:HB3   | 18:AT:107:LEU:HB3  | 1.62                     | 0.80              |
| 18:AT:40:ASN:OD1  | 18:AT:41:LYS:HG3   | 1.81                     | 0.80              |
| 19:AU:66:LEU:HG   | 19:AU:69:TYR:C     | 2.05                     | 0.80              |
| 20:AV:8:LYS:HA    | 20:AV:28:LYS:HD2   | 1.60                     | 0.80              |
| 21:AW:4:ARG:O     | 21:AW:5:LEU:HD23   | 1.81                     | 0.80              |
| 25:Aa:65:ASP:CA   | 25:Aa:68:ARG:NH2   | 2.42                     | 0.80              |
| 26:Ab:47:PRO:C    | 26:Ab:58:LEU:HG    | 2.05                     | 0.80              |
| 27:Ac:24:GLU:CG   | 29:Ae:37:SER:HB2   | 2.10                     | 0.80              |
| 28:Ad:43:THR:C    | 28:Ad:45:ALA:H     | 1.90                     | 0.80              |
| 32:AJ:12:LEU:HD11 | 32:AJ:41:PHE:CZ    | 2.14                     | 0.80              |
| 34:BA:37:U:O4     | 34:BA:38:G:C4      | 2.34                     | 0.80              |
| 34:BA:263:A:H2'   | 34:BA:264:U:C5'    | 2.07                     | 0.80              |
| 34:BA:270:A:H2'   | 34:BA:271:C:H6     | 1.45                     | 0.80              |
| 34:BA:1239:A:H4'  | 34:BA:1240:U:C5'   | 2.11                     | 0.80              |
| 34:BA:1308:U:H5'  | 46:BQ:110:ARG:HH11 | 1.41                     | 0.80              |
| 34:BA:1308:U:O3'  | 46:BQ:92:HIS:CE1   | 2.34                     | 0.80              |
| 41:BL:80:ILE:H    | 41:BL:80:ILE:CD1   | 1.94                     | 0.80              |
| 42:BM:9:ARG:O     | 42:BM:104:ARG:HG2  | 1.81                     | 0.80              |
| 42:BM:29:ASN:OD1  | 42:BM:64:THR:HA    | 1.82                     | 0.80              |
| 43:BN:72:VAL:O    | 43:BN:73:ASP:HB2   | 1.78                     | 0.80              |
| 45:BP:87:GLY:HA2  | 45:BP:98:TYR:HB3   | 1.63                     | 0.80              |
| 57:BZ:373:MET:CE  | 57:BZ:380:LEU:HD23 | 2.11                     | 0.80              |
| 57:BZ:482:GLN:H   | 57:BZ:573:ASP:CG   | 1.87                     | 0.80              |
| 57:BZ:502:PHE:CZ  | 57:BZ:556:VAL:N    | 2.50                     | 0.80              |
| 1:AA:90:U:H4'     | 1:AA:91:A:O5'      | 1.80                     | 0.80              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:875:G:N2     | 1:AA:902:C:H1'     | 1.95                     | 0.80              |
| 1:AA:1033:U:H5'   | 30:Af:16:VAL:HG21  | 1.64                     | 0.80              |
| 1:AA:1037:G:C2    | 1:AA:1119:C:O2     | 2.33                     | 0.80              |
| 1:AA:1048:A:H8    | 1:AA:1110:G:HO2'   | 1.26                     | 0.80              |
| 1:AA:1131:G:OP1   | 9:AK:79:PRO:HD3    | 1.80                     | 0.80              |
| 1:AA:1930:G:N2    | 1:AA:1969:A:OP2    | 2.13                     | 0.80              |
| 1:AA:2468:G:H3'   | 1:AA:2476:A:N1     | 1.96                     | 0.80              |
| 1:AA:2647:U:HO2'  | 1:AA:2648:C:H6     | 1.27                     | 0.80              |
| 1:AA:2652:C:O2'   | 1:AA:2653:U:OP1    | 1.98                     | 0.80              |
| 1:AA:2687:U:C2    | 1:AA:2688:U:H6     | 2.00                     | 0.80              |
| 3:AC:73:ARG:HG2   | 3:AC:92:ASP:OD2    | 1.82                     | 0.80              |
| 4:AD:119:ALA:HB1  | 4:AD:130:ALA:O     | 1.79                     | 0.80              |
| 6:AF:12:LEU:O     | 6:AF:14:PRO:HD3    | 1.81                     | 0.80              |
| 6:AF:153:SER:HA   | 6:AF:172:TRP:O     | 1.81                     | 0.80              |
| 10:AL:9:GLU:HA    | 10:AL:17:ARG:O     | 1.80                     | 0.80              |
| 10:AL:105:GLU:O   | 10:AL:111:PHE:CZ   | 2.31                     | 0.80              |
| 14:AP:89:ARG:CG   | 14:AP:90:GLY:H     | 1.94                     | 0.80              |
| 15:AQ:21:GLU:HG3  | 15:AQ:88:ILE:HD13  | 1.64                     | 0.80              |
| 16:AR:55:ARG:HD2  | 16:AR:55:ARG:H     | 1.46                     | 0.80              |
| 17:AS:57:VAL:HG12 | 17:AS:58:VAL:N     | 1.96                     | 0.80              |
| 19:AU:40:LYS:HA   | 19:AU:51:VAL:HG11  | 1.63                     | 0.80              |
| 21:AW:57:ILE:HG22 | 21:AW:58:VAL:N     | 1.96                     | 0.80              |
| 25:Aa:68:ARG:N    | 25:Aa:68:ARG:NH1   | 2.25                     | 0.80              |
| 26:Ab:55:ARG:O    | 26:Ab:57:VAL:HG22  | 1.82                     | 0.80              |
| 27:Ac:26:ASN:O    | 27:Ac:27:LYS:CB    | 2.30                     | 0.80              |
| 33:Ag:7:UNK:CB    | 33:Ag:143:UNK:C    | 2.59                     | 0.80              |
| 34:BA:619:U:O2    | 37:BH:135:LEU:HD11 | 1.82                     | 0.80              |
| 34:BA:913:A:O2'   | 34:BA:914:A:O4'    | 1.98                     | 0.80              |
| 34:BA:1037:C:H2'  | 34:BA:1038:C:H6    | 1.45                     | 0.80              |
| 34:BA:1045:C:H2'  | 34:BA:1046:A:H8    | 1.43                     | 0.80              |
| 34:BA:1117:G:N1   | 34:BA:1184:G:N7    | 2.28                     | 0.80              |
| 34:BA:1145:C:H1'  | 34:BA:1146:A:N7    | 1.95                     | 0.80              |
| 34:BA:1347:G:H8   | 42:BM:107:ARG:CB   | 1.93                     | 0.80              |
| 36:BG:48:TYR:HA   | 36:BG:52:LEU:CD2   | 2.11                     | 0.80              |
| 41:BL:18:ARG:HH11 | 41:BL:18:ARG:CG    | 1.95                     | 0.80              |
| 46:BQ:20:THR:HA   | 46:BQ:26:GLY:H     | 0.99                     | 0.80              |
| 46:BQ:36:LYS:NZ   | 46:BQ:59:TYR:HB3   | 1.95                     | 0.80              |
| 47:BR:39:LEU:HD13 | 47:BR:44:LEU:HA    | 1.62                     | 0.80              |
| 48:BS:65:ARG:O    | 48:BS:68:ARG:HB3   | 1.81                     | 0.80              |
| 52:BW:51:VAL:HG11 | 52:BW:75:ALA:CB    | 2.11                     | 0.80              |
| 56:BD:4:C:C1'     | 56:BD:70:G:H22     | 1.90                     | 0.80              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 57:BZ:18:LYS:O     | 57:BZ:21:LEU:HG   | 1.81                     | 0.80              |
| 57:BZ:170:GLY:C    | 57:BZ:179:MET:CB  | 2.55                     | 0.80              |
| 1:AA:67:U:H2'      | 1:AA:68:G:C8      | 2.16                     | 0.80              |
| 1:AA:125:G:H21     | 28:Ad:13:ALA:HB3  | 1.45                     | 0.80              |
| 1:AA:242:G:H5''    | 29:Ae:4:MET:HE3   | 1.62                     | 0.80              |
| 1:AA:374:A:H3'     | 1:AA:375:C:H6     | 1.46                     | 0.80              |
| 1:AA:642:G:N2      | 1:AA:644:A:C2     | 2.49                     | 0.80              |
| 1:AA:1222:C:C4     | 1:AA:1223:C:H5    | 1.99                     | 0.80              |
| 1:AA:1259:G:H2'    | 1:AA:1260:G:C8    | 2.16                     | 0.80              |
| 1:AA:1580:A:H2'    | 1:AA:1581:G:N9    | 1.96                     | 0.80              |
| 1:AA:1639:U:H2'    | 1:AA:1640:C:H5''  | 1.64                     | 0.80              |
| 1:AA:1906:G:C8     | 1:AA:1929:G:N9    | 2.48                     | 0.80              |
| 1:AA:2538:C:O2     | 1:AA:2539:C:C5    | 2.34                     | 0.80              |
| 1:AA:2568:C:C2'    | 1:AA:2569:G:H5'   | 2.10                     | 0.80              |
| 1:AA:2631:G:N7     | 1:AA:2894:G:C8    | 2.49                     | 0.80              |
| 1:AA:2835:A:H1'    | 1:AA:2836:U:H5    | 1.46                     | 0.80              |
| 2:AB:35:U:H2'      | 2:AB:35:U:O2      | 1.80                     | 0.80              |
| 3:AC:10:LEU:HD11   | 3:AC:32:LEU:HB3   | 1.62                     | 0.80              |
| 3:AC:68:LEU:HD23   | 3:AC:69:GLY:N     | 1.95                     | 0.80              |
| 4:AD:181:GLU:HG3   | 4:AD:270:ILE:CB   | 2.11                     | 0.80              |
| 5:AE:7:VAL:CG2     | 5:AE:192:ASN:HA   | 2.10                     | 0.80              |
| 7:AG:181:ARG:HD2   | 7:AG:181:ARG:N    | 1.95                     | 0.80              |
| 8:AH:101:ARG:HD3   | 8:AH:117:PRO:HG3  | 1.64                     | 0.80              |
| 10:AL:47:ILE:CD1   | 10:AL:52:VAL:HG13 | 2.11                     | 0.80              |
| 10:AL:106:LEU:HB2  | 15:AQ:39:ARG:NH2  | 1.95                     | 0.80              |
| 12:AN:16:ARG:NE    | 12:AN:73:PRO:HD3  | 1.96                     | 0.80              |
| 12:AN:34:LEU:HD12  | 12:AN:67:ARG:NH2  | 1.97                     | 0.80              |
| 13:AO:17:ARG:HG3   | 13:AO:18:LEU:N    | 1.96                     | 0.80              |
| 14:AP:14:VAL:HG12  | 14:AP:15:ARG:N    | 1.96                     | 0.80              |
| 15:AQ:103:ARG:O    | 15:AQ:104:ASN:C   | 2.24                     | 0.80              |
| 20:AV:32:PRO:HB2   | 20:AV:34:LYS:HG3  | 1.64                     | 0.80              |
| 20:AV:37:VAL:HG12  | 20:AV:64:GLU:HG2  | 1.63                     | 0.80              |
| 20:AV:72:VAL:HG21  | 20:AV:96:ILE:HG12 | 1.60                     | 0.80              |
| 27:Ac:19:ARG:H     | 27:Ac:19:ARG:HD3  | 1.46                     | 0.80              |
| 31:AI:152:VAL:C    | 31:AI:155:GLY:CA  | 2.54                     | 0.80              |
| 32:AJ:105:LEU:CD2  | 32:AJ:123:ALA:HB1 | 2.11                     | 0.80              |
| 34:BA:186(D):C:H2' | 34:BA:186(E):C:H6 | 1.43                     | 0.80              |
| 34:BA:541:G:H4'    | 37:BH:42:GLN:HB2  | 1.63                     | 0.80              |
| 34:BA:620:C:H2'    | 34:BA:621:A:O4'   | 1.81                     | 0.80              |
| 34:BA:858:G:H1     | 34:BA:869:G:H3'   | 1.44                     | 0.80              |
| 34:BA:973:G:H1'    | 43:BN:55:LYS:H    | 1.47                     | 0.80              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BA:1270:C:O2'   | 34:BA:1313:U:C3'  | 2.28                     | 0.80              |
| 34:BA:1436:U:H2'   | 34:BA:1437:C:C6   | 2.16                     | 0.80              |
| 36:BG:8:ILE:HG21   | 47:BR:50:LYS:O    | 1.81                     | 0.80              |
| 36:BG:46:GLU:HB3   | 36:BG:47:LEU:HD22 | 1.62                     | 0.80              |
| 37:BH:94:LEU:HA    | 37:BH:97:LEU:HD12 | 1.64                     | 0.80              |
| 39:BJ:14:LEU:HD13  | 39:BJ:18:GLN:HB3  | 1.63                     | 0.80              |
| 42:BM:47:LEU:HD11  | 42:BM:56:LEU:HG   | 1.62                     | 0.80              |
| 45:BP:84:LEU:HB3   | 45:BP:104:VAL:CG1 | 2.10                     | 0.80              |
| 1:AA:1252:G:H3'    | 1:AA:1253:A:O4'   | 1.81                     | 0.80              |
| 1:AA:2286:A:H1'    | 27:Ac:37:ARG:NH2  | 1.96                     | 0.80              |
| 1:AA:2493:U:H3'    | 1:AA:2493:U:H6    | 1.46                     | 0.80              |
| 4:AD:80:ALA:HB2    | 4:AD:96:HIS:HD1   | 1.45                     | 0.80              |
| 4:AD:108:PRO:HB2   | 4:AD:111:LEU:HD21 | 1.62                     | 0.80              |
| 5:AE:60:ASN:HA     | 5:AE:63:LEU:HD12  | 1.64                     | 0.80              |
| 5:AE:84:PHE:C      | 5:AE:85:ASN:HD22  | 1.90                     | 0.80              |
| 5:AE:100:GLU:H     | 5:AE:172:VAL:HG21 | 1.44                     | 0.80              |
| 6:AF:42:ALA:O      | 6:AF:45:ARG:HB2   | 1.82                     | 0.80              |
| 8:AH:77:LYS:O      | 8:AH:80:SER:OG    | 2.00                     | 0.80              |
| 8:AH:98:LEU:CG     | 8:AH:123:PHE:HB2  | 2.11                     | 0.80              |
| 12:AN:134:ARG:HH11 | 12:AN:134:ARG:C   | 1.89                     | 0.80              |
| 20:AV:75:ILE:HG22  | 20:AV:100:ALA:CB  | 2.12                     | 0.80              |
| 21:AW:24:LEU:HD13  | 21:AW:83:PRO:HD2  | 1.64                     | 0.80              |
| 23:AY:20:VAL:HG21  | 23:AY:56:LEU:HD11 | 1.61                     | 0.80              |
| 26:Ab:34:PRO:HD3   | 26:Ab:40:LYS:CD   | 2.12                     | 0.80              |
| 29:Ae:30:ARG:NE    | 29:Ae:44:LYS:HB2  | 1.96                     | 0.80              |
| 32:AJ:81:ALA:O     | 32:AJ:99:ILE:CG2  | 2.30                     | 0.80              |
| 34:BA:495:A:H1'    | 34:BA:496:A:N7    | 1.97                     | 0.80              |
| 34:BA:1113:C:O2'   | 34:BA:1114:C:H5'  | 1.81                     | 0.80              |
| 35:BF:60:ASP:HB3   | 35:BF:64:ARG:HH12 | 1.47                     | 0.80              |
| 35:BF:90:MET:SD    | 35:BF:91:PRO:HD2  | 2.21                     | 0.80              |
| 35:BF:164:VAL:HG12 | 35:BF:186:ALA:HB2 | 1.64                     | 0.80              |
| 50:BU:7:THR:HG23   | 50:BU:57:VAL:O    | 1.81                     | 0.80              |
| 50:BU:80:GLY:O     | 50:BU:82:MET:HG2  | 1.80                     | 0.80              |
| 55:BC:40:C:H2'     | 55:BC:41:C:H6     | 1.46                     | 0.80              |
| 56:BE:3:C:H2'      | 56:BE:4:C:C5      | 2.17                     | 0.80              |
| 57:BZ:131:ASP:OD1  | 57:BZ:166:SER:CA  | 2.28                     | 0.80              |
| 57:BZ:311:PHE:N    | 57:BZ:356:PHE:H   | 1.78                     | 0.80              |
| 57:BZ:526:ILE:CG1  | 57:BZ:571:PHE:CZ  | 2.58                     | 0.80              |
| 57:BZ:564:THR:HB   | 57:BZ:566:GLU:O   | 1.82                     | 0.80              |
| 1:AA:776:G:H1'     | 1:AA:793:A:N1     | 1.97                     | 0.80              |
| 1:AA:781:A:C1'     | 4:AD:222:ARG:HH12 | 1.91                     | 0.80              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:846:C:O2'     | 1:AA:847:U:OP2     | 1.98                     | 0.80              |
| 1:AA:850:C:O2'     | 1:AA:851:U:H5'     | 1.82                     | 0.80              |
| 1:AA:880:G:H2'     | 1:AA:881:G:H4'     | 1.64                     | 0.80              |
| 1:AA:1022:G:N2     | 1:AA:1023:U:O4     | 2.14                     | 0.80              |
| 1:AA:1059:G:C2'    | 32:AJ:74:ALA:N     | 2.44                     | 0.80              |
| 1:AA:1087:G:H2'    | 1:AA:1089:G:C4'    | 2.11                     | 0.80              |
| 1:AA:1299:G:H22    | 1:AA:1640:C:H5'    | 1.46                     | 0.80              |
| 1:AA:1488:G:H2'    | 1:AA:1489:U:C5'    | 2.10                     | 0.80              |
| 1:AA:1943:U:C2     | 1:AA:1945:G:H5''   | 2.17                     | 0.80              |
| 1:AA:2152:G:OP1    | 3:AC:3:HIS:N       | 2.13                     | 0.80              |
| 1:AA:2187:G:H2'    | 1:AA:2188:C:H6     | 1.47                     | 0.80              |
| 3:AC:22:ILE:HD11   | 3:AC:226:PRO:C     | 2.05                     | 0.80              |
| 4:AD:64:ILE:O      | 4:AD:65:ILE:HD13   | 1.82                     | 0.80              |
| 4:AD:133:LEU:O     | 4:AD:135:PHE:N     | 2.14                     | 0.80              |
| 4:AD:232:PRO:CG    | 4:AD:247:ALA:HA    | 2.12                     | 0.80              |
| 6:AF:66:PRO:C      | 6:AF:68:LYS:N      | 2.38                     | 0.80              |
| 7:AG:55:LYS:O      | 7:AG:59:GLU:HG2    | 1.81                     | 0.80              |
| 8:AH:105:LEU:N     | 8:AH:105:LEU:HD23  | 1.96                     | 0.80              |
| 10:AL:97:ARG:CZ    | 10:AL:98:VAL:N     | 2.44                     | 0.80              |
| 10:AL:121:VAL:HG13 | 15:AQ:68:TYR:OH    | 1.82                     | 0.80              |
| 15:AQ:53:ARG:CZ    | 15:AQ:102:ILE:HG12 | 2.11                     | 0.80              |
| 16:AR:8:VAL:HG23   | 16:AR:9:VAL:N      | 1.97                     | 0.80              |
| 16:AR:38:THR:O     | 16:AR:41:ALA:HB3   | 1.81                     | 0.80              |
| 21:AW:104:PHE:HA   | 21:AW:139:VAL:O    | 1.82                     | 0.80              |
| 30:Af:10:ILE:HD12  | 30:Af:10:ILE:N     | 1.97                     | 0.80              |
| 31:AI:52:PHE:O     | 31:AI:86:PRO:CA    | 2.29                     | 0.80              |
| 32:AJ:19:PRO:CG    | 32:AJ:37:PHE:N     | 2.40                     | 0.80              |
| 32:AJ:105:LEU:CA   | 32:AJ:123:ALA:HB1  | 2.12                     | 0.80              |
| 34:BA:551:U:H2'    | 34:BA:552:U:C5     | 2.16                     | 0.80              |
| 34:BA:1005:A:H3'   | 34:BA:1006:C:C6    | 2.14                     | 0.80              |
| 34:BA:1114:C:H1'   | 34:BA:1187:G:N2    | 1.97                     | 0.80              |
| 34:BA:1189:C:H5''  | 36:BG:5:ILE:HG12   | 1.63                     | 0.80              |
| 34:BA:1406:U:H2'   | 34:BA:1406:U:O2    | 1.80                     | 0.80              |
| 34:BA:1459:C:H2'   | 34:BA:1460:A:C8    | 2.16                     | 0.80              |
| 36:BG:20:SER:HB2   | 36:BG:40:ARG:NH2   | 1.95                     | 0.80              |
| 37:BH:194:LEU:N    | 37:BH:194:LEU:HD22 | 1.95                     | 0.80              |
| 38:BI:29:GLY:HA2   | 38:BI:46:GLY:O     | 1.80                     | 0.80              |
| 38:BI:60:TYR:O     | 38:BI:64:ARG:HG2   | 1.82                     | 0.80              |
| 40:BK:28:ASN:O     | 40:BK:31:MET:HB3   | 1.80                     | 0.80              |
| 41:BL:65:TYR:C     | 41:BL:67:PRO:HD3   | 2.06                     | 0.80              |
| 44:BO:84:VAL:HG21  | 51:BV:88:LYS:CD    | 2.11                     | 0.80              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 46:BQ:20:THR:OG1  | 46:BQ:26:GLY:CA    | 2.23                     | 0.80              |
| 51:BV:46:GLU:H    | 51:BV:49:LYS:HZ1   | 1.24                     | 0.80              |
| 51:BV:70:ILE:O    | 51:BV:74:ARG:HD2   | 1.81                     | 0.80              |
| 53:BX:62:LEU:CA   | 53:BX:65:LYS:HG2   | 2.12                     | 0.80              |
| 56:BD:2:C:N3      | 56:BD:71:G:C2      | 2.49                     | 0.80              |
| 57:BZ:75:THR:HG21 | 57:BZ:84:GLU:OE1   | 1.80                     | 0.80              |
| 57:BZ:124:ILE:HA  | 57:BZ:161:ALA:CB   | 2.12                     | 0.80              |
| 57:BZ:127:ILE:HB  | 57:BZ:164:TYR:CA   | 2.12                     | 0.80              |
| 57:BZ:258:LEU:HB3 | 57:BZ:260:LEU:N    | 1.97                     | 0.80              |
| 57:BZ:406:ASP:CA  | 57:BZ:407:VAL:HG22 | 2.10                     | 0.80              |
| 57:BZ:539:THR:HA  | 57:BZ:541:LYS:H    | 1.47                     | 0.80              |
| 1:AA:49:A:H1'     | 1:AA:118:A:N6      | 1.96                     | 0.80              |
| 1:AA:193:U:H4'    | 1:AA:803:U:C4'     | 2.12                     | 0.80              |
| 1:AA:400:G:H1     | 25:Aa:63:TYR:HH    | 1.29                     | 0.80              |
| 1:AA:616:A:H4'    | 1:AA:617:G:OP1     | 1.82                     | 0.80              |
| 1:AA:718:A:H5''   | 1:AA:719:C:C5      | 2.17                     | 0.80              |
| 1:AA:970:C:H2'    | 1:AA:971:C:H6      | 1.45                     | 0.80              |
| 1:AA:1143:A:H2'   | 1:AA:1144:G:H8     | 1.42                     | 0.80              |
| 1:AA:1155:A:H2'   | 1:AA:1156:A:C5'    | 2.11                     | 0.80              |
| 1:AA:1325:G:N2    | 18:AT:86:LEU:HD13  | 1.96                     | 0.80              |
| 1:AA:1527:G:H3'   | 1:AA:1527:G:C8     | 2.17                     | 0.80              |
| 1:AA:2072:G:C4    | 1:AA:2073:C:C5     | 2.70                     | 0.80              |
| 1:AA:2125:G:N3    | 3:AC:218:MET:CA    | 2.45                     | 0.80              |
| 1:AA:2129:C:H5''  | 3:AC:6:ARG:HG3     | 1.63                     | 0.80              |
| 1:AA:2269:A:C2    | 1:AA:2270:G:H1'    | 2.16                     | 0.80              |
| 1:AA:2673:G:C2    | 1:AA:2674:G:C5     | 2.69                     | 0.80              |
| 1:AA:2771:C:H2'   | 1:AA:2772:C:C6     | 2.17                     | 0.80              |
| 3:AC:97:GLU:CA    | 3:AC:100:ILE:HD12  | 2.10                     | 0.80              |
| 5:AE:5:LEU:HD13   | 5:AE:196:VAL:O     | 1.80                     | 0.80              |
| 5:AE:43:GLY:O     | 5:AE:45:THR:HG22   | 1.82                     | 0.80              |
| 6:AF:157:VAL:HG12 | 6:AF:176:LEU:HD23  | 1.63                     | 0.80              |
| 7:AG:125:PHE:HB2  | 7:AG:131:TYR:O     | 1.82                     | 0.80              |
| 8:AH:169:VAL:O    | 8:AH:171:LEU:HG    | 1.82                     | 0.80              |
| 10:AL:4:PRO:CG    | 10:AL:5:GLN:H      | 1.88                     | 0.80              |
| 11:AM:81:GLN:HB3  | 11:AM:86:LYS:HG3   | 1.64                     | 0.80              |
| 12:AN:130:LYS:HZ1 | 12:AN:132:VAL:HG13 | 1.47                     | 0.80              |
| 13:AO:73:VAL:HG23 | 13:AO:74:LYS:H     | 1.47                     | 0.80              |
| 16:AR:98:LEU:HB3  | 16:AR:105:VAL:CG1  | 2.11                     | 0.80              |
| 19:AU:63:LYS:H    | 19:AU:72:LYS:HG2   | 1.46                     | 0.80              |
| 22:AX:21:LEU:HG   | 22:AX:39:ARG:O     | 1.81                     | 0.80              |
| 23:AY:1:MET:HB3   | 23:AY:4:GLN:HB2    | 1.61                     | 0.80              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 23:AY:5:LEU:O     | 23:AY:8:ALA:HB3    | 1.82                     | 0.80              |
| 26:Ab:13:LYS:HD3  | 26:Ab:13:LYS:N     | 1.96                     | 0.80              |
| 29:Ae:53:PRO:HA   | 29:Ae:56:GLU:CD    | 2.07                     | 0.80              |
| 34:BA:11:G:H2'    | 34:BA:12:U:O4'     | 1.81                     | 0.80              |
| 34:BA:251:G:H22   | 34:BA:272:C:N4     | 1.80                     | 0.80              |
| 34:BA:518:C:O2'   | 34:BA:519:C:OP2    | 2.00                     | 0.80              |
| 34:BA:775:G:N3    | 34:BA:776:G:N7     | 2.29                     | 0.80              |
| 34:BA:1161:C:N3   | 34:BA:1162:C:N4    | 2.29                     | 0.80              |
| 34:BA:1486:G:O6   | 34:BA:1487:G:C6    | 2.35                     | 0.80              |
| 36:BG:10:PHE:HD1  | 36:BG:178:LEU:HD22 | 1.44                     | 0.80              |
| 37:BH:15:GLU:HG2  | 37:BH:63:LYS:HB3   | 1.64                     | 0.80              |
| 37:BH:55:ALA:O    | 37:BH:59:ARG:CG    | 2.28                     | 0.80              |
| 37:BH:155:LEU:H   | 37:BH:158:ILE:HG13 | 1.45                     | 0.80              |
| 41:BL:68:ARG:HD3  | 41:BL:69:ARG:N     | 1.96                     | 0.80              |
| 42:BM:27:THR:HB   | 42:BM:62:TYR:CD1   | 2.17                     | 0.80              |
| 45:BP:24:VAL:HG22 | 45:BP:98:TYR:CZ    | 2.17                     | 0.80              |
| 46:BQ:16:ASP:CA   | 46:BQ:34:LEU:HD11  | 2.00                     | 0.80              |
| 53:BX:11:SER:HA   | 53:BX:13:LEU:CD1   | 2.11                     | 0.80              |
| 57:BZ:28:GLN:O    | 57:BZ:60:ASN:CB    | 2.30                     | 0.80              |
| 57:BZ:73:VAL:HG21 | 57:BZ:88:VAL:HG11  | 1.62                     | 0.80              |
| 57:BZ:239:ILE:N   | 57:BZ:244:GLY:C    | 2.34                     | 0.80              |
| 57:BZ:407:VAL:N   | 57:BZ:408:GLU:HG3  | 1.97                     | 0.80              |
| 1:AA:72:U:O4      | 1:AA:112:U:H1'     | 1.82                     | 0.80              |
| 1:AA:604:G:C6     | 1:AA:605:C:N4      | 2.50                     | 0.80              |
| 1:AA:973:A:H1'    | 1:AA:1188:U:O4     | 1.82                     | 0.80              |
| 1:AA:1037:G:N2    | 1:AA:1119:C:H1'    | 1.97                     | 0.80              |
| 1:AA:1511:A:H2'   | 1:AA:1512:G:C5'    | 2.10                     | 0.80              |
| 1:AA:1691:C:O2'   | 1:AA:1692:U:H5'    | 1.82                     | 0.80              |
| 1:AA:1937:A:N6    | 1:AA:1939:U:C5     | 2.50                     | 0.80              |
| 1:AA:1953:A:N3    | 1:AA:2560:C:H1'    | 1.97                     | 0.80              |
| 1:AA:2046:G:H5''  | 26:Ab:19:ARG:HA    | 1.63                     | 0.80              |
| 1:AA:2660:A:C2    | 57:BZ:457:THR:N    | 2.50                     | 0.80              |
| 1:AA:2672:G:H2'   | 1:AA:2673:G:H8     | 1.45                     | 0.80              |
| 3:AC:8:ARG:HH11   | 3:AC:11:LEU:HD23   | 1.46                     | 0.80              |
| 4:AD:181:GLU:HA   | 4:AD:270:ILE:HG21  | 1.61                     | 0.80              |
| 4:AD:181:GLU:CB   | 4:AD:268:ARG:HH21  | 1.94                     | 0.80              |
| 5:AE:38:THR:OG1   | 5:AE:44:TYR:HB2    | 1.80                     | 0.80              |
| 6:AF:125:LEU:C    | 6:AF:127:GLU:H     | 1.84                     | 0.80              |
| 7:AG:60:LEU:O     | 7:AG:63:ILE:HG22   | 1.81                     | 0.80              |
| 9:AK:99:LEU:HD21  | 9:AK:122:VAL:HG21  | 1.63                     | 0.80              |
| 10:AL:18:LYS:HE2  | 10:AL:44:LYS:CD    | 2.12                     | 0.80              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 11:AM:45:LEU:HB3  | 11:AM:46:LYS:HE2   | 1.62                     | 0.80              |
| 11:AM:93:GLY:HA2  | 11:AM:112:LEU:HD11 | 1.61                     | 0.80              |
| 13:AO:42:LYS:O    | 13:AO:45:ARG:HB3   | 1.80                     | 0.80              |
| 14:AP:67:ARG:O    | 14:AP:71:ARG:HG3   | 1.82                     | 0.80              |
| 15:AQ:52:ILE:N    | 15:AQ:66:VAL:HG12  | 1.97                     | 0.80              |
| 17:AS:40:LEU:HD11 | 17:AS:55:ALA:HA    | 1.62                     | 0.80              |
| 18:AT:36:LEU:HD23 | 18:AT:51:LEU:CD2   | 2.11                     | 0.80              |
| 30:Af:10:ILE:O    | 30:Af:12:ASP:N     | 2.14                     | 0.80              |
| 31:AI:141:VAL:CB  | 33:Ag:134:UNK:CB   | 2.53                     | 0.80              |
| 34:BA:232:G:H2'   | 34:BA:233:C:C5     | 2.16                     | 0.80              |
| 34:BA:412:A:O2'   | 34:BA:413:G:H5''   | 1.82                     | 0.80              |
| 34:BA:477:G:H2'   | 34:BA:478:A:H8     | 1.45                     | 0.80              |
| 34:BA:1269:A:H1'  | 34:BA:1312:G:C2    | 2.17                     | 0.80              |
| 34:BA:1347:G:H4'  | 34:BA:1348:U:O5'   | 1.82                     | 0.80              |
| 34:BA:1394:A:O2'  | 34:BA:1395:C:OP1   | 2.00                     | 0.80              |
| 34:BA:1395:C:OP2  | 34:BA:1395:C:H3'   | 1.80                     | 0.80              |
| 34:BA:1519:A:H2'  | 34:BA:1520:G:H5'   | 1.64                     | 0.80              |
| 34:BA:1520:G:HO2' | 34:BA:1521:G:H8    | 1.30                     | 0.80              |
| 35:BF:167:PRO:HG2 | 35:BF:168:THR:H    | 1.46                     | 0.80              |
| 36:BG:55:VAL:HG22 | 36:BG:68:VAL:HG13  | 1.62                     | 0.80              |
| 37:BH:88:VAL:HG22 | 38:BI:97:GLY:N     | 1.96                     | 0.80              |
| 37:BH:135:LEU:O   | 37:BH:137:SER:N    | 2.11                     | 0.80              |
| 38:BI:11:ILE:HG22 | 38:BI:12:LEU:N     | 1.97                     | 0.80              |
| 40:BK:75:VAL:HG13 | 40:BK:87:VAL:O     | 1.82                     | 0.80              |
| 42:BM:40:LEU:C    | 42:BM:42:ARG:H     | 1.90                     | 0.80              |
| 42:BM:50:LEU:HD13 | 42:BM:56:LEU:HG    | 1.64                     | 0.80              |
| 45:BP:35:GLY:O    | 45:BP:82:VAL:HG13  | 1.82                     | 0.80              |
| 46:BQ:16:ASP:O    | 46:BQ:30:ALA:HB1   | 1.80                     | 0.80              |
| 51:BV:38:GLU:CD   | 51:BV:38:GLU:H     | 1.89                     | 0.80              |
| 57:BZ:6:ARG:HB2   | 57:BZ:69:ARG:C     | 2.07                     | 0.80              |
| 57:BZ:398:GLU:OE2 | 57:BZ:444:PRO:HB2  | 1.82                     | 0.80              |
| 57:BZ:414:SER:O   | 57:BZ:458:MET:SD   | 2.39                     | 0.80              |
| 1:AA:4:C:C4       | 1:AA:2900:A:N1     | 2.42                     | 0.80              |
| 1:AA:355:G:H2'    | 1:AA:356:G:H8      | 1.46                     | 0.80              |
| 1:AA:1113:U:O5'   | 1:AA:1113:U:H6     | 1.65                     | 0.80              |
| 1:AA:1387:C:H2'   | 1:AA:1388:G:H8     | 1.46                     | 0.80              |
| 1:AA:1418:G:OP1   | 1:AA:1588:C:H4'    | 1.82                     | 0.80              |
| 1:AA:1494:A:H2'   | 1:AA:1494:A:N3     | 1.97                     | 0.80              |
| 1:AA:1566:A:H2'   | 1:AA:1567:A:H5'    | 1.64                     | 0.80              |
| 1:AA:1582:C:H3'   | 1:AA:1583:A:C5'    | 2.12                     | 0.80              |
| 1:AA:1759:A:H5'   | 1:AA:2715:C:O4'    | 1.82                     | 0.80              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1950:G:N7     | 1:AA:1951:U:C5     | 2.50                     | 0.80              |
| 1:AA:2453:A:H61    | 1:AA:2500:U:H3     | 1.29                     | 0.80              |
| 1:AA:2780:G:O2'    | 1:AA:2781:A:H5''   | 1.82                     | 0.80              |
| 2:AB:27:C:N4       | 2:AB:56:G:H1       | 1.79                     | 0.80              |
| 2:AB:83:G:O2'      | 2:AB:84:C:H5'      | 1.82                     | 0.80              |
| 3:AC:62:VAL:HG22   | 3:AC:63:SER:H      | 1.46                     | 0.80              |
| 3:AC:108:MET:HE3   | 3:AC:136:LEU:CD1   | 2.10                     | 0.80              |
| 5:AE:174:ASP:O     | 5:AE:182:LEU:HG    | 1.82                     | 0.80              |
| 6:AF:201:VAL:HG12  | 6:AF:205:ARG:NE    | 1.96                     | 0.80              |
| 7:AG:1:MET:HB3     | 7:AG:2:PRO:CD      | 2.12                     | 0.80              |
| 7:AG:41:GLN:NE2    | 7:AG:155:MET:HA    | 1.97                     | 0.80              |
| 8:AH:7:LEU:HD13    | 8:AH:65:HIS:NE2    | 1.97                     | 0.80              |
| 12:AN:12:GLN:NE2   | 12:AN:13:GLN:HE21  | 1.78                     | 0.80              |
| 12:AN:36:ALA:O     | 12:AN:37:LEU:HG    | 1.81                     | 0.80              |
| 15:AQ:7:ILE:HG13   | 15:AQ:8:LYS:H      | 1.46                     | 0.80              |
| 19:AU:16:LYS:H     | 19:AU:16:LYS:HE2   | 1.44                     | 0.80              |
| 20:AV:5:MET:SD     | 20:AV:33:LYS:HE2   | 2.22                     | 0.80              |
| 20:AV:35:TYR:O     | 20:AV:64:GLU:HB3   | 1.82                     | 0.80              |
| 22:AX:19:LYS:HG2   | 22:AX:20:ARG:H     | 1.45                     | 0.80              |
| 34:BA:474:G:C5'    | 49:BT:81:ARG:HG3   | 2.12                     | 0.80              |
| 34:BA:520:A:H3'    | 34:BA:521:G:H5''   | 1.64                     | 0.80              |
| 34:BA:657:G:C2'    | 34:BA:658:G:H5'    | 2.12                     | 0.80              |
| 35:BF:101:MET:HA   | 35:BF:108:ILE:HG13 | 1.64                     | 0.80              |
| 36:BG:3:ASN:CG     | 36:BG:4:LYS:H      | 1.89                     | 0.80              |
| 38:BI:109:ILE:HD13 | 38:BI:135:THR:CB   | 2.11                     | 0.80              |
| 41:BL:109:ILE:HG12 | 41:BL:137:VAL:O    | 1.81                     | 0.80              |
| 45:BP:60:LEU:HD22  | 45:BP:60:LEU:C     | 2.07                     | 0.80              |
| 45:BP:86:ARG:HH12  | 45:BP:119:LYS:CG   | 1.90                     | 0.80              |
| 49:BT:67:THR:O     | 49:BT:70:ALA:HB3   | 1.82                     | 0.80              |
| 57:BZ:165:ALA:HA   | 57:BZ:171:ILE:CG2  | 2.12                     | 0.80              |
| 57:BZ:403:VAL:HB   | 57:BZ:465:LEU:HB2  | 1.63                     | 0.80              |
| 1:AA:2:G:N1        | 1:AA:2902:C:C5     | 2.50                     | 0.79              |
| 1:AA:209:C:C2'     | 1:AA:210:C:H5'     | 2.10                     | 0.79              |
| 1:AA:640:C:C2'     | 1:AA:641:C:C5'     | 2.59                     | 0.79              |
| 1:AA:1046:A:H1'    | 31:AI:11:ALA:HB2   | 1.64                     | 0.79              |
| 1:AA:1064:C:C4     | 1:AA:1065:U:C2     | 2.70                     | 0.79              |
| 1:AA:1334:G:H5''   | 19:AU:65:ARG:HH12  | 1.44                     | 0.79              |
| 1:AA:1685:C:O2'    | 1:AA:1686:C:H5'    | 1.82                     | 0.79              |
| 1:AA:1706:U:H3     | 1:AA:1757:U:H5''   | 1.46                     | 0.79              |
| 1:AA:1743:G:H4'    | 1:AA:1743:G:OP1    | 1.78                     | 0.79              |
| 1:AA:1800:C:H3'    | 1:AA:1800:C:H6     | 1.45                     | 0.79              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:2176:A:C1'    | 3:AC:44:HIS:CD2    | 2.65                     | 0.79              |
| 1:AA:2233:U:H2'    | 1:AA:2234:G:H8     | 1.46                     | 0.79              |
| 1:AA:2308:G:H4'    | 1:AA:2308:G:OP1    | 1.82                     | 0.79              |
| 1:AA:2447:G:H3'    | 1:AA:2499:C:P      | 2.21                     | 0.79              |
| 1:AA:2597:G:C5'    | 4:AD:242:ARG:HE    | 1.94                     | 0.79              |
| 1:AA:2630:G:O2'    | 1:AA:2894:G:P      | 2.41                     | 0.79              |
| 1:AA:2746:U:N3     | 1:AA:2756:U:O4     | 2.15                     | 0.79              |
| 1:AA:2747:G:O2'    | 8:AH:67:LEU:HD13   | 1.82                     | 0.79              |
| 1:AA:2788:C:N3     | 1:AA:2789:C:N4     | 2.26                     | 0.79              |
| 4:AD:232:PRO:HD2   | 4:AD:247:ALA:HA    | 1.65                     | 0.79              |
| 5:AE:137:HIS:HB2   | 5:AE:138:PRO:HD2   | 1.64                     | 0.79              |
| 6:AF:9:ILE:HG21    | 6:AF:124:LEU:CB    | 2.12                     | 0.79              |
| 7:AG:110:ALA:HB1   | 7:AG:139:LEU:CG    | 2.11                     | 0.79              |
| 7:AG:171:ALA:HA    | 7:AG:174:GLU:OE1   | 1.81                     | 0.79              |
| 8:AH:117:PRO:HA    | 8:AH:121:ILE:HD13  | 1.64                     | 0.79              |
| 8:AH:167:GLU:O     | 8:AH:169:VAL:HG13  | 1.81                     | 0.79              |
| 9:AK:91:LEU:O      | 9:AK:95:PRO:HD3    | 1.82                     | 0.79              |
| 11:AM:46:LYS:HB3   | 11:AM:49:ARG:NH2   | 1.96                     | 0.79              |
| 13:AO:99:LYS:HA    | 13:AO:112:ALA:HB2  | 1.63                     | 0.79              |
| 16:AR:15:LYS:HA    | 16:AR:18:LEU:CD2   | 2.09                     | 0.79              |
| 17:AS:35:LEU:C     | 17:AS:61:VAL:HG22  | 2.07                     | 0.79              |
| 19:AU:12:VAL:HG23  | 19:AU:28:PHE:CA    | 2.12                     | 0.79              |
| 34:BA:133:U:H3     | 34:BA:229:U:H3     | 1.26                     | 0.79              |
| 34:BA:375:U:H4'    | 49:BT:17:TYR:CE2   | 2.17                     | 0.79              |
| 34:BA:731:G:H2'    | 34:BA:732:C:C6     | 2.18                     | 0.79              |
| 34:BA:907:A:H2'    | 34:BA:908:A:C8     | 2.17                     | 0.79              |
| 34:BA:964:A:H1'    | 43:BN:55:LYS:HZ2   | 1.47                     | 0.79              |
| 37:BH:141:ARG:CD   | 37:BH:142:PRO:HD2  | 2.12                     | 0.79              |
| 38:BI:13:ILE:HD12  | 38:BI:13:ILE:N     | 1.96                     | 0.79              |
| 39:BJ:46:ARG:HH22  | 51:BV:37:VAL:CG2   | 1.94                     | 0.79              |
| 56:BD:2:C:C2'      | 56:BD:3:C:H5'      | 2.12                     | 0.79              |
| 57:BZ:2:ILE:CG2    | 57:BZ:199:VAL:CG1  | 2.60                     | 0.79              |
| 57:BZ:23:ASP:O     | 57:BZ:24:LYS:HG2   | 1.82                     | 0.79              |
| 57:BZ:50:LYS:HD3   | 57:BZ:50:LYS:C     | 2.07                     | 0.79              |
| 57:BZ:493:GLN:HA   | 57:BZ:518:VAL:O    | 1.81                     | 0.79              |
| 57:BZ:512:LEU:HD21 | 57:BZ:524:ILE:HG21 | 1.63                     | 0.79              |
| 1:AA:76:C:C2'      | 1:AA:77:C:H5'      | 2.12                     | 0.79              |
| 1:AA:1048:A:C6     | 1:AA:1112:G:O2'    | 2.35                     | 0.79              |
| 1:AA:1188:U:O2     | 1:AA:1188:U:H2'    | 1.80                     | 0.79              |
| 1:AA:1493:C:H2'    | 1:AA:1493:C:O2     | 1.82                     | 0.79              |
| 1:AA:1496:A:C2     | 1:AA:1498:C:N4     | 2.50                     | 0.79              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:1638:C:C5'    | 1:AA:2710:C:H1'   | 2.12                     | 0.79              |
| 1:AA:1782:C:N4     | 1:AA:2587:A:N6    | 2.30                     | 0.79              |
| 1:AA:2450:A:O2'    | 1:AA:2451:A:H5'   | 1.83                     | 0.79              |
| 1:AA:2610:C:H4'    | 1:AA:2611:U:O5'   | 1.81                     | 0.79              |
| 1:AA:2788:C:N3     | 1:AA:2789:C:N3    | 2.30                     | 0.79              |
| 3:AC:77:ILE:HG22   | 3:AC:119:VAL:HG21 | 1.64                     | 0.79              |
| 4:AD:90:ALA:HA     | 4:AD:91:ARG:NH1   | 1.98                     | 0.79              |
| 4:AD:147:LEU:HG    | 4:AD:154:LYS:CD   | 2.10                     | 0.79              |
| 5:AE:5:LEU:HD11    | 5:AE:196:VAL:HG12 | 1.63                     | 0.79              |
| 5:AE:47:VAL:HG22   | 5:AE:79:ARG:HB2   | 1.63                     | 0.79              |
| 5:AE:105:THR:OG1   | 5:AE:165:VAL:O    | 2.00                     | 0.79              |
| 7:AG:79:ASN:CG     | 7:AG:82:LEU:HG    | 2.07                     | 0.79              |
| 10:AL:69:VAL:N     | 10:AL:104:ARG:NH2 | 2.29                     | 0.79              |
| 15:AQ:58:ASN:N     | 15:AQ:61:PHE:CD2  | 2.51                     | 0.79              |
| 18:AT:17:VAL:CG2   | 18:AT:76:VAL:HG11 | 2.12                     | 0.79              |
| 20:AV:35:TYR:O     | 20:AV:64:GLU:CB   | 2.30                     | 0.79              |
| 20:AV:75:ILE:H     | 20:AV:100:ALA:HB1 | 1.46                     | 0.79              |
| 28:Ad:21:ARG:CB    | 28:Ad:31:LEU:HD11 | 2.12                     | 0.79              |
| 28:Ad:42:LEU:C     | 28:Ad:44:PRO:HD2  | 2.07                     | 0.79              |
| 30:Af:7:VAL:HG21   | 30:Af:36:GLN:NE2  | 1.96                     | 0.79              |
| 34:BA:22:G:H5'     | 34:BA:885:G:O4'   | 1.83                     | 0.79              |
| 34:BA:225:C:H2'    | 34:BA:226:G:H5'   | 1.64                     | 0.79              |
| 34:BA:270:A:O2'    | 34:BA:271:C:H5'   | 1.82                     | 0.79              |
| 34:BA:751:U:H2'    | 34:BA:752:G:O4'   | 1.82                     | 0.79              |
| 34:BA:888:G:N2     | 34:BA:909:A:N6    | 2.24                     | 0.79              |
| 34:BA:1178:G:H2'   | 34:BA:1180:A:OP2  | 1.82                     | 0.79              |
| 34:BA:1309:G:N2    | 34:BA:1328:C:C5   | 2.50                     | 0.79              |
| 34:BA:1317:C:C5    | 34:BA:1318:A:C5   | 2.70                     | 0.79              |
| 34:BA:1320:C:O2    | 52:BW:75:ALA:O    | 2.01                     | 0.79              |
| 34:BA:1495:U:H2'   | 34:BA:1496:C:H5'  | 1.65                     | 0.79              |
| 35:BF:16:HIS:HA    | 35:BF:204:ASN:HB2 | 1.62                     | 0.79              |
| 35:BF:95:GLN:CG    | 35:BF:148:TYR:HB3 | 2.13                     | 0.79              |
| 46:BQ:5:ALA:HB1    | 46:BQ:67:GLU:CD   | 2.08                     | 0.79              |
| 50:BU:11:VAL:HG23  | 50:BU:21:VAL:HA   | 1.63                     | 0.79              |
| 51:BV:21:LYS:HD2   | 51:BV:22:VAL:H    | 1.47                     | 0.79              |
| 51:BV:74:ARG:CG    | 51:BV:81:PHE:HB3  | 2.09                     | 0.79              |
| 52:BW:18:LYS:HE2   | 52:BW:22:LEU:HD12 | 1.61                     | 0.79              |
| 53:BX:13:LEU:HB2   | 53:BX:17:ARG:NH2  | 1.97                     | 0.79              |
| 57:BZ:287:THR:HG21 | 57:BZ:297:LEU:C   | 2.04                     | 0.79              |
| 1:AA:244:A:O2'     | 11:AM:66:GLY:HA2  | 1.83                     | 0.79              |
| 1:AA:662:G:H5''    | 11:AM:19:VAL:HG13 | 1.62                     | 0.79              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:816:C:H5'    | 1:AA:816:C:H6     | 1.45                     | 0.79              |
| 1:AA:865:C:O2'    | 1:AA:866:A:N7     | 2.15                     | 0.79              |
| 1:AA:935:C:H2'    | 1:AA:936:C:C6     | 2.17                     | 0.79              |
| 1:AA:1041:C:O2    | 1:AA:1115:G:C5    | 2.35                     | 0.79              |
| 1:AA:1312:U:C2'   | 1:AA:1313:U:C6    | 2.65                     | 0.79              |
| 1:AA:1324:G:C1'   | 1:AA:1616:A:N6    | 2.45                     | 0.79              |
| 1:AA:1352:U:H1'   | 1:AA:1570:A:H2    | 1.46                     | 0.79              |
| 1:AA:1475:G:H1    | 1:AA:1477:A:H62   | 1.20                     | 0.79              |
| 1:AA:1602:U:H3'   | 1:AA:1602:U:C6    | 2.17                     | 0.79              |
| 1:AA:2051:A:OP2   | 1:AA:2051:A:O4'   | 2.01                     | 0.79              |
| 1:AA:2261:C:OP2   | 22:AX:17:GLN:HB2  | 1.81                     | 0.79              |
| 1:AA:2262:U:H4'   | 1:AA:2328:A:C2    | 2.17                     | 0.79              |
| 1:AA:2447:G:C3'   | 1:AA:2499:C:P     | 2.70                     | 0.79              |
| 1:AA:2556:C:C4    | 57:BZ:546:MET:HE1 | 2.16                     | 0.79              |
| 3:AC:68:LEU:HD13  | 3:AC:159:GLY:HA2  | 0.87                     | 0.79              |
| 4:AD:77:ALA:HB1   | 4:AD:95:LEU:CD2   | 2.12                     | 0.79              |
| 4:AD:87:ASN:N     | 4:AD:87:ASN:ND2   | 2.27                     | 0.79              |
| 5:AE:104:VAL:CG1  | 5:AE:197:ILE:O    | 2.30                     | 0.79              |
| 6:AF:132:VAL:C    | 6:AF:134:GLY:H    | 1.91                     | 0.79              |
| 8:AH:11:VAL:CB    | 8:AH:50:VAL:HG21  | 2.11                     | 0.79              |
| 10:AL:39:ILE:HD13 | 10:AL:39:ILE:N    | 1.98                     | 0.79              |
| 10:AL:85:VAL:O    | 10:AL:93:PRO:CD   | 2.31                     | 0.79              |
| 11:AM:49:ARG:HG2  | 11:AM:49:ARG:HH21 | 1.48                     | 0.79              |
| 11:AM:49:ARG:O    | 11:AM:52:GLU:HG2  | 1.82                     | 0.79              |
| 15:AQ:53:ARG:NE   | 15:AQ:53:ARG:CA   | 2.45                     | 0.79              |
| 16:AR:13:LYS:HA   | 16:AR:16:LYS:HZ2  | 1.45                     | 0.79              |
| 17:AS:64:HIS:ND1  | 17:AS:96:ILE:HG22 | 1.96                     | 0.79              |
| 21:AW:53:ILE:O    | 21:AW:54:HIS:ND1  | 2.16                     | 0.79              |
| 22:AX:33:ALA:HA   | 22:AX:61:ALA:O    | 1.82                     | 0.79              |
| 24:AZ:50:VAL:HG13 | 24:AZ:53:LEU:CD1  | 2.11                     | 0.79              |
| 25:Aa:10:VAL:N    | 25:Aa:11:PRO:HD3  | 1.97                     | 0.79              |
| 26:Ab:17:ASP:O    | 26:Ab:18:ALA:C    | 2.25                     | 0.79              |
| 26:Ab:37:LYS:O    | 26:Ab:38:ALA:O    | 2.00                     | 0.79              |
| 28:Ad:41:ARG:O    | 28:Ad:42:LEU:HG   | 1.83                     | 0.79              |
| 34:BA:37:U:H6     | 34:BA:37:U:C3'    | 1.94                     | 0.79              |
| 34:BA:261:U:H2'   | 34:BA:263:A:OP2   | 1.83                     | 0.79              |
| 34:BA:303:A:H2'   | 34:BA:304:U:O4'   | 1.83                     | 0.79              |
| 34:BA:1154:G:H2'  | 34:BA:1155:G:C8   | 2.16                     | 0.79              |
| 42:BM:97:LYS:HB3  | 42:BM:98:PRO:HD3  | 1.62                     | 0.79              |
| 42:BM:127:LYS:CB  | 56:BE:31:A:OP1    | 2.26                     | 0.79              |
| 50:BU:12:SER:N    | 50:BU:20:THR:OG1  | 2.14                     | 0.79              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 53:BX:85:MET:HA   | 53:BX:88:VAL:HG23  | 1.63                     | 0.79              |
| 55:BC:5:G:H2'     | 55:BC:6:G:C8       | 2.17                     | 0.79              |
| 55:BC:38:A:H2'    | 55:BC:39:U:C4'     | 2.12                     | 0.79              |
| 56:BD:67:C:C3'    | 56:BD:68:C:H5'     | 2.11                     | 0.79              |
| 56:BE:2:C:O2      | 56:BE:71:G:O4'     | 2.00                     | 0.79              |
| 57:BZ:101:ALA:CB  | 57:BZ:130:VAL:HG12 | 2.12                     | 0.79              |
| 57:BZ:181:GLU:CD  | 57:BZ:183:MET:HG2  | 2.07                     | 0.79              |
| 57:BZ:551:ALA:CB  | 57:BZ:552:ASP:HB2  | 2.10                     | 0.79              |
| 1:AA:618:G:OP1    | 6:AF:106:ARG:HD2   | 1.83                     | 0.79              |
| 1:AA:997:G:C8     | 1:AA:997:G:OP2     | 2.35                     | 0.79              |
| 1:AA:1290:C:H2'   | 1:AA:1291:C:C6     | 2.18                     | 0.79              |
| 1:AA:1394:U:H5''  | 1:AA:1604:C:P      | 2.22                     | 0.79              |
| 1:AA:1472:A:H1'   | 1:AA:1473:G:N7     | 1.96                     | 0.79              |
| 1:AA:1568:G:H5''  | 4:AD:60:ARG:C      | 2.07                     | 0.79              |
| 1:AA:1657:C:O5'   | 1:AA:1657:C:H6     | 1.66                     | 0.79              |
| 1:AA:1954:G:H8    | 1:AA:1954:G:OP2    | 1.65                     | 0.79              |
| 1:AA:2123:G:N2    | 3:AC:216:THR:N     | 2.30                     | 0.79              |
| 1:AA:2877:G:H3'   | 1:AA:2878:U:C6     | 2.17                     | 0.79              |
| 3:AC:77:ILE:HD12  | 3:AC:123:VAL:HG13  | 1.62                     | 0.79              |
| 5:AE:98:PRO:HD3   | 5:AE:175:VAL:HG11  | 1.65                     | 0.79              |
| 7:AG:139:LEU:HD13 | 7:AG:142:PRO:HA    | 1.65                     | 0.79              |
| 10:AL:115:VAL:CG1 | 34:BA:345:C:H2'    | 2.11                     | 0.79              |
| 12:AN:137:TYR:CZ  | 21:AW:124:ILE:HD11 | 2.16                     | 0.79              |
| 20:AV:37:VAL:O    | 20:AV:39:VAL:HG23  | 1.81                     | 0.79              |
| 21:AW:37:VAL:O    | 21:AW:38:TYR:HD2   | 1.64                     | 0.79              |
| 27:Ac:30:THR:HB   | 27:Ac:31:PRO:CD    | 2.12                     | 0.79              |
| 32:AJ:12:LEU:HG   | 32:AJ:57:ILE:CG2   | 2.11                     | 0.79              |
| 34:BA:279:A:H1'   | 34:BA:281:G:N3     | 1.98                     | 0.79              |
| 34:BA:397:A:H2    | 34:BA:548:G:O6     | 1.66                     | 0.79              |
| 34:BA:1216:G:H5'' | 47:BR:5:ALA:HB1    | 1.64                     | 0.79              |
| 34:BA:1307:U:OP1  | 46:BQ:101:GLN:NE2  | 2.15                     | 0.79              |
| 34:BA:1316:G:C5'  | 34:BA:1360:A:C5    | 2.66                     | 0.79              |
| 40:BK:106:GLN:CA  | 40:BK:106:GLN:HE21 | 1.95                     | 0.79              |
| 40:BK:115:ARG:CB  | 40:BK:118:VAL:HG23 | 2.11                     | 0.79              |
| 43:BN:30:SER:CB   | 43:BN:80:LYS:HG3   | 2.12                     | 0.79              |
| 46:BQ:23:TYR:O    | 46:BQ:66:LEU:HG    | 1.83                     | 0.79              |
| 46:BQ:86:CYS:O    | 52:BW:73:GLU:O     | 1.99                     | 0.79              |
| 53:BX:19:SER:O    | 53:BX:23:ARG:HB3   | 1.81                     | 0.79              |
| 53:BX:50:GLU:H    | 53:BX:99:LEU:CD1   | 1.92                     | 0.79              |
| 57:BZ:8:ILE:O     | 57:BZ:72:ILE:O     | 2.00                     | 0.79              |
| 57:BZ:64:ILE:CG2  | 57:BZ:188:GLN:OE1  | 2.30                     | 0.79              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:BZ:309:MET:HG3 | 57:BZ:358:VAL:HB   | 1.62                     | 0.79              |
| 1:AA:205:G:O2'    | 1:AA:206:U:P       | 2.40                     | 0.79              |
| 1:AA:280:C:C4     | 1:AA:283:A:N7      | 2.50                     | 0.79              |
| 1:AA:819:A:H2'    | 1:AA:820:A:C8      | 2.17                     | 0.79              |
| 1:AA:996:A:H2'    | 1:AA:997:G:C8      | 2.18                     | 0.79              |
| 1:AA:1142(A):A:N1 | 1:AA:1143:A:C8     | 2.50                     | 0.79              |
| 1:AA:1263:U:H4'   | 26:Ab:10:LYS:HG3   | 1.64                     | 0.79              |
| 1:AA:1403:C:H4'   | 1:AA:1471:A:H5'    | 1.62                     | 0.79              |
| 1:AA:1543:A:C3'   | 1:AA:1544:C:H4'    | 2.09                     | 0.79              |
| 1:AA:1772:G:C2'   | 1:AA:1773:A:H4'    | 2.11                     | 0.79              |
| 1:AA:1788:C:C2    | 4:AD:222:ARG:NH2   | 2.51                     | 0.79              |
| 1:AA:1803:A:C4'   | 4:AD:257:LEU:HD13  | 2.12                     | 0.79              |
| 1:AA:1846:G:N2    | 1:AA:1895:C:C2     | 2.50                     | 0.79              |
| 1:AA:1935:G:C2'   | 1:AA:1962:C:H42    | 1.95                     | 0.79              |
| 1:AA:2063:C:C3'   | 1:AA:2064:C:H5''   | 2.10                     | 0.79              |
| 1:AA:2333:A:H1'   | 1:AA:2335:A:C4     | 2.16                     | 0.79              |
| 1:AA:2419:U:H5'   | 27:Ac:23:THR:HG21  | 1.65                     | 0.79              |
| 1:AA:2471:C:H5''  | 57:BZ:529:ARG:NH1  | 1.96                     | 0.79              |
| 3:AC:77:ILE:HD12  | 3:AC:123:VAL:CG1   | 2.12                     | 0.79              |
| 4:AD:131:LEU:HG   | 4:AD:135:PHE:CD2   | 2.18                     | 0.79              |
| 5:AE:169:ASN:ND2  | 5:AE:170:LEU:H     | 1.80                     | 0.79              |
| 7:AG:119:GLY:C    | 7:AG:120:LEU:HD23  | 2.08                     | 0.79              |
| 9:AK:11:PRO:HB2   | 9:AK:13:TRP:HZ3    | 1.43                     | 0.79              |
| 10:AL:16:ALA:HB3  | 10:AL:45:GLU:HB2   | 1.64                     | 0.79              |
| 10:AL:96:THR:CA   | 10:AL:117:LEU:HD11 | 2.12                     | 0.79              |
| 12:AN:25:ASP:HB3  | 12:AN:102:VAL:N    | 1.97                     | 0.79              |
| 15:AQ:78:LEU:HD21 | 15:AQ:84:GLN:OE1   | 1.82                     | 0.79              |
| 16:AR:19:LYS:HB2  | 16:AR:19:LYS:HZ2   | 1.45                     | 0.79              |
| 29:Ae:61:LEU:O    | 29:Ae:62:LEU:HB2   | 1.82                     | 0.79              |
| 32:AJ:14:ALA:HA   | 32:AJ:48:MET:O     | 1.82                     | 0.79              |
| 32:AJ:23:VAL:CG1  | 32:AJ:37:PHE:HB2   | 2.11                     | 0.79              |
| 34:BA:130:A:C5    | 34:BA:264:U:H1'    | 2.18                     | 0.79              |
| 34:BA:600:C:O2'   | 34:BA:601:C:H5'    | 1.83                     | 0.79              |
| 34:BA:674:G:H2'   | 34:BA:675:A:C8     | 2.17                     | 0.79              |
| 34:BA:727:G:H3'   | 34:BA:727:G:C8     | 2.17                     | 0.79              |
| 34:BA:947:G:O2'   | 34:BA:948:C:H5'    | 1.82                     | 0.79              |
| 34:BA:1308:U:O2   | 34:BA:1309:G:C5'   | 2.18                     | 0.79              |
| 34:BA:1486:G:C2'  | 34:BA:1487:G:C5'   | 2.57                     | 0.79              |
| 35:BF:44:LEU:O    | 35:BF:48:MET:SD    | 2.41                     | 0.79              |
| 38:BI:43:LEU:N    | 38:BI:65:ASN:HD22  | 1.81                     | 0.79              |
| 45:BP:80:HIS:CD2  | 57:BZ:326:VAL:CA   | 2.59                     | 0.79              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 49:BT:6:LEU:HD23   | 49:BT:17:TYR:CD2   | 2.17                     | 0.79              |
| 52:BW:25:LYS:HD2   | 52:BW:25:LYS:C     | 2.05                     | 0.79              |
| 57:BZ:141:VAL:CG2  | 57:BZ:164:TYR:HH   | 1.90                     | 0.79              |
| 57:BZ:239:ILE:HB   | 57:BZ:244:GLY:HA3  | 1.63                     | 0.79              |
| 57:BZ:426:LEU:HD12 | 57:BZ:441:TYR:CE1  | 2.10                     | 0.79              |
| 57:BZ:576:GLU:HA   | 57:BZ:588:ARG:O    | 1.82                     | 0.79              |
| 1:AA:192:C:H2'     | 1:AA:192:C:O2      | 1.80                     | 0.79              |
| 1:AA:270(B):A:H5'  | 1:AA:366:C:O4'     | 1.82                     | 0.79              |
| 1:AA:901:A:H2'     | 1:AA:902:C:H5'     | 1.62                     | 0.79              |
| 1:AA:975:G:N1      | 1:AA:976:C:C6      | 2.50                     | 0.79              |
| 1:AA:1058:G:C2'    | 32:AJ:116:ASN:ND2  | 2.44                     | 0.79              |
| 1:AA:1214:A:H2'    | 1:AA:1215:G:C8     | 2.17                     | 0.79              |
| 1:AA:2185:C:H2'    | 1:AA:2186:G:C8     | 2.17                     | 0.79              |
| 1:AA:2687:U:H2'    | 1:AA:2687:U:O2     | 1.81                     | 0.79              |
| 1:AA:2786:U:O2'    | 1:AA:2787:C:H5'    | 1.81                     | 0.79              |
| 2:AB:17:C:H2'      | 2:AB:18:G:O4'      | 1.83                     | 0.79              |
| 8:AH:103:LEU:CG    | 8:AH:105:LEU:HD11  | 2.12                     | 0.79              |
| 9:AK:93:THR:HG22   | 9:AK:94:HIS:CD2    | 2.18                     | 0.79              |
| 10:AL:64:ARG:HG3   | 10:AL:64:ARG:NH2   | 1.89                     | 0.79              |
| 12:AN:42:ILE:CD1   | 12:AN:46:GLN:HB3   | 2.13                     | 0.79              |
| 13:AO:72:ASP:O     | 13:AO:76:VAL:HG23  | 1.83                     | 0.79              |
| 14:AP:92:TYR:CZ    | 14:AP:93:LYS:HB3   | 2.18                     | 0.79              |
| 20:AV:88:LYS:HB3   | 20:AV:91:GLU:CD    | 2.08                     | 0.79              |
| 21:AW:153:SER:HB3  | 21:AW:168:GLU:HB2  | 1.64                     | 0.79              |
| 32:AJ:108:ALA:HB2  | 32:AJ:111:LYS:CB   | 2.13                     | 0.79              |
| 34:BA:279:A:H1'    | 34:BA:281:G:C4     | 2.17                     | 0.79              |
| 34:BA:607:A:C2     | 34:BA:608:A:H1'    | 2.17                     | 0.79              |
| 34:BA:1035:A:H2'   | 34:BA:1036:G:H5'   | 1.63                     | 0.79              |
| 34:BA:1224:G:H1    | 34:BA:1362(A):C:N4 | 1.80                     | 0.79              |
| 34:BA:1435:G:C2    | 34:BA:1436:U:O4    | 2.35                     | 0.79              |
| 34:BA:1499:A:C2    | 34:BA:1519:A:O2'   | 2.35                     | 0.79              |
| 34:BA:1521:G:H2'   | 34:BA:1522:U:C6    | 2.18                     | 0.79              |
| 35:BF:67:THR:HB    | 35:BF:155:LEU:HD21 | 1.65                     | 0.79              |
| 36:BG:116:VAL:HG11 | 36:BG:141:VAL:HG21 | 1.64                     | 0.79              |
| 38:BI:91:LEU:HD23  | 38:BI:91:LEU:O     | 1.80                     | 0.79              |
| 39:BJ:65:VAL:HG23  | 39:BJ:66:GLU:N     | 1.96                     | 0.79              |
| 39:BJ:75:LEU:HD22  | 39:BJ:79:LEU:CD2   | 2.11                     | 0.79              |
| 40:BK:137:LYS:HA   | 40:BK:140:ASP:OD2  | 1.82                     | 0.79              |
| 41:BL:86:ILE:HB    | 41:BL:133:LEU:O    | 1.82                     | 0.79              |
| 45:BP:47:LYS:N     | 45:BP:48:PRO:HD3   | 1.98                     | 0.79              |
| 46:BQ:15:VAL:CG2   | 46:BQ:34:LEU:HD23  | 2.12                     | 0.79              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 49:BT:31:LYS:HB3 | 49:BT:31:LYS:NZ    | 1.98                     | 0.79              |
| 51:BV:67:ALA:HA  | 51:BV:70:ILE:HD12  | 1.64                     | 0.79              |
| 51:BV:67:ALA:HA  | 51:BV:70:ILE:CD1   | 2.13                     | 0.79              |
| 54:BY:6:ARG:HB3  | 54:BY:15:ARG:HH21  | 1.46                     | 0.79              |
| 1:AA:568:U:N3    | 1:AA:571:A:OP2     | 2.15                     | 0.79              |
| 1:AA:641:C:C2'   | 1:AA:642:G:H5'     | 2.12                     | 0.79              |
| 1:AA:728:G:HO2'  | 1:AA:729:G:H8      | 1.28                     | 0.79              |
| 1:AA:763:G:C2'   | 1:AA:764:A:H5''    | 2.11                     | 0.79              |
| 1:AA:1799:G:H5'' | 4:AD:264:LYS:CE    | 2.12                     | 0.79              |
| 1:AA:2135:A:H4'  | 1:AA:2136:C:C6     | 2.17                     | 0.79              |
| 1:AA:2286:A:H62  | 27:Ac:32:ASN:H     | 1.30                     | 0.79              |
| 1:AA:2312:U:H5'  | 7:AG:43:LEU:HD21   | 1.65                     | 0.79              |
| 1:AA:2507:C:O3'  | 1:AA:2573:C:N4     | 2.15                     | 0.79              |
| 1:AA:2533:A:C1'  | 1:AA:2664:G:H4'    | 2.12                     | 0.79              |
| 1:AA:2666:C:H2'  | 1:AA:2667:C:H5''   | 1.65                     | 0.79              |
| 2:AB:68:C:H3'    | 2:AB:69:G:H8       | 1.48                     | 0.79              |
| 5:AE:108:SER:OG  | 5:AE:164:ARG:CA    | 2.31                     | 0.79              |
| 5:AE:196:VAL:CG1 | 5:AE:197:ILE:N     | 2.44                     | 0.79              |
| 5:AE:203:LYS:HD3 | 5:AE:203:LYS:O     | 1.83                     | 0.79              |
| 6:AF:93:LYS:HE2  | 6:AF:95:ARG:HG2    | 1.65                     | 0.79              |
| 7:AG:12:TYR:HA   | 7:AG:15:VAL:HG22   | 1.65                     | 0.79              |
| 7:AG:30:GLU:HA   | 7:AG:33:ARG:HG2    | 1.63                     | 0.79              |
| 7:AG:131:TYR:CE1 | 7:AG:157:ILE:O     | 2.35                     | 0.79              |
| 7:AG:148:MET:CG  | 7:AG:151:ALA:HA    | 2.07                     | 0.79              |
| 8:AH:83:TYR:O    | 8:AH:135:GLY:N     | 2.16                     | 0.79              |
| 10:AL:18:LYS:CE  | 10:AL:44:LYS:HD3   | 2.12                     | 0.79              |
| 10:AL:122:LEU:HG | 15:AQ:71:GLY:CA    | 2.13                     | 0.79              |
| 11:AM:74:GLU:HA  | 11:AM:107:LYS:HD3  | 1.62                     | 0.79              |
| 13:AO:44:LEU:CD1 | 13:AO:48:VAL:HG21  | 2.13                     | 0.79              |
| 14:AP:62:LYS:HB3 | 14:AP:65:VAL:N     | 1.96                     | 0.79              |
| 16:AR:57:PHE:CA  | 16:AR:60:LEU:HG    | 2.12                     | 0.79              |
| 16:AR:98:LEU:CD1 | 16:AR:105:VAL:HG21 | 2.12                     | 0.79              |
| 18:AT:90:ARG:H   | 18:AT:90:ARG:HH21  | 1.27                     | 0.79              |
| 22:AX:23:VAL:HA  | 22:AX:38:VAL:HG13  | 1.62                     | 0.79              |
| 32:AJ:12:LEU:HB3 | 32:AJ:13:PRO:CD    | 2.13                     | 0.79              |
| 33:Ag:289:UNK:C  | 33:Ag:343:UNK:CA   | 2.53                     | 0.79              |
| 34:BA:313:A:H2'  | 34:BA:314:C:C5     | 2.16                     | 0.79              |
| 34:BA:979:C:H2'  | 34:BA:980:C:H5'    | 1.65                     | 0.79              |
| 34:BA:1225:A:O4' | 52:BW:78:ARG:HB3   | 1.82                     | 0.79              |
| 34:BA:1375:A:C2  | 34:BA:1376:U:C2    | 2.70                     | 0.79              |
| 35:BF:47:THR:OG1 | 35:BF:202:PRO:HG2  | 1.82                     | 0.79              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 37:BH:165:MET:HE3  | 37:BH:167:GLY:H    | 1.46                     | 0.79              |
| 40:BK:104:LEU:HD23 | 40:BK:134:ALA:CB   | 2.13                     | 0.79              |
| 41:BL:109:ILE:HD11 | 41:BL:137:VAL:HB   | 1.64                     | 0.79              |
| 46:BQ:19:LEU:HB2   | 46:BQ:25:ILE:CG2   | 2.12                     | 0.79              |
| 49:BT:73:LEU:HD13  | 49:BT:73:LEU:C     | 2.07                     | 0.79              |
| 52:BW:10:PHE:O     | 52:BW:41:VAL:CG2   | 2.30                     | 0.79              |
| 52:BW:36:ARG:O     | 52:BW:71:LEU:HB2   | 1.83                     | 0.79              |
| 55:BC:36:A:H2'     | 55:BC:37:A:H5''    | 1.65                     | 0.79              |
| 57:BZ:6:ARG:HD2    | 57:BZ:194:VAL:HG11 | 1.64                     | 0.79              |
| 57:BZ:21:LEU:HD11  | 57:BZ:98:VAL:CG2   | 2.13                     | 0.79              |
| 57:BZ:234:ASN:HB2  | 57:BZ:248:ASN:O    | 1.82                     | 0.79              |
| 1:AA:203:C:H3'     | 1:AA:204:A:H8      | 1.47                     | 0.79              |
| 1:AA:307:G:N2      | 1:AA:309:G:H3'     | 1.98                     | 0.79              |
| 1:AA:401:A:N6      | 1:AA:423:A:N1      | 2.31                     | 0.79              |
| 1:AA:647:G:H2'     | 1:AA:648:G:H8      | 1.45                     | 0.79              |
| 1:AA:685:A:O4'     | 1:AA:688:U:O4      | 1.99                     | 0.79              |
| 1:AA:704:G:H22     | 1:AA:726:G:H1'     | 1.48                     | 0.79              |
| 1:AA:1036:G:C5'    | 8:AH:59:ARG:HH22   | 1.95                     | 0.79              |
| 1:AA:1046:A:N3     | 31:AI:11:ALA:CB    | 2.46                     | 0.79              |
| 1:AA:1419:A:H3'    | 1:AA:1420:U:C2     | 2.18                     | 0.79              |
| 1:AA:2165:G:H2'    | 1:AA:2166:G:O4'    | 1.83                     | 0.79              |
| 1:AA:2606:C:H6     | 1:AA:2606:C:H5'    | 1.47                     | 0.79              |
| 1:AA:2660:A:N3     | 57:BZ:456:MET:CB   | 2.46                     | 0.79              |
| 1:AA:2825:C:H6     | 1:AA:2825:C:O5'    | 1.65                     | 0.79              |
| 1:AA:2828:C:C2     | 1:AA:2829:C:C5     | 2.71                     | 0.79              |
| 2:AB:31:C:C2       | 2:AB:32:C:H5       | 2.01                     | 0.79              |
| 3:AC:22:ILE:O      | 3:AC:25:ALA:HB3    | 1.83                     | 0.79              |
| 4:AD:105:ILE:HD12  | 4:AD:106:ILE:N     | 1.97                     | 0.79              |
| 4:AD:146:GLU:HB2   | 4:AD:154:LYS:N     | 1.97                     | 0.79              |
| 5:AE:113:PHE:HA    | 5:AE:158:GLY:C     | 2.08                     | 0.79              |
| 5:AE:176:ILE:HD12  | 5:AE:179:GLU:O     | 1.80                     | 0.79              |
| 6:AF:134:GLY:O     | 6:AF:166:ALA:HB2   | 1.83                     | 0.79              |
| 7:AG:75:LYS:HB3    | 7:AG:84:LYS:N      | 1.98                     | 0.79              |
| 9:AK:25:ARG:HA     | 9:AK:28:THR:CG2    | 2.11                     | 0.79              |
| 10:AL:16:ALA:C     | 10:AL:18:LYS:H     | 1.91                     | 0.79              |
| 11:AM:113:LYS:HA   | 11:AM:129:ALA:CB   | 2.12                     | 0.79              |
| 19:AU:27:THR:HG22  | 19:AU:80:ILE:HG23  | 1.65                     | 0.79              |
| 21:AW:78:LYS:HG3   | 21:AW:79:ARG:H     | 1.48                     | 0.79              |
| 24:AZ:3:ARG:HH22   | 24:AZ:59:VAL:CG1   | 1.95                     | 0.79              |
| 29:Ae:49:VAL:O     | 29:Ae:53:PRO:HG3   | 1.82                     | 0.79              |
| 34:BA:52:G:H2'     | 34:BA:53:A:C8      | 2.18                     | 0.79              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:174:C:C2    | 34:BA:175:C:C5     | 2.71                     | 0.79              |
| 34:BA:718:G:H4'   | 44:BO:117:ASN:HD21 | 1.48                     | 0.79              |
| 34:BA:1109:C:H2'  | 34:BA:1110:A:C8    | 2.16                     | 0.79              |
| 35:BF:18:GLY:O    | 35:BF:19:HIS:ND1   | 2.15                     | 0.79              |
| 35:BF:53:ARG:HH12 | 35:BF:200:ILE:HD12 | 1.47                     | 0.79              |
| 35:BF:82:ARG:HA   | 35:BF:92:TYR:HE1   | 1.47                     | 0.79              |
| 36:BG:159:GLY:N   | 36:BG:193:TYR:HE1  | 1.81                     | 0.79              |
| 37:BH:78:LEU:HD13 | 37:BH:96:LEU:HB3   | 1.65                     | 0.79              |
| 40:BK:5:ARG:HB3   | 40:BK:5:ARG:NH1    | 1.97                     | 0.79              |
| 44:BO:73:MET:HE2  | 44:BO:103:LEU:HD22 | 1.64                     | 0.79              |
| 45:BP:41:ARG:HB3  | 45:BP:41:ARG:NH1   | 1.97                     | 0.79              |
| 48:BS:31:LEU:HA   | 48:BS:34:LEU:HD23  | 1.65                     | 0.79              |
| 55:BC:38:A:N1     | 55:BC:39:U:C6      | 2.51                     | 0.79              |
| 57:BZ:2:ILE:HG21  | 57:BZ:199:VAL:HG11 | 1.64                     | 0.79              |
| 57:BZ:26:LEU:O    | 57:BZ:27:GLN:HG2   | 1.82                     | 0.79              |
| 57:BZ:381:ALA:HB1 | 57:BZ:577:LEU:CB   | 2.12                     | 0.79              |
| 1:AA:470:A:H2'    | 1:AA:471:A:O4'     | 1.83                     | 0.79              |
| 1:AA:477:A:N6     | 1:AA:502:A:N6      | 2.24                     | 0.79              |
| 1:AA:602:G:O5'    | 1:AA:602:G:H8      | 1.66                     | 0.79              |
| 1:AA:653:A:H5'    | 1:AA:654:A:O2'     | 1.83                     | 0.79              |
| 1:AA:774:A:H1'    | 1:AA:775:G:C8      | 2.18                     | 0.79              |
| 1:AA:829:A:H5''   | 1:AA:830:G:H5''    | 1.62                     | 0.79              |
| 1:AA:861:A:H62    | 1:AA:916:G:H21     | 0.80                     | 0.79              |
| 1:AA:898:C:C2'    | 1:AA:899:A:H4'     | 2.11                     | 0.79              |
| 1:AA:1252:G:H8    | 1:AA:1253:A:C1'    | 1.93                     | 0.79              |
| 1:AA:1710:C:H2'   | 1:AA:1711:C:C6     | 2.16                     | 0.79              |
| 1:AA:2307:G:C4    | 1:AA:2308:G:H1'    | 2.18                     | 0.79              |
| 1:AA:2393:A:H5''  | 11:AM:56:SER:CA    | 2.12                     | 0.79              |
| 1:AA:2666:C:H41   | 1:AA:2667:C:N4     | 1.81                     | 0.79              |
| 3:AC:71:GLN:CD    | 3:AC:72:VAL:HG23   | 2.07                     | 0.79              |
| 3:AC:167:LYS:HG3  | 3:AC:168:THR:N     | 1.95                     | 0.79              |
| 4:AD:130:ALA:O    | 4:AD:131:LEU:HD13  | 1.81                     | 0.79              |
| 4:AD:177:LEU:HD23 | 4:AD:177:LEU:H     | 1.46                     | 0.79              |
| 5:AE:116:VAL:O    | 5:AE:120:TRP:CD1   | 2.36                     | 0.79              |
| 6:AF:74:ARG:HH11  | 6:AF:75:HIS:HA     | 1.46                     | 0.79              |
| 10:AL:122:LEU:HG  | 15:AQ:71:GLY:HA3   | 1.65                     | 0.79              |
| 11:AM:7:ARG:CD    | 11:AM:8:PRO:HD3    | 2.12                     | 0.79              |
| 11:AM:128:HIS:ND1 | 11:AM:129:ALA:N    | 2.30                     | 0.79              |
| 15:AQ:19:LEU:O    | 15:AQ:20:PRO:C     | 2.26                     | 0.79              |
| 17:AS:81:TYR:O    | 17:AS:82:ARG:HB2   | 1.80                     | 0.79              |
| 19:AU:70:LEU:HD23 | 19:AU:71:GLY:N     | 1.98                     | 0.79              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 20:AV:108:THR:O    | 20:AV:109:GLU:HG3 | 1.83                     | 0.79              |
| 21:AW:122:ARG:HG2  | 21:AW:170:THR:O   | 1.83                     | 0.79              |
| 21:AW:161:VAL:HG12 | 21:AW:162:GLU:H   | 1.48                     | 0.79              |
| 25:Aa:64:GLY:HA2   | 25:Aa:67:TYR:CD1  | 2.18                     | 0.79              |
| 26:Ab:39:MET:CE    | 26:Ab:41:PRO:HD3  | 2.13                     | 0.79              |
| 27:Ac:12:GLU:HG2   | 27:Ac:13:CYS:N    | 1.94                     | 0.79              |
| 34:BA:154:C:O2'    | 34:BA:155:C:H5'   | 1.83                     | 0.79              |
| 34:BA:1053:G:C6    | 34:BA:1199:U:H2'  | 2.18                     | 0.79              |
| 34:BA:1309:G:N7    | 34:BA:1330:U:C4   | 2.51                     | 0.79              |
| 34:BA:1507:A:H2'   | 34:BA:1508:G:O4'  | 1.81                     | 0.79              |
| 35:BF:15:VAL:HG11  | 35:BF:209:ARG:HB3 | 1.65                     | 0.79              |
| 36:BG:58:GLU:H     | 36:BG:65:ALA:HB3  | 1.46                     | 0.79              |
| 43:BN:24:VAL:HG22  | 43:BN:34:VAL:HG11 | 1.65                     | 0.79              |
| 45:BP:84:LEU:HG    | 45:BP:85:ILE:H    | 1.48                     | 0.79              |
| 48:BS:36:ILE:HD12  | 48:BS:63:ARG:HD3  | 1.63                     | 0.79              |
| 56:BE:21:A:H2'     | 56:BE:22:G:O4'    | 1.81                     | 0.79              |
| 57:BZ:8:ILE:CD1    | 57:BZ:96:LEU:HD12 | 2.13                     | 0.79              |
| 57:BZ:207:MET:HE1  | 57:BZ:224:GLY:HA3 | 1.63                     | 0.79              |
| 57:BZ:322:GLU:CD   | 57:BZ:581:THR:CB  | 2.56                     | 0.79              |
| 57:BZ:346:ARG:HB2  | 57:BZ:359:SER:HB2 | 1.64                     | 0.79              |
| 57:BZ:411:HIS:CD2  | 57:BZ:459:THR:CA  | 2.65                     | 0.79              |
| 1:AA:71:A:C4'      | 1:AA:72:U:H5''    | 2.11                     | 0.79              |
| 1:AA:185:U:N3      | 1:AA:212:G:N2     | 2.30                     | 0.79              |
| 1:AA:209:C:H2'     | 1:AA:210:C:H5'    | 1.64                     | 0.79              |
| 1:AA:261:G:O2'     | 1:AA:262:A:H5'    | 1.83                     | 0.79              |
| 1:AA:343:C:H2'     | 1:AA:344:G:H5'    | 1.62                     | 0.79              |
| 1:AA:531:C:C6      | 1:AA:532:A:N3     | 2.50                     | 0.79              |
| 1:AA:804:A:H5''    | 1:AA:805:G:OP1    | 1.82                     | 0.79              |
| 1:AA:865:C:H42     | 1:AA:909:A:H62    | 1.29                     | 0.79              |
| 1:AA:1119:C:H2'    | 1:AA:1120:G:H8    | 1.47                     | 0.79              |
| 1:AA:1702:G:C2'    | 1:AA:1703:G:H5''  | 2.01                     | 0.79              |
| 1:AA:1912:A:C6     | 1:AA:1919:A:C2    | 2.70                     | 0.79              |
| 1:AA:1931:U:H5     | 1:AA:1932:A:C5    | 2.01                     | 0.79              |
| 1:AA:1933:G:O6     | 1:AA:1968:G:N2    | 2.15                     | 0.79              |
| 3:AC:42:GLU:C      | 3:AC:215:THR:N    | 2.41                     | 0.79              |
| 3:AC:43:VAL:HG22   | 3:AC:224:ILE:HD13 | 1.60                     | 0.79              |
| 3:AC:48:GLY:H      | 3:AC:210:ARG:HG3  | 1.44                     | 0.79              |
| 3:AC:156:ILE:HA    | 3:AC:160:ARG:N    | 1.98                     | 0.79              |
| 6:AF:7:TYR:O       | 6:AF:18:ARG:CG    | 2.27                     | 0.79              |
| 7:AG:107:LEU:HD12  | 7:AG:111:LEU:HD13 | 1.64                     | 0.79              |
| 8:AH:164:TYR:HE2   | 8:AH:167:GLU:N    | 1.79                     | 0.79              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AL:122:LEU:N    | 15:AQ:70:VAL:O     | 2.15                     | 0.79              |
| 11:AM:113:LYS:HB2  | 11:AM:129:ALA:HB1  | 1.65                     | 0.79              |
| 13:AO:36:THR:HB    | 13:AO:40:LYS:CD    | 2.12                     | 0.79              |
| 13:AO:61:HIS:ND1   | 13:AO:64:ARG:CZ    | 2.46                     | 0.79              |
| 15:AQ:28:VAL:HB    | 15:AQ:52:ILE:HD12  | 1.64                     | 0.79              |
| 16:AR:50:ARG:HE    | 17:AS:75:PHE:HE2   | 1.30                     | 0.79              |
| 20:AV:84:ARG:HD2   | 20:AV:84:ARG:C     | 2.08                     | 0.79              |
| 23:AY:14:VAL:HA    | 23:AY:17:GLU:CD    | 2.07                     | 0.79              |
| 26:Ab:17:ASP:O     | 26:Ab:19:ARG:N     | 2.16                     | 0.79              |
| 34:BA:332:G:H2'    | 34:BA:333:G:H8     | 1.48                     | 0.79              |
| 34:BA:654:G:N2     | 34:BA:753:A:H1'    | 1.98                     | 0.79              |
| 34:BA:655:A:H2'    | 34:BA:656:C:H6     | 1.46                     | 0.79              |
| 34:BA:1044:A:H2'   | 34:BA:1045:C:H5'   | 1.62                     | 0.79              |
| 34:BA:1144:G:H22   | 34:BA:1146:A:H62   | 1.29                     | 0.79              |
| 34:BA:1155:G:N2    | 34:BA:1179:A:N6    | 2.30                     | 0.79              |
| 34:BA:1196:U:H5'   | 34:BA:1197:G:H5'   | 1.64                     | 0.79              |
| 34:BA:1389:C:C2'   | 34:BA:1390:U:H5'   | 2.13                     | 0.79              |
| 35:BF:24:TRP:CH2   | 35:BF:26:PRO:HA    | 2.18                     | 0.79              |
| 35:BF:208:ILE:HG21 | 35:BF:239:VAL:HG11 | 1.65                     | 0.79              |
| 36:BG:205:GLY:O    | 36:BG:206:GLU:HB2  | 1.82                     | 0.79              |
| 39:BJ:53:ALA:HB1   | 39:BJ:86:ARG:NH1   | 1.98                     | 0.79              |
| 40:BK:106:GLN:HE21 | 40:BK:106:GLN:HA   | 1.45                     | 0.79              |
| 41:BL:65:TYR:O     | 41:BL:67:PRO:HD3   | 1.81                     | 0.79              |
| 45:BP:33:ARG:O     | 45:BP:84:LEU:HG    | 1.82                     | 0.79              |
| 46:BQ:96:LEU:HB2   | 46:BQ:97:PRO:CD    | 2.13                     | 0.79              |
| 47:BR:60:SER:O     | 47:BR:61:TRP:HB3   | 1.83                     | 0.79              |
| 49:BT:8:ARG:HH12   | 49:BT:11:SER:H     | 1.30                     | 0.79              |
| 54:BY:24:ARG:O     | 54:BY:25:LYS:HB2   | 1.83                     | 0.79              |
| 55:BC:40:C:H2'     | 55:BC:41:C:C6      | 2.18                     | 0.79              |
| 57:BZ:205:PHE:CE1  | 57:BZ:226:ILE:HG23 | 2.18                     | 0.79              |
| 57:BZ:206:GLN:HB3  | 57:BZ:228:ARG:H    | 1.47                     | 0.79              |
| 57:BZ:213:ASP:O    | 57:BZ:220:VAL:HG13 | 1.83                     | 0.79              |
| 1:AA:221:A:H4'     | 1:AA:222:A:C5'     | 2.07                     | 0.78              |
| 1:AA:535:C:O2'     | 1:AA:536:A:H5'     | 1.83                     | 0.78              |
| 1:AA:568:U:H2'     | 1:AA:570:G:C8      | 2.18                     | 0.78              |
| 1:AA:851:U:H4'     | 24:AZ:46:ASN:HA    | 1.65                     | 0.78              |
| 1:AA:1170:G:H2'    | 1:AA:1170:G:N3     | 1.94                     | 0.78              |
| 1:AA:1184:G:C2'    | 1:AA:1185:C:H5'    | 2.12                     | 0.78              |
| 1:AA:1203:G:N1     | 1:AA:1241:A:H1'    | 1.97                     | 0.78              |
| 1:AA:1670:C:H2'    | 1:AA:1671:U:O4'    | 1.82                     | 0.78              |
| 1:AA:2107:C:C5     | 1:AA:2181:G:O6     | 2.35                     | 0.78              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2114:A:H2'   | 1:AA:2115:G:H5'    | 1.64                     | 0.78              |
| 1:AA:2383:G:OP2   | 29:Ae:39:LYS:HD3   | 1.82                     | 0.78              |
| 1:AA:2484:G:H1'   | 12:AN:124:LYS:NZ   | 1.98                     | 0.78              |
| 1:AA:2848:G:C8    | 15:AQ:99:LEU:CD1   | 2.66                     | 0.78              |
| 2:AB:31:C:C2      | 2:AB:32:C:C5       | 2.71                     | 0.78              |
| 4:AD:95:LEU:HD13  | 4:AD:95:LEU:C      | 2.06                     | 0.78              |
| 7:AG:57:ALA:N     | 7:AG:68:PRO:HB2    | 1.98                     | 0.78              |
| 9:AK:66:LYS:HA    | 9:AK:87:LEU:CD1    | 2.14                     | 0.78              |
| 10:AL:122:LEU:CB  | 15:AQ:71:GLY:HA3   | 2.14                     | 0.78              |
| 11:AM:45:LEU:CD2  | 11:AM:46:LYS:HG3   | 2.13                     | 0.78              |
| 12:AN:65:PHE:O    | 12:AN:66:ILE:HG13  | 1.84                     | 0.78              |
| 12:AN:130:LYS:HE3 | 12:AN:131:ILE:N    | 1.98                     | 0.78              |
| 13:AO:86:ARG:HH11 | 13:AO:86:ARG:CB    | 1.94                     | 0.78              |
| 19:AU:49:VAL:HG12 | 19:AU:88:LYS:HG3   | 1.65                     | 0.78              |
| 20:AV:14:LEU:HD22 | 20:AV:19:LYS:HB2   | 1.65                     | 0.78              |
| 22:AX:25:ARG:CG   | 22:AX:37:LEU:HA    | 2.12                     | 0.78              |
| 24:AZ:19:GLN:O    | 24:AZ:23:LEU:HD13  | 1.83                     | 0.78              |
| 25:Aa:5:ILE:HD12  | 25:Aa:8:LYS:C      | 2.08                     | 0.78              |
| 27:Ac:16:CYS:HB3  | 27:Ac:49:HIS:CG    | 2.18                     | 0.78              |
| 30:Af:10:ILE:HD11 | 30:Af:34:GLN:NE2   | 1.98                     | 0.78              |
| 32:AJ:112:MET:HG2 | 32:AJ:122:ALA:HB3  | 1.65                     | 0.78              |
| 34:BA:944:G:H3'   | 34:BA:945:G:H5''   | 1.63                     | 0.78              |
| 34:BA:1270:C:O2'  | 34:BA:1313:U:H5''  | 1.81                     | 0.78              |
| 37:BH:38:TYR:HB2  | 37:BH:39:PRO:HD2   | 1.63                     | 0.78              |
| 39:BJ:80:ARG:HG2  | 39:BJ:88:VAL:HG21  | 1.63                     | 0.78              |
| 45:BP:126:LYS:NZ  | 45:BP:128:ALA:H    | 1.80                     | 0.78              |
| 49:BT:35:LYS:HZ1  | 49:BT:37:GLY:H     | 1.29                     | 0.78              |
| 53:BX:66:ALA:HB3  | 53:BX:72:LEU:HD12  | 1.63                     | 0.78              |
| 57:BZ:89:MET:HE2  | 57:BZ:119:TYR:CG   | 2.18                     | 0.78              |
| 57:BZ:397:GLN:CD  | 57:BZ:472:TYR:O    | 2.25                     | 0.78              |
| 57:BZ:509:LYS:HG3 | 57:BZ:561:ILE:HD13 | 1.65                     | 0.78              |
| 1:AA:125:G:H22    | 28:Ad:10:ARG:HA    | 1.46                     | 0.78              |
| 1:AA:248:G:C2     | 1:AA:2431:U:H5'    | 2.19                     | 0.78              |
| 1:AA:562:U:O2     | 1:AA:572:A:H1'     | 1.81                     | 0.78              |
| 1:AA:574:C:N1     | 1:AA:2055:C:H5     | 1.82                     | 0.78              |
| 1:AA:1183:G:H4'   | 1:AA:1184:G:O5'    | 1.82                     | 0.78              |
| 1:AA:1242:A:H2    | 11:AM:6:LEU:HD21   | 1.48                     | 0.78              |
| 1:AA:1725:G:C6    | 1:AA:1741:C:N4     | 2.52                     | 0.78              |
| 1:AA:2710:C:H2'   | 1:AA:2711:A:C5'    | 2.11                     | 0.78              |
| 1:AA:2790:A:C4'   | 1:AA:2893:G:H21    | 1.96                     | 0.78              |
| 3:AC:40:THR:C     | 3:AC:216:THR:CG2   | 2.55                     | 0.78              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 3:AC:64:LEU:HD12  | 3:AC:161:ILE:HG21  | 1.64                     | 0.78              |
| 3:AC:66:HIS:H     | 3:AC:158:ALA:C     | 1.85                     | 0.78              |
| 6:AF:105:VAL:HA   | 6:AF:108:LYS:HB2   | 1.64                     | 0.78              |
| 8:AH:16:SER:HB3   | 8:AH:27:LYS:HB2    | 1.65                     | 0.78              |
| 8:AH:175:LYS:CG   | 8:AH:176:ALA:H     | 1.93                     | 0.78              |
| 12:AN:110:THR:O   | 12:AN:111:GLU:HB2  | 1.81                     | 0.78              |
| 14:AP:49:VAL:HG13 | 14:AP:76:LYS:CE    | 2.12                     | 0.78              |
| 15:AQ:46:GLU:OE1  | 15:AQ:47:GLY:N     | 2.16                     | 0.78              |
| 15:AQ:53:ARG:CB   | 15:AQ:65:LYS:O     | 2.28                     | 0.78              |
| 15:AQ:95:ARG:HB3  | 15:AQ:95:ARG:HH21  | 1.46                     | 0.78              |
| 21:AW:113:ALA:HB1 | 21:AW:145:GLU:CD   | 2.07                     | 0.78              |
| 21:AW:152:ALA:CA  | 21:AW:155:LEU:HD13 | 2.11                     | 0.78              |
| 26:Ab:11:THR:HG23 | 26:Ab:15:ARG:CB    | 2.13                     | 0.78              |
| 28:Ad:42:LEU:O    | 28:Ad:45:ALA:HB3   | 1.82                     | 0.78              |
| 32:AJ:29:GLN:HG2  | 57:BZ:431:PRO:HB2  | 1.64                     | 0.78              |
| 34:BA:819:A:C6    | 34:BA:1529:G:N7    | 2.51                     | 0.78              |
| 34:BA:1206:G:H2'  | 34:BA:1207:G:O4'   | 1.82                     | 0.78              |
| 34:BA:1225:A:H4'  | 52:BW:78:ARG:HB2   | 1.62                     | 0.78              |
| 34:BA:1240:U:H2'  | 40:BK:32:ARG:HH21  | 1.46                     | 0.78              |
| 34:BA:1309:G:H2'  | 34:BA:1329:A:C4    | 2.14                     | 0.78              |
| 34:BA:1315:U:O2   | 34:BA:1361:G:H1'   | 1.80                     | 0.78              |
| 34:BA:1318:A:C3'  | 52:BW:37:ARG:HB3   | 2.08                     | 0.78              |
| 34:BA:1454:G:C5   | 34:BA:1455:G:O6    | 2.36                     | 0.78              |
| 35:BF:132:LYS:H   | 35:BF:132:LYS:HE2  | 1.48                     | 0.78              |
| 38:BI:152:ARG:NH2 | 41:BL:43:GLY:HA3   | 1.96                     | 0.78              |
| 40:BK:106:GLN:HA  | 40:BK:109:ASN:HD22 | 1.47                     | 0.78              |
| 44:BO:84:VAL:CG2  | 44:BO:110:ASP:HA   | 2.11                     | 0.78              |
| 44:BO:91:ARG:O    | 44:BO:95:ILE:HG13  | 1.83                     | 0.78              |
| 46:BQ:36:LYS:HD3  | 46:BQ:59:TYR:CE2   | 2.18                     | 0.78              |
| 46:BQ:64:TRP:NE1  | 46:BQ:66:LEU:HD22  | 1.98                     | 0.78              |
| 46:BQ:97:PRO:HG2  | 46:BQ:101:GLN:HG3  | 1.63                     | 0.78              |
| 46:BQ:97:PRO:HB2  | 46:BQ:101:GLN:HG3  | 1.64                     | 0.78              |
| 46:BQ:102:ARG:O   | 46:BQ:103:THR:OG1  | 2.00                     | 0.78              |
| 48:BS:42:HIS:NE2  | 48:BS:43:LEU:HD23  | 1.99                     | 0.78              |
| 49:BT:6:LEU:HD13  | 49:BT:6:LEU:N      | 1.96                     | 0.78              |
| 50:BU:59:ILE:HD12 | 50:BU:60:ILE:N     | 1.98                     | 0.78              |
| 53:BX:33:ILE:HD13 | 53:BX:63:ILE:CA    | 2.13                     | 0.78              |
| 54:BY:14:TRP:CZ3  | 54:BY:15:ARG:CZ    | 2.66                     | 0.78              |
| 57:BZ:398:GLU:OE1 | 57:BZ:444:PRO:CB   | 2.31                     | 0.78              |
| 1:AA:8:A:H5''     | 9:AK:51:PHE:CE2    | 2.18                     | 0.78              |
| 1:AA:120:U:O2     | 1:AA:120:U:H2'     | 1.82                     | 0.78              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:389:G:OP2    | 25:Aa:24:THR:HG23  | 1.82                     | 0.78              |
| 1:AA:397:G:P      | 25:Aa:41:PRO:HG3   | 2.23                     | 0.78              |
| 1:AA:603:A:H2'    | 1:AA:604:G:C8      | 2.17                     | 0.78              |
| 1:AA:820:A:C2'    | 1:AA:821:A:H5'     | 2.09                     | 0.78              |
| 1:AA:860:U:H2'    | 1:AA:861:A:H5'     | 1.65                     | 0.78              |
| 1:AA:973:A:C1'    | 1:AA:1188:U:O4     | 2.32                     | 0.78              |
| 1:AA:1080:C:C5'   | 32:AJ:128:ALA:C    | 2.56                     | 0.78              |
| 1:AA:1439:A:H2'   | 1:AA:1440:G:H5'    | 1.64                     | 0.78              |
| 1:AA:1779:U:C2'   | 1:AA:1783:A:H62    | 1.95                     | 0.78              |
| 1:AA:1842:G:O2'   | 1:AA:1843:C:H5'    | 1.84                     | 0.78              |
| 1:AA:1926:U:H3    | 1:AA:1929:G:H22    | 1.31                     | 0.78              |
| 1:AA:2031:A:H62   | 1:AA:2498:C:H1'    | 1.49                     | 0.78              |
| 1:AA:2265:U:C2    | 1:AA:2266:A:N7     | 2.51                     | 0.78              |
| 1:AA:2587:A:H2'   | 1:AA:2588:G:H5'    | 1.65                     | 0.78              |
| 1:AA:2623:G:H5'   | 1:AA:2826:A:H1'    | 1.63                     | 0.78              |
| 3:AC:59:ARG:HG3   | 3:AC:60:GLY:N      | 1.96                     | 0.78              |
| 3:AC:113:VAL:HG12 | 3:AC:138:PRO:HG3   | 1.65                     | 0.78              |
| 3:AC:148:ASN:HD21 | 3:AC:152:ILE:HG13  | 1.47                     | 0.78              |
| 3:AC:156:ILE:CA   | 3:AC:160:ARG:CB    | 2.38                     | 0.78              |
| 4:AD:206:LEU:O    | 4:AD:206:LEU:HD22  | 1.83                     | 0.78              |
| 5:AE:8:LYS:CG     | 15:AQ:6:LEU:HD11   | 2.13                     | 0.78              |
| 5:AE:52:LEU:HA    | 5:AE:74:PRO:CA     | 2.12                     | 0.78              |
| 5:AE:176:ILE:HG22 | 5:AE:181:LEU:O     | 1.83                     | 0.78              |
| 6:AF:6:VAL:HB     | 6:AF:18:ARG:HD2    | 1.63                     | 0.78              |
| 6:AF:154:VAL:HB   | 6:AF:193:VAL:HG23  | 1.63                     | 0.78              |
| 7:AG:78:SER:HB2   | 7:AG:82:LEU:HB2    | 1.65                     | 0.78              |
| 15:AQ:1:MET:CG    | 15:AQ:2:ASN:H      | 1.95                     | 0.78              |
| 16:AR:97:ASP:HA   | 16:AR:101:ARG:HH21 | 1.49                     | 0.78              |
| 17:AS:3:ALA:HB1   | 17:AS:44:LYS:HZ2   | 1.46                     | 0.78              |
| 23:AY:52:ILE:HA   | 23:AY:55:LEU:CD2   | 2.11                     | 0.78              |
| 30:Af:7:VAL:HG22  | 30:Af:34:GLN:OE1   | 1.83                     | 0.78              |
| 32:AJ:117:THR:O   | 32:AJ:118:THR:OG1  | 2.00                     | 0.78              |
| 34:BA:132:C:C2    | 34:BA:231:G:N2     | 2.51                     | 0.78              |
| 34:BA:540:G:H21   | 37:BH:42:GLN:NE2   | 1.81                     | 0.78              |
| 34:BA:589:C:OP1   | 41:BL:5:PRO:HG2    | 1.82                     | 0.78              |
| 34:BA:594:G:N7    | 34:BA:595:G:N2     | 2.32                     | 0.78              |
| 34:BA:633:G:H2'   | 34:BA:634:C:C6     | 2.18                     | 0.78              |
| 34:BA:1089:G:H2'  | 34:BA:1090:U:H5'   | 1.65                     | 0.78              |
| 34:BA:1296:C:H1'  | 34:BA:1302:U:O4    | 1.82                     | 0.78              |
| 34:BA:1316:G:O4'  | 34:BA:1360:A:N1    | 2.16                     | 0.78              |
| 35:BF:17:PHE:HD1  | 35:BF:18:GLY:H     | 1.29                     | 0.78              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:BF:71:VAL:CG2  | 35:BF:93:VAL:HB   | 2.14                     | 0.78              |
| 37:BH:205:GLU:OE2 | 38:BI:100:VAL:HB  | 1.81                     | 0.78              |
| 38:BI:48:ALA:HB1  | 38:BI:53:LEU:HD12 | 1.66                     | 0.78              |
| 42:BM:10:ARG:HA   | 42:BM:104:ARG:NE  | 1.98                     | 0.78              |
| 43:BN:6:ILE:HG22  | 43:BN:98:ILE:HG13 | 1.66                     | 0.78              |
| 48:BS:77:ARG:NH2  | 48:BS:78:TYR:HA   | 1.99                     | 0.78              |
| 55:BC:28:G:O2'    | 55:BC:29:G:H5'    | 1.81                     | 0.78              |
| 57:BZ:209:ILE:CG2 | 57:BZ:222:GLY:O   | 2.32                     | 0.78              |
| 57:BZ:374:ARG:HD3 | 57:BZ:583:THR:N   | 1.98                     | 0.78              |
| 57:BZ:488:LEU:CG  | 57:BZ:525:GLY:O   | 2.31                     | 0.78              |
| 1:AA:673:C:H2'    | 1:AA:674:G:C5'    | 2.13                     | 0.78              |
| 1:AA:962:G:N2     | 1:AA:963:U:C2     | 2.51                     | 0.78              |
| 1:AA:1048:A:C2    | 1:AA:1112:G:O2'   | 2.36                     | 0.78              |
| 1:AA:1785:A:O5'   | 1:AA:1982:C:H4'   | 1.83                     | 0.78              |
| 1:AA:2122:U:O4'   | 3:AC:166:ASP:CG   | 2.26                     | 0.78              |
| 1:AA:2265:U:N3    | 1:AA:2266:A:N7    | 2.32                     | 0.78              |
| 1:AA:2305:A:C8    | 1:AA:2306:C:H5''  | 2.18                     | 0.78              |
| 1:AA:2647:U:H2'   | 1:AA:2648:C:H6    | 1.48                     | 0.78              |
| 1:AA:2789:C:C2'   | 1:AA:2893:G:N2    | 2.46                     | 0.78              |
| 4:AD:55:GLY:HA2   | 4:AD:217:ARG:NE   | 1.98                     | 0.78              |
| 4:AD:117:VAL:HG13 | 4:AD:129:ASN:CG   | 2.08                     | 0.78              |
| 5:AE:199:ARG:HD2  | 5:AE:199:ARG:N    | 1.98                     | 0.78              |
| 5:AE:200:GLU:HB3  | 5:AE:202:LYS:NZ   | 1.97                     | 0.78              |
| 6:AF:156:LEU:HD12 | 6:AF:167:ALA:HB2  | 1.65                     | 0.78              |
| 7:AG:29:TRP:O     | 7:AG:31:VAL:N     | 2.14                     | 0.78              |
| 9:AK:57:ALA:O     | 9:AK:60:ILE:HG13  | 1.83                     | 0.78              |
| 9:AK:89:LYS:CE    | 9:AK:89:LYS:N     | 2.43                     | 0.78              |
| 12:AN:122:GLY:HA2 | 12:AN:125:LEU:HG  | 1.65                     | 0.78              |
| 12:AN:134:ARG:NH2 | 12:AN:137:TYR:CD1 | 2.51                     | 0.78              |
| 13:AO:37:THR:HG23 | 13:AO:40:LYS:HD2  | 1.66                     | 0.78              |
| 13:AO:61:HIS:CA   | 13:AO:64:ARG:HD3  | 2.13                     | 0.78              |
| 14:AP:23:ARG:HH11 | 14:AP:42:ASP:HB3  | 1.48                     | 0.78              |
| 14:AP:39:ILE:C    | 14:AP:40:ILE:HD12 | 2.09                     | 0.78              |
| 17:AS:70:ILE:HG23 | 17:AS:90:PRO:HA   | 1.65                     | 0.78              |
| 22:AX:31:VAL:HG23 | 22:AX:65:GLY:O    | 1.82                     | 0.78              |
| 23:AY:27:LEU:HD21 | 23:AY:48:LEU:HB3  | 1.64                     | 0.78              |
| 34:BA:194:C:H5''  | 53:BX:65:LYS:HZ3  | 1.46                     | 0.78              |
| 34:BA:290:C:O5'   | 34:BA:290:C:H6    | 1.66                     | 0.78              |
| 34:BA:722:A:H2'   | 34:BA:724:G:H8    | 1.45                     | 0.78              |
| 34:BA:795:C:H4'   | 34:BA:1506:U:O2   | 1.83                     | 0.78              |
| 35:BF:16:HIS:CE1  | 35:BF:210:SER:HA  | 2.19                     | 0.78              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 38:BI:16:THR:HG23 | 38:BI:28:PHE:HA    | 1.65                     | 0.78              |
| 39:BJ:78:GLU:O    | 39:BJ:81:ILE:HB    | 1.83                     | 0.78              |
| 41:BL:88:LYS:H    | 41:BL:88:LYS:NZ    | 1.81                     | 0.78              |
| 42:BM:16:ARG:NE   | 42:BM:18:PHE:HZ    | 1.80                     | 0.78              |
| 55:BC:18:G:H1     | 55:BC:55:U:H1'     | 1.48                     | 0.78              |
| 1:AA:328:U:H3     | 1:AA:332:A:H62     | 1.32                     | 0.78              |
| 1:AA:448:U:O4     | 1:AA:583:G:H1'     | 1.82                     | 0.78              |
| 1:AA:536:A:H2'    | 1:AA:537:C:O4'     | 1.83                     | 0.78              |
| 1:AA:888:C:H1'    | 1:AA:889:C:N3      | 1.98                     | 0.78              |
| 1:AA:1058:G:N2    | 1:AA:1059:G:C8     | 2.51                     | 0.78              |
| 1:AA:1069:A:C6    | 1:AA:1096:A:OP1    | 2.36                     | 0.78              |
| 1:AA:1451:C:H2'   | 1:AA:1457:A:N6     | 1.99                     | 0.78              |
| 1:AA:1526:G:H21   | 1:AA:1545(A):A:H62 | 1.27                     | 0.78              |
| 1:AA:1533:C:C2    | 1:AA:1539:G:N2     | 2.51                     | 0.78              |
| 1:AA:1672:C:C3'   | 1:AA:1673:U:H5''   | 2.14                     | 0.78              |
| 1:AA:1762:A:C8    | 1:AA:1762:A:C3'    | 2.60                     | 0.78              |
| 1:AA:1907:G:O2'   | 1:AA:1908:C:H5'    | 1.84                     | 0.78              |
| 1:AA:2124:G:O6    | 3:AC:218:MET:HA    | 1.84                     | 0.78              |
| 1:AA:2127:G:H3'   | 3:AC:36:LYS:CG     | 1.69                     | 0.78              |
| 1:AA:2259:G:H5'   | 1:AA:2427:C:H3'    | 1.65                     | 0.78              |
| 1:AA:2568:C:H2'   | 1:AA:2569:G:H5'    | 1.63                     | 0.78              |
| 2:AB:77:U:H2'     | 2:AB:78:A:C8       | 2.19                     | 0.78              |
| 5:AE:119:ARG:NE   | 5:AE:155:LYS:HB3   | 1.97                     | 0.78              |
| 6:AF:34:TRP:HD1   | 6:AF:38:ARG:HH11   | 1.32                     | 0.78              |
| 6:AF:130:ALA:O    | 6:AF:139:PHE:HA    | 1.84                     | 0.78              |
| 7:AG:146:TYR:CE1  | 7:AG:149:VAL:HA    | 2.19                     | 0.78              |
| 9:AK:16:ILE:HD11  | 9:AK:52:VAL:CG2    | 2.09                     | 0.78              |
| 10:AL:63:VAL:HA   | 10:AL:78:ARG:HD3   | 1.63                     | 0.78              |
| 14:AP:7:TYR:O     | 14:AP:10:ARG:HB2   | 1.81                     | 0.78              |
| 14:AP:60:GLY:O    | 14:AP:62:LYS:N     | 2.13                     | 0.78              |
| 16:AR:89:GLU:CB   | 17:AS:52:VAL:N     | 2.44                     | 0.78              |
| 19:AU:5:TYR:HB3   | 23:AY:24:LYS:HD3   | 1.65                     | 0.78              |
| 24:AZ:55:ARG:CZ   | 24:AZ:55:ARG:HA    | 2.13                     | 0.78              |
| 28:Ad:8:ASN:HB3   | 28:Ad:11:LYS:HB3   | 1.65                     | 0.78              |
| 28:Ad:17:GLY:N    | 28:Ad:21:ARG:HH22  | 1.81                     | 0.78              |
| 29:Ae:42:ARG:HB3  | 29:Ae:43:GLN:HE22  | 1.47                     | 0.78              |
| 34:BA:124:G:H2'   | 34:BA:125:U:C6     | 2.18                     | 0.78              |
| 34:BA:751:U:H4'   | 48:BS:24:SER:OG    | 1.83                     | 0.78              |
| 34:BA:858:G:N2    | 34:BA:869:G:H3'    | 1.98                     | 0.78              |
| 34:BA:1210:C:H4'  | 34:BA:1214:C:N3    | 1.98                     | 0.78              |
| 34:BA:1315:U:O2   | 34:BA:1361:G:O4'   | 1.86                     | 0.78              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1394:A:N7    | 34:BA:1501:C:O4'   | 2.16                     | 0.78              |
| 35:BF:88:ALA:HA    | 35:BF:219:VAL:HG13 | 1.66                     | 0.78              |
| 35:BF:162:ILE:HD13 | 35:BF:183:PRO:O    | 1.83                     | 0.78              |
| 36:BG:12:LEU:HD21  | 47:BR:58:LYS:H     | 1.48                     | 0.78              |
| 36:BG:15:THR:HG21  | 36:BG:181:ASN:CA   | 2.12                     | 0.78              |
| 36:BG:17:ASP:HB3   | 36:BG:18:TRP:HE3   | 1.49                     | 0.78              |
| 37:BH:135:LEU:HD12 | 37:BH:138:TYR:HB2  | 1.65                     | 0.78              |
| 37:BH:173:TRP:CD1  | 37:BH:189:PRO:HB3  | 2.18                     | 0.78              |
| 38:BI:12:LEU:HG    | 38:BI:129:ILE:CD1  | 2.12                     | 0.78              |
| 39:BJ:30:LEU:HA    | 39:BJ:75:LEU:CD1   | 2.12                     | 0.78              |
| 41:BL:91:ARG:HG2   | 50:BU:34:LYS:CB    | 2.12                     | 0.78              |
| 44:BO:46:GLY:CA    | 44:BO:55:LYS:HD2   | 2.13                     | 0.78              |
| 47:BR:51:GLY:C     | 47:BR:53:LEU:H     | 1.92                     | 0.78              |
| 50:BU:36:ILE:HD13  | 50:BU:36:ILE:N     | 1.99                     | 0.78              |
| 55:BC:39:U:H4'     | 55:BC:39:U:OP1     | 1.81                     | 0.78              |
| 56:BE:6:G:H2'      | 56:BE:6:G:N3       | 1.98                     | 0.78              |
| 56:BE:21:A:N7      | 56:BE:46:G:C6      | 2.50                     | 0.78              |
| 57:BZ:125:VAL:HB   | 57:BZ:162:ILE:CA   | 2.13                     | 0.78              |
| 57:BZ:320:GLY:HA2  | 57:BZ:321:LYS:HB2  | 1.62                     | 0.78              |
| 57:BZ:426:LEU:CB   | 57:BZ:441:TYR:CZ   | 2.66                     | 0.78              |
| 1:AA:359:A:O2'     | 1:AA:360:G:N7      | 2.15                     | 0.78              |
| 1:AA:360:G:H2'     | 1:AA:361:G:O4'     | 1.83                     | 0.78              |
| 1:AA:578:A:H2      | 16:AR:34:LYS:HZ1   | 1.30                     | 0.78              |
| 1:AA:901:A:N7      | 1:AA:902:C:N4      | 2.32                     | 0.78              |
| 1:AA:1270:C:H1'    | 1:AA:1325:G:C5     | 2.17                     | 0.78              |
| 1:AA:1275:A:N6     | 1:AA:1296:G:O4'    | 2.17                     | 0.78              |
| 1:AA:1359:A:H62    | 1:AA:1371:G:N2     | 1.81                     | 0.78              |
| 1:AA:1592:C:H2'    | 1:AA:1593:G:H8     | 1.47                     | 0.78              |
| 1:AA:1780:A:H4'    | 1:AA:1780:A:OP1    | 1.83                     | 0.78              |
| 1:AA:2006:C:O2'    | 1:AA:2823:A:N3     | 2.16                     | 0.78              |
| 1:AA:2122:U:C4'    | 3:AC:166:ASP:OD2   | 2.31                     | 0.78              |
| 1:AA:2335:A:H2'    | 1:AA:2337:G:N7     | 1.98                     | 0.78              |
| 1:AA:2449:U:C6     | 1:AA:2449:U:OP1    | 2.37                     | 0.78              |
| 4:AD:147:LEU:HB3   | 4:AD:185:VAL:CG2   | 2.11                     | 0.78              |
| 5:AE:110:GLY:HA2   | 5:AE:161:GLY:C     | 2.07                     | 0.78              |
| 5:AE:147:PRO:HB2   | 5:AE:149:ARG:HD2   | 1.66                     | 0.78              |
| 6:AF:122:LYS:NZ    | 6:AF:192:LEU:HB3   | 1.97                     | 0.78              |
| 7:AG:141:PHE:CE2   | 7:AG:145:THR:HA    | 2.19                     | 0.78              |
| 8:AH:6:ARG:HA      | 8:AH:6:ARG:HH11    | 1.46                     | 0.78              |
| 8:AH:107:VAL:HG22  | 8:AH:107:VAL:O     | 1.82                     | 0.78              |
| 9:AK:38:HIS:HB3    | 9:AK:48:MET:CE     | 2.14                     | 0.78              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 9:AK:58:ASP:CG     | 9:AK:59:LYS:HG3    | 2.08                     | 0.78              |
| 9:AK:88:GLU:HB2    | 9:AK:89:LYS:CE     | 2.14                     | 0.78              |
| 9:AK:100:GLU:HA    | 9:AK:100:GLU:OE2   | 1.82                     | 0.78              |
| 13:AO:33:ARG:HA    | 13:AO:115:GLU:HB3  | 1.64                     | 0.78              |
| 14:AP:49:VAL:CG1   | 14:AP:80:LEU:HG    | 2.14                     | 0.78              |
| 14:AP:67:ARG:HG2   | 14:AP:67:ARG:HH21  | 1.47                     | 0.78              |
| 16:AR:108:GLU:O    | 16:AR:109:LEU:C    | 2.26                     | 0.78              |
| 19:AU:18:TYR:HA    | 19:AU:21:PHE:CD1   | 2.18                     | 0.78              |
| 20:AV:82:PRO:HG3   | 20:AV:97:ARG:N     | 1.98                     | 0.78              |
| 21:AW:105:VAL:HB   | 21:AW:140:ASP:OD2  | 1.84                     | 0.78              |
| 22:AX:5:LYS:CG     | 22:AX:6:GLY:H      | 1.82                     | 0.78              |
| 26:Ab:51:TYR:CD1   | 26:Ab:55:ARG:HD3   | 2.18                     | 0.78              |
| 29:Ae:21:LYS:HB2   | 29:Ae:21:LYS:NZ    | 1.98                     | 0.78              |
| 29:Ae:22:VAL:CG1   | 29:Ae:23:VAL:N     | 2.45                     | 0.78              |
| 32:AJ:72:PRO:HG3   | 32:AJ:77:LEU:CD2   | 0.68                     | 0.78              |
| 34:BA:482:A:H2     | 34:BA:483:C:O4'    | 1.67                     | 0.78              |
| 34:BA:978:A:H61    | 34:BA:1361:G:H22   | 1.28                     | 0.78              |
| 34:BA:986:A:H5'    | 52:BW:55:LYS:HZ3   | 1.42                     | 0.78              |
| 34:BA:1057:G:H4'   | 36:BG:197:GLY:H    | 1.49                     | 0.78              |
| 34:BA:1158:C:C1'   | 35:BF:133:LYS:HZ1  | 1.95                     | 0.78              |
| 34:BA:1234:C:H4'   | 34:BA:1364:U:H1'   | 1.65                     | 0.78              |
| 34:BA:1378:C:H2'   | 34:BA:1378:C:O2    | 1.82                     | 0.78              |
| 34:BA:1441:G:N2    | 34:BA:1460:A:N6    | 2.30                     | 0.78              |
| 35:BF:47:THR:HG23  | 35:BF:202:PRO:HD2  | 1.63                     | 0.78              |
| 37:BH:12:CYS:CA    | 37:BH:19:LEU:HB2   | 2.12                     | 0.78              |
| 37:BH:108:LEU:HD23 | 37:BH:174:LEU:HD13 | 1.66                     | 0.78              |
| 38:BI:79:GLU:CD    | 38:BI:79:GLU:H     | 1.88                     | 0.78              |
| 40:BK:126:ASP:HB3  | 40:BK:131:LYS:O    | 1.83                     | 0.78              |
| 42:BM:42:ARG:HB3   | 42:BM:74:ILE:CD1   | 2.11                     | 0.78              |
| 45:BP:37:CYS:HA    | 45:BP:58:VAL:CG2   | 2.10                     | 0.78              |
| 46:BQ:91:ARG:HD2   | 46:BQ:98:VAL:O     | 1.81                     | 0.78              |
| 48:BS:32:LEU:O     | 48:BS:36:ILE:HB    | 1.83                     | 0.78              |
| 49:BT:56:ALA:CB    | 49:BT:79:VAL:HG11  | 2.13                     | 0.78              |
| 53:BX:21:LYS:O     | 53:BX:24:LEU:HB2   | 1.83                     | 0.78              |
| 56:BD:2:C:O2'      | 56:BD:3:C:H5'      | 1.83                     | 0.78              |
| 56:BD:6:G:C6       | 56:BD:67:C:N4      | 2.52                     | 0.78              |
| 57:BZ:22:VAL:CG1   | 57:BZ:74:ASP:OD1   | 2.32                     | 0.78              |
| 57:BZ:563:MET:HB3  | 57:BZ:564:THR:HA   | 1.64                     | 0.78              |
| 1:AA:349:G:H2'     | 1:AA:350:U:H6      | 1.49                     | 0.78              |
| 1:AA:574:C:N4      | 1:AA:2054:A:H5''   | 1.99                     | 0.78              |
| 1:AA:686:G:H8      | 28:Ad:7:PRO:HA     | 1.49                     | 0.78              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:740:U:O2'     | 1:AA:741:G:OP1    | 2.02                     | 0.78              |
| 1:AA:865:C:N4      | 1:AA:909:A:H62    | 1.81                     | 0.78              |
| 1:AA:975:G:N2      | 1:AA:976:C:O4'    | 2.17                     | 0.78              |
| 1:AA:1034:G:C6     | 1:AA:1122:G:C5    | 2.72                     | 0.78              |
| 1:AA:1069:A:C2     | 1:AA:1096:A:C5'   | 2.65                     | 0.78              |
| 1:AA:1693:U:H5''   | 1:AA:1694:C:OP2   | 1.84                     | 0.78              |
| 1:AA:2064:C:C1'    | 1:AA:2450:A:N6    | 2.47                     | 0.78              |
| 1:AA:2318:G:O5'    | 1:AA:2318:G:H8    | 1.67                     | 0.78              |
| 1:AA:2574:G:H1'    | 5:AE:143:ASN:ND2  | 1.99                     | 0.78              |
| 1:AA:2651:C:O2     | 1:AA:2670:A:N3    | 2.16                     | 0.78              |
| 2:AB:73:A:H2'      | 2:AB:74:U:H6      | 1.48                     | 0.78              |
| 4:AD:9:TYR:CE2     | 4:AD:25:THR:HG21  | 2.18                     | 0.78              |
| 4:AD:112:GLN:N     | 4:AD:115:GLN:NE2  | 2.31                     | 0.78              |
| 7:AG:131:TYR:HB2   | 7:AG:159:VAL:H    | 1.49                     | 0.78              |
| 8:AH:89:ILE:HD12   | 8:AH:90:LYS:N     | 1.99                     | 0.78              |
| 9:AK:42:TRP:NE1    | 16:AR:64:ARG:HG2  | 1.98                     | 0.78              |
| 9:AK:97:ARG:O      | 9:AK:100:GLU:N    | 2.17                     | 0.78              |
| 11:AM:29:LYS:O     | 11:AM:30:THR:HG23 | 1.83                     | 0.78              |
| 12:AN:38:GLU:N     | 12:AN:39:PRO:HD3  | 1.99                     | 0.78              |
| 12:AN:101:ARG:HG3  | 12:AN:101:ARG:NH1 | 1.93                     | 0.78              |
| 15:AQ:7:ILE:O      | 15:AQ:11:GLU:CD   | 2.27                     | 0.78              |
| 15:AQ:26:ASP:HA    | 15:AQ:100:TYR:OH  | 1.84                     | 0.78              |
| 20:AV:1:MET:CG     | 20:AV:67:LEU:HD22 | 2.14                     | 0.78              |
| 22:AX:44:ARG:HE    | 22:AX:77:ARG:HD2  | 1.48                     | 0.78              |
| 22:AX:50:ASN:O     | 22:AX:62:LEU:HB3  | 1.82                     | 0.78              |
| 25:Aa:23:GLU:C     | 25:Aa:25:TYR:H    | 1.91                     | 0.78              |
| 28:Ad:41:ARG:HB2   | 28:Ad:41:ARG:NH1  | 1.96                     | 0.78              |
| 29:Ae:13:ARG:HD2   | 29:Ae:24:ALA:HB1  | 1.63                     | 0.78              |
| 30:Af:15:LYS:HB2   | 30:Af:26:ILE:O    | 1.83                     | 0.78              |
| 34:BA:280:C:H1'    | 50:BU:38:ARG:NE   | 1.98                     | 0.78              |
| 34:BA:834:C:O2'    | 34:BA:835:U:H5'   | 1.84                     | 0.78              |
| 34:BA:1244:C:H2'   | 34:BA:1245:A:H8   | 1.46                     | 0.78              |
| 34:BA:1270:C:C4'   | 34:BA:1313:U:C4'  | 2.59                     | 0.78              |
| 35:BF:78:GLN:NE2   | 35:BF:96:ARG:HH22 | 1.79                     | 0.78              |
| 35:BF:102:LEU:HD22 | 35:BF:176:GLU:CB  | 2.13                     | 0.78              |
| 36:BG:19:GLU:HB2   | 47:BR:52:GLN:HG2  | 1.65                     | 0.78              |
| 37:BH:12:CYS:HB3   | 37:BH:33:MET:HE3  | 1.66                     | 0.78              |
| 43:BN:87:THR:O     | 43:BN:88:LEU:HD23 | 1.84                     | 0.78              |
| 50:BU:31:LEU:O     | 50:BU:31:LEU:HG   | 1.84                     | 0.78              |
| 50:BU:50:LYS:HD2   | 50:BU:51:TYR:CE1  | 2.19                     | 0.78              |
| 57:BZ:6:ARG:N      | 57:BZ:69:ARG:CB   | 2.36                     | 0.78              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:BZ:62:ALA:HA    | 57:BZ:187:TYR:CD2  | 2.17                     | 0.78              |
| 57:BZ:80:ASP:OD1   | 57:BZ:365:HIS:N    | 2.16                     | 0.78              |
| 1:AA:281:G:N3      | 1:AA:281:G:H2'     | 1.99                     | 0.78              |
| 1:AA:530:G:H22     | 1:AA:2021:C:C3'    | 1.96                     | 0.78              |
| 1:AA:657:U:H2'     | 1:AA:658:C:H6      | 1.48                     | 0.78              |
| 1:AA:1935:G:H3'    | 1:AA:1962:C:H42    | 1.48                     | 0.78              |
| 1:AA:2043:C:H6     | 1:AA:2043:C:OP1    | 1.67                     | 0.78              |
| 1:AA:2096:U:H2'    | 1:AA:2097:C:C5     | 2.19                     | 0.78              |
| 1:AA:2282:G:N2     | 1:AA:2425:A:C8     | 2.52                     | 0.78              |
| 1:AA:2467:C:O2'    | 12:AN:120:ILE:HG23 | 1.82                     | 0.78              |
| 1:AA:2648:C:C2     | 1:AA:2649:U:N3     | 2.52                     | 0.78              |
| 1:AA:2651:C:C2'    | 1:AA:2652:C:H5''   | 2.14                     | 0.78              |
| 3:AC:97:GLU:HA     | 3:AC:100:ILE:CD1   | 2.13                     | 0.78              |
| 3:AC:134:ARG:HD3   | 3:AC:136:LEU:HD12  | 1.66                     | 0.78              |
| 3:AC:156:ILE:CG1   | 3:AC:160:ARG:CB    | 2.54                     | 0.78              |
| 3:AC:156:ILE:HG12  | 3:AC:160:ARG:HG3   | 0.79                     | 0.78              |
| 5:AE:58:ARG:HB2    | 5:AE:58:ARG:HH21   | 1.47                     | 0.78              |
| 5:AE:111:ARG:H     | 5:AE:161:GLY:HA3   | 1.43                     | 0.78              |
| 8:AH:29:PRO:HD3    | 8:AH:79:VAL:C      | 2.09                     | 0.78              |
| 8:AH:103:LEU:HD22  | 8:AH:115:VAL:HG21  | 1.66                     | 0.78              |
| 8:AH:149:ARG:HG2   | 8:AH:153:LYS:HD2   | 1.65                     | 0.78              |
| 9:AK:6:PRO:HA      | 9:AK:41:ASP:CB     | 2.13                     | 0.78              |
| 9:AK:109:LYS:HG2   | 9:AK:112:LEU:HB2   | 1.64                     | 0.78              |
| 11:AM:52:GLU:CA    | 11:AM:55:ARG:HG3   | 2.14                     | 0.78              |
| 12:AN:131:ILE:O    | 12:AN:132:VAL:HG13 | 1.84                     | 0.78              |
| 12:AN:134:ARG:NE   | 12:AN:137:TYR:HA   | 1.98                     | 0.78              |
| 13:AO:45:ARG:O     | 13:AO:49:ASP:HB3   | 1.82                     | 0.78              |
| 14:AP:62:LYS:O     | 14:AP:65:VAL:N     | 2.17                     | 0.78              |
| 17:AS:67:GLY:O     | 17:AS:93:GLU:O     | 2.02                     | 0.78              |
| 19:AU:36:LYS:CD    | 19:AU:54:VAL:HG12  | 2.13                     | 0.78              |
| 21:AW:18:LEU:HB3   | 21:AW:23:LYS:O     | 1.83                     | 0.78              |
| 26:Ab:45:VAL:HB    | 26:Ab:50:GLY:CA    | 2.14                     | 0.78              |
| 34:BA:20:U:H2'     | 34:BA:21:G:O4'     | 1.84                     | 0.78              |
| 34:BA:225:C:H2'    | 34:BA:226:G:C5'    | 2.13                     | 0.78              |
| 34:BA:404:U:H4'    | 37:BH:122:ARG:HH11 | 1.49                     | 0.78              |
| 34:BA:408:A:H5'    | 37:BH:116:GLN:HG2  | 1.66                     | 0.78              |
| 34:BA:501:C:H1'    | 34:BA:549:C:H1'    | 1.66                     | 0.78              |
| 34:BA:552:U:O2'    | 34:BA:553:A:H5'    | 1.82                     | 0.78              |
| 34:BA:1459:C:OP2   | 53:BX:31:SER:CB    | 2.32                     | 0.78              |
| 34:BA:1484:C:C2'   | 34:BA:1485:U:C5'   | 2.60                     | 0.78              |
| 36:BG:152:ILE:HG22 | 36:BG:167:TRP:CB   | 2.13                     | 0.78              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 38:BI:81:GLU:CD    | 38:BI:81:GLU:N     | 2.41                     | 0.78              |
| 40:BK:78:ARG:HB2   | 40:BK:156:TRP:CH2  | 2.19                     | 0.78              |
| 42:BM:49:PRO:HB3   | 42:BM:82:ALA:HB2   | 1.65                     | 0.78              |
| 42:BM:79:LEU:CD1   | 42:BM:101:PHE:HB3  | 2.14                     | 0.78              |
| 45:BP:6:THR:O      | 45:BP:10:LEU:HB2   | 1.83                     | 0.78              |
| 57:BZ:160:PHE:HA   | 57:BZ:161:ALA:C    | 2.08                     | 0.78              |
| 57:BZ:234:ASN:HA   | 57:BZ:235:GLN:CB   | 2.13                     | 0.78              |
| 1:AA:293:U:H6      | 1:AA:293:U:H3'     | 1.48                     | 0.78              |
| 1:AA:832:G:P       | 11:AM:35:HIS:HB2   | 2.23                     | 0.78              |
| 1:AA:981:A:N3      | 1:AA:2037:G:H1'    | 1.98                     | 0.78              |
| 1:AA:1009:A:O2'    | 16:AR:62:ILE:HD13  | 1.83                     | 0.78              |
| 1:AA:1268:A:C6     | 1:AA:2013:A:N7     | 2.51                     | 0.78              |
| 1:AA:1312:U:C2'    | 1:AA:1313:U:H6     | 1.96                     | 0.78              |
| 1:AA:1475:G:H22    | 1:AA:1477:A:H62    | 1.32                     | 0.78              |
| 1:AA:1708:C:O2'    | 1:AA:1709:U:H5''   | 1.84                     | 0.78              |
| 1:AA:1798:U:H5'    | 4:AD:257:LEU:CD1   | 2.14                     | 0.78              |
| 1:AA:1996:C:H2'    | 1:AA:1997:G:C4'    | 2.13                     | 0.78              |
| 1:AA:2073:C:C2'    | 1:AA:2074:U:H5'    | 2.14                     | 0.78              |
| 1:AA:2233:U:H2'    | 1:AA:2234:G:C8     | 2.19                     | 0.78              |
| 1:AA:2457:U:H2'    | 1:AA:2458:G:O4'    | 1.83                     | 0.78              |
| 1:AA:2525:G:H5'    | 1:AA:2526:G:OP2    | 1.84                     | 0.78              |
| 1:AA:2889:C:H2'    | 1:AA:2891:G:H8     | 1.46                     | 0.78              |
| 3:AC:162:GLU:HG2   | 3:AC:163:PHE:N     | 1.98                     | 0.78              |
| 4:AD:37:LEU:HD21   | 4:AD:64:ILE:H      | 1.49                     | 0.78              |
| 4:AD:78:LYS:HG2    | 4:AD:114:GLY:O     | 1.84                     | 0.78              |
| 9:AK:54:VAL:HG12   | 9:AK:122:VAL:CB    | 2.14                     | 0.78              |
| 12:AN:37:LEU:HD11  | 12:AN:130:LYS:HB2  | 1.65                     | 0.78              |
| 13:AO:79:LEU:CD2   | 13:AO:80:PHE:N     | 2.47                     | 0.78              |
| 13:AO:105:ARG:HG3  | 13:AO:106:GLY:H    | 1.49                     | 0.78              |
| 14:AP:26:LEU:HD22  | 14:AP:27:SER:N     | 1.98                     | 0.78              |
| 20:AV:12:THR:C     | 20:AV:73:ARG:CZ    | 2.56                     | 0.78              |
| 20:AV:13:VAL:HG13  | 20:AV:70:SER:HB3   | 1.65                     | 0.78              |
| 26:Ab:51:TYR:HB3   | 26:Ab:55:ARG:CA    | 2.12                     | 0.78              |
| 34:BA:663:A:H5'    | 34:BA:836:G:OP1    | 1.83                     | 0.78              |
| 34:BA:704:A:H2'    | 34:BA:705:U:C6     | 2.18                     | 0.78              |
| 34:BA:1181:G:N7    | 34:BA:1182:G:N3    | 2.32                     | 0.78              |
| 34:BA:1308:U:O2    | 34:BA:1309:G:H5'   | 1.84                     | 0.78              |
| 37:BH:170:VAL:HG23 | 37:BH:176:LEU:HD22 | 1.64                     | 0.78              |
| 50:BU:65:ILE:HG23  | 50:BU:69:LYS:HD2   | 1.64                     | 0.78              |
| 52:BW:3:ARG:CZ     | 52:BW:45:VAL:HG13  | 2.13                     | 0.78              |
| 55:BC:18:G:N1      | 55:BC:55:U:H1'     | 1.99                     | 0.78              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:BZ:119:TYR:CD2  | 57:BZ:121:LEU:HG   | 2.17                     | 0.78              |
| 57:BZ:491:ASN:ND2  | 57:BZ:536:ASN:HB3  | 1.95                     | 0.78              |
| 1:AA:7:G:C2        | 1:AA:2896:C:H2'    | 2.19                     | 0.78              |
| 1:AA:209:C:H5'     | 1:AA:681:G:H4'     | 1.66                     | 0.78              |
| 1:AA:861:A:OP2     | 1:AA:862:G:OP2     | 2.02                     | 0.78              |
| 1:AA:1069:A:H4'    | 1:AA:1070:A:H5''   | 1.66                     | 0.78              |
| 1:AA:1265:A:H8     | 1:AA:1267:U:O4     | 1.65                     | 0.78              |
| 1:AA:1583:A:H5'    | 1:AA:1585:C:H5'    | 1.66                     | 0.78              |
| 1:AA:1805:U:H1'    | 4:AD:51:VAL:HG11   | 1.65                     | 0.78              |
| 1:AA:1817:G:O2'    | 1:AA:1818:U:H5'    | 1.84                     | 0.78              |
| 1:AA:2123:G:C1'    | 3:AC:215:THR:CG2   | 2.62                     | 0.78              |
| 1:AA:2415:G:H5''   | 11:AM:61:ARG:HB2   | 1.65                     | 0.78              |
| 1:AA:2581:G:C6     | 1:AA:2610:C:H2'    | 2.18                     | 0.78              |
| 1:AA:2698:U:H2'    | 1:AA:2699:C:C5     | 2.18                     | 0.78              |
| 1:AA:2764:A:N7     | 1:AA:2766:G:C6     | 2.52                     | 0.78              |
| 5:AE:136:ARG:O     | 5:AE:136:ARG:HD3   | 1.84                     | 0.78              |
| 5:AE:169:ASN:HD22  | 5:AE:170:LEU:H     | 1.32                     | 0.78              |
| 6:AF:154:VAL:HG12  | 6:AF:191:ARG:HB3   | 1.64                     | 0.78              |
| 9:AK:37:LYS:HD2    | 9:AK:42:TRP:C      | 2.09                     | 0.78              |
| 10:AL:59:LYS:HE2   | 10:AL:59:LYS:H     | 1.47                     | 0.78              |
| 17:AS:35:LEU:HG    | 17:AS:36:PRO:HD2   | 1.66                     | 0.78              |
| 18:AT:76:VAL:HG22  | 18:AT:77:ASP:N     | 1.99                     | 0.78              |
| 20:AV:46:LYS:HZ2   | 20:AV:52:SER:HB2   | 1.45                     | 0.78              |
| 21:AW:103:ARG:HB2  | 21:AW:138:GLU:HG2  | 1.66                     | 0.78              |
| 21:AW:171:ILE:HD12 | 21:AW:171:ILE:O    | 1.84                     | 0.78              |
| 24:AZ:28:LEU:N     | 24:AZ:28:LEU:HD23  | 1.97                     | 0.78              |
| 34:BA:404:U:C4'    | 37:BH:122:ARG:HH11 | 1.96                     | 0.78              |
| 34:BA:520:A:N6     | 34:BA:529:G:N2     | 2.32                     | 0.78              |
| 34:BA:735:C:O2'    | 34:BA:736:C:H5'    | 1.84                     | 0.78              |
| 34:BA:892:A:HO2'   | 34:BA:1415:G:HO2'  | 1.31                     | 0.78              |
| 34:BA:1407:C:C2'   | 34:BA:1408:A:H5'   | 2.14                     | 0.78              |
| 35:BF:101:MET:CB   | 35:BF:108:ILE:HG13 | 2.13                     | 0.78              |
| 35:BF:184:VAL:H    | 35:BF:198:ASP:CG   | 1.92                     | 0.78              |
| 37:BH:74:GLN:O     | 37:BH:77:ASN:HB2   | 1.84                     | 0.78              |
| 39:BJ:76:ALA:HB3   | 39:BJ:80:ARG:NH2   | 1.98                     | 0.78              |
| 41:BL:9:MET:HG2    | 41:BL:13:ILE:HD11  | 1.64                     | 0.78              |
| 41:BL:114:THR:HG23 | 41:BL:119:LEU:HD23 | 1.66                     | 0.78              |
| 50:BU:19:VAL:CG2   | 50:BU:46:ASP:HB2   | 2.13                     | 0.78              |
| 57:BZ:6:ARG:CA     | 57:BZ:68:TYR:O     | 2.32                     | 0.78              |
| 57:BZ:101:ALA:C    | 57:BZ:135:ALA:HB1  | 2.08                     | 0.78              |
| 57:BZ:184:THR:H    | 57:BZ:185:PRO:CD   | 1.97                     | 0.78              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:BZ:207:MET:HA   | 57:BZ:226:ILE:HA   | 1.66                     | 0.78              |
| 57:BZ:253:LYS:HE3  | 57:BZ:269:GLU:CB   | 2.14                     | 0.78              |
| 57:BZ:580:VAL:HG12 | 57:BZ:585:ILE:HD12 | 1.65                     | 0.78              |
| 1:AA:13:A:N6       | 1:AA:525:U:C6      | 2.53                     | 0.77              |
| 1:AA:948:G:H1'     | 1:AA:984:A:N3      | 1.99                     | 0.77              |
| 1:AA:1037:G:C6     | 1:AA:1119:C:C4     | 2.72                     | 0.77              |
| 1:AA:1188:U:O2'    | 1:AA:1189:A:H5'    | 1.84                     | 0.77              |
| 1:AA:1224:G:H2'    | 17:AS:87:HIS:CE1   | 2.18                     | 0.77              |
| 1:AA:1225:C:O4'    | 17:AS:87:HIS:HE1   | 1.67                     | 0.77              |
| 1:AA:1495:A:H2'    | 1:AA:1496:A:N7     | 1.98                     | 0.77              |
| 1:AA:1797:C:H2'    | 1:AA:1798:U:C6     | 2.18                     | 0.77              |
| 1:AA:2014:A:N3     | 1:AA:2015:A:N1     | 2.31                     | 0.77              |
| 1:AA:2247:A:O2'    | 1:AA:2248:C:H5'    | 1.84                     | 0.77              |
| 1:AA:2320:A:N6     | 14:AP:4:LEU:HD13   | 1.99                     | 0.77              |
| 1:AA:2481:G:O2'    | 1:AA:2482:G:H5'    | 1.83                     | 0.77              |
| 1:AA:2507:C:C2     | 59:AA:3002:8AN:N3  | 2.51                     | 0.77              |
| 1:AA:2515:C:O2'    | 1:AA:2516:G:H5'    | 1.84                     | 0.77              |
| 1:AA:2570:G:N2     | 1:AA:2571:C:C2     | 2.52                     | 0.77              |
| 1:AA:2832:U:H1'    | 1:AA:2834:G:C2     | 2.18                     | 0.77              |
| 2:AB:31:C:O2       | 2:AB:53:A:N6       | 2.17                     | 0.77              |
| 7:AG:39:ILE:HD12   | 7:AG:39:ILE:N      | 1.99                     | 0.77              |
| 11:AM:59:LEU:HD12  | 11:AM:60:MET:SD    | 2.24                     | 0.77              |
| 11:AM:121:LYS:N    | 11:AM:122:PRO:HD3  | 1.98                     | 0.77              |
| 12:AN:16:ARG:HG2   | 12:AN:73:PRO:HD2   | 1.66                     | 0.77              |
| 12:AN:102:VAL:HG13 | 12:AN:102:VAL:O    | 1.83                     | 0.77              |
| 15:AQ:18:ASP:HB3   | 15:AQ:81:PRO:CA    | 2.14                     | 0.77              |
| 15:AQ:92:GLY:C     | 15:AQ:93:ARG:HE    | 1.92                     | 0.77              |
| 16:AR:88:ILE:HG22  | 17:AS:55:ALA:HB3   | 1.64                     | 0.77              |
| 18:AT:64:MET:CG    | 18:AT:109:GLU:HG3  | 2.13                     | 0.77              |
| 21:AW:65:GLN:O     | 21:AW:67:LEU:HG    | 1.84                     | 0.77              |
| 22:AX:37:LEU:HD12  | 22:AX:59:LEU:HB3   | 1.64                     | 0.77              |
| 23:AY:25:ARG:HG3   | 23:AY:25:ARG:HH21  | 1.48                     | 0.77              |
| 25:Aa:4:GLY:HA2    | 25:Aa:11:PRO:CB    | 2.14                     | 0.77              |
| 30:Af:7:VAL:HG13   | 30:Af:34:GLN:OE1   | 1.84                     | 0.77              |
| 32:AJ:100:THR:HG1  | 32:AJ:103:GLN:CB   | 1.97                     | 0.77              |
| 34:BA:120:A:H2'    | 34:BA:122:G:N7     | 1.99                     | 0.77              |
| 34:BA:161:A:H2'    | 34:BA:162:A:O4'    | 1.83                     | 0.77              |
| 34:BA:708:C:O2'    | 34:BA:709:G:H5'    | 1.82                     | 0.77              |
| 34:BA:781:A:N6     | 34:BA:802:A:C4     | 2.51                     | 0.77              |
| 34:BA:872:A:O2'    | 34:BA:873:A:OP1    | 2.00                     | 0.77              |
| 34:BA:1270:C:O2'   | 34:BA:1313:U:C5'   | 2.31                     | 0.77              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 34:BA:1318:A:H1'  | 52:BW:35:SER:HG   | 0.95                     | 0.77              |
| 34:BA:1394:A:N6   | 34:BA:1501:C:H5'  | 1.98                     | 0.77              |
| 34:BA:1510:U:H2'  | 34:BA:1511:G:H8   | 1.46                     | 0.77              |
| 35:BF:73:THR:HG21 | 35:BF:95:GLN:O    | 1.84                     | 0.77              |
| 35:BF:184:VAL:C   | 35:BF:198:ASP:HB2 | 2.09                     | 0.77              |
| 38:BI:78:HIS:H    | 38:BI:78:HIS:CD2  | 1.99                     | 0.77              |
| 42:BM:3:GLN:HA    | 42:BM:20:ARG:HG2  | 1.65                     | 0.77              |
| 44:BO:48:ILE:HG23 | 44:BO:63:LEU:HD13 | 1.66                     | 0.77              |
| 46:BQ:15:VAL:HG21 | 46:BQ:39:ILE:HG13 | 1.55                     | 0.77              |
| 46:BQ:36:LYS:HG2  | 46:BQ:56:LEU:HD22 | 1.66                     | 0.77              |
| 57:BZ:8:ILE:HD11  | 57:BZ:96:LEU:CD1  | 2.14                     | 0.77              |
| 57:BZ:62:ALA:CB   | 57:BZ:64:ILE:HG13 | 2.13                     | 0.77              |
| 57:BZ:305:PRO:HG2 | 57:BZ:360:GLY:C   | 2.10                     | 0.77              |
| 1:AA:141:A:C2     | 1:AA:141(A):C:O4' | 2.37                     | 0.77              |
| 1:AA:149:A:H2'    | 1:AA:150:C:H5'    | 1.66                     | 0.77              |
| 1:AA:242:G:H3'    | 29:Ae:4:MET:SD    | 2.24                     | 0.77              |
| 1:AA:270:A:H2'    | 1:AA:270(A):A:O4' | 1.84                     | 0.77              |
| 1:AA:274:G:H3'    | 1:AA:274:G:N3     | 1.98                     | 0.77              |
| 1:AA:360:G:H2'    | 1:AA:361:G:C5'    | 2.14                     | 0.77              |
| 1:AA:673:C:H5'    | 6:AF:82:ILE:HG23  | 1.65                     | 0.77              |
| 1:AA:735:A:H8     | 1:AA:735:A:O5'    | 1.67                     | 0.77              |
| 1:AA:1036:G:H5'   | 8:AH:59:ARG:NH2   | 2.00                     | 0.77              |
| 1:AA:1050:A:H1'   | 1:AA:2752:C:C4    | 2.16                     | 0.77              |
| 1:AA:1356:G:O2'   | 1:AA:1357:U:H5'   | 1.85                     | 0.77              |
| 1:AA:1491:G:C3'   | 1:AA:1492:G:H4'   | 2.14                     | 0.77              |
| 1:AA:2268:A:H5'   | 1:AA:2269:A:OP2   | 1.85                     | 0.77              |
| 1:AA:2349:G:C3'   | 1:AA:2350:C:H5''  | 2.12                     | 0.77              |
| 1:AA:2506:U:O2'   | 1:AA:2507:C:H5'   | 1.84                     | 0.77              |
| 1:AA:2516:G:C4    | 1:AA:2569:G:N2    | 2.52                     | 0.77              |
| 1:AA:2520:C:O2'   | 1:AA:2521:C:H5'   | 1.83                     | 0.77              |
| 1:AA:2591:C:C2'   | 1:AA:2592:G:H8    | 1.92                     | 0.77              |
| 1:AA:2670:A:H5'   | 5:AE:206:LYS:HZ1  | 1.48                     | 0.77              |
| 1:AA:2700:C:C2'   | 1:AA:2701:C:H5''  | 2.15                     | 0.77              |
| 1:AA:2797:U:H5''  | 1:AA:2798:C:OP1   | 1.85                     | 0.77              |
| 3:AC:81:GLU:O     | 3:AC:84:LYS:HB2   | 1.84                     | 0.77              |
| 3:AC:90:GLY:HA3   | 3:AC:157:LYS:HB2  | 1.66                     | 0.77              |
| 4:AD:76:PRO:HA    | 4:AD:118:VAL:HG22 | 1.65                     | 0.77              |
| 5:AE:9:VAL:HG12   | 5:AE:192:ASN:HD22 | 1.49                     | 0.77              |
| 6:AF:103:LYS:HA   | 6:AF:106:ARG:CG   | 2.15                     | 0.77              |
| 7:AG:26:GLN:NE2   | 7:AG:31:VAL:CG2   | 2.47                     | 0.77              |
| 8:AH:40:GLU:HB2   | 8:AH:55:PRO:HG3   | 1.64                     | 0.77              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 9:AK:22:THR:HG22   | 9:AK:61:ARG:NH2    | 1.98                     | 0.77              |
| 9:AK:55:VAL:HG21   | 9:AK:127:ASP:N     | 1.99                     | 0.77              |
| 9:AK:103:VAL:CG2   | 9:AK:104:LYS:N     | 2.47                     | 0.77              |
| 11:AM:23:PRO:HB2   | 11:AM:28:GLY:CA    | 2.14                     | 0.77              |
| 13:AO:52:ILE:O     | 13:AO:52:ILE:HD13  | 1.83                     | 0.77              |
| 14:AP:74:ALA:HB2   | 14:AP:104:GLY:O    | 1.82                     | 0.77              |
| 15:AQ:50:ILE:HD13  | 15:AQ:76:PHE:HB3   | 1.66                     | 0.77              |
| 15:AQ:53:ARG:HH22  | 15:AQ:102:ILE:H    | 1.31                     | 0.77              |
| 17:AS:35:LEU:O     | 17:AS:61:VAL:HA    | 1.83                     | 0.77              |
| 20:AV:14:LEU:CD2   | 20:AV:19:LYS:HB2   | 2.15                     | 0.77              |
| 21:AW:110:GLY:CA   | 21:AW:144:LEU:HB2  | 2.14                     | 0.77              |
| 23:AY:36:ILE:HG23  | 23:AY:37:GLY:H     | 1.49                     | 0.77              |
| 26:Ab:36:CYS:HB2   | 26:Ab:37:LYS:HD2   | 1.66                     | 0.77              |
| 29:Ae:4:MET:CE     | 29:Ae:62:LEU:HG    | 2.13                     | 0.77              |
| 31:AI:73:GLY:O     | 31:AI:75:GLN:N     | 2.13                     | 0.77              |
| 32:AJ:51:ALA:HB3   | 32:AJ:72:PRO:HB3   | 1.67                     | 0.77              |
| 34:BA:65:U:H4'     | 34:BA:66:G:H5''    | 1.65                     | 0.77              |
| 34:BA:243:A:H61    | 34:BA:283:C:H41    | 1.30                     | 0.77              |
| 34:BA:301:G:H21    | 34:BA:302:G:H1'    | 1.49                     | 0.77              |
| 34:BA:748:C:C6     | 34:BA:748:C:O5'    | 2.36                     | 0.77              |
| 34:BA:761:G:C5'    | 50:BU:103:GLY:H    | 1.96                     | 0.77              |
| 34:BA:872:A:H2'    | 34:BA:873:A:H5''   | 1.64                     | 0.77              |
| 34:BA:961:U:H1'    | 34:BA:1201:A:H61   | 1.49                     | 0.77              |
| 34:BA:962:C:H1'    | 34:BA:1201:A:N1    | 2.00                     | 0.77              |
| 35:BF:25:ASN:O     | 35:BF:25:ASN:CG    | 2.27                     | 0.77              |
| 35:BF:145:LEU:O    | 35:BF:149:LEU:CB   | 2.32                     | 0.77              |
| 37:BH:108:LEU:HD21 | 37:BH:174:LEU:HB3  | 1.67                     | 0.77              |
| 37:BH:135:LEU:C    | 37:BH:137:SER:H    | 1.92                     | 0.77              |
| 37:BH:168:ARG:CD   | 37:BH:168:ARG:H    | 1.94                     | 0.77              |
| 37:BH:198:VAL:HG23 | 37:BH:199:ASN:H    | 1.49                     | 0.77              |
| 40:BK:36:LYS:NZ    | 40:BK:36:LYS:HA    | 1.98                     | 0.77              |
| 40:BK:143:ARG:HD2  | 40:BK:144:MET:H    | 1.49                     | 0.77              |
| 42:BM:11:LYS:N     | 42:BM:104:ARG:HH21 | 1.82                     | 0.77              |
| 42:BM:66:ARG:HG2   | 42:BM:67:GLY:H     | 1.49                     | 0.77              |
| 43:BN:49:VAL:HG12  | 47:BR:45:ARG:HD2   | 1.64                     | 0.77              |
| 49:BT:6:LEU:HA     | 49:BT:18:ARG:O     | 1.84                     | 0.77              |
| 50:BU:4:LYS:CD     | 50:BU:5:VAL:H      | 1.94                     | 0.77              |
| 50:BU:5:VAL:HG12   | 50:BU:6:LEU:N      | 1.99                     | 0.77              |
| 57:BZ:2:ILE:HD13   | 57:BZ:267:LEU:HB3  | 1.66                     | 0.77              |
| 57:BZ:239:ILE:H    | 57:BZ:244:GLY:C    | 1.71                     | 0.77              |
| 1:AA:245:G:OP1     | 11:AM:65:ARG:HD3   | 1.83                     | 0.77              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1000:A:H61    | 1:AA:1155:A:H5'    | 1.49                     | 0.77              |
| 1:AA:1036:G:N2     | 1:AA:1120:G:C5     | 2.51                     | 0.77              |
| 1:AA:1058:G:C1'    | 32:AJ:116:ASN:HD22 | 1.98                     | 0.77              |
| 1:AA:1312:U:H5'    | 19:AU:63:LYS:HE3   | 1.65                     | 0.77              |
| 1:AA:2291:U:OP1    | 1:AA:2381:C:H5'    | 1.83                     | 0.77              |
| 1:AA:2519:U:C6     | 1:AA:2542:A:C6     | 2.72                     | 0.77              |
| 1:AA:2543:G:N3     | 1:AA:2765:A:C2     | 2.52                     | 0.77              |
| 1:AA:2776:A:H4'    | 1:AA:2777:G:H5''   | 1.66                     | 0.77              |
| 59:AA:3003:8AN:O2P | 22:AX:2:ALA:HB3    | 1.81                     | 0.77              |
| 3:AC:70:LYS:NZ     | 3:AC:177:LYS:HG2   | 1.99                     | 0.77              |
| 5:AE:125:GLY:H     | 5:AE:136:ARG:HA    | 1.49                     | 0.77              |
| 7:AG:15:VAL:O      | 7:AG:18:GLU:HB3    | 1.83                     | 0.77              |
| 8:AH:35:VAL:CG2    | 8:AH:72:ILE:HG23   | 2.14                     | 0.77              |
| 10:AL:37:ASP:N     | 10:AL:61:VAL:HB    | 1.98                     | 0.77              |
| 11:AM:46:LYS:HD2   | 11:AM:46:LYS:O     | 1.83                     | 0.77              |
| 12:AN:42:ILE:HD13  | 12:AN:42:ILE:C     | 2.09                     | 0.77              |
| 12:AN:55:VAL:CG2   | 12:AN:64:ILE:HD11  | 2.14                     | 0.77              |
| 13:AO:38:VAL:CB    | 13:AO:39:PRO:HD3   | 2.14                     | 0.77              |
| 16:AR:57:PHE:CD2   | 16:AR:60:LEU:HD12  | 2.19                     | 0.77              |
| 17:AS:18:LEU:CD1   | 17:AS:66:ARG:HH12  | 1.97                     | 0.77              |
| 20:AV:38:ILE:HG23  | 20:AV:60:PHE:CZ    | 2.18                     | 0.77              |
| 27:Ac:30:THR:HG22  | 27:Ac:31:PRO:HD3   | 1.64                     | 0.77              |
| 32:AJ:23:VAL:HG11  | 32:AJ:37:PHE:CB    | 2.14                     | 0.77              |
| 34:BA:113:G:H2'    | 34:BA:114:U:C6     | 2.19                     | 0.77              |
| 34:BA:179:A:H3'    | 34:BA:180:U:H5     | 1.48                     | 0.77              |
| 34:BA:1004:A:C8    | 34:BA:1036:G:O6    | 2.32                     | 0.77              |
| 34:BA:1164:G:C6    | 34:BA:1165:C:C4    | 2.73                     | 0.77              |
| 34:BA:1269:A:N6    | 34:BA:1312:G:O3'   | 1.97                     | 0.77              |
| 36:BG:91:LEU:HD11  | 36:BG:99:VAL:N     | 1.99                     | 0.77              |
| 37:BH:110:PHE:HE1  | 37:BH:148:VAL:HG23 | 1.49                     | 0.77              |
| 38:BI:125:SER:C    | 38:BI:127:ASN:H    | 1.92                     | 0.77              |
| 39:BJ:1:MET:HE2    | 39:BJ:68:PRO:HG3   | 1.66                     | 0.77              |
| 41:BL:24:THR:O     | 41:BL:60:ARG:HA    | 1.84                     | 0.77              |
| 42:BM:34:ASN:OD1   | 42:BM:43:ALA:HB2   | 1.85                     | 0.77              |
| 42:BM:113:LYS:HZ2  | 42:BM:119:ALA:CB   | 1.97                     | 0.77              |
| 43:BN:25:GLU:O     | 43:BN:28:ARG:HB2   | 1.84                     | 0.77              |
| 45:BP:5:PRO:HB3    | 45:BP:10:LEU:HD11  | 1.66                     | 0.77              |
| 45:BP:41:ARG:HG2   | 45:BP:42:THR:N     | 1.99                     | 0.77              |
| 50:BU:40:LYS:HB3   | 50:BU:40:LYS:HZ3   | 1.49                     | 0.77              |
| 50:BU:43:LEU:HD22  | 50:BU:44:ALA:H     | 1.48                     | 0.77              |
| 53:BX:63:ILE:O     | 53:BX:72:LEU:HD12  | 1.84                     | 0.77              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 55:BC:32:U:H2'    | 55:BC:33:U:O4'    | 1.84                     | 0.77              |
| 56:BD:2:C:H2'     | 56:BD:3:C:H5'     | 1.67                     | 0.77              |
| 56:BE:51:U:H2'    | 56:BE:52:G:C8     | 2.19                     | 0.77              |
| 57:BZ:59:LYS:HB2  | 57:BZ:59:LYS:NZ   | 2.00                     | 0.77              |
| 1:AA:172:C:C2     | 1:AA:173:G:C8     | 2.71                     | 0.77              |
| 1:AA:176:G:H2'    | 1:AA:177:G:H8     | 1.46                     | 0.77              |
| 1:AA:775:G:H21    | 1:AA:787:U:H2'    | 1.49                     | 0.77              |
| 1:AA:781:A:H2     | 1:AA:1776:G:N3    | 1.81                     | 0.77              |
| 1:AA:1105:U:O3'   | 1:AA:1106:G:C3'   | 2.30                     | 0.77              |
| 1:AA:1309:G:H2'   | 1:AA:1310:G:H5'   | 1.65                     | 0.77              |
| 1:AA:1799:G:O6    | 4:AD:177:LEU:HD12 | 1.84                     | 0.77              |
| 1:AA:1864:U:C2'   | 1:AA:1869:G:H5'   | 2.14                     | 0.77              |
| 1:AA:1993:U:C6    | 1:AA:1994:C:H5    | 2.01                     | 0.77              |
| 1:AA:2524:G:H2'   | 1:AA:2525:G:O4'   | 1.83                     | 0.77              |
| 2:AB:28:C:O5'     | 2:AB:28:C:H6      | 1.67                     | 0.77              |
| 4:AD:134:ARG:HG2  | 4:AD:187:GLY:C    | 2.08                     | 0.77              |
| 4:AD:176:ARG:HH22 | 4:AD:270:ILE:CD1  | 1.98                     | 0.77              |
| 4:AD:244:ARG:N    | 4:AD:245:PRO:CD   | 2.46                     | 0.77              |
| 6:AF:139:PHE:HE2  | 6:AF:167:ALA:HA   | 1.48                     | 0.77              |
| 7:AG:12:TYR:HA    | 7:AG:15:VAL:CG2   | 2.14                     | 0.77              |
| 7:AG:57:ALA:HA    | 7:AG:67:LYS:C     | 2.09                     | 0.77              |
| 7:AG:61:ALA:HB2   | 7:AG:67:LYS:HE2   | 1.64                     | 0.77              |
| 7:AG:92:VAL:CG1   | 7:AG:94:LEU:HD22  | 2.15                     | 0.77              |
| 9:AK:115:ARG:HA   | 9:AK:118:LYS:CD   | 2.15                     | 0.77              |
| 10:AL:77:ILE:O    | 15:AQ:75:ILE:HG13 | 1.85                     | 0.77              |
| 11:AM:122:PRO:HB2 | 11:AM:138:LEU:HB2 | 1.65                     | 0.77              |
| 12:AN:75:THR:HG23 | 12:AN:91:GLU:CD   | 2.09                     | 0.77              |
| 14:AP:89:ARG:NH1  | 14:AP:91:PRO:HA   | 2.00                     | 0.77              |
| 15:AQ:18:ASP:CB   | 15:AQ:81:PRO:HA   | 2.14                     | 0.77              |
| 16:AR:47:TYR:OH   | 17:AS:77:ALA:N    | 2.17                     | 0.77              |
| 17:AS:64:HIS:HA   | 17:AS:97:LYS:CD   | 2.14                     | 0.77              |
| 18:AT:36:LEU:HD11 | 18:AT:47:VAL:CG2  | 2.15                     | 0.77              |
| 21:AW:24:LEU:HD13 | 21:AW:83:PRO:CD   | 2.14                     | 0.77              |
| 23:AY:25:ARG:O    | 23:AY:28:MET:HB2  | 1.84                     | 0.77              |
| 24:AZ:10:LYS:HE2  | 24:AZ:31:LEU:CD2  | 2.15                     | 0.77              |
| 26:Ab:4:HIS:CD2   | 26:Ab:4:HIS:C     | 2.62                     | 0.77              |
| 27:Ac:15:GLU:OE2  | 27:Ac:21:TYR:HB3  | 1.84                     | 0.77              |
| 29:Ae:30:ARG:HD2  | 29:Ae:44:LYS:HD2  | 1.65                     | 0.77              |
| 30:Af:4:ARG:O     | 30:Af:5:ALA:HB2   | 1.83                     | 0.77              |
| 32:AJ:12:LEU:HD13 | 32:AJ:41:PHE:CZ   | 2.11                     | 0.77              |
| 32:AJ:54:PRO:HD2  | 32:AJ:70:LYS:HB3  | 1.66                     | 0.77              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:225:C:C2'   | 34:BA:226:G:H5'    | 2.14                     | 0.77              |
| 34:BA:1521:G:O2'  | 34:BA:1522:U:H5'   | 1.84                     | 0.77              |
| 35:BF:77:ALA:HB2  | 35:BF:211:ILE:HD13 | 1.67                     | 0.77              |
| 36:BG:150:LYS:HB2 | 36:BG:173:VAL:CG2  | 2.14                     | 0.77              |
| 38:BI:78:HIS:CB   | 41:BL:104:ARG:HD3  | 2.14                     | 0.77              |
| 39:BJ:98:LEU:HG   | 51:BV:28:GLU:CG    | 2.14                     | 0.77              |
| 41:BL:29:SER:C    | 41:BL:32:LYS:HZ2   | 1.91                     | 0.77              |
| 45:BP:80:HIS:HD2  | 57:BZ:326:VAL:CA   | 1.95                     | 0.77              |
| 48:BS:39:LEU:HD13 | 48:BS:56:LEU:HD13  | 1.65                     | 0.77              |
| 51:BV:69:THR:HA   | 51:BV:72:ARG:HG3   | 1.66                     | 0.77              |
| 55:BC:28:G:H2'    | 55:BC:29:G:H8      | 1.49                     | 0.77              |
| 57:BZ:88:VAL:CG1  | 57:BZ:92:VAL:HG11  | 2.14                     | 0.77              |
| 57:BZ:243:GLU:CG  | 57:BZ:245:LYS:HD3  | 2.13                     | 0.77              |
| 57:BZ:491:ASN:ND2 | 57:BZ:536:ASN:CA   | 2.46                     | 0.77              |
| 1:AA:182:A:H2'    | 1:AA:183:C:H6      | 1.46                     | 0.77              |
| 1:AA:242:G:H2'    | 1:AA:254:G:O6      | 1.85                     | 0.77              |
| 1:AA:516:C:O2'    | 1:AA:517:C:H5'     | 1.84                     | 0.77              |
| 1:AA:623:G:P      | 11:AM:105:LEU:HD21 | 2.23                     | 0.77              |
| 1:AA:1079:C:H2'   | 1:AA:1080:C:H5'    | 1.66                     | 0.77              |
| 1:AA:1081:U:O4'   | 32:AJ:125:ARG:HB3  | 1.84                     | 0.77              |
| 1:AA:1203:G:N1    | 1:AA:1241:A:C8     | 2.52                     | 0.77              |
| 1:AA:1242:A:C2    | 11:AM:6:LEU:HD21   | 2.20                     | 0.77              |
| 1:AA:1567:A:H4'   | 1:AA:1568:G:N2     | 1.99                     | 0.77              |
| 1:AA:1742:C:H3'   | 1:AA:1743:G:C5'    | 2.15                     | 0.77              |
| 1:AA:1992:G:H1'   | 1:AA:1993:U:H5     | 1.46                     | 0.77              |
| 1:AA:2007:C:H4'   | 1:AA:2824:C:O2'    | 1.83                     | 0.77              |
| 1:AA:2097:C:C2'   | 1:AA:2098:U:H5'    | 2.13                     | 0.77              |
| 1:AA:2208:U:O2'   | 4:AD:151:LYS:HD3   | 1.85                     | 0.77              |
| 1:AA:2489:G:H2'   | 1:AA:2490:G:H8     | 1.46                     | 0.77              |
| 2:AB:21:G:H2'     | 2:AB:22:U:O4'      | 1.84                     | 0.77              |
| 3:AC:52:ARG:HD3   | 55:BC:62:C:C1'     | 2.13                     | 0.77              |
| 5:AE:124:GLY:HA3  | 5:AE:136:ARG:HB2   | 1.67                     | 0.77              |
| 5:AE:197:ILE:HD12 | 5:AE:197:ILE:H     | 1.47                     | 0.77              |
| 6:AF:36:VAL:HG11  | 6:AF:183:VAL:HB    | 1.65                     | 0.77              |
| 6:AF:182:ASN:HD21 | 6:AF:185:ASP:CG    | 1.93                     | 0.77              |
| 8:AH:26:VAL:HG21  | 8:AH:75:ALA:HB1    | 1.66                     | 0.77              |
| 12:AN:6:ARG:HH21  | 12:AN:8:LYS:C      | 1.93                     | 0.77              |
| 12:AN:46:GLN:OE1  | 12:AN:125:LEU:C    | 2.28                     | 0.77              |
| 13:AO:11:ASN:CG   | 13:AO:12:ARG:N     | 2.41                     | 0.77              |
| 22:AX:28:GLY:N    | 22:AX:67:VAL:HB    | 1.98                     | 0.77              |
| 25:Aa:5:ILE:CD1   | 25:Aa:10:VAL:HG23  | 2.12                     | 0.77              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 28:Ad:21:ARG:HB3   | 28:Ad:31:LEU:CD1  | 2.13                     | 0.77              |
| 34:BA:1250:A:H4'   | 42:BM:67:GLY:C    | 2.10                     | 0.77              |
| 34:BA:1453:G:H2'   | 34:BA:1454:G:O4'  | 1.85                     | 0.77              |
| 40:BK:76:ARG:NH1   | 40:BK:89:MET:HG3  | 1.99                     | 0.77              |
| 41:BL:22:GLU:CA    | 41:BL:63:LEU:HD22 | 2.14                     | 0.77              |
| 41:BL:82:HIS:NE2   | 41:BL:84:ARG:HG3  | 1.99                     | 0.77              |
| 42:BM:4:TYR:HE1    | 42:BM:59:PHE:CE2  | 2.02                     | 0.77              |
| 43:BN:30:SER:HB2   | 43:BN:81:THR:N    | 2.00                     | 0.77              |
| 46:BQ:14:ARG:HB2   | 46:BQ:41:PRO:HA   | 1.67                     | 0.77              |
| 46:BQ:16:ASP:CB    | 46:BQ:30:ALA:HB1  | 2.14                     | 0.77              |
| 52:BW:62:ILE:HD11  | 52:BW:67:VAL:CA   | 2.14                     | 0.77              |
| 52:BW:62:ILE:HG12  | 52:BW:67:VAL:HG22 | 1.64                     | 0.77              |
| 57:BZ:62:ALA:CA    | 57:BZ:187:TYR:CD2 | 2.67                     | 0.77              |
| 57:BZ:230:LYS:CB   | 57:BZ:231:VAL:HB  | 2.15                     | 0.77              |
| 57:BZ:499:PHE:HB2  | 57:BZ:540:GLY:CA  | 2.13                     | 0.77              |
| 57:BZ:565:LEU:H    | 57:BZ:566:GLU:C   | 1.93                     | 0.77              |
| 1:AA:270(X):G:N1   | 1:AA:270(Y):G:H1' | 2.00                     | 0.77              |
| 1:AA:396:G:OP1     | 25:Aa:10:VAL:HG22 | 1.83                     | 0.77              |
| 1:AA:477:A:H62     | 1:AA:502:A:H61    | 0.80                     | 0.77              |
| 1:AA:621:A:N6      | 1:AA:622:G:C2     | 2.53                     | 0.77              |
| 1:AA:1142:U:C6     | 1:AA:1142(A):A:H8 | 2.01                     | 0.77              |
| 1:AA:1312:U:C5     | 19:AU:62:LYS:HG3  | 2.20                     | 0.77              |
| 1:AA:1815:A:H1'    | 1:AA:1817:G:C4    | 2.20                     | 0.77              |
| 1:AA:2011:U:H2'    | 1:AA:2012:G:C8    | 2.20                     | 0.77              |
| 1:AA:2124:G:C6     | 3:AC:218:MET:CA   | 2.65                     | 0.77              |
| 1:AA:2447:G:C3'    | 1:AA:2499:C:OP2   | 2.32                     | 0.77              |
| 1:AA:2603:G:OP2    | 22:AX:1:MET:HB2   | 1.84                     | 0.77              |
| 1:AA:2631:G:C8     | 1:AA:2894:G:H8    | 1.96                     | 0.77              |
| 59:AA:3003:8AN:O1P | 22:AX:4:LYS:CD    | 2.28                     | 0.77              |
| 2:AB:16:G:H2'      | 2:AB:17:C:H6      | 1.50                     | 0.77              |
| 4:AD:147:LEU:HA    | 4:AD:185:VAL:CG1  | 2.14                     | 0.77              |
| 8:AH:85:LYS:CE     | 8:AH:142:GLY:HA2  | 2.15                     | 0.77              |
| 12:AN:6:ARG:HH21   | 12:AN:8:LYS:HG3   | 1.49                     | 0.77              |
| 13:AO:50:HIS:O     | 13:AO:53:HIS:HB3  | 1.84                     | 0.77              |
| 14:AP:42:ASP:C     | 14:AP:44:LYS:H    | 1.92                     | 0.77              |
| 14:AP:75:GLU:HA    | 14:AP:78:LEU:HB3  | 1.66                     | 0.77              |
| 19:AU:8:ILE:C      | 19:AU:9:LEU:HG    | 2.09                     | 0.77              |
| 25:Aa:38:LYS:HG2   | 25:Aa:39:CYS:H    | 1.47                     | 0.77              |
| 32:AJ:37:PHE:CE2   | 32:AJ:63:ARG:HD3  | 2.18                     | 0.77              |
| 32:AJ:58:THR:C     | 32:AJ:59:ILE:HD13 | 2.10                     | 0.77              |
| 32:AJ:72:PRO:HD3   | 32:AJ:77:LEU:HD21 | 1.67                     | 0.77              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 32:AJ:105:LEU:HA  | 32:AJ:123:ALA:HB2  | 1.64                     | 0.77              |
| 34:BA:67:C:H4'    | 34:BA:172:A:O4'    | 1.84                     | 0.77              |
| 34:BA:194:C:C2'   | 34:BA:195:A:H5''   | 2.13                     | 0.77              |
| 34:BA:842:C:H4'   | 34:BA:848:C:C2     | 2.19                     | 0.77              |
| 34:BA:1074:G:H4'  | 35:BF:103:THR:O    | 1.82                     | 0.77              |
| 34:BA:1242:C:H5'' | 54:BY:10:ARG:NH1   | 1.95                     | 0.77              |
| 34:BA:1312:G:O6   | 34:BA:1326:C:C4    | 2.36                     | 0.77              |
| 34:BA:1463:C:O2'  | 34:BA:1464:G:H5'   | 1.85                     | 0.77              |
| 34:BA:1486:G:C5   | 34:BA:1487:G:N7    | 2.21                     | 0.77              |
| 40:BK:76:ARG:HD3  | 40:BK:89:MET:HE2   | 1.67                     | 0.77              |
| 41:BL:39:LEU:HB3  | 41:BL:45:ILE:HG21  | 1.65                     | 0.77              |
| 42:BM:53:VAL:HG21 | 42:BM:92:TYR:CE1   | 2.20                     | 0.77              |
| 45:BP:36:VAL:C    | 45:BP:58:VAL:HG13  | 2.09                     | 0.77              |
| 45:BP:82:VAL:HG12 | 45:BP:83:VAL:H     | 1.50                     | 0.77              |
| 48:BS:26:GLU:O    | 48:BS:29:VAL:HB    | 1.84                     | 0.77              |
| 56:BD:50:U:C4     | 56:BD:64:A:N1      | 2.52                     | 0.77              |
| 56:BE:5:G:H5''    | 56:BE:6:G:C2       | 2.20                     | 0.77              |
| 57:BZ:6:ARG:HD2   | 57:BZ:194:VAL:HG12 | 0.78                     | 0.77              |
| 57:BZ:57:LEU:HD23 | 57:BZ:71:ASN:CG    | 2.09                     | 0.77              |
| 57:BZ:248:ASN:OD1 | 57:BZ:274:VAL:O    | 2.01                     | 0.77              |
| 1:AA:30:G:OP1     | 16:AR:11:ARG:NH2   | 2.18                     | 0.77              |
| 1:AA:221:A:O2'    | 1:AA:222:A:OP2     | 2.02                     | 0.77              |
| 1:AA:261:G:C4'    | 1:AA:608:A:C2      | 2.65                     | 0.77              |
| 1:AA:319:C:H2'    | 1:AA:320:A:O4'     | 1.85                     | 0.77              |
| 1:AA:518:G:H4'    | 18:AT:18:ARG:NH1   | 1.98                     | 0.77              |
| 1:AA:630:G:C5'    | 29:Ae:46:ARG:HH12  | 1.97                     | 0.77              |
| 1:AA:800:A:O2'    | 1:AA:801:G:H5''    | 1.85                     | 0.77              |
| 1:AA:973:A:O4'    | 1:AA:1188:U:C4     | 2.38                     | 0.77              |
| 1:AA:1046:A:C6    | 31:AI:9:LEU:O      | 2.38                     | 0.77              |
| 1:AA:1446:C:H2'   | 1:AA:1447:G:H8     | 1.48                     | 0.77              |
| 1:AA:1453:A:H61   | 13:AO:63:ARG:NH2   | 1.80                     | 0.77              |
| 1:AA:1524:G:H2'   | 1:AA:1525:G:C8     | 2.20                     | 0.77              |
| 1:AA:1742:C:H2'   | 1:AA:1743:G:C4'    | 2.14                     | 0.77              |
| 1:AA:1788:C:N4    | 1:AA:1789:A:N7     | 2.31                     | 0.77              |
| 1:AA:1803:A:H4'   | 4:AD:257:LEU:CD1   | 2.15                     | 0.77              |
| 1:AA:1863:G:H2'   | 1:AA:1864:U:H6     | 1.48                     | 0.77              |
| 1:AA:1969:A:H5'   | 1:AA:1970:A:OP1    | 1.85                     | 0.77              |
| 1:AA:2459:A:H2'   | 1:AA:2460:U:C4'    | 2.14                     | 0.77              |
| 1:AA:2488:A:O2'   | 1:AA:2489:G:H5'    | 1.84                     | 0.77              |
| 1:AA:2503:A:H4'   | 1:AA:2504:U:OP1    | 1.84                     | 0.77              |
| 1:AA:2523:G:H1'   | 1:AA:2765:A:H62    | 1.47                     | 0.77              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2541:A:H2     | 1:AA:2765:A:H61   | 1.33                     | 0.77              |
| 1:AA:2784:C:H4'    | 5:AE:41:LYS:HE2   | 1.65                     | 0.77              |
| 1:AA:2815:C:H4'    | 26:Ab:42:PRO:HG3  | 1.65                     | 0.77              |
| 2:AB:73:A:N6       | 2:AB:104:A:H1'    | 2.00                     | 0.77              |
| 3:AC:122:ALA:CB    | 3:AC:126:LYS:HD3  | 2.14                     | 0.77              |
| 3:AC:180:PHE:HE2   | 3:AC:184:LYS:HB2  | 0.63                     | 0.77              |
| 4:AD:24:ILE:HG21   | 4:AD:26:LYS:HE2   | 1.67                     | 0.77              |
| 6:AF:125:LEU:HD22  | 6:AF:127:GLU:O    | 1.85                     | 0.77              |
| 8:AH:103:LEU:HD13  | 8:AH:115:VAL:CG1  | 2.15                     | 0.77              |
| 8:AH:153:LYS:HB2   | 8:AH:162:ILE:CG2  | 2.14                     | 0.77              |
| 14:AP:40:ILE:HG13  | 14:AP:47:THR:HG23 | 1.66                     | 0.77              |
| 19:AU:7:VAL:CG1    | 23:AY:31:ARG:HH22 | 1.97                     | 0.77              |
| 29:Ae:36:LYS:HG3   | 29:Ae:40:GLU:CD   | 2.10                     | 0.77              |
| 32:AJ:33:ASN:HB2   | 32:AJ:63:ARG:HB3  | 1.65                     | 0.77              |
| 34:BA:110:C:H2'    | 34:BA:111:G:O4'   | 1.85                     | 0.77              |
| 34:BA:129(A):G:H4' | 34:BA:130:A:O5'   | 1.85                     | 0.77              |
| 34:BA:511:C:HO2'   | 34:BA:512:U:H6    | 1.33                     | 0.77              |
| 34:BA:923:A:P      | 38:BI:21:ALA:HB2  | 2.25                     | 0.77              |
| 34:BA:1109:C:C2'   | 34:BA:1110:A:H8   | 1.97                     | 0.77              |
| 34:BA:1239:A:H2'   | 34:BA:1239:A:N3   | 1.99                     | 0.77              |
| 34:BA:1289:A:N6    | 34:BA:1371:G:O2'  | 2.18                     | 0.77              |
| 34:BA:1308:U:O5'   | 46:BQ:98:VAL:HB   | 1.85                     | 0.77              |
| 34:BA:1315:U:O2    | 34:BA:1361:G:N3   | 2.18                     | 0.77              |
| 35:BF:25:ASN:HB3   | 35:BF:191:ASP:HA  | 1.67                     | 0.77              |
| 35:BF:212:GLN:O    | 35:BF:216:SER:HB2 | 1.85                     | 0.77              |
| 39:BJ:65:VAL:HG23  | 39:BJ:66:GLU:O    | 1.83                     | 0.77              |
| 39:BJ:68:PRO:HB2   | 39:BJ:71:ARG:CG   | 2.15                     | 0.77              |
| 41:BL:9:MET:HG3    | 41:BL:26:VAL:HG11 | 1.65                     | 0.77              |
| 41:BL:32:LYS:HG2   | 41:BL:33:GLU:N    | 1.97                     | 0.77              |
| 42:BM:103:THR:HG22 | 42:BM:104:ARG:N   | 2.00                     | 0.77              |
| 46:BQ:15:VAL:HG11  | 46:BQ:37:THR:CG2  | 2.15                     | 0.77              |
| 46:BQ:16:ASP:CB    | 46:BQ:34:LEU:HD11 | 1.80                     | 0.77              |
| 48:BS:7:GLU:HB3    | 48:BS:10:LYS:HE3  | 1.66                     | 0.77              |
| 55:BC:33:U:H5''    | 55:BC:34:G:OP2    | 1.84                     | 0.77              |
| 56:BD:5:G:C5       | 56:BD:69:G:C5     | 2.72                     | 0.77              |
| 57:BZ:603:ALA:HB3  | 57:BZ:604:PRO:CD  | 2.15                     | 0.77              |
| 1:AA:5:A:C6        | 1:AA:2898:U:O4    | 2.35                     | 0.77              |
| 1:AA:41:C:O2'      | 1:AA:43:G:H5'     | 1.84                     | 0.77              |
| 1:AA:494:G:H5'     | 18:AT:7:ALA:HA    | 1.66                     | 0.77              |
| 1:AA:716:A:N3      | 48:BS:44:LYS:HD3  | 1.99                     | 0.77              |
| 1:AA:847:U:N3      | 1:AA:933:A:H2     | 1.82                     | 0.77              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:866:A:N3     | 1:AA:866:A:H2'     | 1.98                     | 0.77              |
| 1:AA:1068:G:C1'   | 1:AA:1096:A:H4'    | 2.14                     | 0.77              |
| 1:AA:1603:A:OP2   | 1:AA:1603:A:H3'    | 1.84                     | 0.77              |
| 1:AA:1687:G:C6    | 1:AA:1688:U:C5     | 2.73                     | 0.77              |
| 1:AA:1853:A:H2'   | 1:AA:1854:A:H8     | 1.49                     | 0.77              |
| 1:AA:2176:A:C4    | 3:AC:44:HIS:HD2    | 2.02                     | 0.77              |
| 1:AA:2378:A:C2    | 1:AA:2379:G:H1'    | 2.18                     | 0.77              |
| 1:AA:2455:G:H2'   | 1:AA:2456:C:H6     | 1.49                     | 0.77              |
| 1:AA:2647:U:H2'   | 1:AA:2648:C:C6     | 2.20                     | 0.77              |
| 1:AA:2656:U:H2'   | 1:AA:2657:A:H5''   | 1.67                     | 0.77              |
| 1:AA:2667:C:H2'   | 1:AA:2668:G:O4'    | 1.85                     | 0.77              |
| 1:AA:2777:G:H4'   | 1:AA:2778:A:H5'    | 1.66                     | 0.77              |
| 1:AA:2822:G:OP2   | 13:AO:4:LEU:HD11   | 1.84                     | 0.77              |
| 4:AD:34:VAL:HG23  | 4:AD:36:PRO:HD2    | 1.65                     | 0.77              |
| 5:AE:58:ARG:HG2   | 5:AE:63:LEU:HD23   | 1.66                     | 0.77              |
| 7:AG:59:GLU:CD    | 7:AG:152:LEU:HD22  | 2.09                     | 0.77              |
| 7:AG:120:LEU:HD22 | 7:AG:181:ARG:HG2   | 1.67                     | 0.77              |
| 7:AG:167:GLU:O    | 7:AG:170:ARG:HB3   | 1.85                     | 0.77              |
| 8:AH:98:LEU:HG    | 8:AH:123:PHE:CB    | 2.11                     | 0.77              |
| 9:AK:36:GLY:O     | 9:AK:47:ALA:HB3    | 1.84                     | 0.77              |
| 10:AL:99:PHE:O    | 10:AL:118:ALA:HB1  | 1.85                     | 0.77              |
| 11:AM:75:ILE:HG22 | 11:AM:115:LEU:CD1  | 2.14                     | 0.77              |
| 12:AN:118:LEU:CD1 | 12:AN:131:ILE:HG21 | 2.15                     | 0.77              |
| 13:AO:12:ARG:NH1  | 13:AO:16:HIS:HB3   | 1.99                     | 0.77              |
| 15:AQ:4:GLY:O     | 15:AQ:8:LYS:HG3    | 1.85                     | 0.77              |
| 17:AS:6:LYS:HB3   | 17:AS:10:LYS:CA    | 2.11                     | 0.77              |
| 21:AW:43:GLU:O    | 21:AW:47:VAL:HG23  | 1.84                     | 0.77              |
| 24:AZ:26:LEU:CB   | 24:AZ:28:LEU:HD21  | 2.15                     | 0.77              |
| 27:Ac:25:LYS:HE2  | 29:Ae:35:GLN:HB3   | 1.65                     | 0.77              |
| 29:Ae:25:MET:HB3  | 29:Ae:44:LYS:HE2   | 1.67                     | 0.77              |
| 31:AI:97:ALA:CB   | 31:AI:132:ASP:O    | 2.32                     | 0.77              |
| 32:AJ:27:LEU:HD22 | 32:AJ:58:THR:C     | 2.09                     | 0.77              |
| 34:BA:529:G:H3'   | 34:BA:529:G:H8     | 1.48                     | 0.77              |
| 34:BA:544:G:H2'   | 34:BA:545:C:C6     | 2.20                     | 0.77              |
| 34:BA:562:C:H5''  | 34:BA:563:A:OP1    | 1.85                     | 0.77              |
| 34:BA:737:A:OP1   | 39:BJ:91:VAL:HA    | 1.84                     | 0.77              |
| 34:BA:789:U:C2    | 34:BA:791:G:OP2    | 2.38                     | 0.77              |
| 34:BA:1237:C:O2'  | 34:BA:1300:G:N2    | 2.17                     | 0.77              |
| 34:BA:1309:G:N2   | 34:BA:1328:C:N3    | 2.30                     | 0.77              |
| 34:BA:1376:U:H2'  | 34:BA:1377:A:C8    | 2.18                     | 0.77              |
| 40:BK:88:PRO:HG2  | 40:BK:152:ALA:HB2  | 1.67                     | 0.77              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 51:BV:61:LYS:O    | 51:BV:65:ILE:HG12 | 1.85                     | 0.77              |
| 56:BD:74:C:O2'    | 56:BD:75:C:OP1    | 2.03                     | 0.77              |
| 57:BZ:127:ILE:CA  | 57:BZ:164:TYR:HA  | 2.11                     | 0.77              |
| 57:BZ:300:LEU:HB2 | 57:BZ:301:SER:CA  | 2.14                     | 0.77              |
| 1:AA:265:A:C8     | 1:AA:265:A:C3'    | 2.56                     | 0.77              |
| 1:AA:323:G:H2'    | 6:AF:170:LEU:CB   | 2.13                     | 0.77              |
| 1:AA:519:U:H5'    | 1:AA:519:U:C6     | 2.16                     | 0.77              |
| 1:AA:668:G:H2'    | 1:AA:670:A:H62    | 1.49                     | 0.77              |
| 1:AA:892:G:H2'    | 1:AA:893:C:C6     | 2.18                     | 0.77              |
| 1:AA:946:G:H1     | 1:AA:972:G:H21    | 1.33                     | 0.77              |
| 1:AA:1000:A:H2'   | 1:AA:1001:A:O4'   | 1.85                     | 0.77              |
| 1:AA:1388:G:H2'   | 1:AA:1389:G:H8    | 1.48                     | 0.77              |
| 1:AA:1882:C:N3    | 1:AA:1883:G:H1'   | 1.98                     | 0.77              |
| 1:AA:1941:C:H2'   | 1:AA:1941:C:O2    | 1.83                     | 0.77              |
| 1:AA:2055:C:H4'   | 1:AA:2056:G:C5'   | 2.15                     | 0.77              |
| 1:AA:2072:G:C6    | 1:AA:2073:C:N4    | 2.53                     | 0.77              |
| 1:AA:2124:G:N3    | 3:AC:216:THR:N    | 2.12                     | 0.77              |
| 1:AA:2252:G:N7    | 59:AA:3003:8AN:N6 | 2.31                     | 0.77              |
| 1:AA:2305:A:C2'   | 7:AG:154:GLY:HA2  | 2.15                     | 0.77              |
| 1:AA:2638:G:N7    | 1:AA:2775:A:C6    | 2.53                     | 0.77              |
| 5:AE:114:ALA:CB   | 5:AE:118:LYS:HB2  | 2.14                     | 0.77              |
| 6:AF:89:VAL:CG1   | 6:AF:90:PHE:N     | 2.45                     | 0.77              |
| 7:AG:163:ALA:HB1  | 7:AG:169:ALA:CA   | 2.11                     | 0.77              |
| 10:AL:6:THR:HA    | 10:AL:7:TYR:CD1   | 2.19                     | 0.77              |
| 10:AL:39:ILE:C    | 10:AL:59:LYS:HZ3  | 1.90                     | 0.77              |
| 11:AM:15:ARG:CZ   | 11:AM:16:ARG:H    | 1.97                     | 0.77              |
| 12:AN:23:GLY:N    | 12:AN:99:PRO:HG3  | 1.99                     | 0.77              |
| 12:AN:43:THR:HG23 | 12:AN:46:GLN:CB   | 2.14                     | 0.77              |
| 12:AN:137:TYR:CE2 | 21:AW:124:ILE:CD1 | 2.68                     | 0.77              |
| 13:AO:36:THR:HB   | 13:AO:40:LYS:HD3  | 1.66                     | 0.77              |
| 15:AQ:18:ASP:CG   | 15:AQ:81:PRO:HG3  | 2.10                     | 0.77              |
| 17:AS:6:LYS:HD3   | 17:AS:10:LYS:CG   | 2.13                     | 0.77              |
| 22:AX:32:ARG:O    | 22:AX:35:ASN:HB2  | 1.84                     | 0.77              |
| 27:Ac:33:LYS:O    | 27:Ac:34:LEU:C    | 2.28                     | 0.77              |
| 28:Ad:43:THR:O    | 28:Ad:46:VAL:HB   | 1.85                     | 0.77              |
| 31:AI:140:GLY:O   | 33:Ag:136:UNK:CB  | 2.33                     | 0.77              |
| 32:AJ:12:LEU:CD2  | 32:AJ:57:ILE:HG21 | 2.15                     | 0.77              |
| 34:BA:10:A:OP2    | 38:BI:126:ARG:HD2 | 1.83                     | 0.77              |
| 34:BA:124:G:H2'   | 34:BA:125:U:O4'   | 1.85                     | 0.77              |
| 34:BA:339:C:H2'   | 34:BA:340:U:H6    | 1.48                     | 0.77              |
| 34:BA:498:A:H4'   | 34:BA:500:G:OP1   | 1.85                     | 0.77              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 34:BA:768:A:H8    | 34:BA:768:A:O5'   | 1.67                     | 0.77              |
| 34:BA:960:U:N3    | 34:BA:1225:A:N7   | 2.33                     | 0.77              |
| 34:BA:1014:A:C1'  | 52:BW:34:TRP:HH2  | 1.81                     | 0.77              |
| 34:BA:1262:C:H2'  | 34:BA:1263:C:C6   | 2.19                     | 0.77              |
| 36:BG:31:HIS:ND1  | 36:BG:34:LEU:HD13 | 1.99                     | 0.77              |
| 38:BI:100:VAL:CG1 | 38:BI:107:ARG:HG3 | 2.14                     | 0.77              |
| 39:BJ:22:GLU:OE2  | 39:BJ:82:ARG:HD2  | 1.85                     | 0.77              |
| 41:BL:45:ILE:HD12 | 41:BL:48:TYR:HB3  | 1.67                     | 0.77              |
| 42:BM:16:ARG:HG2  | 42:BM:18:PHE:CZ   | 2.20                     | 0.77              |
| 45:BP:85:ILE:O    | 45:BP:85:ILE:HG23 | 1.84                     | 0.77              |
| 48:BS:6:GLU:OE2   | 48:BS:6:GLU:N     | 2.16                     | 0.77              |
| 48:BS:49:ASP:OD2  | 48:BS:52:SER:HB2  | 1.84                     | 0.77              |
| 53:BX:29:LYS:O    | 53:BX:32:ALA:HB3  | 1.84                     | 0.77              |
| 56:BE:16:U:C4     | 56:BE:59:U:O2     | 2.38                     | 0.77              |
| 57:BZ:22:VAL:CG1  | 57:BZ:56:ILE:HG12 | 2.12                     | 0.77              |
| 57:BZ:27:GLN:H    | 57:BZ:28:GLN:CA   | 1.98                     | 0.77              |
| 1:AA:388:G:C2'    | 1:AA:390:A:N7     | 2.48                     | 0.77              |
| 1:AA:623:G:H8     | 11:AM:105:LEU:HB2 | 1.48                     | 0.77              |
| 1:AA:663:G:C4'    | 11:AM:18:ARG:HE   | 1.98                     | 0.77              |
| 1:AA:740:U:C1'    | 1:AA:1784:A:N7    | 2.48                     | 0.77              |
| 1:AA:1222:C:N4    | 1:AA:1227:A:H61   | 1.78                     | 0.77              |
| 1:AA:1602:U:N3    | 1:AA:1602:U:OP2   | 2.18                     | 0.77              |
| 1:AA:2057:A:H2'   | 1:AA:2058:A:H8    | 1.50                     | 0.77              |
| 1:AA:2121:G:H1'   | 3:AC:167:LYS:NZ   | 2.00                     | 0.77              |
| 1:AA:2415:G:OP1   | 11:AM:61:ARG:NH2  | 2.17                     | 0.77              |
| 1:AA:2517:C:C4    | 1:AA:2542:A:N7    | 2.53                     | 0.77              |
| 1:AA:2551:C:H2'   | 1:AA:2552:U:C6    | 2.20                     | 0.77              |
| 1:AA:2793:G:C6    | 1:AA:2794:C:C4    | 2.73                     | 0.77              |
| 3:AC:22:ILE:HD13  | 3:AC:190:ARG:HH22 | 1.50                     | 0.77              |
| 4:AD:234:GLY:H    | 4:AD:241:PRO:CG   | 1.98                     | 0.77              |
| 5:AE:7:VAL:HG22   | 5:AE:192:ASN:HA   | 1.66                     | 0.77              |
| 5:AE:8:LYS:HE3    | 15:AQ:2:ASN:OD1   | 1.85                     | 0.77              |
| 5:AE:49:LEU:HD21  | 5:AE:75:VAL:C     | 2.09                     | 0.77              |
| 7:AG:162:THR:C    | 7:AG:164:GLU:H    | 1.92                     | 0.77              |
| 10:AL:23:ARG:HH11 | 10:AL:23:ARG:CB   | 1.95                     | 0.77              |
| 15:AQ:7:ILE:O     | 15:AQ:11:GLU:OE1  | 2.02                     | 0.77              |
| 15:AQ:112:ARG:NH2 | 34:BA:1464:G:P    | 2.57                     | 0.77              |
| 17:AS:5:VAL:HG11  | 17:AS:37:VAL:CG1  | 2.15                     | 0.77              |
| 18:AT:27:LYS:HB3  | 18:AT:31:GLU:CD   | 2.10                     | 0.77              |
| 20:AV:46:LYS:HG3  | 20:AV:58:GLY:H    | 1.49                     | 0.77              |
| 21:AW:20:ARG:CZ   | 21:AW:20:ARG:HB2  | 2.15                     | 0.77              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 21:AW:55:HIS:HB2   | 21:AW:101:PRO:HG3  | 1.67                     | 0.77              |
| 21:AW:103:ARG:HE   | 21:AW:103:ARG:HA   | 1.48                     | 0.77              |
| 22:AX:21:LEU:HD13  | 22:AX:41:ARG:HG2   | 1.67                     | 0.77              |
| 32:AJ:23:VAL:CG1   | 32:AJ:37:PHE:CD1   | 2.68                     | 0.77              |
| 34:BA:367:U:H4'    | 34:BA:368:U:OP1    | 1.85                     | 0.77              |
| 34:BA:397:A:O2'    | 34:BA:398:C:H3'    | 1.84                     | 0.77              |
| 34:BA:522:C:N4     | 34:BA:523:A:N6     | 2.33                     | 0.77              |
| 34:BA:620:C:N1     | 37:BH:135:LEU:HD13 | 2.00                     | 0.77              |
| 34:BA:640:A:H2'    | 34:BA:641:U:O4'    | 1.85                     | 0.77              |
| 34:BA:687:A:N6     | 34:BA:703:G:H1'    | 2.00                     | 0.77              |
| 34:BA:1126:U:H1'   | 34:BA:1280:A:C6    | 2.20                     | 0.77              |
| 34:BA:1129:C:P     | 42:BM:16:ARG:NH2   | 2.55                     | 0.77              |
| 34:BA:1164:G:C2'   | 34:BA:1165:C:H5'   | 2.14                     | 0.77              |
| 34:BA:1314:C:H2'   | 34:BA:1315:U:C5    | 2.20                     | 0.77              |
| 34:BA:1437:C:H2'   | 34:BA:1438:G:H8    | 1.50                     | 0.77              |
| 34:BA:1494:G:O6    | 58:BA:1601:NMY:H12 | 1.84                     | 0.77              |
| 36:BG:131:ARG:HG3  | 36:BG:166:GLU:OE2  | 1.85                     | 0.77              |
| 36:BG:172:ARG:HH22 | 36:BG:174:PRO:HG3  | 1.49                     | 0.77              |
| 43:BN:7:LYS:HG3    | 43:BN:71:LEU:CD1   | 2.15                     | 0.77              |
| 43:BN:8:LEU:CD1    | 43:BN:16:LEU:HD13  | 2.15                     | 0.77              |
| 44:BO:78:GLN:HB2   | 44:BO:103:LEU:O    | 1.85                     | 0.77              |
| 51:BV:37:VAL:HG12  | 51:BV:41:LYS:NZ    | 2.00                     | 0.77              |
| 55:BC:29:G:H2'     | 55:BC:30:G:C8      | 2.19                     | 0.77              |
| 57:BZ:389:PHE:CG   | 57:BZ:396:LYS:HG2  | 2.20                     | 0.77              |
| 57:BZ:509:LYS:HZ2  | 57:BZ:561:ILE:CD1  | 1.76                     | 0.77              |
| 1:AA:190:A:H2'     | 1:AA:191:A:H8      | 1.48                     | 0.76              |
| 1:AA:292:C:H3'     | 1:AA:293:U:C4      | 2.20                     | 0.76              |
| 1:AA:723:G:O2'     | 1:AA:724:U:H5'     | 1.85                     | 0.76              |
| 1:AA:727:A:N3      | 1:AA:728:G:H5'     | 2.00                     | 0.76              |
| 1:AA:1037:G:O6     | 1:AA:1119:C:N4     | 2.18                     | 0.76              |
| 1:AA:1264:G:C3'    | 1:AA:1265:A:H5''   | 2.14                     | 0.76              |
| 1:AA:1509:C:OP1    | 1:AA:1510:A:H8     | 1.66                     | 0.76              |
| 1:AA:1634:A:O2'    | 1:AA:1635:G:OP1    | 2.02                     | 0.76              |
| 1:AA:1790:C:O2'    | 4:AD:209:ALA:HB3   | 1.83                     | 0.76              |
| 1:AA:1944:U:C1'    | 1:AA:1955:U:H6     | 1.98                     | 0.76              |
| 1:AA:2023:G:H5''   | 1:AA:2617:C:O2'    | 1.84                     | 0.76              |
| 1:AA:2176:A:O2'    | 3:AC:213:TYR:HB2   | 1.85                     | 0.76              |
| 1:AA:2238:G:H1'    | 1:AA:2240:C:H5     | 1.48                     | 0.76              |
| 1:AA:2595:G:H1'    | 1:AA:2599:G:N2     | 2.00                     | 0.76              |
| 1:AA:2666:C:C5     | 1:AA:2667:C:C6     | 2.73                     | 0.76              |
| 1:AA:2749:A:H4'    | 8:AH:62:LYS:CG     | 2.14                     | 0.76              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2864:G:H2'   | 1:AA:2865:U:C5     | 2.20                     | 0.76              |
| 3:AC:59:ARG:HG3   | 3:AC:60:GLY:H      | 1.48                     | 0.76              |
| 3:AC:66:HIS:ND1   | 3:AC:67:GLY:N      | 2.34                     | 0.76              |
| 4:AD:145:VAL:O    | 4:AD:155:LEU:HB3   | 1.84                     | 0.76              |
| 5:AE:32:PRO:CB    | 5:AE:35:GLN:HE22   | 1.98                     | 0.76              |
| 6:AF:104:LYS:O    | 6:AF:108:LYS:HE3   | 1.85                     | 0.76              |
| 8:AH:26:VAL:HG11  | 8:AH:75:ALA:C      | 2.10                     | 0.76              |
| 9:AK:17:ASP:HB3   | 9:AK:21:LYS:NZ     | 2.01                     | 0.76              |
| 11:AM:38:GLN:O    | 11:AM:40:SER:N     | 2.18                     | 0.76              |
| 12:AN:112:GLU:C   | 12:AN:115:MET:HB2  | 2.10                     | 0.76              |
| 16:AR:79:PHE:CZ   | 16:AR:83:LEU:HD11  | 2.19                     | 0.76              |
| 17:AS:25:LEU:HD23 | 17:AS:29:PRO:HD3   | 1.66                     | 0.76              |
| 22:AX:37:LEU:N    | 22:AX:37:LEU:HD23  | 1.99                     | 0.76              |
| 27:Ac:27:LYS:HG2  | 27:Ac:29:ASN:HD21  | 1.50                     | 0.76              |
| 27:Ac:35:GLU:OE2  | 27:Ac:52:VAL:HG13  | 1.84                     | 0.76              |
| 29:Ae:5:LYS:HG3   | 29:Ae:10:ALA:HB2   | 1.67                     | 0.76              |
| 31:AI:26:LEU:HA   | 31:AI:84:GLU:HA    | 1.67                     | 0.76              |
| 32:AJ:12:LEU:CG   | 32:AJ:57:ILE:CG2   | 2.62                     | 0.76              |
| 34:BA:66:G:H5'    | 34:BA:173:U:O4     | 1.86                     | 0.76              |
| 34:BA:277:C:H5''  | 50:BU:68:ARG:HH12  | 1.49                     | 0.76              |
| 34:BA:392:G:H5'   | 49:BT:12:LYS:NZ    | 1.99                     | 0.76              |
| 34:BA:714:G:H1'   | 34:BA:777:A:N7     | 2.00                     | 0.76              |
| 34:BA:1005:A:H5'' | 34:BA:1006:C:H5    | 1.48                     | 0.76              |
| 34:BA:1158:C:N4   | 34:BA:1160:G:H1'   | 2.00                     | 0.76              |
| 34:BA:1230:C:H5'  | 56:BE:30:G:OP1     | 1.85                     | 0.76              |
| 34:BA:1267:C:O2   | 34:BA:1267:C:H2'   | 1.84                     | 0.76              |
| 36:BG:34:LEU:HD23 | 36:BG:35:GLU:N     | 1.98                     | 0.76              |
| 36:BG:50:ALA:C    | 36:BG:72:LYS:HD2   | 2.10                     | 0.76              |
| 36:BG:50:ALA:O    | 36:BG:72:LYS:HD2   | 1.84                     | 0.76              |
| 37:BH:83:SER:HA   | 37:BH:89:THR:OG1   | 1.85                     | 0.76              |
| 38:BI:59:GLY:O    | 38:BI:62:ALA:HB3   | 1.84                     | 0.76              |
| 41:BL:107:LEU:H   | 41:BL:107:LEU:HD23 | 1.50                     | 0.76              |
| 41:BL:110:ALA:HA  | 41:BL:136:GLU:HB2  | 1.66                     | 0.76              |
| 43:BN:24:VAL:HG21 | 43:BN:37:PRO:HD3   | 1.68                     | 0.76              |
| 44:BO:122:LYS:C   | 44:BO:126:ARG:HG3  | 2.10                     | 0.76              |
| 52:BW:38:SER:HB3  | 52:BW:71:LEU:CD1   | 2.15                     | 0.76              |
| 57:BZ:64:ILE:CG2  | 57:BZ:188:GLN:CD   | 2.57                     | 0.76              |
| 57:BZ:87:ARG:NH2  | 57:BZ:211:GLN:N    | 2.33                     | 0.76              |
| 57:BZ:253:LYS:HB2 | 57:BZ:262:ARG:HG3  | 1.65                     | 0.76              |
| 57:BZ:374:ARG:HD3 | 57:BZ:583:THR:H    | 1.49                     | 0.76              |
| 1:AA:243:U:H2'    | 1:AA:243:U:O2      | 1.84                     | 0.76              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:460:A:H2'    | 1:AA:461:C:H6      | 1.50                     | 0.76              |
| 1:AA:499:U:C5     | 1:AA:500:G:N3      | 2.53                     | 0.76              |
| 1:AA:580:C:H2'    | 1:AA:581:C:H6      | 1.50                     | 0.76              |
| 1:AA:755:C:H2'    | 1:AA:756:C:H6      | 1.50                     | 0.76              |
| 1:AA:1059:G:H21   | 32:AJ:130:SER:CB   | 1.90                     | 0.76              |
| 1:AA:1430:C:H2'   | 1:AA:1431:U:H6     | 1.50                     | 0.76              |
| 1:AA:1602:U:H2'   | 1:AA:1603:A:O5'    | 1.85                     | 0.76              |
| 1:AA:1682:G:OP2   | 1:AA:1699:G:N2     | 2.18                     | 0.76              |
| 1:AA:1835:G:H2'   | 1:AA:1836:C:H5'    | 1.67                     | 0.76              |
| 1:AA:2286:A:C4'   | 1:AA:2287:A:H1'    | 2.14                     | 0.76              |
| 1:AA:2296:U:C1'   | 1:AA:2335:A:H61    | 1.97                     | 0.76              |
| 1:AA:2333:A:H4'   | 1:AA:2335:A:O4'    | 1.85                     | 0.76              |
| 1:AA:2404:C:H2'   | 1:AA:2405:G:C8     | 2.21                     | 0.76              |
| 1:AA:2513:G:H2'   | 1:AA:2514:U:C6     | 2.19                     | 0.76              |
| 1:AA:2582:G:H5'   | 1:AA:2582:G:C8     | 2.20                     | 0.76              |
| 1:AA:2792:G:H1'   | 1:AA:2805:G:C2     | 2.20                     | 0.76              |
| 1:AA:2805:G:H3'   | 1:AA:2807:G:C5'    | 2.14                     | 0.76              |
| 1:AA:2888:C:H2'   | 1:AA:2889:C:H6     | 1.50                     | 0.76              |
| 3:AC:123:VAL:HG11 | 3:AC:138:PRO:HG2   | 1.66                     | 0.76              |
| 4:AD:37:LEU:HD11  | 4:AD:63:ARG:CA     | 2.15                     | 0.76              |
| 4:AD:56:GLY:H     | 4:AD:217:ARG:CD    | 1.96                     | 0.76              |
| 5:AE:44:TYR:C     | 5:AE:45:THR:HG22   | 2.10                     | 0.76              |
| 6:AF:56:GLU:O     | 6:AF:57:VAL:C      | 2.28                     | 0.76              |
| 8:AH:45:VAL:HG13  | 8:AH:50:VAL:HG22   | 1.67                     | 0.76              |
| 10:AL:16:ALA:O    | 10:AL:18:LYS:N     | 2.18                     | 0.76              |
| 10:AL:122:LEU:CG  | 15:AQ:71:GLY:HA3   | 2.15                     | 0.76              |
| 13:AO:54:LEU:HD12 | 13:AO:54:LEU:N     | 2.01                     | 0.76              |
| 13:AO:97:VAL:HG22 | 13:AO:114:VAL:HG11 | 1.65                     | 0.76              |
| 15:AQ:27:THR:O    | 15:AQ:52:ILE:HB    | 1.84                     | 0.76              |
| 16:AR:88:ILE:HG12 | 17:AS:52:VAL:HG13  | 1.67                     | 0.76              |
| 16:AR:97:ASP:CA   | 16:AR:101:ARG:HH21 | 1.99                     | 0.76              |
| 21:AW:31:ARG:N    | 21:AW:89:PHE:HE2   | 1.82                     | 0.76              |
| 21:AW:94:GLU:N    | 21:AW:95:PRO:CD    | 2.46                     | 0.76              |
| 29:Ae:22:VAL:O    | 29:Ae:48:PHE:CG    | 2.39                     | 0.76              |
| 34:BA:198:G:OP2   | 34:BA:198:G:C8     | 2.38                     | 0.76              |
| 34:BA:225:C:O2'   | 34:BA:226:G:H5'    | 1.85                     | 0.76              |
| 34:BA:283:C:H2'   | 34:BA:283:C:O2     | 1.85                     | 0.76              |
| 34:BA:342:C:H2'   | 34:BA:343:U:C6     | 2.21                     | 0.76              |
| 34:BA:371:G:C2'   | 34:BA:372:C:C5'    | 2.63                     | 0.76              |
| 34:BA:766:A:H2'   | 34:BA:767:A:C8     | 2.20                     | 0.76              |
| 34:BA:1117:G:C5   | 34:BA:1184:G:C2    | 2.73                     | 0.76              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BA:1415:G:N1    | 34:BA:1486:G:C5   | 2.53                     | 0.76              |
| 35:BF:213:LEU:O    | 35:BF:217:ARG:HD3 | 1.85                     | 0.76              |
| 36:BG:142:MET:HB3  | 36:BG:170:GLN:NE2 | 2.00                     | 0.76              |
| 37:BH:31:CYS:O     | 37:BH:33:MET:HE3  | 1.85                     | 0.76              |
| 39:BJ:41:GLU:HB3   | 39:BJ:62:TRP:HE3  | 1.50                     | 0.76              |
| 39:BJ:76:ALA:HA    | 39:BJ:79:LEU:CD1  | 2.15                     | 0.76              |
| 44:BO:22:HIS:HB2   | 44:BO:85:ARG:HB2  | 1.66                     | 0.76              |
| 46:BQ:80:ARG:HB3   | 52:BW:65:ASN:ND2  | 1.99                     | 0.76              |
| 49:BT:8:ARG:C      | 49:BT:9:PHE:HD2   | 1.93                     | 0.76              |
| 53:BX:72:LEU:HD13  | 53:BX:77:ALA:CB   | 2.15                     | 0.76              |
| 56:BE:21:A:C4      | 56:BE:46:G:C6     | 2.73                     | 0.76              |
| 57:BZ:69:ARG:CG    | 57:BZ:71:ASN:HB2  | 2.14                     | 0.76              |
| 57:BZ:82:GLY:HA3   | 57:BZ:361:ARG:CB  | 2.13                     | 0.76              |
| 57:BZ:398:GLU:CD   | 57:BZ:444:PRO:CB  | 2.59                     | 0.76              |
| 57:BZ:502:PHE:HE2  | 57:BZ:555:VAL:CA  | 1.97                     | 0.76              |
| 1:AA:197:A:H61     | 1:AA:248:G:H22    | 1.30                     | 0.76              |
| 1:AA:548:A:N6      | 1:AA:549:G:H21    | 1.83                     | 0.76              |
| 1:AA:635:C:O2'     | 1:AA:636:G:H5'    | 1.85                     | 0.76              |
| 1:AA:1123:C:H2'    | 1:AA:1124:C:C6    | 2.20                     | 0.76              |
| 1:AA:1205:U:C2'    | 1:AA:1206:G:N7    | 2.47                     | 0.76              |
| 1:AA:1766:U:O2'    | 1:AA:1767:C:H5'   | 1.86                     | 0.76              |
| 1:AA:1886:C:H2'    | 1:AA:1887:C:H6    | 1.50                     | 0.76              |
| 1:AA:2135:A:N7     | 1:AA:2160:G:H1'   | 1.99                     | 0.76              |
| 1:AA:2181:G:N9     | 1:AA:2182:G:O6    | 2.19                     | 0.76              |
| 1:AA:2652:C:N3     | 1:AA:2670:A:C1'   | 2.49                     | 0.76              |
| 1:AA:2808:U:O2     | 1:AA:2810:A:N7    | 2.18                     | 0.76              |
| 2:AB:75:G:H4'      | 21:AW:36:LYS:CE   | 2.15                     | 0.76              |
| 3:AC:183:GLU:O     | 3:AC:186:ALA:HB3  | 1.86                     | 0.76              |
| 4:AD:199:ALA:O     | 4:AD:202:LYS:HB2  | 1.84                     | 0.76              |
| 8:AH:69:ARG:HB2    | 8:AH:69:ARG:CZ    | 2.16                     | 0.76              |
| 8:AH:175:LYS:CG    | 8:AH:176:ALA:N    | 2.48                     | 0.76              |
| 9:AK:97:ARG:O      | 9:AK:100:GLU:HB2  | 1.85                     | 0.76              |
| 10:AL:24:VAL:CG2   | 10:AL:30:ALA:HA   | 2.15                     | 0.76              |
| 12:AN:109:VAL:HG22 | 12:AN:113:GLN:HB2 | 1.68                     | 0.76              |
| 18:AT:25:ARG:HA    | 18:AT:71:VAL:HG11 | 1.67                     | 0.76              |
| 24:AZ:54:VAL:CG2   | 24:AZ:55:ARG:H    | 1.97                     | 0.76              |
| 28:Ad:19:ARG:HB3   | 28:Ad:23:ARG:CZ   | 2.15                     | 0.76              |
| 34:BA:67:C:H5'     | 34:BA:172:A:O2'   | 1.84                     | 0.76              |
| 34:BA:148:G:H1     | 34:BA:174:C:H42   | 1.32                     | 0.76              |
| 34:BA:486:U:H2'    | 34:BA:487:A:O5'   | 1.84                     | 0.76              |
| 34:BA:519:C:H2'    | 34:BA:520:A:H5'   | 1.67                     | 0.76              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BA:578:C:N4     | 34:BA:579:G:O6    | 2.19                     | 0.76              |
| 34:BA:586:C:OP1    | 50:BU:34:LYS:NZ   | 2.18                     | 0.76              |
| 34:BA:1116:C:N3    | 34:BA:1184:G:C6   | 2.53                     | 0.76              |
| 34:BA:1310:G:C5    | 34:BA:1327:C:N3   | 2.52                     | 0.76              |
| 35:BF:32:ILE:HD11  | 35:BF:40:HIS:HD2  | 1.50                     | 0.76              |
| 36:BG:11:ARG:HH22  | 36:BG:179:ARG:H   | 1.30                     | 0.76              |
| 37:BH:203:VAL:O    | 37:BH:206:PHE:HB3 | 1.85                     | 0.76              |
| 39:BJ:11:ASN:HD22  | 39:BJ:86:ARG:NH2  | 1.83                     | 0.76              |
| 40:BK:51:GLN:HE22  | 40:BK:58:PRO:HG3  | 1.48                     | 0.76              |
| 42:BM:127:LYS:HD2  | 56:BE:30:G:O3'    | 1.85                     | 0.76              |
| 44:BO:42:TRP:HE3   | 44:BO:43:SER:HA   | 1.48                     | 0.76              |
| 44:BO:87:THR:HG22  | 44:BO:91:ARG:HH12 | 1.50                     | 0.76              |
| 46:BQ:19:LEU:O     | 46:BQ:25:ILE:CG2  | 2.34                     | 0.76              |
| 49:BT:19:ILE:HG13  | 49:BT:38:TYR:HA   | 1.66                     | 0.76              |
| 49:BT:35:LYS:HD2   | 49:BT:36:ILE:N    | 2.00                     | 0.76              |
| 50:BU:5:VAL:CG1    | 50:BU:59:ILE:O    | 2.31                     | 0.76              |
| 51:BV:37:VAL:HG12  | 51:BV:41:LYS:CE   | 2.14                     | 0.76              |
| 51:BV:74:ARG:HA    | 51:BV:79:LEU:HD11 | 1.65                     | 0.76              |
| 53:BX:54:LYS:O     | 53:BX:57:ARG:HB2  | 1.84                     | 0.76              |
| 56:BE:1:G:C4'      | 56:BE:71:G:H22    | 1.94                     | 0.76              |
| 57:BZ:130:VAL:HG22 | 57:BZ:165:ALA:O   | 1.84                     | 0.76              |
| 57:BZ:398:GLU:CA   | 57:BZ:472:TYR:CD1 | 2.68                     | 0.76              |
| 57:BZ:399:PRO:HG2  | 57:BZ:468:THR:O   | 1.85                     | 0.76              |
| 1:AA:109:G:N2      | 1:AA:110:G:H1'    | 2.01                     | 0.76              |
| 1:AA:311:A:N6      | 1:AA:329:G:H5'    | 2.00                     | 0.76              |
| 1:AA:324:A:N6      | 1:AA:339:U:H1'    | 2.00                     | 0.76              |
| 1:AA:456:C:H5      | 19:AU:68:ARG:HH12 | 1.33                     | 0.76              |
| 1:AA:901:A:N1      | 1:AA:902:C:C2     | 2.53                     | 0.76              |
| 1:AA:1033:U:C5'    | 30:Af:16:VAL:HG21 | 2.16                     | 0.76              |
| 1:AA:1203:G:C6     | 1:AA:1240:U:O2    | 2.35                     | 0.76              |
| 1:AA:1270:C:H4'    | 1:AA:1271:G:H5''  | 1.68                     | 0.76              |
| 1:AA:1313:U:H2'    | 1:AA:1314:C:C6    | 2.20                     | 0.76              |
| 1:AA:1342:A:H2'    | 1:AA:1345:C:N4    | 1.99                     | 0.76              |
| 1:AA:1420:U:H1'    | 1:AA:1421:G:N7    | 2.00                     | 0.76              |
| 1:AA:1483:G:H1'    | 1:AA:1507:A:C2    | 2.20                     | 0.76              |
| 1:AA:1559:G:C2     | 1:AA:1560:G:H4'   | 2.20                     | 0.76              |
| 1:AA:1655:A:H2'    | 1:AA:1656:C:C6    | 2.20                     | 0.76              |
| 1:AA:2649:U:O2'    | 1:AA:2650:U:H5'   | 1.86                     | 0.76              |
| 1:AA:2756:U:C4     | 1:AA:2758:A:N6    | 2.54                     | 0.76              |
| 3:AC:97:GLU:CG     | 3:AC:119:VAL:HB   | 2.14                     | 0.76              |
| 5:AE:102:VAL:HA    | 5:AE:202:LYS:NZ   | 2.01                     | 0.76              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 5:AE:179:GLU:HB2   | 5:AE:181:LEU:CD1   | 2.15                     | 0.76              |
| 10:AL:11:ALA:N     | 10:AL:17:ARG:HG3   | 2.01                     | 0.76              |
| 11:AM:114:ILE:HG22 | 11:AM:114:ILE:O    | 1.84                     | 0.76              |
| 12:AN:134:ARG:HE   | 12:AN:137:TYR:CA   | 1.96                     | 0.76              |
| 17:AS:3:ALA:CB     | 17:AS:44:LYS:HZ2   | 1.98                     | 0.76              |
| 21:AW:71:VAL:HA    | 21:AW:87:ASP:O     | 1.86                     | 0.76              |
| 22:AX:41:ARG:HB3   | 22:AX:41:ARG:NH1   | 2.01                     | 0.76              |
| 28:Ad:43:THR:HG23  | 28:Ad:46:VAL:HG21  | 1.68                     | 0.76              |
| 32:AJ:12:LEU:CG    | 32:AJ:57:ILE:HG23  | 2.16                     | 0.76              |
| 34:BA:570:G:C2     | 34:BA:873:A:N1     | 2.53                     | 0.76              |
| 34:BA:1125:U:H5'   | 43:BN:38:ILE:HG21  | 1.67                     | 0.76              |
| 34:BA:1196:U:H5'   | 34:BA:1197:G:C5'   | 2.15                     | 0.76              |
| 34:BA:1269:A:O4'   | 34:BA:1312:G:N2    | 2.17                     | 0.76              |
| 35:BF:147:LYS:HE2  | 35:BF:147:LYS:HA   | 1.65                     | 0.76              |
| 36:BG:22:TRP:CB    | 36:BG:59:ARG:HB3   | 2.16                     | 0.76              |
| 36:BG:38:ARG:CB    | 36:BG:94:LEU:HD11  | 2.15                     | 0.76              |
| 36:BG:150:LYS:HA   | 36:BG:169:ALA:CB   | 2.15                     | 0.76              |
| 37:BH:43:HIS:HB3   | 37:BH:46:LYS:CG    | 2.15                     | 0.76              |
| 40:BK:122:HIS:N    | 40:BK:125:MET:HE3  | 2.00                     | 0.76              |
| 42:BM:108:VAL:O    | 42:BM:110:GLU:N    | 2.18                     | 0.76              |
| 44:BO:20:TYR:CE2   | 44:BO:83:ILE:HG12  | 2.19                     | 0.76              |
| 45:BP:32:PHE:CB    | 45:BP:84:LEU:HD21  | 2.15                     | 0.76              |
| 45:BP:56:ALA:HB2   | 45:BP:70:ILE:CG1   | 2.16                     | 0.76              |
| 49:BT:6:LEU:HB2    | 49:BT:17:TYR:HB3   | 1.68                     | 0.76              |
| 49:BT:44:THR:CG2   | 49:BT:45:THR:H     | 1.90                     | 0.76              |
| 50:BU:63:ARG:HG2   | 50:BU:64:PRO:HD2   | 1.67                     | 0.76              |
| 56:BD:74:C:H1'     | 56:BD:75:C:P       | 2.26                     | 0.76              |
| 56:BE:2:C:C2'      | 56:BE:70:G:H22     | 1.94                     | 0.76              |
| 56:BE:19:G:C2      | 56:BE:57:G:N2      | 2.54                     | 0.76              |
| 57:BZ:13:HIS:CD2   | 57:BZ:109:THR:HG23 | 2.17                     | 0.76              |
| 57:BZ:27:GLN:OE1   | 57:BZ:183:MET:HB3  | 1.84                     | 0.76              |
| 57:BZ:397:GLN:CB   | 57:BZ:472:TYR:O    | 2.28                     | 0.76              |
| 57:BZ:495:LYS:O    | 57:BZ:538:LEU:HD13 | 1.85                     | 0.76              |
| 1:AA:210:C:H5''    | 28:Ad:29:LYS:NZ    | 2.00                     | 0.76              |
| 1:AA:247:G:H4'     | 1:AA:386:G:C2      | 2.21                     | 0.76              |
| 1:AA:500:G:H2'     | 1:AA:501:A:H5''    | 1.67                     | 0.76              |
| 1:AA:558:G:C2      | 1:AA:559:G:N7      | 2.54                     | 0.76              |
| 1:AA:730:C:H2'     | 1:AA:731:C:C6      | 2.20                     | 0.76              |
| 1:AA:847:U:O2      | 1:AA:934:G:N3      | 2.19                     | 0.76              |
| 1:AA:918:A:C8      | 2:AB:80:U:H4'      | 2.21                     | 0.76              |
| 1:AA:942:G:C3'     | 11:AM:32:THR:HG22  | 2.15                     | 0.76              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1368:G:O2'   | 1:AA:1369:G:H5'   | 1.83                     | 0.76              |
| 1:AA:1418:G:H1'   | 1:AA:1579:A:H61   | 1.49                     | 0.76              |
| 1:AA:1541:U:H5''  | 1:AA:1542:G:OP2   | 1.86                     | 0.76              |
| 1:AA:1728:G:H3'   | 1:AA:1728:G:OP1   | 1.86                     | 0.76              |
| 1:AA:1967:C:H42   | 1:AA:1968:G:H21   | 1.29                     | 0.76              |
| 1:AA:2063:C:OP2   | 1:AA:2064:C:OP2   | 2.04                     | 0.76              |
| 1:AA:2334:G:O2'   | 14:AP:15:ARG:HG3  | 1.84                     | 0.76              |
| 1:AA:2668:G:C2    | 1:AA:2669:G:C6    | 2.73                     | 0.76              |
| 1:AA:2718:G:H2'   | 1:AA:2719:G:H8    | 1.49                     | 0.76              |
| 3:AC:21:THR:HG22  | 3:AC:225:ASN:ND2  | 2.00                     | 0.76              |
| 3:AC:171:ILE:HD12 | 3:AC:192:PHE:CZ   | 1.89                     | 0.76              |
| 4:AD:175:LEU:C    | 4:AD:182:LEU:HD23 | 2.10                     | 0.76              |
| 8:AH:128:PRO:O    | 8:AH:131:VAL:HB   | 1.85                     | 0.76              |
| 9:AK:22:THR:HG23  | 9:AK:25:ARG:NH1   | 2.01                     | 0.76              |
| 10:AL:2:ILE:HD13  | 10:AL:31:LYS:O    | 1.86                     | 0.76              |
| 11:AM:72:PRO:HG3  | 11:AM:110:TYR:CE2 | 2.18                     | 0.76              |
| 12:AN:99:PRO:HG2  | 12:AN:101:ARG:HE  | 1.49                     | 0.76              |
| 14:AP:64:GLU:OE2  | 14:AP:67:ARG:HB3  | 1.85                     | 0.76              |
| 14:AP:92:TYR:CG   | 14:AP:93:LYS:N    | 2.53                     | 0.76              |
| 15:AQ:26:ASP:HA   | 15:AQ:100:TYR:CZ  | 2.20                     | 0.76              |
| 15:AQ:112:ARG:NH2 | 34:BA:1465:C:P    | 2.58                     | 0.76              |
| 17:AS:40:LEU:CD1  | 17:AS:55:ALA:HA   | 2.15                     | 0.76              |
| 20:AV:12:THR:HG21 | 20:AV:71:LYS:CA   | 2.14                     | 0.76              |
| 21:AW:17:ALA:HA   | 21:AW:20:ARG:NH2  | 2.01                     | 0.76              |
| 22:AX:19:LYS:NZ   | 22:AX:41:ARG:HE   | 1.81                     | 0.76              |
| 25:Aa:52:THR:HG22 | 25:Aa:53:GLU:H    | 1.48                     | 0.76              |
| 29:Ae:16:ILE:HG23 | 29:Ae:22:VAL:CG2  | 2.15                     | 0.76              |
| 34:BA:331:G:OP1   | 34:BA:332:G:H8    | 1.67                     | 0.76              |
| 34:BA:448:A:H2'   | 34:BA:449:C:C6    | 2.21                     | 0.76              |
| 34:BA:759:A:H4'   | 34:BA:881:G:OP1   | 1.84                     | 0.76              |
| 34:BA:828:A:O4'   | 34:BA:859:A:C2    | 2.39                     | 0.76              |
| 34:BA:1014:A:C1'  | 52:BW:34:TRP:HZ3  | 1.99                     | 0.76              |
| 34:BA:1192:C:C5   | 34:BA:1193:G:C8   | 2.74                     | 0.76              |
| 34:BA:1318:A:H2'  | 52:BW:37:ARG:H    | 1.48                     | 0.76              |
| 35:BF:130:ARG:HD3 | 35:BF:131:PRO:HD3 | 1.66                     | 0.76              |
| 36:BG:36:ASP:HA   | 36:BG:39:ILE:HD12 | 1.66                     | 0.76              |
| 37:BH:144:ASP:HA  | 37:BH:184:LYS:NZ  | 2.00                     | 0.76              |
| 38:BI:81:GLU:HA   | 38:BI:90:VAL:HG22 | 1.67                     | 0.76              |
| 38:BI:153:LYS:HG2 | 38:BI:154:GLY:H   | 1.48                     | 0.76              |
| 40:BK:40:ALA:O    | 40:BK:43:PHE:HB3  | 1.86                     | 0.76              |
| 41:BL:4:ASP:HB2   | 41:BL:6:ILE:HG22  | 1.67                     | 0.76              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 42:BM:16:ARG:HE    | 42:BM:18:PHE:HZ    | 1.33                     | 0.76              |
| 45:BP:113:ARG:NH2  | 45:BP:115:LYS:O    | 2.18                     | 0.76              |
| 49:BT:49:LEU:HD22  | 49:BT:73:LEU:HD21  | 1.67                     | 0.76              |
| 50:BU:21:VAL:HG23  | 50:BU:42:TYR:O     | 1.85                     | 0.76              |
| 56:BE:5:G:H1'      | 56:BE:7:A:C5'      | 2.15                     | 0.76              |
| 56:BE:6:G:C5       | 56:BE:69:G:N2      | 2.54                     | 0.76              |
| 57:BZ:137:PRO:HB2  | 57:BZ:164:TYR:CE2  | 2.20                     | 0.76              |
| 57:BZ:180:ALA:HB3  | 57:BZ:181:GLU:C    | 2.10                     | 0.76              |
| 57:BZ:512:LEU:HD21 | 57:BZ:524:ILE:HG22 | 1.66                     | 0.76              |
| 1:AA:60:G:H21      | 1:AA:74:A:C4'      | 1.99                     | 0.76              |
| 1:AA:388:G:H1'     | 1:AA:390:A:N6      | 2.00                     | 0.76              |
| 1:AA:624:C:H5'     | 1:AA:625:G:OP2     | 1.86                     | 0.76              |
| 1:AA:673:C:C2'     | 1:AA:674:G:H5'     | 2.15                     | 0.76              |
| 1:AA:961:C:O2'     | 1:AA:962:G:OP1     | 2.01                     | 0.76              |
| 1:AA:980:A:H2      | 1:AA:2038:G:O4'    | 1.69                     | 0.76              |
| 1:AA:1007:C:H2'    | 1:AA:1008:C:C5     | 2.21                     | 0.76              |
| 1:AA:1403:C:O3'    | 1:AA:1471:A:H4'    | 1.86                     | 0.76              |
| 1:AA:1615:C:C2     | 18:AT:87:PRO:HG3   | 2.19                     | 0.76              |
| 1:AA:1681:G:C2     | 1:AA:1762:A:N7     | 2.54                     | 0.76              |
| 1:AA:1791:A:H3'    | 1:AA:1792:G:C8     | 2.20                     | 0.76              |
| 1:AA:1961:C:H5'    | 34:BA:1484:C:C4'   | 2.14                     | 0.76              |
| 1:AA:2053:G:O2'    | 1:AA:2054:A:H5'    | 1.85                     | 0.76              |
| 1:AA:2124:G:C3'    | 3:AC:42:GLU:CD     | 2.49                     | 0.76              |
| 1:AA:2508:G:O2'    | 1:AA:2509:G:H5'    | 1.86                     | 0.76              |
| 1:AA:2748:A:O2'    | 8:AH:66:GLY:HA3    | 1.85                     | 0.76              |
| 5:AE:59:VAL:O      | 5:AE:63:LEU:HG     | 1.85                     | 0.76              |
| 6:AF:131:GLY:CA    | 6:AF:138:GLU:HG3   | 2.15                     | 0.76              |
| 7:AG:67:LYS:O      | 7:AG:67:LYS:HG3    | 1.84                     | 0.76              |
| 8:AH:74:ASN:HB2    | 8:AH:138:LYS:NZ    | 1.99                     | 0.76              |
| 8:AH:87:LEU:HD23   | 8:AH:88:LEU:N      | 2.00                     | 0.76              |
| 8:AH:106:THR:HG23  | 8:AH:111:HIS:HB3   | 1.68                     | 0.76              |
| 9:AK:58:ASP:O      | 9:AK:60:ILE:HG13   | 1.86                     | 0.76              |
| 10:AL:7:TYR:HB3    | 10:AL:18:LYS:CE    | 2.15                     | 0.76              |
| 10:AL:62:VAL:O     | 10:AL:82:ASN:O     | 2.03                     | 0.76              |
| 10:AL:92:GLU:OE1   | 10:AL:113:LYS:HB3  | 1.86                     | 0.76              |
| 12:AN:43:THR:HG23  | 12:AN:46:GLN:HB2   | 1.68                     | 0.76              |
| 14:AP:7:TYR:HB3    | 14:AP:11:LYS:NZ    | 2.01                     | 0.76              |
| 15:AQ:50:ILE:CD1   | 15:AQ:76:PHE:HB3   | 2.15                     | 0.76              |
| 16:AR:77:SER:O     | 16:AR:81:HIS:HB2   | 1.85                     | 0.76              |
| 21:AW:161:VAL:O    | 21:AW:162:GLU:HB2  | 1.83                     | 0.76              |
| 25:Aa:41:PRO:HB2   | 25:Aa:57:GLU:CD    | 2.11                     | 0.76              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 27:Ac:40:CYS:SG   | 27:Ac:46:HIS:HA    | 2.25                     | 0.76              |
| 31:Al:116:ILE:O   | 31:Al:123:GLU:N    | 2.13                     | 0.76              |
| 31:Al:141:VAL:O   | 33:Ag:134:UNK:HA   | 1.85                     | 0.76              |
| 34:BA:435:C:O2'   | 34:BA:436:C:H5'    | 1.86                     | 0.76              |
| 34:BA:520:A:N7    | 34:BA:521:G:C8     | 2.54                     | 0.76              |
| 34:BA:1128:C:H4'  | 42:BM:16:ARG:NH2   | 2.01                     | 0.76              |
| 34:BA:1202:G:H2'  | 34:BA:1203:C:H6    | 1.50                     | 0.76              |
| 34:BA:1318:A:O3'  | 52:BW:38:SER:CA    | 2.11                     | 0.76              |
| 34:BA:1449:C:N4   | 34:BA:1454:G:C6    | 2.50                     | 0.76              |
| 35:BF:53:ARG:HE   | 35:BF:199:TYR:HE2  | 1.34                     | 0.76              |
| 35:BF:130:ARG:NE  | 35:BF:130:ARG:HA   | 1.99                     | 0.76              |
| 35:BF:136:VAL:O   | 35:BF:139:LYS:HG2  | 1.85                     | 0.76              |
| 35:BF:178:ARG:HA  | 35:BF:178:ARG:NH1  | 2.01                     | 0.76              |
| 37:BH:50:ARG:NH1  | 37:BH:52:SER:HA    | 2.01                     | 0.76              |
| 37:BH:59:ARG:HH22 | 37:BH:66:ARG:HH12  | 1.31                     | 0.76              |
| 37:BH:79:PHE:HB2  | 37:BH:93:PHE:CE1   | 2.21                     | 0.76              |
| 38:BI:79:GLU:HG3  | 38:BI:93:PRO:HD2   | 1.66                     | 0.76              |
| 40:BK:65:ALA:O    | 40:BK:69:VAL:HG23  | 1.85                     | 0.76              |
| 40:BK:69:VAL:CG2  | 40:BK:135:VAL:HG22 | 2.15                     | 0.76              |
| 42:BM:37:PHE:HE1  | 42:BM:74:ILE:HG23  | 1.47                     | 0.76              |
| 42:BM:45:ALA:O    | 42:BM:78:LYS:HB2   | 1.84                     | 0.76              |
| 46:BQ:8:GLU:CD    | 46:BQ:21:TYR:CB    | 2.44                     | 0.76              |
| 50:BU:10:VAL:HG12 | 50:BU:54:GLY:H     | 1.51                     | 0.76              |
| 50:BU:28:PRO:HA   | 50:BU:35:VAL:HA    | 1.65                     | 0.76              |
| 56:BE:4:C:N4      | 56:BE:69:G:N3      | 2.24                     | 0.76              |
| 56:BE:11:C:O2'    | 56:BE:12:U:H5'     | 1.84                     | 0.76              |
| 57:BZ:14:VAL:H    | 57:BZ:108:GLN:CB   | 1.98                     | 0.76              |
| 57:BZ:18:LYS:N    | 60:BZ:701:GCP:PB   | 2.51                     | 0.76              |
| 57:BZ:88:VAL:O    | 57:BZ:92:VAL:HG22  | 1.86                     | 0.76              |
| 57:BZ:89:MET:CE   | 57:BZ:119:TYR:CE1  | 2.68                     | 0.76              |
| 57:BZ:160:PHE:CE2 | 57:BZ:162:ILE:HD12 | 2.20                     | 0.76              |
| 57:BZ:240:ILE:H   | 57:BZ:286:ASP:CB   | 1.99                     | 0.76              |
| 57:BZ:307:VAL:O   | 57:BZ:359:SER:HA   | 1.85                     | 0.76              |
| 57:BZ:502:PHE:CD2 | 57:BZ:555:VAL:CG1  | 2.68                     | 0.76              |
| 1:AA:287:C:H2'    | 1:AA:288:C:H5      | 1.51                     | 0.76              |
| 1:AA:587:C:C2     | 1:AA:671:C:O4'     | 2.39                     | 0.76              |
| 1:AA:666:G:O4'    | 29:Ae:3:LYS:HE3    | 1.85                     | 0.76              |
| 1:AA:704:G:H21    | 1:AA:725:G:H21     | 1.29                     | 0.76              |
| 1:AA:752:A:H62    | 1:AA:1781:C:C1'    | 1.98                     | 0.76              |
| 1:AA:820:A:H2'    | 1:AA:821:A:C5'     | 2.11                     | 0.76              |
| 1:AA:1024:G:H22   | 1:AA:1139:G:H1     | 1.32                     | 0.76              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1166:C:C2    | 1:AA:1184:G:N2     | 2.54                     | 0.76              |
| 1:AA:1203:G:H1    | 1:AA:1241:A:H1'    | 1.50                     | 0.76              |
| 1:AA:1258:C:C5'   | 6:AF:84:VAL:HG21   | 2.14                     | 0.76              |
| 1:AA:1658:C:P     | 5:AE:134:ILE:HB    | 2.25                     | 0.76              |
| 1:AA:1746:G:H3'   | 1:AA:1746:G:OP2    | 1.85                     | 0.76              |
| 1:AA:1935:G:C3'   | 1:AA:1962:C:H42    | 1.98                     | 0.76              |
| 1:AA:1935:G:H2'   | 1:AA:1962:C:N4     | 2.00                     | 0.76              |
| 1:AA:2199:A:C8    | 1:AA:2199:A:O5'    | 2.38                     | 0.76              |
| 1:AA:2630:G:O5'   | 1:AA:2894:G:O3'    | 1.72                     | 0.76              |
| 1:AA:2749:A:C4'   | 8:AH:62:LYS:HG3    | 2.15                     | 0.76              |
| 4:AD:77:ALA:CB    | 4:AD:95:LEU:HD21   | 2.14                     | 0.76              |
| 6:AF:201:VAL:HA   | 6:AF:204:ASN:ND2   | 2.00                     | 0.76              |
| 7:AG:118:ARG:HB3  | 7:AG:118:ARG:NH1   | 2.01                     | 0.76              |
| 8:AH:8:PRO:HA     | 8:AH:51:ARG:NH1    | 2.01                     | 0.76              |
| 9:AK:12:ARG:HD2   | 9:AK:12:ARG:O      | 1.84                     | 0.76              |
| 11:AM:89:ALA:C    | 11:AM:125:VAL:HG22 | 2.11                     | 0.76              |
| 11:AM:120:ALA:HB1 | 11:AM:137:LYS:HB3  | 1.68                     | 0.76              |
| 13:AO:96:ARG:CG   | 13:AO:98:LEU:HD11  | 2.15                     | 0.76              |
| 15:AQ:80:SER:HB3  | 15:AQ:81:PRO:HD3   | 1.67                     | 0.76              |
| 15:AQ:103:ARG:O   | 15:AQ:105:LEU:N    | 2.19                     | 0.76              |
| 16:AR:13:LYS:HA   | 16:AR:16:LYS:NZ    | 2.01                     | 0.76              |
| 17:AS:28:GLU:C    | 17:AS:30:GLY:H     | 1.92                     | 0.76              |
| 17:AS:36:PRO:N    | 17:AS:61:VAL:HG22  | 2.00                     | 0.76              |
| 18:AT:24:ILE:HD13 | 18:AT:36:LEU:HD13  | 1.67                     | 0.76              |
| 18:AT:82:LEU:O    | 18:AT:97:LYS:HA    | 1.85                     | 0.76              |
| 21:AW:94:GLU:N    | 21:AW:95:PRO:HD3   | 1.97                     | 0.76              |
| 34:BA:8:A:N6      | 37:BH:209:ARG:HH12 | 1.84                     | 0.76              |
| 34:BA:101:A:H2'   | 34:BA:102:G:C8     | 2.19                     | 0.76              |
| 34:BA:192:U:H1'   | 53:BX:103:GLY:HA2  | 1.66                     | 0.76              |
| 34:BA:337:C:H2'   | 34:BA:338:A:C8     | 2.20                     | 0.76              |
| 34:BA:482:A:C2    | 34:BA:483:C:O4'    | 2.38                     | 0.76              |
| 34:BA:568:G:H21   | 34:BA:574:A:H2     | 1.31                     | 0.76              |
| 34:BA:601:C:H2'   | 34:BA:602:A:H8     | 1.51                     | 0.76              |
| 34:BA:1318:A:N9   | 52:BW:37:ARG:HB2   | 2.00                     | 0.76              |
| 34:BA:1516:G:N3   | 34:BA:1518:A:OP2   | 2.18                     | 0.76              |
| 36:BG:40:ARG:O    | 36:BG:43:LEU:HB3   | 1.86                     | 0.76              |
| 36:BG:84:ILE:HG13 | 36:BG:101:LEU:HD13 | 1.66                     | 0.76              |
| 38:BI:63:ARG:HA   | 38:BI:66:MET:HG2   | 1.68                     | 0.76              |
| 40:BK:15:ASP:OD1  | 40:BK:18:TYR:HB2   | 1.85                     | 0.76              |
| 40:BK:45:ASP:O    | 40:BK:48:LYS:HB2   | 1.84                     | 0.76              |
| 40:BK:62:PHE:O    | 40:BK:66:VAL:HG23  | 1.86                     | 0.76              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 42:BM:48:GLU:OE1  | 42:BM:48:GLU:HA    | 1.85                     | 0.76              |
| 43:BN:49:VAL:CG1  | 47:BR:45:ARG:HD2   | 2.16                     | 0.76              |
| 44:BO:61:ALA:CB   | 44:BO:94:ALA:HB2   | 2.07                     | 0.76              |
| 44:BO:87:THR:HG22 | 44:BO:91:ARG:HH22  | 1.51                     | 0.76              |
| 48:BS:7:GLU:HA    | 48:BS:10:LYS:CD    | 2.14                     | 0.76              |
| 50:BU:10:VAL:CG1  | 50:BU:54:GLY:H     | 1.99                     | 0.76              |
| 56:BD:1:G:N2      | 56:BD:2:C:O2       | 2.19                     | 0.76              |
| 57:BZ:2:ILE:HG22  | 57:BZ:268:ALA:HB2  | 1.67                     | 0.76              |
| 57:BZ:40:GLU:CA   | 57:BZ:41:ARG:HB2   | 2.14                     | 0.76              |
| 57:BZ:83:GLY:O    | 57:BZ:84:GLU:HG3   | 1.86                     | 0.76              |
| 57:BZ:230:LYS:HD2 | 57:BZ:230:LYS:O    | 1.86                     | 0.76              |
| 57:BZ:424:GLY:C   | 57:BZ:441:TYR:HD2  | 1.94                     | 0.76              |
| 57:BZ:564:THR:HB  | 57:BZ:566:GLU:C    | 2.11                     | 0.76              |
| 1:AA:270(H):C:H2' | 1:AA:270(I):G:H8   | 1.51                     | 0.76              |
| 1:AA:559:G:H5'    | 1:AA:559:G:C8      | 2.18                     | 0.76              |
| 1:AA:574:C:C2     | 1:AA:2055:C:C5     | 2.74                     | 0.76              |
| 1:AA:623:G:OP2    | 11:AM:105:LEU:HD21 | 1.85                     | 0.76              |
| 1:AA:747:U:O2'    | 1:AA:748:G:OP1     | 2.01                     | 0.76              |
| 1:AA:1034:G:N1    | 1:AA:1122:G:C5     | 2.54                     | 0.76              |
| 1:AA:1067:A:H4'   | 32:AJ:21:PRO:HB3   | 1.68                     | 0.76              |
| 1:AA:1131:G:N2    | 9:AK:72:TYR:CE1    | 2.53                     | 0.76              |
| 1:AA:1178:C:C2    | 1:AA:1179:C:C5     | 2.74                     | 0.76              |
| 1:AA:1935:G:N1    | 1:AA:1962:C:H2'    | 2.00                     | 0.76              |
| 1:AA:2017:U:H2'   | 1:AA:2018:G:OP1    | 1.86                     | 0.76              |
| 1:AA:2295:C:H1'   | 1:AA:2338:G:N2     | 2.01                     | 0.76              |
| 1:AA:2640:G:H4'   | 9:AK:75:TYR:OH     | 1.85                     | 0.76              |
| 1:AA:2658:C:C4    | 1:AA:2664:G:C2     | 2.73                     | 0.76              |
| 1:AA:2749:A:H5'   | 8:AH:62:LYS:O      | 1.85                     | 0.76              |
| 4:AD:59:LYS:HD2   | 4:AD:59:LYS:C      | 2.10                     | 0.76              |
| 4:AD:231:HIS:O    | 4:AD:232:PRO:C     | 2.29                     | 0.76              |
| 5:AE:105:THR:HG23 | 5:AE:197:ILE:HD13  | 1.68                     | 0.76              |
| 5:AE:171:GLU:OE1  | 5:AE:172:VAL:N     | 2.18                     | 0.76              |
| 10:AL:7:TYR:HA    | 10:AL:18:LYS:HE3   | 1.67                     | 0.76              |
| 12:AN:26:TYR:CD1  | 12:AN:27:VAL:N     | 2.49                     | 0.76              |
| 12:AN:48:GLU:C    | 12:AN:51:ARG:HG3   | 2.09                     | 0.76              |
| 12:AN:67:ARG:CZ   | 12:AN:103:MET:CB   | 2.54                     | 0.76              |
| 12:AN:122:GLY:HA2 | 12:AN:125:LEU:CG   | 2.15                     | 0.76              |
| 13:AO:55:ALA:CB   | 13:AO:79:LEU:HD21  | 2.15                     | 0.76              |
| 14:AP:11:LYS:H    | 14:AP:11:LYS:CD    | 1.99                     | 0.76              |
| 14:AP:13:ARG:HD3  | 14:AP:89:ARG:HE    | 1.51                     | 0.76              |
| 14:AP:60:GLY:C    | 14:AP:62:LYS:H     | 1.93                     | 0.76              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 16:AR:30:LYS:HD2   | 16:AR:30:LYS:N     | 2.01                     | 0.76              |
| 18:AT:5:ALA:HB1    | 18:AT:50:VAL:HG12  | 1.68                     | 0.76              |
| 18:AT:75:TYR:O     | 18:AT:104:THR:HG23 | 1.85                     | 0.76              |
| 19:AU:49:VAL:HG12  | 19:AU:88:LYS:CG    | 2.16                     | 0.76              |
| 21:AW:55:HIS:HB3   | 21:AW:101:PRO:CG   | 2.14                     | 0.76              |
| 32:AJ:40:ALA:CB    | 32:AJ:66:THR:HG1   | 1.76                     | 0.76              |
| 32:AJ:75:SER:CB    | 32:AJ:130:SER:HB2  | 1.80                     | 0.76              |
| 34:BA:49:U:N3      | 34:BA:364:A:N7     | 2.33                     | 0.76              |
| 34:BA:153:C:H2'    | 34:BA:154:C:H6     | 1.50                     | 0.76              |
| 34:BA:355:C:N4     | 34:BA:356:A:H62    | 1.84                     | 0.76              |
| 34:BA:599:C:H4'    | 41:BL:130:GLY:CA   | 2.08                     | 0.76              |
| 34:BA:673:G:H2'    | 34:BA:674:G:C8     | 2.21                     | 0.76              |
| 34:BA:687:A:O2'    | 34:BA:688:G:O4'    | 2.04                     | 0.76              |
| 34:BA:973:G:C2     | 34:BA:974:A:C5     | 2.74                     | 0.76              |
| 34:BA:1075:C:H4'   | 34:BA:1101:A:H62   | 1.50                     | 0.76              |
| 34:BA:1247:U:H2'   | 34:BA:1248:A:C8    | 2.21                     | 0.76              |
| 34:BA:1363:A:H5''  | 34:BA:1364:U:OP1   | 1.86                     | 0.76              |
| 34:BA:1372:U:OP2   | 42:BM:11:LYS:HE2   | 1.85                     | 0.76              |
| 34:BA:1405:G:H21   | 34:BA:1517:G:H22   | 0.77                     | 0.76              |
| 34:BA:1405:G:O6    | 34:BA:1497:G:O6    | 2.04                     | 0.76              |
| 35:BF:78:GLN:HE22  | 35:BF:96:ARG:NH1   | 1.84                     | 0.76              |
| 35:BF:149:LEU:CD2  | 35:BF:153:ARG:HG2  | 2.16                     | 0.76              |
| 35:BF:187:LEU:HD13 | 35:BF:187:LEU:C    | 2.11                     | 0.76              |
| 36:BG:122:GLU:CA   | 36:BG:125:GLU:HG2  | 2.15                     | 0.76              |
| 36:BG:190:ARG:HE   | 36:BG:190:ARG:CA   | 1.99                     | 0.76              |
| 37:BH:154:ASN:ND2  | 37:BH:155:LEU:HD22 | 2.00                     | 0.76              |
| 40:BK:87:VAL:HG22  | 40:BK:151:TYR:HB3  | 1.68                     | 0.76              |
| 41:BL:123:GLU:O    | 41:BL:126:LYS:HG3  | 1.86                     | 0.76              |
| 49:BT:8:ARG:HD3    | 49:BT:15:PRO:HA    | 1.66                     | 0.76              |
| 50:BU:6:LEU:HD13   | 50:BU:23:VAL:HG21  | 1.67                     | 0.76              |
| 50:BU:11:VAL:HB    | 50:BU:20:THR:OG1   | 1.86                     | 0.76              |
| 52:BW:51:VAL:HG21  | 52:BW:60:VAL:HG21  | 1.66                     | 0.76              |
| 55:BC:69:G:C3'     | 55:BC:70:G:H5''    | 2.16                     | 0.76              |
| 56:BD:48:C:H3'     | 56:BD:48:C:OP1     | 1.85                     | 0.76              |
| 56:BE:18:G:H21     | 56:BE:58:A:C4'     | 1.98                     | 0.76              |
| 1:AA:64:A:C5'      | 19:AU:73:ARG:HA    | 2.15                     | 0.76              |
| 1:AA:242:G:C8      | 29:Ae:4:MET:HG3    | 2.21                     | 0.76              |
| 1:AA:686:G:C8      | 28:Ad:7:PRO:HA     | 2.21                     | 0.76              |
| 1:AA:861:A:H2'     | 1:AA:862:G:H5'     | 1.67                     | 0.76              |
| 1:AA:888:C:H1'     | 1:AA:889:C:O2      | 1.84                     | 0.76              |
| 1:AA:896:A:N1      | 1:AA:897:C:C2      | 2.54                     | 0.76              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:997:G:O2'     | 1:AA:998:C:H5'     | 1.85                     | 0.76              |
| 1:AA:1059:G:H21    | 32:AJ:130:SER:HA   | 0.94                     | 0.76              |
| 1:AA:1225:C:O4'    | 17:AS:87:HIS:CE1   | 2.39                     | 0.76              |
| 1:AA:1345:C:O2'    | 1:AA:1346:G:H5'    | 1.85                     | 0.76              |
| 1:AA:1530:G:C2'    | 1:AA:1531:C:C6     | 2.69                     | 0.76              |
| 1:AA:1530:G:C3'    | 1:AA:1531:C:C6     | 2.68                     | 0.76              |
| 1:AA:2017:U:O2     | 26:Ab:9:LYS:HA     | 1.85                     | 0.76              |
| 1:AA:2496:C:H3'    | 1:AA:2497:A:C2     | 2.21                     | 0.76              |
| 1:AA:2586:C:H2'    | 1:AA:2587:A:H8     | 1.49                     | 0.76              |
| 1:AA:2657:A:N6     | 1:AA:2664:G:C2'    | 2.48                     | 0.76              |
| 1:AA:2685:G:O5'    | 10:AL:67:LYS:HD2   | 1.86                     | 0.76              |
| 4:AD:85:ASP:HB2    | 4:AD:87:ASN:HD21   | 1.50                     | 0.76              |
| 4:AD:136:ILE:HD12  | 4:AD:173:VAL:HG21  | 1.67                     | 0.76              |
| 5:AE:2:LYS:HZ3     | 5:AE:83:ASP:HB2    | 1.50                     | 0.76              |
| 6:AF:110:LEU:CD1   | 6:AF:181:LEU:HD23  | 2.16                     | 0.76              |
| 7:AG:57:ALA:O      | 7:AG:67:LYS:HB2    | 1.83                     | 0.76              |
| 8:AH:85:LYS:HD2    | 8:AH:145:ALA:CB    | 2.16                     | 0.76              |
| 9:AK:26:LEU:O      | 9:AK:30:ILE:HG13   | 1.86                     | 0.76              |
| 12:AN:25:ASP:CB    | 12:AN:102:VAL:HG12 | 2.16                     | 0.76              |
| 12:AN:75:THR:HG21  | 12:AN:88:GLY:O     | 1.86                     | 0.76              |
| 13:AO:98:LEU:HD23  | 13:AO:99:LYS:NZ    | 2.01                     | 0.76              |
| 16:AR:93:LYS:HB2   | 17:AS:10:LYS:HD2   | 1.66                     | 0.76              |
| 17:AS:7:THR:HG23   | 17:AS:11:GLN:CD    | 2.11                     | 0.76              |
| 17:AS:16:PRO:HD3   | 17:AS:100:ARG:NH1  | 2.00                     | 0.76              |
| 18:AT:88:ARG:HB2   | 18:AT:94:ASP:CG    | 2.11                     | 0.76              |
| 19:AU:92:LEU:H     | 19:AU:92:LEU:CD1   | 1.99                     | 0.76              |
| 23:AY:48:LEU:HA    | 23:AY:51:GLN:NE2   | 2.01                     | 0.76              |
| 32:AJ:27:LEU:CD2   | 32:AJ:58:THR:CA    | 2.62                     | 0.76              |
| 34:BA:243:A:N6     | 34:BA:283:C:H41    | 1.83                     | 0.76              |
| 34:BA:1115:C:O4'   | 34:BA:1186:G:N2    | 2.19                     | 0.76              |
| 34:BA:1259:C:O2    | 34:BA:1283:G:H1'   | 1.85                     | 0.76              |
| 35:BF:222:ILE:HD13 | 35:BF:226:ARG:HH21 | 1.51                     | 0.76              |
| 37:BH:147:ALA:CB   | 37:BH:182:LYS:HA   | 2.16                     | 0.76              |
| 37:BH:200:GLU:HG3  | 37:BH:201:GLN:N    | 2.01                     | 0.76              |
| 48:BS:10:LYS:O     | 48:BS:13:GLN:HB2   | 1.85                     | 0.76              |
| 48:BS:36:ILE:HD11  | 48:BS:60:VAL:HG22  | 1.66                     | 0.76              |
| 53:BX:57:ARG:NH2   | 53:BX:100:ILE:HB   | 2.01                     | 0.76              |
| 57:BZ:64:ILE:HD12  | 57:BZ:187:TYR:HB3  | 1.67                     | 0.76              |
| 57:BZ:213:ASP:OD1  | 57:BZ:223:ILE:HD11 | 1.85                     | 0.76              |
| 57:BZ:236:GLN:NE2  | 57:BZ:245:LYS:H    | 1.83                     | 0.76              |
| 57:BZ:249:ALA:HB1  | 57:BZ:250:LYS:HE3  | 1.68                     | 0.76              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:300:A:H2'    | 1:AA:334:C:O2'    | 1.86                     | 0.76              |
| 1:AA:311:A:H1'    | 1:AA:332:A:C5     | 2.21                     | 0.76              |
| 1:AA:557:U:O3'    | 9:AK:112:LEU:HG   | 1.86                     | 0.76              |
| 1:AA:594:U:H5''   | 29:Ae:61:LEU:CD1  | 2.16                     | 0.76              |
| 1:AA:776:G:O2'    | 1:AA:777:A:OP2    | 2.02                     | 0.76              |
| 1:AA:861:A:C5     | 1:AA:917:A:H2     | 2.03                     | 0.76              |
| 1:AA:879:G:O6     | 1:AA:897:C:C3'    | 2.33                     | 0.76              |
| 1:AA:950:G:H2'    | 1:AA:951:C:C6     | 2.21                     | 0.76              |
| 1:AA:1056:G:H4'   | 31:Al:34:ALA:HB2  | 1.68                     | 0.76              |
| 1:AA:1080:C:O4'   | 32:AJ:128:ALA:C   | 2.29                     | 0.76              |
| 1:AA:1204:A:OP2   | 1:AA:1204:A:C4'   | 2.34                     | 0.76              |
| 1:AA:1317:A:H2'   | 1:AA:1318:C:C6    | 2.21                     | 0.76              |
| 1:AA:1427:A:H1'   | 1:AA:1428:C:C5    | 2.20                     | 0.76              |
| 1:AA:1788:C:H2'   | 4:AD:222:ARG:NE   | 2.01                     | 0.76              |
| 1:AA:1910:G:C2    | 1:AA:1911:U:N3    | 2.54                     | 0.76              |
| 1:AA:2043:C:N4    | 1:AA:2777:G:C4    | 2.54                     | 0.76              |
| 1:AA:2046:G:OP1   | 26:Ab:18:ALA:HB1  | 1.85                     | 0.76              |
| 1:AA:2071:A:C2    | 1:AA:2441:C:N3    | 2.54                     | 0.76              |
| 1:AA:2134:A:H2'   | 1:AA:2135:A:O5'   | 1.85                     | 0.76              |
| 1:AA:2181:G:H5'   | 55:BC:17:C:H41    | 0.91                     | 0.76              |
| 1:AA:2370:G:O2'   | 27:Ac:45:LYS:HD3  | 1.84                     | 0.76              |
| 1:AA:2447:G:C8    | 1:AA:2500:U:C6    | 2.74                     | 0.76              |
| 1:AA:2538:C:H2'   | 1:AA:2539:C:C6    | 2.21                     | 0.76              |
| 2:AB:104:A:H2'    | 2:AB:105:G:O4'    | 1.86                     | 0.76              |
| 3:AC:163:PHE:CZ   | 3:AC:192:PHE:CA   | 2.53                     | 0.76              |
| 4:AD:42:GLY:HA2   | 4:AD:60:ARG:HH22  | 1.51                     | 0.76              |
| 4:AD:147:LEU:H    | 4:AD:147:LEU:HD23 | 1.50                     | 0.76              |
| 4:AD:226:MET:HE1  | 4:AD:237:GLU:O    | 1.86                     | 0.76              |
| 5:AE:25:VAL:HG23  | 5:AE:182:LEU:O    | 1.85                     | 0.76              |
| 7:AG:165:THR:HB   | 7:AG:168:GLU:OE1  | 1.85                     | 0.76              |
| 9:AK:39:ARG:N     | 9:AK:48:MET:HE2   | 2.01                     | 0.76              |
| 9:AK:109:LYS:CG   | 9:AK:112:LEU:HB2  | 2.16                     | 0.76              |
| 11:AM:28:GLY:O    | 11:AM:29:LYS:HG3  | 1.85                     | 0.76              |
| 12:AN:36:ALA:C    | 12:AN:100:GLY:HA2 | 2.11                     | 0.76              |
| 13:AO:54:LEU:HD22 | 13:AO:66:VAL:HG23 | 1.68                     | 0.76              |
| 15:AQ:102:ILE:O   | 15:AQ:104:ASN:N   | 2.19                     | 0.76              |
| 21:AW:94:GLU:HA   | 21:AW:130:PRO:HB3 | 1.68                     | 0.76              |
| 22:AX:47:PRO:HG3  | 22:AX:53:MET:SD   | 2.26                     | 0.76              |
| 23:AY:45:ILE:HG13 | 23:AY:46:ARG:N    | 1.99                     | 0.76              |
| 32:AJ:95:LYS:HA   | 32:AJ:95:LYS:CE   | 2.12                     | 0.76              |
| 32:AJ:112:MET:HE2 | 32:AJ:122:ALA:N   | 2.00                     | 0.76              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:551:U:H5'    | 45:BP:119:LYS:HZ3  | 1.50                     | 0.76              |
| 34:BA:749:C:H2'    | 34:BA:749:C:O2     | 1.86                     | 0.76              |
| 34:BA:1313:U:N3    | 34:BA:1324:A:C2    | 2.28                     | 0.76              |
| 34:BA:1316:G:H5'   | 34:BA:1360:A:N9    | 2.01                     | 0.76              |
| 35:BF:95:GLN:HE21  | 35:BF:148:TYR:CB   | 1.98                     | 0.76              |
| 37:BH:143:GLY:HA2  | 37:BH:185:PHE:CB   | 2.14                     | 0.76              |
| 42:BM:127:LYS:NZ   | 56:BE:30:G:H4'     | 2.00                     | 0.76              |
| 44:BO:73:MET:HG2   | 44:BO:103:LEU:HD13 | 1.65                     | 0.76              |
| 51:BV:70:ILE:O     | 51:BV:73:ALA:HB3   | 1.86                     | 0.76              |
| 52:BW:41:VAL:CB    | 52:BW:42:PRO:HD2   | 2.11                     | 0.76              |
| 56:BD:4:C:N1       | 56:BD:70:G:N2      | 2.33                     | 0.76              |
| 56:BE:21:A:N6      | 56:BE:46:G:C5      | 2.51                     | 0.76              |
| 57:BZ:106:MET:HB3  | 57:BZ:108:GLN:OE1  | 1.86                     | 0.76              |
| 57:BZ:382:VAL:HG21 | 57:BZ:569:LEU:HG   | 1.66                     | 0.76              |
| 1:AA:84:A:C5'      | 20:AV:8:LYS:HG3    | 2.16                     | 0.75              |
| 1:AA:200:U:C4      | 1:AA:248:G:N7      | 2.54                     | 0.75              |
| 1:AA:514:A:C2      | 1:AA:515:A:C4      | 2.73                     | 0.75              |
| 1:AA:531:C:H5'     | 1:AA:532:A:C2      | 2.20                     | 0.75              |
| 1:AA:911:A:O4'     | 1:AA:2264:C:H4'    | 1.85                     | 0.75              |
| 1:AA:980:A:C6      | 1:AA:1135:C:H4'    | 2.21                     | 0.75              |
| 1:AA:1023:U:P      | 1:AA:1025:G:N1     | 2.59                     | 0.75              |
| 1:AA:1075:C:C1'    | 32:AJ:90:LYS:HZ3   | 1.97                     | 0.75              |
| 1:AA:1201:C:N4     | 1:AA:1241:A:N6     | 2.33                     | 0.75              |
| 1:AA:1327:C:H3'    | 1:AA:1328:G:H8     | 1.49                     | 0.75              |
| 1:AA:1429:G:H3'    | 1:AA:1430:C:H6     | 1.51                     | 0.75              |
| 1:AA:1657:C:OP1    | 5:AE:136:ARG:NH2   | 2.18                     | 0.75              |
| 1:AA:1664:A:H2'    | 1:AA:1665:A:H8     | 1.51                     | 0.75              |
| 1:AA:1670:C:C2'    | 1:AA:1671:U:H5'    | 2.15                     | 0.75              |
| 1:AA:1800:C:C6     | 1:AA:1800:C:C3'    | 2.68                     | 0.75              |
| 1:AA:1944:U:H1'    | 1:AA:1955:U:O4'    | 1.86                     | 0.75              |
| 1:AA:1961:C:H4'    | 34:BA:1484:C:H4'   | 1.67                     | 0.75              |
| 1:AA:2181:G:H21    | 1:AA:2182:G:H1     | 1.25                     | 0.75              |
| 1:AA:2420:C:H5''   | 29:Ae:35:GLN:HE22  | 1.50                     | 0.75              |
| 1:AA:2633:G:H4'    | 1:AA:2812:G:OP1    | 1.86                     | 0.75              |
| 2:AB:58:A:H8       | 2:AB:58:A:O5'      | 1.70                     | 0.75              |
| 3:AC:118:ASP:OD1   | 3:AC:119:VAL:HG13  | 1.86                     | 0.75              |
| 4:AD:34:VAL:HG22   | 4:AD:104:TYR:OH    | 1.85                     | 0.75              |
| 6:AF:30:PRO:HA     | 6:AF:33:LEU:HD21   | 1.67                     | 0.75              |
| 8:AH:28:GLY:CA     | 8:AH:79:VAL:HB     | 2.16                     | 0.75              |
| 10:AL:68:GLU:OE1   | 10:AL:70:LYS:HE3   | 1.85                     | 0.75              |
| 15:AQ:64:ARG:O     | 15:AQ:66:VAL:HG22  | 1.83                     | 0.75              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 15:AQ:82:LEU:O     | 15:AQ:84:GLN:N     | 2.19                     | 0.75              |
| 26:Ab:35:GLU:HB3   | 26:Ab:49:CYS:CB    | 2.16                     | 0.75              |
| 31:AI:7:VAL:O      | 31:AI:11:ALA:HB3   | 1.86                     | 0.75              |
| 32:AJ:20:ALA:HB3   | 32:AJ:21:PRO:CD    | 2.15                     | 0.75              |
| 32:AJ:103:GLN:HA   | 32:AJ:106:GLU:CG   | 2.16                     | 0.75              |
| 34:BA:489:C:H2'    | 34:BA:490:G:H8     | 1.51                     | 0.75              |
| 34:BA:1157:A:H5''  | 34:BA:1158:C:OP1   | 1.85                     | 0.75              |
| 34:BA:1166:G:O2'   | 34:BA:1169:A:N7    | 2.18                     | 0.75              |
| 34:BA:1311:G:C4    | 34:BA:1327:C:C6    | 2.67                     | 0.75              |
| 34:BA:1318:A:C3'   | 52:BW:37:ARG:HB2   | 2.08                     | 0.75              |
| 34:BA:1431:C:H2'   | 34:BA:1432:G:O4'   | 1.85                     | 0.75              |
| 35:BF:19:HIS:HA    | 35:BF:39:ILE:HD11  | 1.67                     | 0.75              |
| 36:BG:35:GLU:HA    | 36:BG:38:ARG:CG    | 2.16                     | 0.75              |
| 36:BG:137:ALA:O    | 36:BG:141:VAL:HG23 | 1.86                     | 0.75              |
| 36:BG:177:THR:HG23 | 36:BG:180:ALA:HB2  | 1.68                     | 0.75              |
| 37:BH:93:PHE:O     | 37:BH:94:LEU:C     | 2.29                     | 0.75              |
| 39:BJ:64:GLN:O     | 39:BJ:65:VAL:HG12  | 1.85                     | 0.75              |
| 40:BK:86:GLN:O     | 40:BK:148:ASN:HB3  | 1.84                     | 0.75              |
| 42:BM:51:ARG:HH11  | 42:BM:51:ARG:HA    | 1.50                     | 0.75              |
| 43:BN:12:ASP:OD1   | 43:BN:14:LYS:N     | 2.19                     | 0.75              |
| 46:BQ:16:ASP:O     | 46:BQ:30:ALA:HB2   | 1.86                     | 0.75              |
| 50:BU:91:ARG:HA    | 50:BU:94:ASN:ND2   | 1.99                     | 0.75              |
| 57:BZ:13:HIS:ND1   | 57:BZ:15:ASP:O     | 2.19                     | 0.75              |
| 57:BZ:233:PRO:HB2  | 57:BZ:234:ASN:HB2  | 1.69                     | 0.75              |
| 57:BZ:250:LYS:O    | 57:BZ:273:ILE:HD11 | 1.86                     | 0.75              |
| 57:BZ:565:LEU:CD2  | 57:BZ:585:ILE:HG21 | 2.15                     | 0.75              |
| 1:AA:49:A:H1'      | 1:AA:118:A:H61     | 1.50                     | 0.75              |
| 1:AA:247:G:H4'     | 1:AA:386:G:N3      | 2.00                     | 0.75              |
| 1:AA:452:G:H3'     | 1:AA:453:C:C5'     | 2.13                     | 0.75              |
| 1:AA:527:C:H4'     | 1:AA:527:C:OP1     | 1.85                     | 0.75              |
| 1:AA:900:A:C5      | 1:AA:901:A:H1'     | 2.21                     | 0.75              |
| 1:AA:1180:C:H2'    | 1:AA:1181:C:H6     | 1.51                     | 0.75              |
| 1:AA:1255:U:C4     | 6:AF:72:ARG:O      | 2.39                     | 0.75              |
| 1:AA:1631:A:N6     | 1:AA:1683:C:H5'    | 2.01                     | 0.75              |
| 1:AA:1650:G:H21    | 1:AA:1651:G:H1'    | 1.51                     | 0.75              |
| 1:AA:1746:G:H2'    | 1:AA:1747:G:C8     | 2.22                     | 0.75              |
| 1:AA:2045:C:O2     | 26:Ab:22:HIS:CE1   | 2.39                     | 0.75              |
| 1:AA:2059:A:N1     | 1:AA:2503:A:N6     | 2.34                     | 0.75              |
| 1:AA:2253:G:H2'    | 1:AA:2254:C:H6     | 1.51                     | 0.75              |
| 1:AA:2576:G:OP1    | 1:AA:2577:A:OP1    | 2.03                     | 0.75              |
| 3:AC:66:HIS:CA     | 3:AC:158:ALA:O     | 2.32                     | 0.75              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 3:AC:116:THR:CG2   | 3:AC:149:ILE:HB    | 2.16                     | 0.75              |
| 4:AD:7:LYS:HD3     | 4:AD:9:TYR:HH      | 1.50                     | 0.75              |
| 4:AD:58:HIS:O      | 4:AD:59:LYS:CG     | 2.34                     | 0.75              |
| 5:AE:45:THR:HB     | 5:AE:81:ILE:CA     | 2.05                     | 0.75              |
| 5:AE:129:HIS:H     | 5:AE:129:HIS:CD2   | 2.05                     | 0.75              |
| 7:AG:45:GLU:C      | 7:AG:47:LYS:H      | 1.94                     | 0.75              |
| 9:AK:117:PHE:HA    | 9:AK:120:LEU:HB3   | 1.68                     | 0.75              |
| 10:AL:10:VAL:N     | 10:AL:17:ARG:HG2   | 2.02                     | 0.75              |
| 10:AL:18:LYS:HZ1   | 10:AL:44:LYS:NZ    | 1.84                     | 0.75              |
| 13:AO:75:LEU:HA    | 13:AO:78:LYS:HB3   | 1.68                     | 0.75              |
| 13:AO:102:GLU:CG   | 13:AO:103:ARG:H    | 1.98                     | 0.75              |
| 16:AR:15:LYS:O     | 16:AR:18:LEU:HB2   | 1.85                     | 0.75              |
| 16:AR:88:ILE:HD13  | 16:AR:88:ILE:H     | 1.50                     | 0.75              |
| 18:AT:20:VAL:HG13  | 18:AT:21:VAL:N     | 2.01                     | 0.75              |
| 21:AW:157:LEU:CD2  | 21:AW:161:VAL:HA   | 2.15                     | 0.75              |
| 24:AZ:41:PRO:HA    | 24:AZ:44:ARG:NH1   | 2.01                     | 0.75              |
| 32:AJ:115:LEU:HD13 | 32:AJ:116:ASN:N    | 2.01                     | 0.75              |
| 34:BA:266:G:H8     | 50:BU:67:LYS:NZ    | 1.80                     | 0.75              |
| 34:BA:307:C:N4     | 34:BA:308:C:H41    | 1.84                     | 0.75              |
| 34:BA:601:C:C2     | 34:BA:602:A:C8     | 2.74                     | 0.75              |
| 34:BA:918:A:H2'    | 34:BA:919:A:C8     | 2.21                     | 0.75              |
| 34:BA:1057:G:H4'   | 36:BG:197:GLY:N    | 2.01                     | 0.75              |
| 34:BA:1065:U:H2'   | 34:BA:1065:U:O2    | 1.85                     | 0.75              |
| 34:BA:1115:C:H1'   | 34:BA:1186:G:N2    | 2.02                     | 0.75              |
| 34:BA:1180:A:OP1   | 42:BM:102:LEU:HB2  | 1.86                     | 0.75              |
| 34:BA:1239:A:H1'   | 34:BA:1241:G:C4    | 2.21                     | 0.75              |
| 34:BA:1288:A:H2'   | 34:BA:1289:A:C8    | 2.18                     | 0.75              |
| 34:BA:1292:U:H2'   | 34:BA:1293:G:C8    | 2.20                     | 0.75              |
| 34:BA:1309:G:N1    | 34:BA:1328:C:C5    | 2.53                     | 0.75              |
| 34:BA:1312:G:C4    | 34:BA:1326:C:N3    | 2.50                     | 0.75              |
| 34:BA:1319:A:H5'   | 52:BW:70:LYS:HE2   | 0.77                     | 0.75              |
| 36:BG:67:THR:CG2   | 36:BG:104:GLN:HG2  | 2.16                     | 0.75              |
| 36:BG:157:ILE:HG13 | 36:BG:164:ARG:CG   | 2.16                     | 0.75              |
| 37:BH:145:GLU:O    | 37:BH:146:ILE:HG23 | 1.85                     | 0.75              |
| 37:BH:170:VAL:HG23 | 37:BH:176:LEU:HB3  | 1.68                     | 0.75              |
| 45:BP:83:VAL:HG22  | 45:BP:84:LEU:N     | 2.02                     | 0.75              |
| 48:BS:31:LEU:O     | 48:BS:34:LEU:HG    | 1.86                     | 0.75              |
| 49:BT:39:TYR:HB2   | 49:BT:49:LEU:CD1   | 2.08                     | 0.75              |
| 55:BC:56:C:H3'     | 55:BC:57:G:H5''    | 1.68                     | 0.75              |
| 56:BE:16:U:O2'     | 56:BE:17:C:H2'     | 1.87                     | 0.75              |
| 57:BZ:102:PHE:CE2  | 57:BZ:134:GLY:O    | 2.38                     | 0.75              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:BZ:211:GLN:HB2  | 57:BZ:223:ILE:HG21 | 1.68                     | 0.75              |
| 57:BZ:401:GLU:O    | 57:BZ:467:SER:HB2  | 1.85                     | 0.75              |
| 57:BZ:545:ASN:HB3  | 57:BZ:546:MET:CA   | 2.14                     | 0.75              |
| 57:BZ:546:MET:CB   | 57:BZ:547:ARG:HA   | 2.15                     | 0.75              |
| 1:AA:108:U:H4'     | 1:AA:348:G:N2      | 2.02                     | 0.75              |
| 1:AA:243:U:O2      | 1:AA:244:A:H5'     | 1.87                     | 0.75              |
| 1:AA:662:G:H5'     | 11:AM:17:LYS:H     | 1.50                     | 0.75              |
| 1:AA:1021:A:H2'    | 1:AA:1022:G:OP1    | 1.85                     | 0.75              |
| 1:AA:1045:A:H1'    | 1:AA:1047:G:H8     | 1.51                     | 0.75              |
| 1:AA:1451:C:H3'    | 1:AA:1453:A:H4'    | 1.68                     | 0.75              |
| 1:AA:1517:G:N2     | 1:AA:1518:C:C2     | 2.53                     | 0.75              |
| 1:AA:1532:C:H2'    | 1:AA:1533:C:C6     | 2.21                     | 0.75              |
| 1:AA:1613:G:C3'    | 1:AA:1614:A:H5'    | 2.13                     | 0.75              |
| 1:AA:1649:G:H21    | 13:AO:107:ASP:CB   | 1.90                     | 0.75              |
| 1:AA:1658:C:OP1    | 5:AE:134:ILE:HD12  | 1.85                     | 0.75              |
| 1:AA:1667:G:C2     | 1:AA:1991:U:C4     | 2.75                     | 0.75              |
| 1:AA:1804:C:C4'    | 4:AD:250:TRP:HH2   | 1.95                     | 0.75              |
| 1:AA:1944:U:O4     | 57:BZ:543:LEU:HD22 | 1.86                     | 0.75              |
| 1:AA:2169:A:C6     | 55:BC:19:G:N2      | 2.54                     | 0.75              |
| 1:AA:2238:G:O2'    | 1:AA:2239:G:H5''   | 1.85                     | 0.75              |
| 1:AA:2419:U:O4     | 29:Ae:31:HIS:HE1   | 1.69                     | 0.75              |
| 1:AA:2569:G:C2     | 1:AA:2570:G:C8     | 2.73                     | 0.75              |
| 1:AA:2780:G:N2     | 9:AK:97:ARG:NH1    | 2.23                     | 0.75              |
| 3:AC:86:ALA:HB2    | 3:AC:149:ILE:HG23  | 1.67                     | 0.75              |
| 6:AF:115:ALA:O     | 6:AF:119:ARG:HG3   | 1.87                     | 0.75              |
| 7:AG:39:ILE:HG23   | 7:AG:157:ILE:CG1   | 2.17                     | 0.75              |
| 7:AG:55:LYS:HG3    | 7:AG:148:MET:HB2   | 1.68                     | 0.75              |
| 7:AG:131:TYR:CD1   | 7:AG:132:ASN:N     | 2.53                     | 0.75              |
| 8:AH:69:ARG:HG3    | 8:AH:70:THR:N      | 1.99                     | 0.75              |
| 12:AN:35:VAL:HG23  | 12:AN:101:ARG:C    | 2.10                     | 0.75              |
| 12:AN:41:TRP:HB3   | 12:AN:74:TYR:OH    | 1.86                     | 0.75              |
| 14:AP:74:ALA:HB1   | 14:AP:108:GLY:H    | 1.51                     | 0.75              |
| 15:AQ:29:ARG:HA    | 15:AQ:51:ARG:HA    | 1.68                     | 0.75              |
| 16:AR:108:GLU:O    | 16:AR:111:GLU:HG2  | 1.86                     | 0.75              |
| 21:AW:114:GLY:HA3  | 21:AW:180:VAL:HG11 | 1.67                     | 0.75              |
| 34:BA:22:G:H2'     | 34:BA:23:C:O4'     | 1.86                     | 0.75              |
| 34:BA:186(B):C:O2' | 34:BA:186(C):G:H5' | 1.85                     | 0.75              |
| 34:BA:474:G:P      | 49:BT:81:ARG:HA    | 2.26                     | 0.75              |
| 34:BA:508:C:O2'    | 34:BA:509:A:H8     | 1.69                     | 0.75              |
| 34:BA:598:U:O2'    | 41:BL:94:TYR:HB3   | 1.87                     | 0.75              |
| 34:BA:836:G:P      | 51:BV:61:LYS:HZ1   | 2.10                     | 0.75              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1311:G:C2   | 34:BA:1326:C:C2'   | 2.68                     | 0.75              |
| 34:BA:1312:G:C2   | 34:BA:1326:C:N1    | 2.55                     | 0.75              |
| 39:BJ:99:ALA:HB2  | 51:BV:31:LEU:HD11  | 1.68                     | 0.75              |
| 43:BN:22:LYS:HZ2  | 43:BN:90:LEU:HD12  | 1.51                     | 0.75              |
| 43:BN:45:ARG:HH11 | 43:BN:45:ARG:CB    | 1.98                     | 0.75              |
| 47:BR:41:ARG:O    | 47:BR:45:ARG:HG2   | 1.86                     | 0.75              |
| 53:BX:90:GLN:HA   | 53:BX:93:GLU:OE1   | 1.86                     | 0.75              |
| 57:BZ:2:ILE:CG2   | 57:BZ:267:LEU:HD23 | 2.13                     | 0.75              |
| 57:BZ:249:ALA:H   | 57:BZ:276:ILE:N    | 1.84                     | 0.75              |
| 57:BZ:499:PHE:HB2 | 57:BZ:540:GLY:C    | 2.11                     | 0.75              |
| 57:BZ:502:PHE:HZ  | 57:BZ:556:VAL:N    | 1.82                     | 0.75              |
| 57:BZ:512:LEU:CD2 | 57:BZ:524:ILE:HG22 | 2.16                     | 0.75              |
| 1:AA:151:C:H2'    | 1:AA:152:G:C8      | 2.20                     | 0.75              |
| 1:AA:237:C:H2'    | 1:AA:238:C:H6      | 1.51                     | 0.75              |
| 1:AA:270(E):G:O2' | 1:AA:270(F):U:H5'  | 1.86                     | 0.75              |
| 1:AA:446:G:N7     | 16:AR:3:ARG:NH2    | 2.33                     | 0.75              |
| 1:AA:563:G:H21    | 16:AR:34:LYS:HE2   | 1.50                     | 0.75              |
| 1:AA:623:G:H2'    | 1:AA:624:C:H5''    | 1.68                     | 0.75              |
| 1:AA:1050:A:H2'   | 1:AA:2752:C:OP1    | 1.86                     | 0.75              |
| 1:AA:1081:U:H5'   | 32:AJ:125:ARG:HG2  | 1.69                     | 0.75              |
| 1:AA:1269:A:H61   | 1:AA:2011:U:H3     | 1.32                     | 0.75              |
| 1:AA:1511:A:H2'   | 1:AA:1512:G:H5''   | 1.68                     | 0.75              |
| 1:AA:1683:C:C2    | 1:AA:1684:C:C5     | 2.74                     | 0.75              |
| 1:AA:1731:G:N2    | 1:AA:1733:G:N2     | 2.34                     | 0.75              |
| 1:AA:1805:U:H2'   | 1:AA:1806:C:C6     | 2.21                     | 0.75              |
| 1:AA:1808:U:N3    | 1:AA:1810:A:C2     | 2.54                     | 0.75              |
| 1:AA:1819:A:H5''  | 4:AD:178:PRO:CB    | 2.15                     | 0.75              |
| 1:AA:1854:A:C2    | 1:AA:1855:G:H1'    | 2.21                     | 0.75              |
| 1:AA:1944:U:H1'   | 1:AA:1955:U:C6     | 2.22                     | 0.75              |
| 1:AA:2431:U:O2    | 1:AA:2433:A:OP2    | 2.04                     | 0.75              |
| 1:AA:2666:C:C5    | 1:AA:2667:C:H5     | 1.87                     | 0.75              |
| 1:AA:2845:G:H5''  | 15:AQ:57:PHE:O     | 1.86                     | 0.75              |
| 3:AC:10:LEU:CD1   | 3:AC:13:LYS:HD2    | 2.16                     | 0.75              |
| 4:AD:182:LEU:CD1  | 4:AD:270:ILE:HD11  | 2.17                     | 0.75              |
| 4:AD:243:GLY:O    | 4:AD:244:ARG:HB2   | 1.85                     | 0.75              |
| 5:AE:45:THR:OG1   | 5:AE:80:GLU:O      | 2.01                     | 0.75              |
| 7:AG:39:ILE:HD13  | 7:AG:92:VAL:HG12   | 1.67                     | 0.75              |
| 7:AG:77:ILE:O     | 7:AG:83:ARG:NE     | 2.20                     | 0.75              |
| 7:AG:144:ILE:HG23 | 7:AG:147:ASP:OD2   | 1.85                     | 0.75              |
| 8:AH:153:LYS:H    | 8:AH:154:PRO:HD2   | 1.49                     | 0.75              |
| 9:AK:109:LYS:NZ   | 9:AK:110:GLY:N     | 2.27                     | 0.75              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 10:AL:97:ARG:HH21 | 10:AL:97:ARG:CB    | 1.94                     | 0.75              |
| 11:AM:114:ILE:CD1 | 11:AM:123:LEU:HG   | 2.16                     | 0.75              |
| 14:AP:62:LYS:CB   | 14:AP:65:VAL:HG13  | 2.17                     | 0.75              |
| 21:AW:27:VAL:CG2  | 21:AW:85:HIS:HE1   | 1.99                     | 0.75              |
| 26:Ab:9:LYS:HD2   | 26:Ab:9:LYS:N      | 2.02                     | 0.75              |
| 26:Ab:58:LEU:CD2  | 26:Ab:59:GLU:H     | 1.94                     | 0.75              |
| 34:BA:84:U:H2'    | 34:BA:85:U:O4'     | 1.85                     | 0.75              |
| 34:BA:228:A:C2'   | 34:BA:229:U:H5'    | 2.16                     | 0.75              |
| 34:BA:236:G:H5'   | 50:BU:42:TYR:OH    | 1.86                     | 0.75              |
| 34:BA:539:A:OP2   | 45:BP:115:LYS:HE3  | 1.87                     | 0.75              |
| 34:BA:714:G:H1'   | 34:BA:777:A:C8     | 2.22                     | 0.75              |
| 34:BA:865:A:H5'   | 34:BA:1078:U:O4    | 1.86                     | 0.75              |
| 34:BA:889:A:H5'   | 34:BA:891:U:O4'    | 1.86                     | 0.75              |
| 34:BA:949:A:H1'   | 34:BA:1364:U:H3    | 1.51                     | 0.75              |
| 34:BA:973:G:C2    | 34:BA:974:A:C6     | 2.75                     | 0.75              |
| 34:BA:1125:U:C5'  | 43:BN:38:ILE:HG21  | 2.16                     | 0.75              |
| 34:BA:1399:C:C4   | 34:BA:1502:A:N6    | 2.55                     | 0.75              |
| 35:BF:10:LEU:HD23 | 35:BF:11:LEU:HD23  | 1.68                     | 0.75              |
| 35:BF:103:THR:OG1 | 35:BF:180:LEU:HD21 | 1.86                     | 0.75              |
| 35:BF:144:ARG:HA  | 35:BF:147:LYS:CB   | 2.15                     | 0.75              |
| 37:BH:63:LYS:HA   | 37:BH:66:ARG:HD2   | 1.67                     | 0.75              |
| 38:BI:79:GLU:HG3  | 38:BI:93:PRO:CD    | 2.16                     | 0.75              |
| 38:BI:108:ALA:O   | 38:BI:112:LEU:HB2  | 1.87                     | 0.75              |
| 40:BK:121:ALA:C   | 40:BK:125:MET:HE3  | 2.12                     | 0.75              |
| 41:BL:46:LYS:CE   | 41:BL:64:LYS:HA    | 2.17                     | 0.75              |
| 42:BM:47:LEU:HD13 | 42:BM:47:LEU:O     | 1.86                     | 0.75              |
| 43:BN:65:LEU:HD12 | 47:BR:56:VAL:CG2   | 2.15                     | 0.75              |
| 45:BP:5:PRO:O     | 45:BP:6:THR:HG23   | 1.87                     | 0.75              |
| 46:BQ:65:LYS:HG3  | 46:BQ:69:GLU:CG    | 2.16                     | 0.75              |
| 49:BT:8:ARG:NH1   | 49:BT:11:SER:H     | 1.82                     | 0.75              |
| 55:BC:16:U:C5     | 55:BC:18:G:C3'     | 2.66                     | 0.75              |
| 56:BE:4:C:C6      | 56:BE:6:G:C5       | 2.73                     | 0.75              |
| 57:BZ:13:HIS:CE1  | 57:BZ:15:ASP:O     | 2.40                     | 0.75              |
| 57:BZ:29:SER:OG   | 57:BZ:58:ALA:HB1   | 1.86                     | 0.75              |
| 57:BZ:403:VAL:O   | 57:BZ:465:LEU:HD13 | 1.86                     | 0.75              |
| 1:AA:567:A:C2     | 1:AA:568:U:H1'     | 2.21                     | 0.75              |
| 1:AA:640:C:N4     | 1:AA:647:G:H1      | 1.84                     | 0.75              |
| 1:AA:643:A:H4'    | 1:AA:644:A:O5'     | 1.85                     | 0.75              |
| 1:AA:755:C:H2'    | 1:AA:756:C:C6      | 2.21                     | 0.75              |
| 1:AA:1023:U:H2'   | 1:AA:1024:G:C5'    | 2.16                     | 0.75              |
| 1:AA:1065:U:H2'   | 1:AA:1066:U:C5'    | 2.16                     | 0.75              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1299:G:H5'   | 1:AA:1301:A:H1'    | 1.69                     | 0.75              |
| 1:AA:1312:U:H3'   | 1:AA:1313:U:H5     | 1.51                     | 0.75              |
| 1:AA:1382:G:H2'   | 1:AA:1383:C:H6     | 1.52                     | 0.75              |
| 1:AA:1467:C:N4    | 1:AA:1524:G:O6     | 2.20                     | 0.75              |
| 1:AA:1695:G:C2    | 1:AA:1696:G:O4'    | 2.38                     | 0.75              |
| 1:AA:1700:A:C2'   | 1:AA:1701:A:H5'    | 2.15                     | 0.75              |
| 1:AA:1967:C:O2    | 1:AA:1967:C:H2'    | 1.85                     | 0.75              |
| 1:AA:2553:G:N2    | 1:AA:2554:U:O2'    | 2.17                     | 0.75              |
| 1:AA:2626:C:H2'   | 1:AA:2627:G:H8     | 1.51                     | 0.75              |
| 1:AA:2647:U:O2'   | 1:AA:2648:C:O4'    | 2.05                     | 0.75              |
| 3:AC:47:LEU:HG    | 3:AC:49:ILE:HG23   | 1.68                     | 0.75              |
| 3:AC:87:GLU:HG3   | 3:AC:94:VAL:CG2    | 2.15                     | 0.75              |
| 4:AD:66:ASP:OD2   | 4:AD:103:ARG:HD3   | 1.86                     | 0.75              |
| 4:AD:158:ALA:C    | 4:AD:160:GLY:H     | 1.94                     | 0.75              |
| 4:AD:181:GLU:HB2  | 4:AD:268:ARG:NH2   | 2.01                     | 0.75              |
| 4:AD:229:VAL:HG22 | 4:AD:230:ASP:OD1   | 1.84                     | 0.75              |
| 5:AE:8:LYS:HD3    | 5:AE:9:VAL:CG2     | 2.15                     | 0.75              |
| 5:AE:60:ASN:CG    | 5:AE:61:ARG:H      | 1.95                     | 0.75              |
| 7:AG:8:LYS:HZ3    | 7:AG:103:LEU:HG    | 1.51                     | 0.75              |
| 7:AG:17:PRO:O     | 7:AG:20:ILE:HB     | 1.85                     | 0.75              |
| 8:AH:33:LEU:HD13  | 8:AH:75:ALA:HA     | 1.66                     | 0.75              |
| 8:AH:76:VAL:HG23  | 8:AH:77:LYS:N      | 2.01                     | 0.75              |
| 9:AK:4:TYR:HD2    | 16:AR:100:VAL:HG11 | 1.50                     | 0.75              |
| 9:AK:10:GLU:CD    | 9:AK:39:ARG:HD2    | 2.11                     | 0.75              |
| 11:AM:38:GLN:C    | 11:AM:40:SER:N     | 2.33                     | 0.75              |
| 12:AN:42:ILE:HG23 | 12:AN:47:ILE:HD11  | 1.69                     | 0.75              |
| 13:AO:14:SER:O    | 13:AO:18:LEU:HD23  | 1.86                     | 0.75              |
| 15:AQ:34:VAL:HG11 | 15:AQ:78:LEU:CD1   | 2.16                     | 0.75              |
| 15:AQ:61:PHE:HD1  | 15:AQ:81:PRO:HD3   | 1.51                     | 0.75              |
| 16:AR:25:TRP:HE3  | 16:AR:26:GLY:N     | 1.83                     | 0.75              |
| 17:AS:6:LYS:CB    | 17:AS:10:LYS:HA    | 2.12                     | 0.75              |
| 17:AS:52:VAL:HG12 | 17:AS:53:GLU:N     | 2.00                     | 0.75              |
| 18:AT:33:ARG:HH11 | 18:AT:36:LEU:HB3   | 1.52                     | 0.75              |
| 24:AZ:26:LEU:HB3  | 24:AZ:35:ARG:HH11  | 1.50                     | 0.75              |
| 28:Ad:43:THR:HG23 | 28:Ad:46:VAL:CG2   | 2.17                     | 0.75              |
| 30:Af:15:LYS:O    | 30:Af:25:VAL:HG13  | 1.86                     | 0.75              |
| 34:BA:93:U:H2'    | 34:BA:95:G:C8      | 2.22                     | 0.75              |
| 34:BA:284:G:O2'   | 34:BA:285:G:H5'    | 1.86                     | 0.75              |
| 34:BA:362:G:H8    | 45:BP:34:ARG:NH2   | 1.80                     | 0.75              |
| 34:BA:526:C:H42   | 34:BA:535:A:H2     | 1.35                     | 0.75              |
| 34:BA:1208:C:H2'  | 34:BA:1209:C:H6    | 1.51                     | 0.75              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 34:BA:1412:C:C2   | 34:BA:1489:G:C6   | 2.69                     | 0.75              |
| 36:BG:11:ARG:HG3  | 36:BG:16:ARG:HE   | 1.50                     | 0.75              |
| 47:BR:42:ILE:O    | 47:BR:43:CYS:C    | 2.30                     | 0.75              |
| 48:BS:53:HIS:C    | 48:BS:57:LEU:HD13 | 2.11                     | 0.75              |
| 53:BX:51:GLU:HB3  | 53:BX:54:LYS:HZ2  | 1.51                     | 0.75              |
| 53:BX:72:LEU:HD23 | 53:BX:76:ALA:HB1  | 1.68                     | 0.75              |
| 54:BY:7:ARG:HG3   | 54:BY:8:THR:H     | 1.51                     | 0.75              |
| 55:BC:37:A:C2'    | 55:BC:38:A:H5'    | 2.16                     | 0.75              |
| 57:BZ:13:HIS:NE2  | 57:BZ:106:MET:CG  | 2.49                     | 0.75              |
| 57:BZ:493:GLN:HG2 | 57:BZ:519:TYR:CB  | 2.16                     | 0.75              |
| 1:AA:221:A:N7     | 1:AA:266:G:O6     | 2.20                     | 0.75              |
| 1:AA:349:G:C8     | 1:AA:349:G:OP2    | 2.40                     | 0.75              |
| 1:AA:514:A:H2     | 1:AA:515:A:C4     | 2.05                     | 0.75              |
| 1:AA:690:G:O2'    | 1:AA:780:G:OP1    | 2.03                     | 0.75              |
| 1:AA:746:A:N7     | 1:AA:2611:U:O3'   | 2.20                     | 0.75              |
| 1:AA:748:G:H5'    | 1:AA:749:C:OP2    | 1.86                     | 0.75              |
| 1:AA:782:A:H5''   | 1:AA:783:A:OP1    | 1.87                     | 0.75              |
| 1:AA:893:C:C2'    | 1:AA:894:C:H6     | 1.97                     | 0.75              |
| 1:AA:1072:C:C3'   | 1:AA:1093:G:C6    | 2.69                     | 0.75              |
| 1:AA:1184:G:H2'   | 1:AA:1185:C:H5'   | 1.69                     | 0.75              |
| 1:AA:1206:G:C2'   | 1:AA:1207:C:O4'   | 2.29                     | 0.75              |
| 1:AA:1312:U:C3'   | 1:AA:1313:U:H6    | 1.98                     | 0.75              |
| 1:AA:1609:A:H62   | 1:AA:1616:A:H2    | 1.34                     | 0.75              |
| 1:AA:1697:G:C3'   | 1:AA:1698:A:C5'   | 2.62                     | 0.75              |
| 1:AA:1793:C:H42   | 1:AA:1825:A:H61   | 1.33                     | 0.75              |
| 1:AA:2177:C:C5'   | 3:AC:223:ARG:NH1  | 2.41                     | 0.75              |
| 1:AA:2180:U:O2'   | 55:BC:17:C:C6     | 2.39                     | 0.75              |
| 1:AA:2282:G:H1    | 1:AA:2427:C:N4    | 1.82                     | 0.75              |
| 1:AA:2595:G:H1'   | 1:AA:2599:G:H22   | 1.50                     | 0.75              |
| 5:AE:112:GLY:C    | 5:AE:113:PHE:CD1  | 2.65                     | 0.75              |
| 6:AF:41:LEU:O     | 6:AF:44:ARG:CZ    | 2.34                     | 0.75              |
| 6:AF:153:SER:OG   | 6:AF:190:GLU:HG2  | 1.87                     | 0.75              |
| 6:AF:184:TYR:HD2  | 6:AF:184:TYR:H    | 1.33                     | 0.75              |
| 8:AH:127:GLU:HG3  | 8:AH:130:ARG:HB2  | 1.68                     | 0.75              |
| 9:AK:51:PHE:CG    | 9:AK:119:ARG:HB2  | 2.21                     | 0.75              |
| 10:AL:70:LYS:HE2  | 10:AL:104:ARG:HG3 | 1.68                     | 0.75              |
| 11:AM:77:ARG:NH1  | 11:AM:79:ARG:HG2  | 2.02                     | 0.75              |
| 11:AM:88:LEU:CD1  | 11:AM:124:LYS:HZ1 | 2.00                     | 0.75              |
| 18:AT:58:ALA:O    | 18:AT:63:ASP:N    | 2.18                     | 0.75              |
| 21:AW:122:ARG:CG  | 21:AW:171:ILE:HA  | 2.17                     | 0.75              |
| 29:Ae:16:ILE:HG23 | 29:Ae:22:VAL:HG23 | 1.69                     | 0.75              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 29:Ae:39:LYS:O     | 29:Ae:42:ARG:HB2   | 1.87                     | 0.75              |
| 34:BA:449:C:C2     | 34:BA:450:G:C1'    | 2.66                     | 0.75              |
| 34:BA:1148:U:O2    | 34:BA:1149:C:C6    | 2.40                     | 0.75              |
| 34:BA:1221:G:C5'   | 52:BW:52:TYR:O     | 2.35                     | 0.75              |
| 34:BA:1228:C:P     | 46:BQ:115:LYS:HB3  | 2.27                     | 0.75              |
| 34:BA:1347:G:O2'   | 34:BA:1348:U:OP2   | 2.04                     | 0.75              |
| 35:BF:20:GLU:O     | 35:BF:39:ILE:HG13  | 1.86                     | 0.75              |
| 35:BF:48:MET:HA    | 35:BF:51:LEU:HD12  | 1.68                     | 0.75              |
| 35:BF:71:VAL:O     | 35:BF:164:VAL:HG23 | 1.85                     | 0.75              |
| 35:BF:222:ILE:CD1  | 35:BF:226:ARG:HH21 | 1.99                     | 0.75              |
| 36:BG:108:ASN:HD22 | 36:BG:111:LEU:CD1  | 1.99                     | 0.75              |
| 39:BJ:96:PRO:O     | 39:BJ:97:PHE:HB2   | 1.84                     | 0.75              |
| 41:BL:7:ALA:HA     | 41:BL:10:LEU:CD1   | 2.17                     | 0.75              |
| 44:BO:101:SER:O    | 44:BO:103:LEU:HG   | 1.86                     | 0.75              |
| 45:BP:117:ARG:HH22 | 45:BP:124:LYS:HG3  | 1.50                     | 0.75              |
| 53:BX:56:MET:O     | 53:BX:59:ALA:HB3   | 1.86                     | 0.75              |
| 57:BZ:373:MET:HE2  | 57:BZ:380:LEU:HD23 | 1.68                     | 0.75              |
| 57:BZ:397:GLN:HB3  | 57:BZ:472:TYR:C    | 2.05                     | 0.75              |
| 57:BZ:518:VAL:HB   | 57:BZ:522:GLN:CD   | 2.12                     | 0.75              |
| 1:AA:2:G:H2'       | 1:AA:3:U:C6        | 2.22                     | 0.75              |
| 1:AA:270(P):C:H2'  | 1:AA:270(Q):C:H6   | 1.49                     | 0.75              |
| 1:AA:312:G:O4'     | 1:AA:312:G:OP1     | 2.02                     | 0.75              |
| 1:AA:686:G:H4'     | 1:AA:687:C:OP2     | 1.85                     | 0.75              |
| 1:AA:962:G:C2'     | 1:AA:963:U:C6      | 2.69                     | 0.75              |
| 1:AA:1022:G:N7     | 9:AK:65:LYS:HE3    | 2.01                     | 0.75              |
| 1:AA:1061:U:C5'    | 32:AJ:52:ILE:HD11  | 2.16                     | 0.75              |
| 1:AA:1321:A:C2     | 1:AA:1322:A:O4'    | 2.40                     | 0.75              |
| 1:AA:2051:A:C4     | 1:AA:2614:A:N6     | 2.55                     | 0.75              |
| 1:AA:2434:A:C2'    | 1:AA:2435:A:H5''   | 2.16                     | 0.75              |
| 1:AA:2563:U:N3     | 1:AA:2566:A:OP2    | 2.20                     | 0.75              |
| 1:AA:2623:G:H22    | 26:Ab:22:HIS:HE1   | 1.33                     | 0.75              |
| 4:AD:154:LYS:O     | 4:AD:154:LYS:HG3   | 1.86                     | 0.75              |
| 5:AE:58:ARG:HG2    | 5:AE:63:LEU:CD2    | 2.16                     | 0.75              |
| 7:AG:135:LEU:HD22  | 7:AG:136:ARG:H     | 1.52                     | 0.75              |
| 8:AH:115:VAL:CG1   | 8:AH:116:GLU:N     | 2.49                     | 0.75              |
| 9:AK:55:VAL:HB     | 9:AK:130:HIS:CE1   | 2.21                     | 0.75              |
| 9:AK:86:PRO:HB2    | 9:AK:89:LYS:HZ1    | 1.47                     | 0.75              |
| 10:AL:8:LEU:HD22   | 10:AL:9:GLU:N      | 2.00                     | 0.75              |
| 10:AL:94:ARG:HG3   | 10:AL:96:THR:H     | 1.52                     | 0.75              |
| 13:AO:113:LEU:HD13 | 13:AO:114:VAL:N    | 2.02                     | 0.75              |
| 15:AQ:109:GLU:O    | 15:AQ:110:ILE:HB   | 1.87                     | 0.75              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 17:AS:73:SER:HG   | 17:AS:89:GLN:HB2   | 1.50                     | 0.75              |
| 19:AU:50:LYS:HG3  | 19:AU:84:ALA:HB3   | 1.69                     | 0.75              |
| 22:AX:51:VAL:HG21 | 22:AX:79:VAL:O     | 1.86                     | 0.75              |
| 25:Aa:43:TYR:HA   | 25:Aa:61:ARG:CZ    | 2.16                     | 0.75              |
| 25:Aa:57:GLU:HA   | 25:Aa:61:ARG:CZ    | 2.17                     | 0.75              |
| 29:Ae:15:LYS:O    | 29:Ae:22:VAL:HA    | 1.86                     | 0.75              |
| 29:Ae:30:ARG:HG2  | 29:Ae:31:HIS:H     | 1.50                     | 0.75              |
| 32:AJ:29:GLN:OE1  | 57:BZ:432:ASP:O    | 2.05                     | 0.75              |
| 33:Ag:290:UNK:N   | 33:Ag:343:UNK:HA   | 2.00                     | 0.75              |
| 34:BA:38:G:N3     | 34:BA:397:A:N6     | 2.35                     | 0.75              |
| 34:BA:115:G:O2'   | 34:BA:116:A:OP2    | 2.04                     | 0.75              |
| 34:BA:1206:G:H4'  | 36:BG:192:THR:O    | 1.87                     | 0.75              |
| 34:BA:1270:C:O2'  | 34:BA:1313:U:H4'   | 1.84                     | 0.75              |
| 34:BA:1319:A:C5'  | 52:BW:70:LYS:HZ2   | 1.62                     | 0.75              |
| 34:BA:1528:U:O2'  | 34:BA:1529:G:H3'   | 1.86                     | 0.75              |
| 35:BF:178:ARG:HA  | 35:BF:184:VAL:HG21 | 1.67                     | 0.75              |
| 36:BG:140:ARG:HB3 | 36:BG:140:ARG:NH1  | 2.02                     | 0.75              |
| 37:BH:118:ARG:NH2 | 37:BH:136:PRO:HB2  | 2.02                     | 0.75              |
| 38:BI:72:GLN:HE22 | 38:BI:145:LYS:H    | 1.33                     | 0.75              |
| 40:BK:126:ASP:HA  | 40:BK:131:LYS:CE   | 2.10                     | 0.75              |
| 42:BM:112:LYS:HG3 | 42:BM:117:HIS:HA   | 1.67                     | 0.75              |
| 44:BO:63:LEU:HD23 | 44:BO:63:LEU:C     | 2.11                     | 0.75              |
| 48:BS:16:ALA:HB1  | 48:BS:21:ASP:CB    | 2.17                     | 0.75              |
| 48:BS:39:LEU:HD22 | 48:BS:56:LEU:HD22  | 1.66                     | 0.75              |
| 57:BZ:81:PHE:HA   | 57:BZ:365:HIS:CD2  | 2.22                     | 0.75              |
| 57:BZ:164:TYR:C   | 57:BZ:172:ALA:O    | 2.30                     | 0.75              |
| 57:BZ:236:GLN:CG  | 57:BZ:247:ARG:HA   | 2.15                     | 0.75              |
| 57:BZ:408:GLU:CG  | 57:BZ:436:ARG:NH1  | 2.48                     | 0.75              |
| 1:AA:2:G:N7       | 1:AA:2902:C:N4     | 2.35                     | 0.75              |
| 1:AA:14:A:N7      | 1:AA:15:G:N9       | 2.35                     | 0.75              |
| 1:AA:28:A:H2'     | 1:AA:29:U:H5'      | 1.69                     | 0.75              |
| 1:AA:36:G:H4'     | 1:AA:451:C:C2      | 2.21                     | 0.75              |
| 1:AA:140:A:H61    | 1:AA:1596:A:H4'    | 1.52                     | 0.75              |
| 1:AA:144:C:H2'    | 1:AA:145:G:O4'     | 1.85                     | 0.75              |
| 1:AA:175:G:N2     | 1:AA:176:G:N3      | 2.34                     | 0.75              |
| 1:AA:248:G:OP1    | 25:Aa:28:LYS:HE2   | 1.86                     | 0.75              |
| 1:AA:426:C:H2'    | 1:AA:427:U:C6      | 2.20                     | 0.75              |
| 1:AA:530:G:O2'    | 1:AA:531:C:OP1     | 2.04                     | 0.75              |
| 1:AA:640:C:O2'    | 1:AA:641:C:H5''    | 1.86                     | 0.75              |
| 1:AA:675:A:H5''   | 6:AF:67:GLN:CD     | 2.12                     | 0.75              |
| 1:AA:826:U:OP1    | 1:AA:2429:G:OP1    | 2.05                     | 0.75              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1028:A:H2    | 1:AA:2486:G:O2'    | 1.70                     | 0.75              |
| 1:AA:1116:C:H2'   | 1:AA:1117:G:H8     | 1.50                     | 0.75              |
| 1:AA:1142:U:H6    | 1:AA:1142(A):A:C8  | 2.05                     | 0.75              |
| 1:AA:1222:C:C4    | 1:AA:1223:C:C5     | 2.75                     | 0.75              |
| 1:AA:1698:A:H1'   | 1:AA:1700:A:O5'    | 1.86                     | 0.75              |
| 1:AA:1773:A:C4    | 1:AA:1774:C:O2     | 2.39                     | 0.75              |
| 1:AA:2034:U:C3'   | 1:AA:2035:G:H5''   | 2.08                     | 0.75              |
| 1:AA:2052:G:H1'   | 5:AE:150:VAL:N     | 2.02                     | 0.75              |
| 1:AA:2178:C:H5'   | 3:AC:211:SER:OG    | 1.86                     | 0.75              |
| 1:AA:2181:G:C2    | 1:AA:2182:G:C6     | 2.71                     | 0.75              |
| 1:AA:2253:G:N1    | 59:AA:3003:8AN:N7  | 2.35                     | 0.75              |
| 1:AA:2306:C:OP1   | 7:AG:136:ARG:HD3   | 1.86                     | 0.75              |
| 1:AA:2323:G:C2    | 1:AA:2324:C:C4     | 2.75                     | 0.75              |
| 1:AA:2387:U:C1'   | 22:AX:41:ARG:NH2   | 2.50                     | 0.75              |
| 1:AA:2396:G:H4'   | 25:Aa:27:THR:HA    | 1.69                     | 0.75              |
| 1:AA:2631:G:P     | 1:AA:2894:G:O2'    | 2.44                     | 0.75              |
| 1:AA:2888:C:H2'   | 1:AA:2889:C:C6     | 2.22                     | 0.75              |
| 3:AC:62:VAL:HB    | 3:AC:192:PHE:CA    | 2.17                     | 0.75              |
| 3:AC:114:VAL:HA   | 3:AC:144:THR:O     | 1.87                     | 0.75              |
| 4:AD:63:ARG:HG3   | 4:AD:64:ILE:N      | 2.00                     | 0.75              |
| 4:AD:69:ARG:NH2   | 4:AD:130:ALA:HB2   | 2.02                     | 0.75              |
| 4:AD:87:ASN:HD22  | 4:AD:87:ASN:H      | 1.31                     | 0.75              |
| 4:AD:174:ILE:CD1  | 4:AD:184:LYS:HE3   | 2.16                     | 0.75              |
| 4:AD:183:ARG:HG2  | 4:AD:268:ARG:CG    | 2.16                     | 0.75              |
| 5:AE:36:ARG:HB3   | 5:AE:41:LYS:HB2    | 1.69                     | 0.75              |
| 5:AE:49:LEU:HD13  | 5:AE:76:ARG:O      | 1.87                     | 0.75              |
| 6:AF:81:PRO:HG2   | 6:AF:82:ILE:HD12   | 1.67                     | 0.75              |
| 9:AK:7:LYS:NZ     | 9:AK:10:GLU:H      | 1.84                     | 0.75              |
| 10:AL:12:ASP:CB   | 10:AL:93:PRO:HG2   | 2.17                     | 0.75              |
| 10:AL:24:VAL:HG21 | 10:AL:26:LYS:CE    | 2.17                     | 0.75              |
| 13:AO:5:LYS:HE2   | 13:AO:5:LYS:HA     | 1.69                     | 0.75              |
| 14:AP:3:ARG:CG    | 14:AP:4:LEU:HG     | 2.12                     | 0.75              |
| 14:AP:106:ARG:CZ  | 14:AP:110:LEU:HD22 | 2.16                     | 0.75              |
| 15:AQ:30:VAL:HG22 | 15:AQ:32:TYR:OH    | 1.87                     | 0.75              |
| 17:AS:3:ALA:HB2   | 17:AS:44:LYS:HD2   | 1.68                     | 0.75              |
| 31:AI:51:LEU:CA   | 31:AI:90:ALA:HB2   | 2.17                     | 0.75              |
| 32:AJ:23:VAL:HG11 | 32:AJ:41:PHE:CZ    | 2.22                     | 0.75              |
| 34:BA:440:A:H3'   | 34:BA:442:C:C6     | 2.21                     | 0.75              |
| 34:BA:665:A:C2'   | 34:BA:725:G:N2     | 2.46                     | 0.75              |
| 34:BA:738:C:H2'   | 34:BA:739:C:H6     | 1.52                     | 0.75              |
| 34:BA:1063:C:C4   | 34:BA:1064:G:N7    | 2.55                     | 0.75              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1287:A:H2'  | 34:BA:1288:A:C8    | 2.20                     | 0.75              |
| 34:BA:1302:U:C2'  | 34:BA:1303:C:H5'   | 2.17                     | 0.75              |
| 35:BF:16:HIS:CE1  | 35:BF:213:LEU:HD13 | 2.21                     | 0.75              |
| 36:BG:85:ARG:NH2  | 36:BG:89:GLU:HB2   | 2.01                     | 0.75              |
| 36:BG:201:TYR:N   | 36:BG:201:TYR:CD1  | 2.55                     | 0.75              |
| 37:BH:152:SER:O   | 37:BH:154:ASN:N    | 2.20                     | 0.75              |
| 39:BJ:14:LEU:HD13 | 39:BJ:15:ASP:H     | 1.52                     | 0.75              |
| 39:BJ:33:TYR:HE2  | 39:BJ:74:ASP:HB2   | 1.50                     | 0.75              |
| 40:BK:73:MET:HE1  | 40:BK:149:ARG:NH2  | 2.00                     | 0.75              |
| 42:BM:49:PRO:HG3  | 42:BM:78:LYS:O     | 1.86                     | 0.75              |
| 45:BP:41:ARG:NH1  | 45:BP:55:VAL:HG11  | 2.02                     | 0.75              |
| 46:BQ:97:PRO:CB   | 46:BQ:101:GLN:HG3  | 2.17                     | 0.75              |
| 48:BS:33:THR:HG23 | 48:BS:87:ILE:CD1   | 2.17                     | 0.75              |
| 50:BU:66:SER:HB2  | 50:BU:69:LYS:HZ3   | 1.52                     | 0.75              |
| 52:BW:6:LYS:HD2   | 52:BW:7:LYS:N      | 2.02                     | 0.75              |
| 53:BX:40:ALA:HA   | 53:BX:55:ILE:HD12  | 1.66                     | 0.75              |
| 53:BX:51:GLU:HA   | 53:BX:54:LYS:CE    | 2.17                     | 0.75              |
| 56:BD:47:U:C4     | 57:BZ:598:ARG:HD3  | 2.16                     | 0.75              |
| 57:BZ:4:LYS:O     | 57:BZ:68:TYR:CA    | 2.34                     | 0.75              |
| 57:BZ:538:LEU:H   | 57:BZ:539:THR:C    | 1.94                     | 0.75              |
| 1:AA:187:G:H2'    | 1:AA:1365:A:C2     | 2.22                     | 0.75              |
| 1:AA:623:G:OP2    | 11:AM:105:LEU:HD11 | 1.87                     | 0.75              |
| 1:AA:661:C:H5''   | 11:AM:15:ARG:HH11  | 1.51                     | 0.75              |
| 1:AA:884:C:H1'    | 1:AA:885:C:C5'     | 2.16                     | 0.75              |
| 1:AA:983:A:H2'    | 1:AA:984:A:C8      | 2.22                     | 0.75              |
| 1:AA:1046:A:N6    | 31:AI:9:LEU:CA     | 2.49                     | 0.75              |
| 1:AA:1046:A:C5'   | 31:AI:6:ASN:O      | 2.29                     | 0.75              |
| 1:AA:1496:A:C2    | 1:AA:1577:C:H1'    | 2.21                     | 0.75              |
| 1:AA:2027:G:H2'   | 1:AA:2028:U:C6     | 2.21                     | 0.75              |
| 1:AA:2129:C:O3'   | 3:AC:6:ARG:CD      | 2.32                     | 0.75              |
| 1:AA:2175:C:P     | 3:AC:7:TYR:CG      | 2.80                     | 0.75              |
| 1:AA:2629:A:H5'   | 1:AA:2895:U:C6     | 2.22                     | 0.75              |
| 1:AA:2756:U:C2    | 1:AA:2758:A:N6     | 2.54                     | 0.75              |
| 1:AA:2865:U:C4    | 1:AA:2866:U:H5     | 2.03                     | 0.75              |
| 4:AD:54:ARG:CA    | 4:AD:219:PRO:HG2   | 2.17                     | 0.75              |
| 4:AD:105:ILE:HG13 | 4:AD:106:ILE:CG1   | 2.12                     | 0.75              |
| 5:AE:109:LYS:N    | 5:AE:191:PRO:HD3   | 2.02                     | 0.75              |
| 7:AG:141:PHE:C    | 7:AG:143:GLU:N     | 2.36                     | 0.75              |
| 7:AG:146:TYR:HE1  | 7:AG:149:VAL:HA    | 1.52                     | 0.75              |
| 8:AH:154:PRO:O    | 8:AH:155:SER:HB3   | 1.86                     | 0.75              |
| 9:AK:73:THR:HB    | 9:AK:75:TYR:CE1    | 2.22                     | 0.75              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 12:AN:34:LEU:HA   | 12:AN:131:ILE:CG1  | 2.11                     | 0.75              |
| 15:AQ:7:ILE:O     | 15:AQ:8:LYS:C      | 2.30                     | 0.75              |
| 16:AR:65:ILE:O    | 16:AR:66:ASN:C     | 2.28                     | 0.75              |
| 17:AS:62:LEU:CD1  | 17:AS:96:ILE:HB    | 2.02                     | 0.75              |
| 18:AT:24:ILE:HG22 | 18:AT:32:ALA:HB1   | 1.68                     | 0.75              |
| 20:AV:12:THR:HG22 | 20:AV:13:VAL:N     | 2.01                     | 0.75              |
| 20:AV:12:THR:HA   | 20:AV:73:ARG:CD    | 2.16                     | 0.75              |
| 29:Ae:12:LYS:HG2  | 29:Ae:13:ARG:HH12  | 1.50                     | 0.75              |
| 30:Af:11:CYS:HB3  | 30:Af:32:HIS:CD2   | 2.22                     | 0.75              |
| 34:BA:43:C:H2'    | 34:BA:44:G:H8      | 1.50                     | 0.75              |
| 34:BA:52:G:H2'    | 34:BA:53:A:O4'     | 1.87                     | 0.75              |
| 34:BA:440:A:N6    | 34:BA:494:U:C5     | 2.55                     | 0.75              |
| 34:BA:748:C:C6    | 34:BA:748:C:H3'    | 2.22                     | 0.75              |
| 34:BA:932:C:OP1   | 40:BK:3:ARG:HB3    | 1.87                     | 0.75              |
| 34:BA:1363:A:N3   | 34:BA:1365:G:C6    | 2.55                     | 0.75              |
| 35:BF:136:VAL:HA  | 35:BF:139:LYS:HZ3  | 1.52                     | 0.75              |
| 37:BH:134:ASP:O   | 37:BH:136:PRO:HD3  | 1.85                     | 0.75              |
| 40:BK:121:ALA:O   | 40:BK:125:MET:HG2  | 1.87                     | 0.75              |
| 41:BL:112:LEU:HA  | 41:BL:134:ILE:HG13 | 1.69                     | 0.75              |
| 43:BN:23:ILE:HG22 | 43:BN:72:VAL:HG11  | 1.67                     | 0.75              |
| 43:BN:34:VAL:HG12 | 43:BN:35:SER:N     | 1.99                     | 0.75              |
| 43:BN:82:ILE:O    | 43:BN:86:MET:HB3   | 1.87                     | 0.75              |
| 46:BQ:87:TYR:N    | 52:BW:73:GLU:O     | 1.99                     | 0.75              |
| 49:BT:27:LYS:HZ2  | 49:BT:27:LYS:H     | 1.34                     | 0.75              |
| 57:BZ:2:ILE:CB    | 57:BZ:199:VAL:HG21 | 2.17                     | 0.75              |
| 57:BZ:6:ARG:CD    | 57:BZ:194:VAL:CG1  | 2.45                     | 0.75              |
| 57:BZ:54:ILE:HG13 | 57:BZ:211:GLN:HE22 | 1.50                     | 0.75              |
| 57:BZ:127:ILE:CG1 | 57:BZ:163:VAL:O    | 2.26                     | 0.75              |
| 57:BZ:412:GLN:O   | 57:BZ:416:MET:HG3  | 1.86                     | 0.75              |
| 57:BZ:455:PHE:CZ  | 57:BZ:465:LEU:HD23 | 2.22                     | 0.75              |
| 57:BZ:490:SER:O   | 57:BZ:534:THR:HG23 | 1.84                     | 0.75              |
| 1:AA:52:A:H2'     | 1:AA:53:A:C8       | 2.14                     | 0.74              |
| 1:AA:326:G:N2     | 1:AA:337:C:H1'     | 2.01                     | 0.74              |
| 1:AA:365:C:O5'    | 1:AA:365:C:H6      | 1.68                     | 0.74              |
| 1:AA:397:G:O2'    | 1:AA:2231:C:H1'    | 1.86                     | 0.74              |
| 1:AA:571:A:C8     | 1:AA:575:A:N6      | 2.55                     | 0.74              |
| 1:AA:574:C:H1'    | 1:AA:2055:C:C5     | 2.21                     | 0.74              |
| 1:AA:668:G:N3     | 1:AA:670:A:N6      | 2.35                     | 0.74              |
| 1:AA:725:G:C6     | 1:AA:726:G:N2      | 2.54                     | 0.74              |
| 1:AA:728:G:O2'    | 1:AA:729:G:H5''    | 1.87                     | 0.74              |
| 1:AA:805:G:O6     | 1:AA:2068:U:P      | 2.45                     | 0.74              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:848:G:H21    | 1:AA:933:A:H1'     | 1.52                     | 0.74              |
| 1:AA:1083:U:H2'   | 1:AA:1084:A:H5''   | 1.68                     | 0.74              |
| 1:AA:1101:U:H6    | 1:AA:1101:U:OP1    | 1.70                     | 0.74              |
| 1:AA:1128:A:H62   | 1:AA:2518:A:H61    | 0.79                     | 0.74              |
| 1:AA:1252:G:H22   | 16:AR:37:GLU:CG    | 2.00                     | 0.74              |
| 1:AA:1258:C:H2'   | 1:AA:1259:G:H8     | 1.51                     | 0.74              |
| 1:AA:1315:C:O2'   | 1:AA:1392:A:H1'    | 1.87                     | 0.74              |
| 1:AA:1471:A:C2'   | 1:AA:1472:A:H5'    | 2.16                     | 0.74              |
| 1:AA:1503:U:H2'   | 1:AA:1504:C:C5     | 2.21                     | 0.74              |
| 1:AA:1742:C:N4    | 1:AA:1743:G:C8     | 2.55                     | 0.74              |
| 1:AA:2311:A:H3'   | 1:AA:2312:U:C6     | 2.22                     | 0.74              |
| 2:AB:44:G:H21     | 2:AB:48:A:H1'      | 1.51                     | 0.74              |
| 5:AE:36:ARG:HD2   | 5:AE:41:LYS:HZ2    | 1.51                     | 0.74              |
| 5:AE:111:ARG:H    | 5:AE:161:GLY:CA    | 2.00                     | 0.74              |
| 6:AF:11:VAL:HG23  | 6:AF:17:ARG:HH22   | 1.52                     | 0.74              |
| 6:AF:31:HIS:ND1   | 11:AM:11:GLY:HA3   | 2.03                     | 0.74              |
| 6:AF:118:ALA:CB   | 6:AF:122:LYS:HE2   | 2.17                     | 0.74              |
| 8:AH:6:ARG:HD2    | 8:AH:66:GLY:HA2    | 1.69                     | 0.74              |
| 8:AH:11:VAL:O     | 8:AH:11:VAL:CG1    | 2.34                     | 0.74              |
| 8:AH:97:ARG:HA    | 8:AH:125:VAL:HG11  | 1.69                     | 0.74              |
| 9:AK:112:LEU:O    | 9:AK:113:GLY:C     | 2.29                     | 0.74              |
| 10:AL:16:ALA:CB   | 10:AL:45:GLU:HB2   | 2.17                     | 0.74              |
| 11:AM:97:PRO:HA   | 11:AM:102:ARG:NE   | 2.01                     | 0.74              |
| 11:AM:129:ALA:C   | 11:AM:130:PHE:HD2  | 1.94                     | 0.74              |
| 15:AQ:7:ILE:O     | 15:AQ:11:GLU:OE2   | 2.03                     | 0.74              |
| 15:AQ:53:ARG:NH2  | 15:AQ:102:ILE:H    | 1.84                     | 0.74              |
| 16:AR:65:ILE:HD13 | 16:AR:65:ILE:N     | 2.02                     | 0.74              |
| 18:AT:70:TYR:CZ   | 18:AT:72:LYS:HB2   | 2.22                     | 0.74              |
| 20:AV:8:LYS:CA    | 20:AV:28:LYS:HD2   | 2.17                     | 0.74              |
| 20:AV:98:VAL:O    | 20:AV:99:CYS:SG    | 2.45                     | 0.74              |
| 22:AX:51:VAL:HG11 | 22:AX:79:VAL:HG23  | 1.69                     | 0.74              |
| 25:Aa:10:VAL:H    | 25:Aa:11:PRO:HD3   | 1.52                     | 0.74              |
| 25:Aa:53:GLU:CG   | 25:Aa:54:GLY:H     | 1.96                     | 0.74              |
| 30:Af:16:VAL:HG13 | 30:Af:16:VAL:O     | 1.87                     | 0.74              |
| 31:AI:66:LEU:O    | 31:AI:70:GLU:N     | 2.19                     | 0.74              |
| 32:AJ:104:VAL:C   | 32:AJ:127:ILE:HD11 | 2.11                     | 0.74              |
| 34:BA:735:C:H5'   | 51:BV:71:LYS:HD3   | 1.69                     | 0.74              |
| 34:BA:894:G:O2'   | 34:BA:895:G:H5'    | 1.86                     | 0.74              |
| 34:BA:1284:C:H2'  | 34:BA:1285:A:N7    | 2.02                     | 0.74              |
| 34:BA:1316:G:H5'  | 34:BA:1360:A:C5    | 2.22                     | 0.74              |
| 35:BF:84:GLU:HG2  | 35:BF:234:PRO:CD   | 2.16                     | 0.74              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:BF:173:ALA:HA  | 35:BF:176:GLU:HB2 | 1.67                     | 0.74              |
| 36:BG:83:ARG:O    | 36:BG:87:LEU:HG   | 1.87                     | 0.74              |
| 39:BJ:6:VAL:HG12  | 39:BJ:63:TYR:O    | 1.87                     | 0.74              |
| 39:BJ:76:ALA:CB   | 39:BJ:80:ARG:HH22 | 1.99                     | 0.74              |
| 40:BK:72:ARG:CZ   | 40:BK:142:GLU:OE1 | 2.35                     | 0.74              |
| 42:BM:9:ARG:HD2   | 42:BM:14:VAL:CG2  | 2.15                     | 0.74              |
| 43:BN:50:ILE:HA   | 43:BN:60:ARG:CG   | 2.11                     | 0.74              |
| 51:BV:18:ARG:NH2  | 51:BV:21:LYS:HB2  | 2.02                     | 0.74              |
| 55:BC:5:G:C6      | 55:BC:69:G:N1     | 2.54                     | 0.74              |
| 57:BZ:10:ILE:HD12 | 57:BZ:21:LEU:CB   | 2.17                     | 0.74              |
| 57:BZ:563:MET:HE2 | 57:BZ:563:MET:HA  | 1.69                     | 0.74              |
| 1:AA:201:C:H2'    | 1:AA:202:U:H5'    | 1.68                     | 0.74              |
| 1:AA:487:C:O2'    | 18:AT:52:GLU:HB3  | 1.86                     | 0.74              |
| 1:AA:600:G:N2     | 1:AA:604:G:H4'    | 2.01                     | 0.74              |
| 1:AA:673:C:N4     | 1:AA:808:G:H1     | 1.85                     | 0.74              |
| 1:AA:805:G:H2'    | 1:AA:806:C:OP1    | 1.86                     | 0.74              |
| 1:AA:1036:G:OP1   | 8:AH:59:ARG:HD3   | 1.87                     | 0.74              |
| 1:AA:1080:C:C5'   | 32:AJ:128:ALA:CA  | 2.65                     | 0.74              |
| 1:AA:1102:C:H3'   | 1:AA:1104:C:H5    | 1.52                     | 0.74              |
| 1:AA:1152:C:O2'   | 16:AR:80:ILE:HD12 | 1.88                     | 0.74              |
| 1:AA:1275:A:N7    | 1:AA:1296:G:H1'   | 2.03                     | 0.74              |
| 1:AA:1451:C:C4    | 1:AA:1454:U:OP1   | 2.39                     | 0.74              |
| 1:AA:1638:C:H1'   | 1:AA:2698:U:O2'   | 1.85                     | 0.74              |
| 1:AA:1664:A:H3'   | 1:AA:1664:A:C8    | 2.21                     | 0.74              |
| 1:AA:2021:C:C2'   | 1:AA:2022:U:OP1   | 2.34                     | 0.74              |
| 5:AE:190:GLY:O    | 5:AE:191:PRO:O    | 2.05                     | 0.74              |
| 6:AF:176:LEU:HD21 | 6:AF:180:GLY:O    | 1.87                     | 0.74              |
| 7:AG:32:PRO:O     | 7:AG:172:LEU:HD22 | 1.87                     | 0.74              |
| 9:AK:16:ILE:HD12  | 9:AK:16:ILE:N     | 2.02                     | 0.74              |
| 11:AM:116:GLY:HA3 | 11:AM:121:LYS:O   | 1.87                     | 0.74              |
| 16:AR:61:TRP:O    | 16:AR:62:ILE:C    | 2.30                     | 0.74              |
| 17:AS:35:LEU:N    | 17:AS:61:VAL:HG13 | 2.01                     | 0.74              |
| 17:AS:67:GLY:CA   | 17:AS:93:GLU:O    | 2.35                     | 0.74              |
| 18:AT:77:ASP:O    | 18:AT:102:HIS:O   | 2.05                     | 0.74              |
| 19:AU:36:LYS:HD3  | 19:AU:39:ILE:HD12 | 1.69                     | 0.74              |
| 20:AV:2:ARG:HH21  | 20:AV:4:LYS:CB    | 1.99                     | 0.74              |
| 21:AW:127:LYS:HA  | 21:AW:164:ALA:H   | 1.51                     | 0.74              |
| 22:AX:72:ARG:HB2  | 22:AX:78:TYR:CD1  | 2.22                     | 0.74              |
| 24:AZ:54:VAL:CG2  | 24:AZ:55:ARG:N    | 2.49                     | 0.74              |
| 29:Ae:7:HIS:O     | 29:Ae:11:LYS:HG3  | 1.87                     | 0.74              |
| 34:BA:50:A:O2'    | 34:BA:52:G:N7     | 2.20                     | 0.74              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:778:G:H2'   | 34:BA:779:C:H6     | 1.50                     | 0.74              |
| 34:BA:898:G:H2'   | 34:BA:900:A:OP2    | 1.86                     | 0.74              |
| 34:BA:994:A:N1    | 34:BA:1047:G:H4'   | 2.02                     | 0.74              |
| 34:BA:1068:G:N7   | 34:BA:1094:G:N7    | 2.36                     | 0.74              |
| 34:BA:1236:A:H5'' | 34:BA:1304:G:H5''  | 1.70                     | 0.74              |
| 34:BA:1316:G:H5'' | 47:BR:17:LYS:NZ    | 2.02                     | 0.74              |
| 37:BH:147:ALA:HB1 | 37:BH:181:MET:O    | 1.86                     | 0.74              |
| 41:BL:70:GLN:HE21 | 41:BL:71:GLY:N     | 1.84                     | 0.74              |
| 41:BL:126:LYS:HD2 | 41:BL:126:LYS:C    | 2.13                     | 0.74              |
| 50:BU:33:GLY:O    | 50:BU:34:LYS:O     | 2.05                     | 0.74              |
| 53:BX:27:LYS:HD3  | 53:BX:27:LYS:C     | 2.12                     | 0.74              |
| 55:BC:5:G:H2'     | 55:BC:6:G:H8       | 1.50                     | 0.74              |
| 57:BZ:73:VAL:HG21 | 57:BZ:88:VAL:CG1   | 2.14                     | 0.74              |
| 57:BZ:560:PRO:CG  | 57:BZ:562:ARG:HB2  | 2.16                     | 0.74              |
| 1:AA:141(A):C:H2' | 1:AA:142:G:O4'     | 1.87                     | 0.74              |
| 1:AA:459:U:OP2    | 28:Ad:40:TRP:HA    | 1.87                     | 0.74              |
| 1:AA:656:G:H2'    | 1:AA:657:U:C6      | 2.22                     | 0.74              |
| 1:AA:1105:U:O3'   | 1:AA:1107:G:P      | 2.44                     | 0.74              |
| 1:AA:1156:A:OP1   | 16:AR:55:ARG:NE    | 2.20                     | 0.74              |
| 1:AA:1270:C:C4'   | 1:AA:1271:G:H5''   | 2.18                     | 0.74              |
| 1:AA:1327:C:H3'   | 1:AA:1328:G:C8     | 2.21                     | 0.74              |
| 1:AA:1349:A:C2    | 1:AA:1598:C:N3     | 2.54                     | 0.74              |
| 1:AA:1407:C:H2'   | 1:AA:1408:C:H6     | 1.53                     | 0.74              |
| 1:AA:1574:C:H2'   | 1:AA:1575:C:O4'    | 1.87                     | 0.74              |
| 1:AA:1669:A:H2'   | 1:AA:1670:C:H5'    | 1.68                     | 0.74              |
| 1:AA:1815:A:OP1   | 1:AA:1822:G:H4'    | 1.86                     | 0.74              |
| 1:AA:1999:C:H2'   | 1:AA:2000:G:O5'    | 1.87                     | 0.74              |
| 1:AA:2123:G:H1'   | 3:AC:215:THR:HG21  | 1.67                     | 0.74              |
| 1:AA:2285:C:O4'   | 1:AA:2288:A:N6     | 2.20                     | 0.74              |
| 1:AA:2491:U:C6    | 1:AA:2492:U:C5'    | 2.70                     | 0.74              |
| 1:AA:2619:C:C5'   | 5:AE:152:LYS:HA    | 2.18                     | 0.74              |
| 1:AA:2675:A:H2'   | 1:AA:2676:C:H5'    | 1.69                     | 0.74              |
| 4:AD:112:GLN:O    | 4:AD:115:GLN:HB3   | 1.86                     | 0.74              |
| 5:AE:2:LYS:HD3    | 5:AE:83:ASP:HB3    | 1.70                     | 0.74              |
| 5:AE:119:ARG:HG3  | 5:AE:156:MET:O     | 1.87                     | 0.74              |
| 6:AF:31:HIS:CB    | 11:AM:14:LYS:HZ2   | 1.99                     | 0.74              |
| 6:AF:194:MET:CE   | 6:AF:200:GLU:HG2   | 2.18                     | 0.74              |
| 8:AH:85:LYS:NZ    | 8:AH:142:GLY:HA2   | 2.00                     | 0.74              |
| 9:AK:4:TYR:CD2    | 16:AR:100:VAL:HG11 | 2.22                     | 0.74              |
| 9:AK:13:TRP:O     | 9:AK:138:LEU:HB2   | 1.85                     | 0.74              |
| 9:AK:34:LEU:HD21  | 9:AK:52:VAL:HG12   | 1.67                     | 0.74              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AL:63:VAL:CG2   | 10:AL:81:ASP:HA    | 2.17                     | 0.74              |
| 12:AN:77:LYS:HE2   | 12:AN:87:LYS:HG3   | 1.66                     | 0.74              |
| 12:AN:85:LYS:HG3   | 12:AN:87:LYS:N     | 2.02                     | 0.74              |
| 14:AP:62:LYS:HB2   | 14:AP:65:VAL:HG13  | 1.69                     | 0.74              |
| 14:AP:89:ARG:HG3   | 14:AP:90:GLY:N     | 2.02                     | 0.74              |
| 16:AR:99:ALA:HA    | 16:AR:106:PHE:HB2  | 1.69                     | 0.74              |
| 20:AV:97:ARG:HA    | 20:AV:101:LYS:CG   | 2.18                     | 0.74              |
| 21:AW:96:VAL:HG13  | 21:AW:128:VAL:HG22 | 1.68                     | 0.74              |
| 21:AW:168:GLU:OE1  | 21:AW:169:GLU:HA   | 1.88                     | 0.74              |
| 25:Aa:5:ILE:HG23   | 25:Aa:57:GLU:CB    | 2.15                     | 0.74              |
| 27:Ac:7:ILE:C      | 27:Ac:9:LEU:N      | 2.41                     | 0.74              |
| 27:Ac:17:LYS:NZ    | 27:Ac:50:ARG:HB2   | 2.02                     | 0.74              |
| 28:Ad:42:LEU:HB3   | 28:Ad:44:PRO:CG    | 2.17                     | 0.74              |
| 34:BA:90:C:O2'     | 34:BA:91:C:H5'     | 1.85                     | 0.74              |
| 34:BA:236:G:H3'    | 34:BA:237:C:H6     | 1.52                     | 0.74              |
| 34:BA:936:C:O2'    | 34:BA:937:A:H5'    | 1.88                     | 0.74              |
| 34:BA:1035:A:C2'   | 34:BA:1036:G:H5'   | 2.17                     | 0.74              |
| 34:BA:1048:G:O4'   | 34:BA:1215:G:H4'   | 1.87                     | 0.74              |
| 34:BA:1064:G:OP1   | 34:BA:1386:G:H4'   | 1.86                     | 0.74              |
| 34:BA:1117:G:C4    | 34:BA:1184:G:N3    | 2.54                     | 0.74              |
| 34:BA:1240:U:C2'   | 40:BK:32:ARG:HH21  | 2.00                     | 0.74              |
| 34:BA:1416:G:H2'   | 34:BA:1417:G:C8    | 2.21                     | 0.74              |
| 35:BF:17:PHE:CD1   | 35:BF:18:GLY:N     | 2.54                     | 0.74              |
| 35:BF:119:GLU:HA   | 35:BF:142:LEU:HD13 | 1.67                     | 0.74              |
| 37:BH:13:ARG:HG2   | 37:BH:32:ALA:HB2   | 1.68                     | 0.74              |
| 38:BI:59:GLY:C     | 38:BI:63:ARG:HH21  | 1.95                     | 0.74              |
| 40:BK:113:GLU:OE2  | 40:BK:119:ARG:HG3  | 1.86                     | 0.74              |
| 42:BM:116:LYS:HB3  | 42:BM:122:ALA:CA   | 2.16                     | 0.74              |
| 43:BN:51:ARG:HB2   | 43:BN:59:SER:O     | 1.87                     | 0.74              |
| 44:BO:110:ASP:OD1  | 51:BV:85:LEU:HB3   | 1.87                     | 0.74              |
| 47:BR:27:CYS:O     | 47:BR:29:ARG:HG3   | 1.86                     | 0.74              |
| 57:BZ:300:LEU:HD12 | 57:BZ:300:LEU:N    | 2.01                     | 0.74              |
| 57:BZ:586:ARG:HH21 | 57:BZ:586:ARG:CB   | 2.00                     | 0.74              |
| 1:AA:270(Z):U:H2'  | 1:AA:270(Z):U:O2   | 1.85                     | 0.74              |
| 1:AA:322:A:C5'     | 1:AA:341:G:H5'     | 2.17                     | 0.74              |
| 1:AA:363(C):G:O2'  | 1:AA:363(D):G:H5'  | 1.88                     | 0.74              |
| 1:AA:399:G:C6      | 1:AA:400:G:H1'     | 2.21                     | 0.74              |
| 1:AA:661:C:H5''    | 11:AM:15:ARG:NH1   | 2.01                     | 0.74              |
| 1:AA:839:U:H2'     | 1:AA:840:C:C5      | 2.21                     | 0.74              |
| 1:AA:861:A:C5      | 1:AA:917:A:C2      | 2.75                     | 0.74              |
| 1:AA:989:G:O2'     | 1:AA:990:A:O5'     | 2.05                     | 0.74              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:997:G:H8     | 1:AA:997:G:OP2    | 1.69                     | 0.74              |
| 1:AA:1020:A:C2    | 1:AA:1140:C:H2'   | 2.22                     | 0.74              |
| 1:AA:1036:G:C2    | 1:AA:1120:G:C5    | 2.75                     | 0.74              |
| 1:AA:1190:G:OP1   | 11:AM:31:ALA:N    | 2.20                     | 0.74              |
| 1:AA:1203:G:C4    | 1:AA:1241:A:H8    | 2.05                     | 0.74              |
| 1:AA:1416:G:N2    | 1:AA:1582:C:O2    | 2.20                     | 0.74              |
| 1:AA:1556:C:H2'   | 1:AA:1557:C:C6    | 2.21                     | 0.74              |
| 1:AA:1789:A:H4'   | 4:AD:222:ARG:CZ   | 2.16                     | 0.74              |
| 1:AA:1890:A:H3'   | 1:AA:1891:G:H8    | 1.51                     | 0.74              |
| 1:AA:2210:G:O6    | 4:AD:150:LYS:HA   | 1.87                     | 0.74              |
| 1:AA:2305:A:C5    | 7:AG:42:GLY:HA2   | 2.22                     | 0.74              |
| 1:AA:2594:C:O2'   | 1:AA:2595:G:H5'   | 1.87                     | 0.74              |
| 1:AA:2718:G:H2'   | 1:AA:2719:G:C8    | 2.22                     | 0.74              |
| 1:AA:2723:C:H4'   | 13:AO:2:ARG:O     | 1.88                     | 0.74              |
| 1:AA:2797:U:H4'   | 1:AA:2798:C:H4'   | 1.69                     | 0.74              |
| 5:AE:51:PHE:CD1   | 5:AE:76:ARG:HG2   | 2.22                     | 0.74              |
| 5:AE:149:ARG:HE   | 5:AE:150:VAL:C    | 1.95                     | 0.74              |
| 7:AG:102:PHE:CE2  | 7:AG:106:LEU:HD12 | 2.22                     | 0.74              |
| 8:AH:85:LYS:NZ    | 8:AH:141:VAL:HG12 | 2.02                     | 0.74              |
| 8:AH:89:ILE:HD12  | 8:AH:90:LYS:H     | 1.51                     | 0.74              |
| 8:AH:121:ILE:HA   | 8:AH:134:SER:O    | 1.86                     | 0.74              |
| 9:AK:70:LYS:HA    | 9:AK:85:ILE:O     | 1.87                     | 0.74              |
| 10:AL:68:GLU:CD   | 10:AL:76:ALA:HB3  | 2.13                     | 0.74              |
| 10:AL:79:PHE:HB2  | 15:AQ:73:GLU:CD   | 2.12                     | 0.74              |
| 10:AL:116:SER:HB3 | 34:BA:345:C:O2    | 1.87                     | 0.74              |
| 11:AM:16:ARG:HG2  | 11:AM:19:VAL:HG13 | 1.67                     | 0.74              |
| 11:AM:88:LEU:CG   | 11:AM:124:LYS:HZ1 | 2.00                     | 0.74              |
| 13:AO:64:ARG:HG2  | 13:AO:65:LEU:N    | 2.02                     | 0.74              |
| 21:AW:5:LEU:HB2   | 21:AW:23:LYS:HZ3  | 1.52                     | 0.74              |
| 22:AX:47:PRO:HG2  | 22:AX:53:MET:HB2  | 1.69                     | 0.74              |
| 24:AZ:17:LYS:HA   | 24:AZ:20:LYS:NZ   | 2.02                     | 0.74              |
| 24:AZ:30:ARG:HD2  | 24:AZ:30:ARG:N    | 2.01                     | 0.74              |
| 28:Ad:28:ARG:CA   | 28:Ad:31:LEU:HD12 | 2.04                     | 0.74              |
| 29:Ae:8:LYS:HA    | 29:Ae:11:LYS:HD2  | 1.68                     | 0.74              |
| 34:BA:475:G:C2'   | 34:BA:476:G:H8    | 2.00                     | 0.74              |
| 34:BA:675:A:H2'   | 34:BA:676:A:C8    | 2.23                     | 0.74              |
| 34:BA:958:A:C4    | 52:BW:56:GLN:NE2  | 2.55                     | 0.74              |
| 34:BA:1104:G:O2'  | 34:BA:1105:A:H5'  | 1.86                     | 0.74              |
| 34:BA:1116:C:N3   | 34:BA:1184:G:O6   | 2.21                     | 0.74              |
| 34:BA:1293:G:H2'  | 34:BA:1294:G:C8   | 2.22                     | 0.74              |
| 39:BJ:14:LEU:HD12 | 39:BJ:15:ASP:H    | 1.50                     | 0.74              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 39:BJ:35:ALA:O    | 39:BJ:36:ARG:HG3   | 1.86                     | 0.74              |
| 39:BJ:77:ARG:HA   | 39:BJ:80:ARG:NE    | 2.03                     | 0.74              |
| 40:BK:72:ARG:HH22 | 40:BK:138:LYS:HZ3  | 1.36                     | 0.74              |
| 41:BL:61:VAL:HG12 | 41:BL:62:TYR:N     | 2.02                     | 0.74              |
| 41:BL:126:LYS:HD2 | 41:BL:127:LEU:N    | 2.02                     | 0.74              |
| 42:BM:58:HIS:CD2  | 42:BM:59:PHE:CD1   | 2.75                     | 0.74              |
| 42:BM:85:LEU:HD23 | 42:BM:96:LEU:CD1   | 2.15                     | 0.74              |
| 49:BT:3:LYS:CE    | 49:BT:24:ALA:HB2   | 2.17                     | 0.74              |
| 49:BT:8:ARG:NH1   | 49:BT:11:SER:N     | 2.35                     | 0.74              |
| 49:BT:20:VAL:CG1  | 49:BT:21:VAL:N     | 2.51                     | 0.74              |
| 50:BU:57:VAL:HB   | 50:BU:75:ARG:O     | 1.87                     | 0.74              |
| 51:BV:53:ARG:HG2  | 51:BV:63:GLN:HE21  | 1.53                     | 0.74              |
| 55:BC:5:G:C6      | 55:BC:69:G:C6      | 2.76                     | 0.74              |
| 56:BE:41:C:H3'    | 56:BE:42:C:H5''    | 1.68                     | 0.74              |
| 57:BZ:236:GLN:CB  | 57:BZ:247:ARG:CA   | 2.63                     | 0.74              |
| 1:AA:28:A:C1'     | 1:AA:513:A:N1      | 2.48                     | 0.74              |
| 1:AA:270(G):C:H2' | 1:AA:270(H):C:C6   | 2.22                     | 0.74              |
| 1:AA:326:G:H22    | 1:AA:337:C:H1'     | 1.50                     | 0.74              |
| 1:AA:684:G:C2'    | 1:AA:687:C:H41     | 1.98                     | 0.74              |
| 1:AA:824:A:H2'    | 1:AA:825:C:C5      | 2.23                     | 0.74              |
| 1:AA:915:C:H2'    | 1:AA:916:G:O4'     | 1.87                     | 0.74              |
| 1:AA:1046:A:C5    | 31:AI:6:ASN:C      | 2.65                     | 0.74              |
| 1:AA:1081:U:H5''  | 32:AJ:125:ARG:CD   | 2.04                     | 0.74              |
| 1:AA:1203:G:O6    | 1:AA:1240:U:H2'    | 1.86                     | 0.74              |
| 1:AA:1435:G:N1    | 1:AA:1558:A:N6     | 2.36                     | 0.74              |
| 1:AA:1537:C:H2'   | 1:AA:1538:G:H5'    | 1.68                     | 0.74              |
| 1:AA:2121:G:C1'   | 3:AC:167:LYS:NZ    | 2.50                     | 0.74              |
| 1:AA:2369:A:H2'   | 1:AA:2370:G:C8     | 2.21                     | 0.74              |
| 3:AC:6:ARG:HD2    | 3:AC:6:ARG:O       | 1.87                     | 0.74              |
| 4:AD:138:VAL:HA   | 4:AD:165:ILE:CG2   | 2.18                     | 0.74              |
| 6:AF:122:LYS:CE   | 6:AF:192:LEU:HD12  | 2.16                     | 0.74              |
| 7:AG:75:LYS:HD3   | 7:AG:85:GLY:H      | 1.52                     | 0.74              |
| 10:AL:75:SER:C    | 15:AQ:77:PRO:HG2   | 2.13                     | 0.74              |
| 11:AM:13:ASN:ND2  | 11:AM:14:LYS:N     | 2.35                     | 0.74              |
| 11:AM:72:PRO:HB3  | 11:AM:110:TYR:C    | 2.12                     | 0.74              |
| 11:AM:93:GLY:HA2  | 11:AM:112:LEU:HD12 | 1.70                     | 0.74              |
| 11:AM:99:LEU:HD13 | 11:AM:101:VAL:HG22 | 1.69                     | 0.74              |
| 12:AN:37:LEU:HA   | 12:AN:100:GLY:CA   | 2.17                     | 0.74              |
| 13:AO:45:ARG:CB   | 13:AO:95:THR:HG21  | 2.17                     | 0.74              |
| 14:AP:14:VAL:C    | 14:AP:18:ILE:HD13  | 2.13                     | 0.74              |
| 14:AP:95:HIS:CA   | 14:AP:99:LYS:HB2   | 2.17                     | 0.74              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 15:AQ:95:ARG:NH2   | 15:AQ:96:ARG:NH2   | 2.35                     | 0.74              |
| 16:AR:89:GLU:HG2   | 17:AS:52:VAL:CG2   | 2.06                     | 0.74              |
| 17:AS:23:GLU:HB2   | 17:AS:92:THR:O     | 1.87                     | 0.74              |
| 21:AW:49:ARG:O     | 21:AW:51:ALA:N     | 2.21                     | 0.74              |
| 22:AX:56:ASP:OD1   | 22:AX:58:THR:HB    | 1.88                     | 0.74              |
| 23:AY:56:LEU:N     | 23:AY:56:LEU:HD13  | 2.01                     | 0.74              |
| 34:BA:10:A:O2'     | 34:BA:11:G:H5'     | 1.86                     | 0.74              |
| 34:BA:66:G:H4'     | 34:BA:173:U:C4     | 2.21                     | 0.74              |
| 34:BA:281:G:H4'    | 34:BA:282:A:H5'    | 1.70                     | 0.74              |
| 34:BA:967:C:H2'    | 34:BA:968:A:N7     | 2.03                     | 0.74              |
| 34:BA:1202:G:C1'   | 47:BR:29:ARG:HE    | 1.99                     | 0.74              |
| 35:BF:69:LEU:O     | 35:BF:162:ILE:CA   | 2.34                     | 0.74              |
| 35:BF:139:LYS:HG3  | 35:BF:140:HIS:H    | 1.50                     | 0.74              |
| 35:BF:178:ARG:HA   | 35:BF:178:ARG:HH11 | 1.51                     | 0.74              |
| 36:BG:83:ARG:O     | 36:BG:85:ARG:N     | 2.19                     | 0.74              |
| 41:BL:119:LEU:N    | 41:BL:119:LEU:HD22 | 2.01                     | 0.74              |
| 43:BN:3:LYS:HE3    | 43:BN:77:PRO:HD3   | 1.70                     | 0.74              |
| 43:BN:22:LYS:NZ    | 43:BN:90:LEU:HD12  | 2.01                     | 0.74              |
| 43:BN:60:ARG:HD3   | 43:BN:60:ARG:H     | 1.51                     | 0.74              |
| 46:BQ:66:LEU:CA    | 46:BQ:70:LEU:HB2   | 2.17                     | 0.74              |
| 53:BX:64:ASP:O     | 53:BX:67:ALA:HB3   | 1.88                     | 0.74              |
| 56:BD:67:C:C5      | 56:BD:68:C:C6      | 2.75                     | 0.74              |
| 57:BZ:205:PHE:CE1  | 57:BZ:226:ILE:CG2  | 2.70                     | 0.74              |
| 57:BZ:419:LEU:HD12 | 57:BZ:441:TYR:CD1  | 2.23                     | 0.74              |
| 57:BZ:464:LEU:N    | 57:BZ:464:LEU:HD13 | 2.03                     | 0.74              |
| 57:BZ:502:PHE:CE1  | 57:BZ:557:LEU:HB3  | 2.23                     | 0.74              |
| 57:BZ:563:MET:CB   | 57:BZ:564:THR:HA   | 2.16                     | 0.74              |
| 1:AA:6:A:C2        | 1:AA:2897:U:N1     | 2.55                     | 0.74              |
| 1:AA:39:C:H2'      | 1:AA:40:C:H6       | 1.50                     | 0.74              |
| 1:AA:49:A:N6       | 1:AA:176:G:C6      | 2.55                     | 0.74              |
| 1:AA:81:G:H4'      | 1:AA:294:A:C2      | 2.23                     | 0.74              |
| 1:AA:386:G:H4'     | 1:AA:387:U:C5      | 2.23                     | 0.74              |
| 1:AA:465:G:H21     | 1:AA:683:C:H2'     | 1.53                     | 0.74              |
| 1:AA:556:G:H2'     | 1:AA:557:U:C6      | 2.23                     | 0.74              |
| 1:AA:603:A:H61     | 1:AA:624:C:N4      | 1.86                     | 0.74              |
| 1:AA:632:A:H2'     | 1:AA:633:A:C8      | 2.22                     | 0.74              |
| 1:AA:817:C:H2'     | 1:AA:818:G:O4'     | 1.87                     | 0.74              |
| 1:AA:1275:A:H2     | 13:AO:16:HIS:CA    | 1.96                     | 0.74              |
| 1:AA:1394:U:H4'    | 1:AA:1603:A:C5'    | 2.18                     | 0.74              |
| 1:AA:1566:A:C4     | 4:AD:215:LEU:HD22  | 2.22                     | 0.74              |
| 1:AA:1820:U:N1     | 4:AD:202:LYS:HG2   | 2.03                     | 0.74              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2016:U:O4'   | 26:Ab:6:VAL:HG11   | 1.87                     | 0.74              |
| 1:AA:2124:G:N7    | 3:AC:217:THR:HA    | 2.02                     | 0.74              |
| 1:AA:2209:C:H2'   | 1:AA:2210:G:H3'    | 1.68                     | 0.74              |
| 1:AA:2278:A:H62   | 22:AX:14:ARG:HB3   | 1.51                     | 0.74              |
| 1:AA:2447:G:O6    | 1:AA:2452:C:N4     | 2.20                     | 0.74              |
| 1:AA:2512:C:H5''  | 5:AE:120:TRP:CZ2   | 2.22                     | 0.74              |
| 1:AA:2597:G:O4'   | 4:AD:242:ARG:NH2   | 2.19                     | 0.74              |
| 1:AA:2602:A:O2'   | 22:AX:1:MET:O      | 2.03                     | 0.74              |
| 1:AA:2833:G:N3    | 1:AA:2833:G:H2'    | 2.02                     | 0.74              |
| 1:AA:2886:G:O2'   | 26:Ab:32:PRO:HD2   | 1.87                     | 0.74              |
| 2:AB:87:G:OP2     | 2:AB:87:G:H8       | 1.68                     | 0.74              |
| 4:AD:87:ASN:O     | 4:AD:88:ARG:HB2    | 1.87                     | 0.74              |
| 5:AE:4:ILE:CG2    | 5:AE:30:PRO:HG3    | 2.18                     | 0.74              |
| 5:AE:102:VAL:HA   | 5:AE:200:GLU:OE1   | 1.88                     | 0.74              |
| 6:AF:41:LEU:HB2   | 6:AF:44:ARG:NH1    | 2.02                     | 0.74              |
| 6:AF:176:LEU:CG   | 6:AF:178:PRO:HD2   | 2.17                     | 0.74              |
| 7:AG:94:LEU:HG    | 7:AG:98:ARG:NH1    | 2.02                     | 0.74              |
| 8:AH:6:ARG:C      | 8:AH:69:ARG:HE     | 1.95                     | 0.74              |
| 10:AL:63:VAL:HG23 | 10:AL:81:ASP:HA    | 1.68                     | 0.74              |
| 12:AN:39:PRO:CG   | 12:AN:127:ILE:HG12 | 2.17                     | 0.74              |
| 12:AN:137:TYR:CE2 | 21:AW:124:ILE:HD11 | 2.23                     | 0.74              |
| 14:AP:69:VAL:O    | 14:AP:72:ALA:HB3   | 1.88                     | 0.74              |
| 15:AQ:67:SER:OG   | 15:AQ:75:ILE:HG23  | 1.87                     | 0.74              |
| 16:AR:44:ASN:C    | 16:AR:47:TYR:HB2   | 2.10                     | 0.74              |
| 20:AV:46:LYS:NZ   | 20:AV:46:LYS:HB3   | 2.01                     | 0.74              |
| 21:AW:4:ARG:HH22  | 21:AW:88:PHE:HE1   | 1.33                     | 0.74              |
| 23:AY:14:VAL:O    | 23:AY:17:GLU:HB2   | 1.88                     | 0.74              |
| 23:AY:20:VAL:CA   | 23:AY:55:LEU:HD23  | 2.17                     | 0.74              |
| 25:Aa:42:PHE:O    | 25:Aa:61:ARG:NH1   | 2.21                     | 0.74              |
| 28:Ad:34:ARG:HB3  | 28:Ad:34:ARG:NH1   | 2.01                     | 0.74              |
| 32:AJ:11:GLN:HA   | 32:AJ:56:GLU:CB    | 2.17                     | 0.74              |
| 34:BA:730:G:N7    | 34:BA:731:G:H1'    | 2.03                     | 0.74              |
| 34:BA:959:A:H1'   | 34:BA:985:C:H1'    | 1.70                     | 0.74              |
| 34:BA:965:A:C8    | 34:BA:969:A:C4     | 2.75                     | 0.74              |
| 34:BA:1056:U:O2   | 36:BG:195:VAL:HG23 | 1.87                     | 0.74              |
| 34:BA:1162:C:H2'  | 34:BA:1163:C:H6    | 1.49                     | 0.74              |
| 34:BA:1479:C:O2'  | 34:BA:1480:G:H5'   | 1.87                     | 0.74              |
| 35:BF:56:ARG:HH11 | 35:BF:56:ARG:CB    | 2.00                     | 0.74              |
| 37:BH:58:LEU:HD13 | 37:BH:58:LEU:C     | 2.12                     | 0.74              |
| 38:BI:17:ALA:HA   | 38:BI:26:PHE:HB3   | 1.67                     | 0.74              |
| 41:BL:92:ARG:HG2  | 41:BL:92:ARG:HH11  | 1.51                     | 0.74              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 44:BO:121:PRO:O   | 44:BO:126:ARG:HD2  | 1.88                     | 0.74              |
| 46:BQ:48:LEU:HD22 | 46:BQ:53:VAL:HG23  | 1.70                     | 0.74              |
| 48:BS:36:ILE:HG13 | 48:BS:59:MET:HE1   | 1.69                     | 0.74              |
| 52:BW:22:LEU:O    | 52:BW:22:LEU:HD23  | 1.87                     | 0.74              |
| 57:BZ:39:GLN:C    | 57:BZ:40:GLU:HG3   | 2.11                     | 0.74              |
| 57:BZ:122:LYS:NZ  | 57:BZ:153:ALA:HB1  | 2.02                     | 0.74              |
| 57:BZ:549:SER:CB  | 57:BZ:550:GLY:HA2  | 2.17                     | 0.74              |
| 57:BZ:560:PRO:HB3 | 57:BZ:562:ARG:CB   | 2.14                     | 0.74              |
| 1:AA:59:U:O4'     | 1:AA:73:A:C2       | 2.39                     | 0.74              |
| 1:AA:219:G:H8     | 1:AA:219:G:O5'     | 1.68                     | 0.74              |
| 1:AA:239:U:H2'    | 1:AA:240:G:O4'     | 1.88                     | 0.74              |
| 1:AA:559:G:C2'    | 1:AA:560:C:C6      | 2.66                     | 0.74              |
| 1:AA:572:A:H2     | 1:AA:2033:A:N1     | 1.86                     | 0.74              |
| 1:AA:643:A:H1'    | 1:AA:644:A:N7      | 2.02                     | 0.74              |
| 1:AA:1057:A:C8    | 1:AA:1084:A:N6     | 2.56                     | 0.74              |
| 1:AA:1158:C:H4'   | 24:AZ:32:GLN:NE2   | 2.02                     | 0.74              |
| 1:AA:1707:G:H2'   | 1:AA:1708:C:C6     | 2.22                     | 0.74              |
| 1:AA:1825:A:N6    | 1:AA:1826:G:O6     | 2.20                     | 0.74              |
| 1:AA:2556:C:H4'   | 57:BZ:550:GLY:C    | 2.13                     | 0.74              |
| 1:AA:2687:U:O2    | 1:AA:2688:U:H6     | 1.71                     | 0.74              |
| 1:AA:2716:U:O2'   | 1:AA:2717:G:H5'    | 1.87                     | 0.74              |
| 4:AD:72:LYS:HD3   | 4:AD:75:ILE:HD12   | 1.68                     | 0.74              |
| 4:AD:81:ALA:HA    | 4:AD:113:VAL:HG22  | 1.68                     | 0.74              |
| 5:AE:51:PHE:CZ    | 5:AE:75:VAL:HG22   | 2.22                     | 0.74              |
| 5:AE:197:ILE:HD13 | 5:AE:199:ARG:HH21  | 1.52                     | 0.74              |
| 6:AF:37:VAL:HG12  | 6:AF:41:LEU:HD23   | 1.68                     | 0.74              |
| 7:AG:71:THR:HG22  | 7:AG:71:THR:O      | 1.86                     | 0.74              |
| 7:AG:124:SER:O    | 7:AG:132:ASN:HB3   | 1.87                     | 0.74              |
| 7:AG:125:PHE:HA   | 7:AG:132:ASN:HB3   | 1.70                     | 0.74              |
| 8:AH:140:LYS:HA   | 8:AH:143:GLN:NE2   | 2.03                     | 0.74              |
| 10:AL:90:GLN:O    | 10:AL:91:LEU:C     | 2.29                     | 0.74              |
| 12:AN:50:ALA:HB2  | 12:AN:125:LEU:HD11 | 1.70                     | 0.74              |
| 12:AN:54:MET:SD   | 12:AN:121:ALA:HB2  | 2.27                     | 0.74              |
| 16:AR:98:LEU:HB3  | 16:AR:105:VAL:HG11 | 1.68                     | 0.74              |
| 18:AT:18:ARG:HB2  | 18:AT:18:ARG:HH21  | 1.52                     | 0.74              |
| 20:AV:9:LYS:HB2   | 20:AV:110:GLU:CD   | 2.12                     | 0.74              |
| 23:AY:52:ILE:CA   | 23:AY:55:LEU:HD22  | 2.14                     | 0.74              |
| 26:Ab:17:ASP:O    | 26:Ab:21:SER:OG    | 2.06                     | 0.74              |
| 27:Ac:16:CYS:SG   | 27:Ac:19:ARG:NH1   | 2.61                     | 0.74              |
| 33:Ag:325:UNK:O   | 33:Ag:327:UNK:N    | 2.20                     | 0.74              |
| 34:BA:272:C:H2'   | 34:BA:273:A:C8     | 2.23                     | 0.74              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BA:274:A:O2'    | 34:BA:275:G:C1'   | 2.35                     | 0.74              |
| 34:BA:438:G:N2     | 34:BA:495:A:H8    | 1.86                     | 0.74              |
| 34:BA:1047:G:H5''  | 47:BR:4:LYS:HD3   | 1.70                     | 0.74              |
| 34:BA:1057:G:H2'   | 34:BA:1058:G:H8   | 1.51                     | 0.74              |
| 34:BA:1311:G:C4    | 34:BA:1327:C:C1'  | 2.71                     | 0.74              |
| 35:BF:115:LEU:O    | 35:BF:118:LEU:HB3 | 1.88                     | 0.74              |
| 40:BK:38:LEU:O     | 40:BK:41:ARG:HB2  | 1.87                     | 0.74              |
| 42:BM:96:LEU:O     | 42:BM:100:GLY:HA3 | 1.88                     | 0.74              |
| 44:BO:19:ALA:HB2   | 44:BO:80:VAL:HG21 | 1.68                     | 0.74              |
| 49:BT:35:LYS:NZ    | 49:BT:37:GLY:N    | 2.36                     | 0.74              |
| 49:BT:44:THR:HG23  | 49:BT:45:THR:HG23 | 1.70                     | 0.74              |
| 53:BX:87:LYS:HA    | 53:BX:87:LYS:CE   | 2.18                     | 0.74              |
| 55:BC:27:G:H2'     | 55:BC:28:G:H8     | 1.53                     | 0.74              |
| 57:BZ:4:LYS:O      | 57:BZ:68:TYR:CD1  | 2.40                     | 0.74              |
| 57:BZ:124:ILE:HD13 | 57:BZ:161:ALA:HB2 | 1.68                     | 0.74              |
| 57:BZ:405:LEU:HD11 | 57:BZ:464:LEU:N   | 1.22                     | 0.74              |
| 57:BZ:547:ARG:HD3  | 57:BZ:548:ALA:HB2 | 1.60                     | 0.74              |
| 1:AA:5:A:C2        | 1:AA:2899:G:C5    | 2.74                     | 0.74              |
| 1:AA:84:A:O2'      | 1:AA:103:A:N1     | 2.20                     | 0.74              |
| 1:AA:244:A:N6      | 1:AA:245:G:N3     | 2.36                     | 0.74              |
| 1:AA:531:C:N3      | 16:AR:38:THR:HG22 | 2.03                     | 0.74              |
| 1:AA:630:G:H2'     | 1:AA:632:A:OP2    | 1.88                     | 0.74              |
| 1:AA:697:C:C2'     | 1:AA:698:C:H5''   | 2.17                     | 0.74              |
| 1:AA:727:A:H2'     | 1:AA:728:G:H5'    | 1.69                     | 0.74              |
| 1:AA:875:G:N2      | 1:AA:902:C:C1'    | 2.51                     | 0.74              |
| 1:AA:997:G:H5''    | 16:AR:92:ARG:HD2  | 1.70                     | 0.74              |
| 1:AA:1072:C:H2'    | 1:AA:1093:G:C5    | 2.22                     | 0.74              |
| 1:AA:1163:G:C2     | 1:AA:1164:G:C8    | 2.76                     | 0.74              |
| 1:AA:1197:G:C5     | 1:AA:1198:U:C5    | 2.76                     | 0.74              |
| 1:AA:1670:C:P      | 1:AA:1671:U:H5    | 2.10                     | 0.74              |
| 1:AA:1943:U:H4'    | 1:AA:1944:U:C5'   | 2.18                     | 0.74              |
| 1:AA:2121:G:H2'    | 1:AA:2122:U:C6    | 2.23                     | 0.74              |
| 1:AA:2586:C:H2'    | 1:AA:2587:A:C8    | 2.23                     | 0.74              |
| 1:AA:2676:C:H2'    | 1:AA:2677:G:C8    | 2.21                     | 0.74              |
| 1:AA:2809:A:OP1    | 1:AA:2809:A:H3'   | 1.87                     | 0.74              |
| 3:AC:43:VAL:HG12   | 3:AC:213:TYR:O    | 1.85                     | 0.74              |
| 5:AE:60:ASN:CG     | 5:AE:61:ARG:N     | 2.44                     | 0.74              |
| 5:AE:93:VAL:HG12   | 5:AE:177:PRO:O    | 1.88                     | 0.74              |
| 7:AG:116:ASP:HB3   | 7:AG:118:ARG:NH2  | 2.01                     | 0.74              |
| 8:AH:94:TYR:H      | 8:AH:95:ARG:HH21  | 1.36                     | 0.74              |
| 10:AL:18:LYS:HB3   | 10:AL:45:GLU:CG   | 2.14                     | 0.74              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AL:25:LEU:CB    | 10:AL:38:VAL:O     | 2.28                     | 0.74              |
| 10:AL:94:ARG:CG    | 10:AL:96:THR:H     | 2.01                     | 0.74              |
| 12:AN:42:ILE:O     | 12:AN:94:VAL:HB    | 1.87                     | 0.74              |
| 14:AP:9:ARG:HA     | 14:AP:12:PHE:CE2   | 2.22                     | 0.74              |
| 18:AT:59:VAL:HA    | 18:AT:63:ASP:CA    | 2.13                     | 0.74              |
| 19:AU:63:LYS:NZ    | 19:AU:63:LYS:HA    | 2.03                     | 0.74              |
| 21:AW:6:LYS:HD2    | 21:AW:35:ARG:HD3   | 1.70                     | 0.74              |
| 23:AY:20:VAL:CB    | 23:AY:55:LEU:HD23  | 2.18                     | 0.74              |
| 29:Ae:13:ARG:O     | 29:Ae:14:VAL:HB    | 1.86                     | 0.74              |
| 32:AJ:59:ILE:HD13  | 32:AJ:59:ILE:N     | 2.03                     | 0.74              |
| 34:BA:112:G:C5'    | 34:BA:389:A:H4'    | 2.16                     | 0.74              |
| 34:BA:301:G:N2     | 34:BA:302:G:H1'    | 2.02                     | 0.74              |
| 34:BA:754:C:H2'    | 34:BA:755:G:OP1    | 1.87                     | 0.74              |
| 34:BA:923:A:OP1    | 38:BI:21:ALA:HB2   | 1.88                     | 0.74              |
| 34:BA:1110:A:H2'   | 34:BA:1111:A:C5'   | 2.16                     | 0.74              |
| 34:BA:1128:C:H1'   | 34:BA:1146:A:N6    | 2.02                     | 0.74              |
| 34:BA:1144:G:N2    | 34:BA:1146:A:H62   | 1.84                     | 0.74              |
| 34:BA:1239:A:H1'   | 34:BA:1241:G:C8    | 2.22                     | 0.74              |
| 34:BA:1245:A:H2'   | 34:BA:1246:C:H6    | 1.47                     | 0.74              |
| 34:BA:1364:U:O2'   | 34:BA:1365:G:OP1   | 2.06                     | 0.74              |
| 35:BF:15:VAL:HG23  | 35:BF:16:HIS:ND1   | 2.03                     | 0.74              |
| 36:BG:130:VAL:O    | 36:BG:133:ALA:HB3  | 1.86                     | 0.74              |
| 36:BG:152:ILE:HG22 | 36:BG:167:TRP:HB2  | 1.70                     | 0.74              |
| 37:BH:18:LYS:CG    | 37:BH:33:MET:HB3   | 2.16                     | 0.74              |
| 38:BI:81:GLU:HB3   | 38:BI:90:VAL:HG22  | 1.70                     | 0.74              |
| 41:BL:11:THR:HA    | 41:BL:14:ARG:NH1   | 2.03                     | 0.74              |
| 46:BQ:48:LEU:HD22  | 46:BQ:53:VAL:HG22  | 1.70                     | 0.74              |
| 46:BQ:65:LYS:CG    | 46:BQ:69:GLU:HB3   | 2.18                     | 0.74              |
| 51:BV:29:PHE:CE2   | 51:BV:39:VAL:HG11  | 2.23                     | 0.74              |
| 55:BC:14:A:H3'     | 55:BC:15:G:C8      | 2.23                     | 0.74              |
| 56:BD:27:G:H21     | 56:BD:43:C:H5      | 1.36                     | 0.74              |
| 57:BZ:180:ALA:HB3  | 57:BZ:181:GLU:CB   | 2.18                     | 0.74              |
| 57:BZ:213:ASP:OD1  | 57:BZ:221:ILE:HB   | 1.87                     | 0.74              |
| 57:BZ:400:TYR:CZ   | 57:BZ:444:PRO:CG   | 2.70                     | 0.74              |
| 57:BZ:427:LYS:CG   | 57:BZ:442:VAL:HG21 | 2.17                     | 0.74              |
| 57:BZ:446:ARG:C    | 57:BZ:480:VAL:HG11 | 2.13                     | 0.74              |
| 1:AA:172:C:C4      | 1:AA:173:G:N7      | 2.56                     | 0.74              |
| 1:AA:220:G:N2      | 1:AA:265:A:H61     | 1.85                     | 0.74              |
| 1:AA:456:C:C5      | 19:AU:68:ARG:NH1   | 2.55                     | 0.74              |
| 1:AA:1049:C:H5     | 1:AA:2751:G:O6     | 1.68                     | 0.74              |
| 1:AA:1534:G:N2     | 1:AA:1537:C:H5     | 1.85                     | 0.74              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1924:C:H2'    | 1:AA:1925:C:C6     | 2.23                     | 0.74              |
| 1:AA:1935:G:HO2'   | 1:AA:1937:A:H2     | 0.77                     | 0.74              |
| 1:AA:2016:U:H5''   | 1:AA:2058:A:OP1    | 1.87                     | 0.74              |
| 1:AA:2054:A:H62    | 1:AA:2577:A:H61    | 1.36                     | 0.74              |
| 1:AA:2227:A:H2'    | 1:AA:2228:G:O4'    | 1.86                     | 0.74              |
| 1:AA:2357:U:H2'    | 1:AA:2358:G:C5'    | 2.18                     | 0.74              |
| 1:AA:2497:A:O2'    | 1:AA:2498:C:O5'    | 2.06                     | 0.74              |
| 1:AA:2506:U:H6     | 59:AA:3002:8AN:N3' | 1.82                     | 0.74              |
| 1:AA:2562:U:H1'    | 10:AL:23:ARG:HH21  | 1.51                     | 0.74              |
| 2:AB:25:A:H2'      | 2:AB:26:A:C8       | 2.23                     | 0.74              |
| 3:AC:43:VAL:CG2    | 3:AC:224:ILE:HG21  | 2.18                     | 0.74              |
| 4:AD:63:ARG:HH11   | 4:AD:87:ASN:HD21   | 1.35                     | 0.74              |
| 4:AD:133:LEU:HB2   | 4:AD:187:GLY:HA2   | 1.69                     | 0.74              |
| 5:AE:182:LEU:CD2   | 5:AE:184:VAL:HG13  | 2.18                     | 0.74              |
| 9:AK:13:TRP:O      | 9:AK:138:LEU:HD12  | 1.87                     | 0.74              |
| 11:AM:79:ARG:O     | 11:AM:83:VAL:HG13  | 1.88                     | 0.74              |
| 11:AM:91:PHE:H     | 11:AM:125:VAL:CG1  | 2.01                     | 0.74              |
| 15:AQ:17:THR:HB    | 15:AQ:20:PRO:CD    | 2.18                     | 0.74              |
| 20:AV:42:VAL:CG2   | 20:AV:61:ILE:HG21  | 2.18                     | 0.74              |
| 20:AV:86:ARG:HG2   | 20:AV:91:GLU:CB    | 2.18                     | 0.74              |
| 23:AY:36:ILE:HG12  | 23:AY:37:GLY:N     | 2.01                     | 0.74              |
| 27:Ac:19:ARG:CZ    | 27:Ac:41:PRO:HG3   | 2.17                     | 0.74              |
| 32:AJ:104:VAL:HG11 | 32:AJ:127:ILE:CB   | 2.17                     | 0.74              |
| 34:BA:49:U:C2      | 34:BA:364:A:N6     | 2.48                     | 0.74              |
| 34:BA:110:C:O2'    | 34:BA:111:G:H5'    | 1.88                     | 0.74              |
| 34:BA:116:A:OP2    | 34:BA:289:G:H5''   | 1.88                     | 0.74              |
| 34:BA:410:G:H1'    | 34:BA:432:A:N6     | 2.02                     | 0.74              |
| 34:BA:728:A:C8     | 48:BS:54:ARG:CZ    | 2.71                     | 0.74              |
| 34:BA:745:C:OP1    | 34:BA:851:G:O2'    | 2.04                     | 0.74              |
| 34:BA:761:G:C4'    | 50:BU:103:GLY:H    | 2.00                     | 0.74              |
| 34:BA:854:G:C5'    | 34:BA:871:U:H3     | 2.01                     | 0.74              |
| 34:BA:894:G:C4     | 34:BA:895:G:C8     | 2.76                     | 0.74              |
| 34:BA:948:C:P      | 46:BQ:109:THR:OG1  | 2.46                     | 0.74              |
| 34:BA:1125:U:H5'   | 43:BN:38:ILE:HD13  | 1.58                     | 0.74              |
| 34:BA:1148:U:O2    | 34:BA:1148:U:H2'   | 1.87                     | 0.74              |
| 34:BA:1318:A:O3'   | 52:BW:12:ASP:OD1   | 1.96                     | 0.74              |
| 34:BA:1441:G:C2    | 34:BA:1460:A:N6    | 2.54                     | 0.74              |
| 35:BF:74:LYS:NZ    | 35:BF:76:GLN:HB2   | 2.03                     | 0.74              |
| 36:BG:91:LEU:HD23  | 36:BG:91:LEU:C     | 2.13                     | 0.74              |
| 39:BJ:8:ILE:HG22   | 39:BJ:88:VAL:HA    | 1.70                     | 0.74              |
| 39:BJ:26:ILE:HG22  | 39:BJ:30:LEU:HD11  | 1.70                     | 0.74              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 40:BK:62:PHE:HA    | 40:BK:124:LEU:HD21 | 1.68                     | 0.74              |
| 41:BL:55:GLY:O     | 41:BL:57:PRO:HD3   | 1.88                     | 0.74              |
| 41:BL:122:ARG:HA   | 41:BL:125:ARG:NH1  | 2.03                     | 0.74              |
| 44:BO:104:GLN:HE22 | 44:BO:106:LYS:H    | 1.31                     | 0.74              |
| 45:BP:85:ILE:CD1   | 45:BP:99:HIS:N     | 2.50                     | 0.74              |
| 48:BS:5:LYS:HB2    | 48:BS:5:LYS:NZ     | 2.03                     | 0.74              |
| 50:BU:66:SER:CB    | 50:BU:69:LYS:HZ3   | 2.01                     | 0.74              |
| 56:BD:50:U:C4      | 56:BD:65:G:C2      | 2.75                     | 0.74              |
| 57:BZ:80:ASP:N     | 57:BZ:82:GLY:H     | 1.86                     | 0.74              |
| 57:BZ:253:LYS:NZ   | 57:BZ:269:GLU:HB3  | 2.03                     | 0.74              |
| 57:BZ:419:LEU:HD12 | 57:BZ:441:TYR:CG   | 2.23                     | 0.74              |
| 1:AA:752:A:N6      | 1:AA:1781:C:C1'    | 2.51                     | 0.74              |
| 1:AA:1476:C:C5     | 1:AA:1477:A:N6     | 2.56                     | 0.74              |
| 1:AA:1513:C:N3     | 1:AA:1514:U:O4     | 2.20                     | 0.74              |
| 1:AA:1706:U:H2'    | 1:AA:1706:U:O2     | 1.86                     | 0.74              |
| 1:AA:1712:C:H2'    | 1:AA:1716:U:H6     | 1.53                     | 0.74              |
| 1:AA:1716:U:O2     | 1:AA:1716:U:C2'    | 2.36                     | 0.74              |
| 1:AA:1931:U:O2'    | 1:AA:1932:A:H5'    | 1.86                     | 0.74              |
| 1:AA:1987:G:C2     | 1:AA:1988:C:C5     | 2.76                     | 0.74              |
| 1:AA:2123:G:H1'    | 3:AC:215:THR:CG2   | 2.18                     | 0.74              |
| 1:AA:2135:A:C4'    | 1:AA:2136:C:H5     | 2.01                     | 0.74              |
| 1:AA:2520:C:C5     | 1:AA:2567:G:C4     | 2.76                     | 0.74              |
| 1:AA:2619:C:H5''   | 5:AE:152:LYS:HB2   | 1.69                     | 0.74              |
| 1:AA:2853:C:H2'    | 1:AA:2854:G:H8     | 1.53                     | 0.74              |
| 2:AB:9:G:N3        | 2:AB:9:G:H2'       | 2.01                     | 0.74              |
| 3:AC:59:ARG:HH11   | 3:AC:164:ARG:HG2   | 1.52                     | 0.74              |
| 4:AD:60:ARG:HA     | 4:AD:62:TYR:CZ     | 2.23                     | 0.74              |
| 4:AD:176:ARG:NH2   | 4:AD:182:LEU:HD11  | 2.03                     | 0.74              |
| 5:AE:81:ILE:HG22   | 5:AE:82:ARG:HG2    | 1.70                     | 0.74              |
| 5:AE:121:ASN:HB3   | 5:AE:122:PHE:CD1   | 2.22                     | 0.74              |
| 7:AG:40:ASN:HD22   | 7:AG:41:GLN:H      | 1.36                     | 0.74              |
| 7:AG:75:LYS:CD     | 7:AG:85:GLY:H      | 2.00                     | 0.74              |
| 8:AH:118:PRO:HD2   | 8:AH:121:ILE:CD1   | 2.18                     | 0.74              |
| 10:AL:39:ILE:O     | 10:AL:59:LYS:NZ    | 2.21                     | 0.74              |
| 13:AO:45:ARG:HG2   | 13:AO:46:GLY:N     | 2.02                     | 0.74              |
| 13:AO:74:LYS:HB2   | 13:AO:74:LYS:NZ    | 2.01                     | 0.74              |
| 14:AP:28:VAL:HG22  | 14:AP:29:PHE:N     | 2.01                     | 0.74              |
| 14:AP:52:SER:HB3   | 14:AP:69:VAL:HG13  | 1.70                     | 0.74              |
| 16:AR:63:VAL:O     | 16:AR:64:ARG:C     | 2.30                     | 0.74              |
| 16:AR:94:ASN:HD22  | 17:AS:6:LYS:CE     | 2.00                     | 0.74              |
| 16:AR:110:VAL:HG12 | 16:AR:111:GLU:N    | 2.03                     | 0.74              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AS:91:TYR:O     | 17:AS:92:THR:HB    | 1.87                     | 0.74              |
| 23:AY:58:VAL:HG22  | 23:AY:59:LEU:N     | 2.00                     | 0.74              |
| 24:AZ:31:LEU:HB3   | 24:AZ:32:GLN:NE2   | 2.02                     | 0.74              |
| 32:AJ:51:ALA:C     | 32:AJ:76:TYR:HB3   | 2.13                     | 0.74              |
| 34:BA:335:C:O2'    | 34:BA:1433:A:N3    | 2.21                     | 0.74              |
| 34:BA:479:C:O5'    | 34:BA:479:C:H6     | 1.71                     | 0.74              |
| 34:BA:886:G:C2'    | 34:BA:887:G:H5'    | 2.18                     | 0.74              |
| 34:BA:915:A:H2'    | 34:BA:916:G:C5'    | 2.17                     | 0.74              |
| 34:BA:1158:C:HO2'  | 35:BF:133:LYS:HZ2  | 0.84                     | 0.74              |
| 34:BA:1317:C:HO2'  | 34:BA:1318:A:H5'   | 0.91                     | 0.74              |
| 34:BA:1346:A:N6    | 34:BA:1374:A:H3'   | 2.03                     | 0.74              |
| 34:BA:1512:U:H2'   | 34:BA:1513:A:C8    | 2.23                     | 0.74              |
| 35:BF:101:MET:CA   | 35:BF:108:ILE:HG13 | 2.18                     | 0.74              |
| 39:BJ:73:ASN:O     | 39:BJ:76:ALA:HB3   | 1.88                     | 0.74              |
| 40:BK:35:LYS:HZ3   | 40:BK:38:LEU:HD22  | 1.49                     | 0.74              |
| 40:BK:149:ARG:HB3  | 44:BO:59:TYR:CZ    | 2.23                     | 0.74              |
| 44:BO:48:ILE:HD11  | 44:BO:64:ALA:HB2   | 1.67                     | 0.74              |
| 44:BO:95:ILE:HG23  | 44:BO:98:LEU:HD12  | 1.70                     | 0.74              |
| 45:BP:24:VAL:CG2   | 45:BP:97:ARG:HG2   | 2.17                     | 0.74              |
| 45:BP:68:ALA:HB1   | 45:BP:98:TYR:C     | 2.13                     | 0.74              |
| 50:BU:7:THR:CG2    | 50:BU:8:GLY:N      | 2.50                     | 0.74              |
| 50:BU:40:LYS:HB3   | 50:BU:40:LYS:NZ    | 2.01                     | 0.74              |
| 51:BV:86:VAL:O     | 51:BV:87:ARG:HB2   | 1.88                     | 0.74              |
| 52:BW:32:LYS:CB    | 52:BW:50:ALA:HB3   | 2.17                     | 0.74              |
| 56:BD:47:U:C2'     | 56:BD:48:C:H5''    | 2.18                     | 0.74              |
| 57:BZ:488:LEU:HD21 | 57:BZ:527:HIS:N    | 2.03                     | 0.74              |
| 1:AA:270(C):C:O2'  | 1:AA:270(D):C:H5'  | 1.88                     | 0.73              |
| 1:AA:455:C:C4'     | 1:AA:456:C:OP1     | 2.36                     | 0.73              |
| 1:AA:546:C:H2'     | 1:AA:547:A:N9      | 2.03                     | 0.73              |
| 1:AA:792:G:H21     | 1:AA:2072:G:H1'    | 1.53                     | 0.73              |
| 1:AA:1055:G:H4'    | 31:AI:33:PRO:HA    | 1.70                     | 0.73              |
| 1:AA:1077:A:N6     | 1:AA:1088:A:H4'    | 2.02                     | 0.73              |
| 1:AA:1080:C:C1'    | 32:AJ:129:GLY:N    | 2.51                     | 0.73              |
| 1:AA:1104:C:O2'    | 1:AA:1106:G:OP2    | 2.05                     | 0.73              |
| 1:AA:1128:A:N6     | 1:AA:2518:A:N6     | 2.14                     | 0.73              |
| 1:AA:1206:G:C8     | 1:AA:1206:G:C3'    | 2.70                     | 0.73              |
| 1:AA:1583:A:C5'    | 1:AA:1585:C:H5'    | 2.18                     | 0.73              |
| 1:AA:1602:U:O5'    | 1:AA:1602:U:C2     | 2.41                     | 0.73              |
| 1:AA:1775:U:C2     | 4:AD:208:LYS:HD2   | 2.23                     | 0.73              |
| 1:AA:2132:U:H5''   | 1:AA:2133:G:H5'    | 1.69                     | 0.73              |
| 1:AA:2177:C:O2'    | 3:AC:211:SER:OG    | 2.05                     | 0.73              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2246:G:N2    | 1:AA:2247:A:C4     | 2.55                     | 0.73              |
| 1:AA:2305:A:C2'   | 1:AA:2306:C:H5''   | 2.18                     | 0.73              |
| 1:AA:2746:U:O4    | 1:AA:2756:U:C4     | 2.40                     | 0.73              |
| 1:AA:2900:A:H2'   | 1:AA:2901:C:H6     | 1.54                     | 0.73              |
| 2:AB:78:A:C2'     | 2:AB:79:C:H5'      | 2.18                     | 0.73              |
| 2:AB:100:G:H2'    | 2:AB:101:A:H8      | 1.49                     | 0.73              |
| 3:AC:46:LYS:O     | 3:AC:210:ARG:CB    | 2.33                     | 0.73              |
| 3:AC:53:ARG:O     | 3:AC:55:ASP:N      | 2.21                     | 0.73              |
| 7:AG:32:PRO:HG2   | 7:AG:172:LEU:HB2   | 1.70                     | 0.73              |
| 7:AG:96:ARG:HD3   | 7:AG:97:ASP:OD1    | 1.87                     | 0.73              |
| 10:AL:68:GLU:HG2  | 10:AL:76:ALA:C     | 2.13                     | 0.73              |
| 11:AM:74:GLU:CA   | 11:AM:107:LYS:HD3  | 2.17                     | 0.73              |
| 13:AO:94:TYR:C    | 13:AO:117:VAL:HG12 | 2.13                     | 0.73              |
| 20:AV:1:MET:CA    | 20:AV:33:LYS:HE3   | 2.17                     | 0.73              |
| 26:Ab:18:ALA:O    | 26:Ab:21:SER:OG    | 2.04                     | 0.73              |
| 27:Ac:44:ARG:HB2  | 27:Ac:47:THR:HG21  | 1.70                     | 0.73              |
| 28:Ad:41:ARG:CB   | 28:Ad:41:ARG:NH1   | 2.51                     | 0.73              |
| 34:BA:9:G:OP2     | 38:BI:121:LYS:HD2  | 1.86                     | 0.73              |
| 34:BA:17:U:H2'    | 34:BA:18:C:H6      | 1.53                     | 0.73              |
| 34:BA:1413:A:H2   | 34:BA:1487:G:H21   | 1.32                     | 0.73              |
| 35:BF:84:GLU:OE2  | 35:BF:219:VAL:HG21 | 1.87                     | 0.73              |
| 36:BG:88:ARG:HB2  | 36:BG:101:LEU:HB2  | 1.67                     | 0.73              |
| 36:BG:125:GLU:OE1 | 36:BG:190:ARG:HB2  | 1.87                     | 0.73              |
| 38:BI:80:ILE:O    | 38:BI:90:VAL:HA    | 1.88                     | 0.73              |
| 40:BK:74:GLU:HG2  | 40:BK:75:VAL:N     | 2.02                     | 0.73              |
| 42:BM:115:GLY:O   | 42:BM:117:HIS:N    | 2.21                     | 0.73              |
| 44:BO:18:ARG:HD3  | 44:BO:34:ASP:O     | 1.87                     | 0.73              |
| 44:BO:32:ILE:HD11 | 44:BO:68:ALA:O     | 1.88                     | 0.73              |
| 47:BR:55:GLY:O    | 47:BR:56:VAL:C     | 2.31                     | 0.73              |
| 49:BT:67:THR:HB   | 49:BT:70:ALA:HB2   | 1.68                     | 0.73              |
| 52:BW:45:VAL:HA   | 52:BW:67:VAL:HG21  | 1.70                     | 0.73              |
| 56:BD:67:C:H5     | 56:BD:68:C:C5      | 1.76                     | 0.73              |
| 57:BZ:82:GLY:HA3  | 57:BZ:361:ARG:HB3  | 1.67                     | 0.73              |
| 57:BZ:364:LEU:O   | 57:BZ:367:SER:OG   | 2.01                     | 0.73              |
| 1:AA:248:G:N3     | 1:AA:2431:U:C5'    | 2.51                     | 0.73              |
| 1:AA:351:G:C1'    | 1:AA:352:G:N7      | 2.51                     | 0.73              |
| 1:AA:618:G:H2'    | 1:AA:618(A):C:C6   | 2.22                     | 0.73              |
| 1:AA:878:A:C4     | 1:AA:898:C:N4      | 2.56                     | 0.73              |
| 1:AA:1316:U:O2'   | 1:AA:1317:A:H5'    | 1.88                     | 0.73              |
| 1:AA:1406:U:O2'   | 1:AA:1407:C:O5'    | 2.02                     | 0.73              |
| 1:AA:1774:C:C4    | 4:AD:18:VAL:HG11   | 2.23                     | 0.73              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1839:G:C8     | 1:AA:1927:A:O4'    | 2.41                     | 0.73              |
| 1:AA:2162:G:C2'    | 1:AA:2163:C:H5'    | 2.18                     | 0.73              |
| 1:AA:2619:C:O2'    | 1:AA:2620:C:H5'    | 1.86                     | 0.73              |
| 1:AA:2684:U:O2'    | 10:AL:67:LYS:HG3   | 1.88                     | 0.73              |
| 1:AA:2776:A:H4'    | 1:AA:2777:G:O5'    | 1.88                     | 0.73              |
| 1:AA:2795:G:H2'    | 1:AA:2795:G:N3     | 2.02                     | 0.73              |
| 1:AA:2820:A:O3'    | 13:AO:4:LEU:HD22   | 1.87                     | 0.73              |
| 6:AF:123:LEU:HD12  | 6:AF:193:VAL:CG2   | 2.18                     | 0.73              |
| 6:AF:188:ARG:HG2   | 6:AF:188:ARG:HH21  | 1.52                     | 0.73              |
| 8:AH:87:LEU:H      | 8:AH:132:ARG:HB3   | 1.52                     | 0.73              |
| 9:AK:42:TRP:CZ3    | 16:AR:67:ALA:HB1   | 2.22                     | 0.73              |
| 10:AL:59:LYS:HA    | 10:AL:86:ILE:CD1   | 2.15                     | 0.73              |
| 12:AN:89:ASN:N     | 12:AN:89:ASN:HD22  | 1.85                     | 0.73              |
| 15:AQ:17:THR:CB    | 15:AQ:20:PRO:HD3   | 2.17                     | 0.73              |
| 15:AQ:103:ARG:C    | 15:AQ:105:LEU:N    | 2.42                     | 0.73              |
| 21:AW:77:ASP:OD2   | 21:AW:80:ARG:HD3   | 1.88                     | 0.73              |
| 21:AW:161:VAL:HG12 | 21:AW:162:GLU:N    | 2.03                     | 0.73              |
| 25:Aa:56:VAL:O     | 25:Aa:61:ARG:NH2   | 2.20                     | 0.73              |
| 32:AJ:19:PRO:CD    | 32:AJ:38:VAL:H     | 1.94                     | 0.73              |
| 33:Ag:7:UNK:O      | 33:Ag:148:UNK:CA   | 2.36                     | 0.73              |
| 34:BA:186(A):C:H2' | 34:BA:186(B):C:O4' | 1.87                     | 0.73              |
| 34:BA:528:C:N4     | 45:BP:49:ASN:ND2   | 2.35                     | 0.73              |
| 34:BA:582:U:H5''   | 48:BS:68:ARG:HH12  | 1.52                     | 0.73              |
| 34:BA:1321:C:O5'   | 34:BA:1321:C:H6    | 1.71                     | 0.73              |
| 34:BA:1394:A:N7    | 34:BA:1501:C:C1'   | 2.51                     | 0.73              |
| 35:BF:42:ILE:HD11  | 35:BF:202:PRO:CB   | 2.17                     | 0.73              |
| 36:BG:120:VAL:HG21 | 36:BG:137:ALA:CB   | 2.18                     | 0.73              |
| 38:BI:82:VAL:HG21  | 38:BI:137:GLU:HB3  | 1.70                     | 0.73              |
| 39:BJ:95:GLU:OE2   | 39:BJ:96:PRO:HD3   | 1.88                     | 0.73              |
| 40:BK:51:GLN:OE1   | 40:BK:58:PRO:HD3   | 1.88                     | 0.73              |
| 41:BL:104:ARG:O    | 41:BL:106:GLY:N    | 2.20                     | 0.73              |
| 44:BO:67:ASP:O     | 44:BO:71:LYS:HG2   | 1.86                     | 0.73              |
| 44:BO:102:GLY:C    | 44:BO:104:GLN:N    | 2.40                     | 0.73              |
| 47:BR:40:CYS:N     | 47:BR:43:CYS:SG    | 2.59                     | 0.73              |
| 53:BX:23:ARG:O     | 53:BX:26:ASN:ND2   | 2.20                     | 0.73              |
| 57:BZ:64:ILE:CD1   | 57:BZ:187:TYR:C    | 2.61                     | 0.73              |
| 57:BZ:157:GLN:O    | 57:BZ:159:ASP:HB3  | 1.87                     | 0.73              |
| 57:BZ:167:ALA:CB   | 60:BZ:701:GCP:N1   | 2.49                     | 0.73              |
| 57:BZ:564:THR:CB   | 57:BZ:566:GLU:HG3  | 2.18                     | 0.73              |
| 57:BZ:565:LEU:O    | 57:BZ:569:LEU:HB2  | 1.87                     | 0.73              |
| 1:AA:80:G:C1'      | 1:AA:347:A:N6      | 2.50                     | 0.73              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:534:U:O2'    | 16:AR:49:HIS:NE2  | 2.21                     | 0.73              |
| 1:AA:624:C:C6     | 1:AA:624:C:C3'    | 2.71                     | 0.73              |
| 1:AA:672:C:H2'    | 1:AA:673:C:H6     | 1.53                     | 0.73              |
| 1:AA:775:G:H5'    | 1:AA:777:A:C1'    | 2.18                     | 0.73              |
| 1:AA:836:G:C6     | 1:AA:837:C:N4     | 2.56                     | 0.73              |
| 1:AA:856:C:H1'    | 22:AX:69:PHE:CE1  | 2.23                     | 0.73              |
| 1:AA:893:C:C4     | 1:AA:894:C:C5     | 2.76                     | 0.73              |
| 1:AA:1453:A:C6    | 1:AA:1454:U:H1'   | 2.23                     | 0.73              |
| 1:AA:1464:C:H4'   | 1:AA:1528:A:H1'   | 1.70                     | 0.73              |
| 1:AA:1471:A:H2'   | 1:AA:1472:A:H5'   | 1.69                     | 0.73              |
| 1:AA:1530:G:H2'   | 1:AA:1531:C:N1    | 2.03                     | 0.73              |
| 1:AA:1729:A:N7    | 1:AA:1731:G:O6    | 2.21                     | 0.73              |
| 1:AA:1772:G:H21   | 1:AA:1774:C:H5'   | 1.52                     | 0.73              |
| 1:AA:1798:U:C5'   | 4:AD:257:LEU:HB2  | 2.18                     | 0.73              |
| 1:AA:2097:C:O2'   | 1:AA:2098:U:H5'   | 1.88                     | 0.73              |
| 1:AA:2745:C:O2'   | 8:AH:143:GLN:HG3  | 1.88                     | 0.73              |
| 3:AC:161:ILE:HG21 | 3:AC:188:ASN:HD22 | 1.52                     | 0.73              |
| 4:AD:5:LYS:C      | 4:AD:82:ILE:HD12  | 2.13                     | 0.73              |
| 4:AD:159:ALA:O    | 4:AD:196:VAL:HG11 | 1.87                     | 0.73              |
| 6:AF:158:THR:CG2  | 6:AF:195:ASP:HB2  | 2.16                     | 0.73              |
| 7:AG:88:ILE:HG22  | 7:AG:88:ILE:O     | 1.88                     | 0.73              |
| 7:AG:125:PHE:O    | 7:AG:126:ASP:HB3  | 1.87                     | 0.73              |
| 9:AK:95:PRO:HA    | 9:AK:98:VAL:HG23  | 1.70                     | 0.73              |
| 16:AR:94:ASN:HD22 | 17:AS:6:LYS:HE3   | 1.51                     | 0.73              |
| 18:AT:82:LEU:CD1  | 18:AT:84:ARG:HG3  | 2.18                     | 0.73              |
| 19:AU:12:VAL:O    | 19:AU:12:VAL:HG12 | 1.86                     | 0.73              |
| 20:AV:81:LYS:HD3  | 20:AV:96:ILE:HG13 | 1.70                     | 0.73              |
| 21:AW:4:ARG:CG    | 21:AW:5:LEU:H     | 1.98                     | 0.73              |
| 32:AJ:27:LEU:HD21 | 32:AJ:57:ILE:CA   | 2.18                     | 0.73              |
| 32:AJ:34:ILE:CD1  | 32:AJ:35:MET:H    | 2.00                     | 0.73              |
| 32:AJ:51:ALA:HB3  | 32:AJ:72:PRO:CB   | 2.18                     | 0.73              |
| 34:BA:92:G:H2'    | 34:BA:93:U:O4'    | 1.88                     | 0.73              |
| 34:BA:468:A:C4'   | 49:BT:82:GLN:HB3  | 2.18                     | 0.73              |
| 34:BA:590:C:OP1   | 41:BL:29:SER:HB3  | 1.88                     | 0.73              |
| 34:BA:610:G:C2'   | 34:BA:611:A:H5'   | 2.18                     | 0.73              |
| 34:BA:1011:G:H2'  | 34:BA:1012:U:H5'  | 1.69                     | 0.73              |
| 34:BA:1151:A:H62  | 34:BA:1152:A:N6   | 1.85                     | 0.73              |
| 34:BA:1296:C:OP1  | 46:BQ:44:ARG:CD   | 2.30                     | 0.73              |
| 34:BA:1308:U:H3'  | 34:BA:1309:G:OP1  | 1.85                     | 0.73              |
| 34:BA:1443:G:N3   | 34:BA:1443:G:H2'  | 2.02                     | 0.73              |
| 34:BA:1504:G:H4'  | 34:BA:1505:G:O5'  | 1.87                     | 0.73              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BF:77:ALA:HB2  | 35:BF:211:ILE:CD1  | 2.19                     | 0.73              |
| 37:BH:12:CYS:HB3  | 37:BH:33:MET:CE    | 2.18                     | 0.73              |
| 38:BI:11:ILE:CG2  | 38:BI:12:LEU:H     | 2.01                     | 0.73              |
| 39:BJ:24:GLU:O    | 39:BJ:27:GLN:HB2   | 1.88                     | 0.73              |
| 39:BJ:28:ARG:HG2  | 39:BJ:28:ARG:HH11  | 1.52                     | 0.73              |
| 40:BK:27:ILE:HG12 | 40:BK:43:PHE:CD1   | 2.23                     | 0.73              |
| 40:BK:66:VAL:HG12 | 40:BK:70:LYS:HE2   | 1.71                     | 0.73              |
| 40:BK:75:VAL:HG22 | 40:BK:88:PRO:CA    | 2.17                     | 0.73              |
| 41:BL:95:VAL:HB   | 41:BL:99:GLU:OE1   | 1.87                     | 0.73              |
| 42:BM:37:PHE:CE1  | 42:BM:74:ILE:HG23  | 2.22                     | 0.73              |
| 44:BO:69:ALA:HB1  | 44:BO:103:LEU:HD12 | 1.69                     | 0.73              |
| 46:BQ:15:VAL:H    | 46:BQ:34:LEU:HD21  | 1.52                     | 0.73              |
| 46:BQ:22:ILE:CB   | 46:BQ:25:ILE:HD11  | 1.99                     | 0.73              |
| 53:BX:72:LEU:CD2  | 53:BX:76:ALA:HB1   | 2.18                     | 0.73              |
| 55:BC:13:C:O2     | 55:BC:23:A:C6      | 2.41                     | 0.73              |
| 1:AA:467:G:OP1    | 28:Ad:33:ARG:NH1   | 2.21                     | 0.73              |
| 1:AA:627:A:H1'    | 1:AA:637:A:C6      | 2.23                     | 0.73              |
| 1:AA:713:G:H2'    | 1:AA:713:G:N3      | 2.03                     | 0.73              |
| 1:AA:826:U:OP1    | 1:AA:2428:G:H3'    | 1.88                     | 0.73              |
| 1:AA:901:A:C4     | 1:AA:902:C:C5      | 2.75                     | 0.73              |
| 1:AA:901:A:C2'    | 1:AA:902:C:H5'     | 2.18                     | 0.73              |
| 1:AA:1061:U:O2    | 32:AJ:11:GLN:CD    | 2.31                     | 0.73              |
| 1:AA:1078:U:H5''  | 32:AJ:137:GLU:OE1  | 1.86                     | 0.73              |
| 1:AA:1438:U:H2'   | 1:AA:1439:A:C5'    | 2.17                     | 0.73              |
| 1:AA:1556:C:H2'   | 1:AA:1557:C:H6     | 1.53                     | 0.73              |
| 1:AA:1566:A:N1    | 4:AD:215:LEU:HD13  | 2.03                     | 0.73              |
| 1:AA:2092:U:H5    | 1:AA:2227:A:N6     | 1.86                     | 0.73              |
| 1:AA:2278:A:OP1   | 12:AN:14:ARG:CG    | 2.33                     | 0.73              |
| 1:AA:2284:C:H5''  | 27:Ac:9:LEU:CD2    | 2.18                     | 0.73              |
| 1:AA:2394:C:P     | 11:AM:57:THR:HA    | 2.27                     | 0.73              |
| 1:AA:2524:G:H5'   | 1:AA:2764:A:HO2'   | 1.53                     | 0.73              |
| 1:AA:2585:U:H2'   | 1:AA:2585:U:O2     | 1.87                     | 0.73              |
| 1:AA:2670:A:N1    | 1:AA:2671:A:C5     | 2.56                     | 0.73              |
| 1:AA:2670:A:H5'   | 5:AE:206:LYS:NZ    | 1.99                     | 0.73              |
| 1:AA:2876:G:C4'   | 15:AQ:1:MET:H2     | 1.99                     | 0.73              |
| 2:AB:112:G:H5'    | 2:AB:113:C:OP2     | 1.89                     | 0.73              |
| 3:AC:40:THR:O     | 3:AC:216:THR:HG21  | 1.84                     | 0.73              |
| 4:AD:196:VAL:CG1  | 4:AD:197:GLY:N     | 2.31                     | 0.73              |
| 6:AF:110:LEU:O    | 6:AF:114:VAL:HG23  | 1.88                     | 0.73              |
| 6:AF:119:ARG:HH21 | 6:AF:119:ARG:CB    | 1.97                     | 0.73              |
| 8:AH:26:VAL:HG21  | 8:AH:75:ALA:CB     | 2.18                     | 0.73              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 9:AK:6:PRO:HA     | 9:AK:41:ASP:HB3    | 1.70                     | 0.73              |
| 9:AK:27:ALA:CA    | 9:AK:30:ILE:HD12   | 2.16                     | 0.73              |
| 10:AL:24:VAL:HG22 | 10:AL:30:ALA:HA    | 1.69                     | 0.73              |
| 12:AN:8:LYS:CE    | 12:AN:93:TYR:HB3   | 2.14                     | 0.73              |
| 12:AN:75:THR:HG22 | 12:AN:77:LYS:N     | 2.02                     | 0.73              |
| 13:AO:8:ARG:HE    | 13:AO:10:LEU:HD11  | 1.49                     | 0.73              |
| 14:AP:70:GLY:HA2  | 14:AP:73:LEU:HD22  | 1.67                     | 0.73              |
| 15:AQ:64:ARG:NE   | 15:AQ:77:PRO:HB2   | 2.03                     | 0.73              |
| 16:AR:58:ARG:O    | 16:AR:62:ILE:HG13  | 1.89                     | 0.73              |
| 17:AS:11:GLN:HB3  | 17:AS:21:ARG:HD2   | 1.70                     | 0.73              |
| 21:AW:28:MET:HA   | 21:AW:28:MET:CE    | 2.12                     | 0.73              |
| 21:AW:57:ILE:CG2  | 21:AW:58:VAL:H     | 2.00                     | 0.73              |
| 21:AW:68:PRO:HG3  | 21:AW:131:ARG:HH22 | 1.51                     | 0.73              |
| 24:AZ:11:SER:H    | 24:AZ:12:PRO:HD3   | 1.53                     | 0.73              |
| 24:AZ:50:VAL:CG1  | 24:AZ:53:LEU:HD12  | 2.16                     | 0.73              |
| 34:BA:55:A:H2'    | 34:BA:56:U:O4'     | 1.87                     | 0.73              |
| 34:BA:342:C:H2'   | 34:BA:343:U:H6     | 1.52                     | 0.73              |
| 34:BA:541:G:C4'   | 37:BH:42:GLN:HB2   | 2.18                     | 0.73              |
| 34:BA:652:U:H4'   | 34:BA:653:A:OP1    | 1.87                     | 0.73              |
| 34:BA:795:C:O4'   | 34:BA:1506:U:O2    | 2.07                     | 0.73              |
| 34:BA:1118:C:C6   | 34:BA:1179:A:C2    | 2.68                     | 0.73              |
| 34:BA:1124:G:H21  | 34:BA:1126:U:H3    | 0.81                     | 0.73              |
| 34:BA:1269:A:O2'  | 34:BA:1313:U:O2    | 1.61                     | 0.73              |
| 34:BA:1273:G:H3'  | 34:BA:1274:G:C8    | 2.23                     | 0.73              |
| 34:BA:1277:C:C4'  | 34:BA:1282:C:H1'   | 2.17                     | 0.73              |
| 34:BA:1468:A:H2'  | 34:BA:1469:G:C5'   | 2.18                     | 0.73              |
| 35:BF:80:ILE:HD11 | 35:BF:208:ILE:HG23 | 1.68                     | 0.73              |
| 37:BH:8:VAL:O     | 37:BH:11:LEU:N     | 2.21                     | 0.73              |
| 37:BH:24:GLU:C    | 37:BH:27:TYR:HB3   | 2.14                     | 0.73              |
| 42:BM:73:GLN:O    | 42:BM:77:ILE:HG13  | 1.88                     | 0.73              |
| 44:BO:85:ARG:HG3  | 44:BO:85:ARG:HH11  | 1.53                     | 0.73              |
| 45:BP:8:ASN:H     | 45:BP:8:ASN:HD22   | 1.35                     | 0.73              |
| 46:BQ:16:ASP:HB2  | 46:BQ:30:ALA:HB1   | 1.70                     | 0.73              |
| 47:BR:29:ARG:HB3  | 47:BR:29:ARG:NH1   | 2.02                     | 0.73              |
| 48:BS:15:PHE:O    | 48:BS:17:ARG:N     | 2.21                     | 0.73              |
| 50:BU:28:PRO:HB2  | 50:BU:33:GLY:O     | 1.88                     | 0.73              |
| 52:BW:11:VAL:HG12 | 52:BW:15:LEU:CB    | 2.18                     | 0.73              |
| 56:BD:5:G:C4      | 56:BD:69:G:N9      | 2.56                     | 0.73              |
| 57:BZ:316:SER:HB2 | 57:BZ:317:PRO:CD   | 2.19                     | 0.73              |
| 57:BZ:563:MET:HE2 | 57:BZ:563:MET:CA   | 2.18                     | 0.73              |
| 1:AA:2:G:C8       | 1:AA:2902:C:C2     | 2.74                     | 0.73              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:15:G:O2'     | 1:AA:16:G:H5'     | 1.88                     | 0.73              |
| 1:AA:247:G:C5     | 1:AA:249:C:O2     | 2.41                     | 0.73              |
| 1:AA:282:A:C5     | 1:AA:283:A:H4'    | 2.24                     | 0.73              |
| 1:AA:387:U:H4'    | 1:AA:388:G:O4'    | 1.88                     | 0.73              |
| 1:AA:623:G:C8     | 11:AM:105:LEU:HB2 | 2.24                     | 0.73              |
| 1:AA:814:C:H4'    | 1:AA:1224:G:N2    | 2.02                     | 0.73              |
| 1:AA:849:A:N3     | 24:AZ:21:ALA:HB1  | 2.02                     | 0.73              |
| 1:AA:1025:G:N3    | 1:AA:1025:G:H2'   | 2.02                     | 0.73              |
| 1:AA:1238:G:C2'   | 1:AA:1239:G:H5'   | 2.18                     | 0.73              |
| 1:AA:1359:A:C2'   | 1:AA:1360:A:H5'   | 2.18                     | 0.73              |
| 1:AA:1814:G:C2    | 1:AA:1815:A:N6    | 2.56                     | 0.73              |
| 1:AA:1872:A:C2'   | 1:AA:1878:G:H5'   | 2.11                     | 0.73              |
| 1:AA:2019:A:C3'   | 1:AA:2020:A:H5''  | 2.18                     | 0.73              |
| 1:AA:2110:G:H2'   | 1:AA:2120:G:O5'   | 1.86                     | 0.73              |
| 1:AA:2227:A:H1'   | 4:AD:262:ARG:NH1  | 2.04                     | 0.73              |
| 1:AA:2329:G:H1    | 1:AA:2386:C:H42   | 1.34                     | 0.73              |
| 1:AA:2459:A:C2    | 1:AA:2460:U:H1'   | 2.23                     | 0.73              |
| 1:AA:2656:U:C4    | 1:AA:2665:A:N6    | 2.56                     | 0.73              |
| 1:AA:2716:U:O2'   | 1:AA:2717:G:C5'   | 2.37                     | 0.73              |
| 2:AB:73:A:H2'     | 2:AB:74:U:C6      | 2.23                     | 0.73              |
| 4:AD:221:VAL:C    | 4:AD:222:ARG:HG3  | 2.13                     | 0.73              |
| 5:AE:77:ILE:O     | 5:AE:78:LEU:HD13  | 1.88                     | 0.73              |
| 6:AF:109:GLY:O    | 6:AF:110:LEU:C    | 2.31                     | 0.73              |
| 7:AG:17:PRO:C     | 7:AG:20:ILE:HB    | 2.14                     | 0.73              |
| 9:AK:85:ILE:HD12  | 9:AK:85:ILE:N     | 2.03                     | 0.73              |
| 9:AK:115:ARG:HA   | 9:AK:118:LYS:HD2  | 1.71                     | 0.73              |
| 12:AN:58:PHE:O    | 12:AN:60:ARG:N    | 2.21                     | 0.73              |
| 14:AP:76:LYS:HE3  | 14:AP:77:ALA:HB2  | 1.70                     | 0.73              |
| 16:AR:59:ARG:HB3  | 16:AR:59:ARG:NH1  | 2.04                     | 0.73              |
| 17:AS:78:LYS:HB2  | 17:AS:84:LYS:HB3  | 1.68                     | 0.73              |
| 21:AW:15:PRO:HB3  | 21:AW:25:PRO:HB3  | 1.70                     | 0.73              |
| 21:AW:28:MET:SD   | 21:AW:29:TYR:N    | 2.62                     | 0.73              |
| 21:AW:78:LYS:NZ   | 21:AW:78:LYS:HB3  | 2.04                     | 0.73              |
| 21:AW:165:VAL:CG1 | 21:AW:166:SER:N   | 2.50                     | 0.73              |
| 34:BA:657:G:N2    | 48:BS:22:THR:O    | 2.21                     | 0.73              |
| 34:BA:1318:A:C2'  | 52:BW:37:ARG:H    | 2.01                     | 0.73              |
| 36:BG:71:ALA:HA   | 36:BG:105:GLU:HG3 | 1.69                     | 0.73              |
| 39:BJ:47:ARG:CD   | 39:BJ:57:GLN:HB3  | 2.17                     | 0.73              |
| 46:BQ:96:LEU:HB2  | 46:BQ:97:PRO:HD3  | 1.70                     | 0.73              |
| 49:BT:21:VAL:HG13 | 49:BT:36:ILE:HD11 | 1.70                     | 0.73              |
| 52:BW:4:SER:CA    | 52:BW:5:LEU:HB3   | 2.17                     | 0.73              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 53:BX:17:ARG:O    | 53:BX:20:LEU:HB2   | 1.89                     | 0.73              |
| 57:BZ:54:ILE:CD1  | 57:BZ:211:GLN:NE2  | 2.52                     | 0.73              |
| 57:BZ:556:VAL:O   | 57:BZ:557:LEU:CB   | 2.36                     | 0.73              |
| 57:BZ:563:MET:HE2 | 57:BZ:563:MET:N    | 2.02                     | 0.73              |
| 1:AA:542:C:O2'    | 1:AA:543:C:H5'     | 1.88                     | 0.73              |
| 1:AA:580:C:H2'    | 1:AA:581:C:C6      | 2.23                     | 0.73              |
| 1:AA:815:C:H2'    | 1:AA:816:C:H5'     | 1.70                     | 0.73              |
| 1:AA:861:A:C6     | 1:AA:917:A:N3      | 2.56                     | 0.73              |
| 1:AA:917:A:C8     | 1:AA:918:A:H5''    | 2.23                     | 0.73              |
| 1:AA:1212:G:HO2'  | 1:AA:1213:A:H8     | 1.34                     | 0.73              |
| 1:AA:1365:A:N7    | 1:AA:1366:A:N7     | 2.37                     | 0.73              |
| 1:AA:1471:A:C5    | 1:AA:1521:G:N2     | 2.57                     | 0.73              |
| 1:AA:2027:G:O2'   | 1:AA:2028:U:H5'    | 1.88                     | 0.73              |
| 1:AA:2597:G:O4'   | 4:AD:242:ARG:NE    | 2.21                     | 0.73              |
| 1:AA:2660:A:N3    | 57:BZ:456:MET:HB3  | 2.02                     | 0.73              |
| 1:AA:2787:C:C5'   | 5:AE:64:LYS:HD2    | 2.18                     | 0.73              |
| 1:AA:2807:G:H3'   | 1:AA:2808:U:C5     | 2.23                     | 0.73              |
| 1:AA:2839:G:O2'   | 1:AA:2840:C:H5'    | 1.89                     | 0.73              |
| 4:AD:79:VAL:HG21  | 4:AD:112:GLN:O     | 1.87                     | 0.73              |
| 4:AD:225:ALA:HB3  | 4:AD:231:HIS:CE1   | 2.22                     | 0.73              |
| 5:AE:4:ILE:HG21   | 5:AE:30:PRO:HG3    | 1.69                     | 0.73              |
| 5:AE:102:VAL:HG23 | 5:AE:200:GLU:OE1   | 1.87                     | 0.73              |
| 5:AE:202:LYS:C    | 5:AE:204:ALA:H     | 1.94                     | 0.73              |
| 7:AG:51:ARG:HD2   | 7:AG:51:ARG:H      | 1.53                     | 0.73              |
| 7:AG:104:GLU:HG3  | 7:AG:105:LYS:N     | 2.02                     | 0.73              |
| 12:AN:78:PRO:HB3  | 12:AN:81:VAL:CG2   | 2.18                     | 0.73              |
| 13:AO:55:ALA:HA   | 13:AO:80:PHE:CD1   | 2.23                     | 0.73              |
| 14:AP:26:LEU:HD11 | 14:AP:37:ALA:HB1   | 1.70                     | 0.73              |
| 15:AQ:33:LYS:HD3  | 15:AQ:47:GLY:HA3   | 1.70                     | 0.73              |
| 15:AQ:54:ARG:HG2  | 15:AQ:100:TYR:CB   | 2.14                     | 0.73              |
| 16:AR:48:ALA:O    | 16:AR:51:LYS:HB2   | 1.86                     | 0.73              |
| 16:AR:74:LEU:CD1  | 16:AR:78:THR:HG21  | 2.19                     | 0.73              |
| 18:AT:33:ARG:HD3  | 18:AT:37:ARG:HD3   | 1.69                     | 0.73              |
| 19:AU:15:GLU:HB3  | 19:AU:16:LYS:HE2   | 1.71                     | 0.73              |
| 19:AU:60:ARG:HD3  | 19:AU:62:LYS:HZ3   | 1.52                     | 0.73              |
| 24:AZ:20:LYS:O    | 24:AZ:23:LEU:HB2   | 1.87                     | 0.73              |
| 32:AJ:12:LEU:HD11 | 32:AJ:57:ILE:HG22  | 1.71                     | 0.73              |
| 34:BA:50:A:N6     | 34:BA:361:G:C4'    | 2.50                     | 0.73              |
| 34:BA:1323:G:H4'  | 34:BA:1362(A):C:C4 | 2.23                     | 0.73              |
| 34:BA:1437:C:O2'  | 34:BA:1438:G:H5'   | 1.89                     | 0.73              |
| 35:BF:71:VAL:CG1  | 35:BF:73:THR:HG23  | 2.19                     | 0.73              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BF:91:PRO:HD3  | 35:BF:154:LEU:HD13 | 1.70                     | 0.73              |
| 35:BF:171:ALA:HA  | 35:BF:174:VAL:HB   | 1.70                     | 0.73              |
| 35:BF:189:ASP:HB2 | 35:BF:205:ASP:HB3  | 1.69                     | 0.73              |
| 36:BG:47:LEU:CD1  | 36:BG:83:ARG:HH21  | 2.01                     | 0.73              |
| 40:BK:103:TRP:HH2 | 40:BK:138:LYS:HA   | 1.49                     | 0.73              |
| 40:BK:107:ALA:O   | 40:BK:110:GLN:HB2  | 1.88                     | 0.73              |
| 41:BL:29:SER:N    | 41:BL:32:LYS:HD2   | 2.03                     | 0.73              |
| 42:BM:58:HIS:CD2  | 42:BM:59:PHE:HD1   | 2.06                     | 0.73              |
| 43:BN:45:ARG:HB3  | 43:BN:45:ARG:NH1   | 1.98                     | 0.73              |
| 44:BO:25:TYR:HD1  | 44:BO:89:ALA:HB2   | 1.54                     | 0.73              |
| 45:BP:84:LEU:HD23 | 45:BP:84:LEU:C     | 2.14                     | 0.73              |
| 48:BS:71:GLN:HB2  | 48:BS:78:TYR:CE1   | 2.24                     | 0.73              |
| 49:BT:23:ASP:O    | 49:BT:25:ARG:N     | 2.21                     | 0.73              |
| 52:BW:4:SER:HA    | 52:BW:5:LEU:HB3    | 1.70                     | 0.73              |
| 55:BC:38:A:C3'    | 55:BC:39:U:H5''    | 2.19                     | 0.73              |
| 57:BZ:190:ILE:O   | 57:BZ:194:VAL:HG23 | 1.88                     | 0.73              |
| 57:BZ:325:PHE:C   | 57:BZ:378:PHE:CD1  | 2.66                     | 0.73              |
| 1:AA:126:A:N7     | 1:AA:127:A:C4      | 2.56                     | 0.73              |
| 1:AA:292:C:C6     | 1:AA:293:U:N3      | 2.56                     | 0.73              |
| 1:AA:637:A:H2     | 1:AA:651:G:H5''    | 1.53                     | 0.73              |
| 1:AA:647:G:H4'    | 1:AA:2352:A:OP1    | 1.89                     | 0.73              |
| 1:AA:942:G:N1     | 1:AA:943:U:O4      | 2.21                     | 0.73              |
| 1:AA:1222:C:O2'   | 1:AA:1223:C:H5'    | 1.88                     | 0.73              |
| 1:AA:1308:A:H2'   | 1:AA:1309:G:O4'    | 1.89                     | 0.73              |
| 1:AA:1520:U:H6    | 1:AA:1520:U:H3'    | 1.52                     | 0.73              |
| 1:AA:1539:G:N7    | 1:AA:1540:G:N7     | 2.37                     | 0.73              |
| 1:AA:1935:G:N2    | 1:AA:1962:C:O2'    | 2.21                     | 0.73              |
| 1:AA:1949:G:O2'   | 1:AA:1950:G:H5'    | 1.89                     | 0.73              |
| 1:AA:2056:G:N3    | 1:AA:2056:G:H2'    | 2.02                     | 0.73              |
| 1:AA:2371:G:C5'   | 27:Ac:45:LYS:HB3   | 2.19                     | 0.73              |
| 1:AA:2733:A:H2'   | 1:AA:2734:A:O4'    | 1.88                     | 0.73              |
| 1:AA:2746:U:C4    | 1:AA:2756:U:O4     | 2.42                     | 0.73              |
| 1:AA:2807:G:H22   | 1:AA:2892:A:N6     | 1.86                     | 0.73              |
| 1:AA:2841:C:C2'   | 1:AA:2842:G:H8     | 1.98                     | 0.73              |
| 1:AA:2865:U:O5'   | 1:AA:2865:U:H6     | 1.71                     | 0.73              |
| 3:AC:104:LEU:HD13 | 3:AC:130:ILE:HD11  | 1.69                     | 0.73              |
| 3:AC:163:PHE:CD1  | 3:AC:196:LEU:CD1   | 2.48                     | 0.73              |
| 4:AD:5:LYS:HD2    | 4:AD:113:VAL:HG21  | 1.70                     | 0.73              |
| 4:AD:42:GLY:CA    | 4:AD:60:ARG:HH22   | 2.01                     | 0.73              |
| 4:AD:46:GLN:C     | 4:AD:48:ARG:N      | 2.41                     | 0.73              |
| 4:AD:142:VAL:O    | 4:AD:163:ALA:CB    | 2.29                     | 0.73              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 5:AE:49:LEU:HD12   | 5:AE:51:PHE:H      | 1.53                     | 0.73              |
| 7:AG:74:LYS:HG2    | 7:AG:75:LYS:CD     | 2.18                     | 0.73              |
| 7:AG:166:ASP:O     | 7:AG:167:GLU:C     | 2.32                     | 0.73              |
| 9:AK:36:GLY:HA2    | 9:AK:47:ALA:O      | 1.89                     | 0.73              |
| 9:AK:107:LEU:HD22  | 9:AK:117:PHE:CE1   | 2.23                     | 0.73              |
| 10:AL:8:LEU:HD11   | 10:AL:82:ASN:HA    | 1.70                     | 0.73              |
| 11:AM:7:ARG:HD2    | 11:AM:8:PRO:HD3    | 1.70                     | 0.73              |
| 12:AN:34:LEU:O     | 12:AN:103:MET:CB   | 2.29                     | 0.73              |
| 13:AO:55:ALA:HA    | 13:AO:79:LEU:HD21  | 1.69                     | 0.73              |
| 15:AQ:54:ARG:O     | 15:AQ:64:ARG:HB2   | 1.86                     | 0.73              |
| 15:AQ:55:ASN:HA    | 15:AQ:62:THR:O     | 1.88                     | 0.73              |
| 15:AQ:56:GLY:O     | 15:AQ:61:PHE:HB3   | 1.89                     | 0.73              |
| 16:AR:62:ILE:HG22  | 16:AR:63:VAL:N     | 2.01                     | 0.73              |
| 23:AY:23:LYS:HE3   | 23:AY:52:ILE:HG12  | 1.71                     | 0.73              |
| 32:AJ:10:LEU:HD13  | 32:AJ:27:LEU:HD11  | 1.71                     | 0.73              |
| 34:BA:283:C:N3     | 34:BA:284:G:C8     | 2.57                     | 0.73              |
| 34:BA:553:A:H2'    | 34:BA:554:C:H6     | 1.51                     | 0.73              |
| 34:BA:1064:G:N3    | 34:BA:1066:C:N3    | 2.37                     | 0.73              |
| 34:BA:1118:C:P     | 42:BM:103:THR:CG2  | 2.76                     | 0.73              |
| 34:BA:1317:C:O2    | 34:BA:1318:A:C1'   | 2.35                     | 0.73              |
| 34:BA:1431:C:N4    | 34:BA:1469:G:H1    | 1.86                     | 0.73              |
| 34:BA:1440:C:H2'   | 34:BA:1441:G:H5'   | 1.69                     | 0.73              |
| 35:BF:174:VAL:C    | 35:BF:178:ARG:HG2  | 2.13                     | 0.73              |
| 36:BG:20:SER:CB    | 36:BG:40:ARG:HH22  | 1.97                     | 0.73              |
| 36:BG:84:ILE:CG1   | 36:BG:101:LEU:HD22 | 2.18                     | 0.73              |
| 37:BH:61:LYS:CG    | 37:BH:203:VAL:HG13 | 2.19                     | 0.73              |
| 37:BH:70:ILE:HD12  | 37:BH:100:ARG:NH2  | 2.04                     | 0.73              |
| 37:BH:82:ALA:HB1   | 37:BH:92:VAL:HB    | 1.70                     | 0.73              |
| 37:BH:101:LEU:HB2  | 37:BH:138:TYR:O    | 1.88                     | 0.73              |
| 39:BJ:37:VAL:HA    | 39:BJ:65:VAL:CG1   | 2.19                     | 0.73              |
| 41:BL:32:LYS:HZ1   | 41:BL:32:LYS:H     | 1.37                     | 0.73              |
| 41:BL:104:ARG:NE   | 41:BL:138:TRP:CZ3  | 2.57                     | 0.73              |
| 42:BM:19:LEU:HD22  | 42:BM:59:PHE:HD2   | 1.51                     | 0.73              |
| 42:BM:74:ILE:O     | 42:BM:77:ILE:HB    | 1.88                     | 0.73              |
| 45:BP:93:LEU:O     | 45:BP:96:VAL:HG23  | 1.88                     | 0.73              |
| 45:BP:104:VAL:HG12 | 45:BP:105:TYR:CD1  | 2.24                     | 0.73              |
| 46:BQ:11:ARG:O     | 46:BQ:13:LYS:N     | 2.21                     | 0.73              |
| 46:BQ:16:ASP:N     | 46:BQ:34:LEU:CD2   | 2.50                     | 0.73              |
| 47:BR:15:LYS:O     | 47:BR:16:PHE:HB2   | 1.87                     | 0.73              |
| 53:BX:40:ALA:HB2   | 53:BX:55:ILE:CG2   | 2.18                     | 0.73              |
| 56:BD:16:U:C3'     | 56:BD:17:C:H5'     | 2.19                     | 0.73              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 57:BZ:21:LEU:HD11  | 57:BZ:98:VAL:HG21 | 1.70                     | 0.73              |
| 57:BZ:67:ASP:HB3   | 57:BZ:191:VAL:CG2 | 2.17                     | 0.73              |
| 57:BZ:311:PHE:O    | 57:BZ:355:ALA:C   | 2.30                     | 0.73              |
| 57:BZ:423:LYS:O    | 57:BZ:425:ASP:N   | 2.22                     | 0.73              |
| 57:BZ:488:LEU:HD12 | 57:BZ:525:GLY:C   | 2.12                     | 0.73              |
| 1:AA:5:A:N1        | 1:AA:2899:G:N7    | 2.37                     | 0.73              |
| 1:AA:192:C:O2      | 1:AA:802:A:H1'    | 1.89                     | 0.73              |
| 1:AA:360:G:O2'     | 1:AA:361:G:H5'    | 1.89                     | 0.73              |
| 1:AA:443:A:H61     | 6:AF:41:LEU:CD1   | 2.02                     | 0.73              |
| 1:AA:716:A:C2'     | 1:AA:717:G:H5'    | 2.19                     | 0.73              |
| 1:AA:825:C:O2'     | 1:AA:826:U:H5'    | 1.89                     | 0.73              |
| 1:AA:995:C:H42     | 9:AK:3:THR:HA     | 1.54                     | 0.73              |
| 1:AA:1046:A:N6     | 31:AI:9:LEU:CB    | 2.52                     | 0.73              |
| 1:AA:1340:U:H5     | 19:AU:57:LEU:HG   | 1.54                     | 0.73              |
| 1:AA:1513:C:N4     | 1:AA:1514:U:O4    | 2.22                     | 0.73              |
| 1:AA:1530:G:H3'    | 1:AA:1531:C:C6    | 2.24                     | 0.73              |
| 1:AA:1620:G:O4'    | 28:Ad:1:MET:N     | 2.22                     | 0.73              |
| 1:AA:1709:U:H1'    | 1:AA:2860:A:H1'   | 1.71                     | 0.73              |
| 1:AA:1851:U:H2'    | 1:AA:1852:C:C6    | 2.24                     | 0.73              |
| 1:AA:1955:U:H2'    | 1:AA:1956:U:OP1   | 1.88                     | 0.73              |
| 1:AA:2389:G:H5''   | 1:AA:2390:U:O5'   | 1.89                     | 0.73              |
| 1:AA:2447:G:N7     | 1:AA:2500:U:H2'   | 2.04                     | 0.73              |
| 1:AA:2611:U:H5'    | 1:AA:2611:U:H6    | 1.54                     | 0.73              |
| 1:AA:2740:A:H2'    | 1:AA:2741:A:H8    | 1.53                     | 0.73              |
| 2:AB:54:G:O2'      | 2:AB:55:U:H5'     | 1.89                     | 0.73              |
| 3:AC:116:THR:O     | 3:AC:120:MET:HG2  | 1.89                     | 0.73              |
| 4:AD:148:GLU:CB    | 4:AD:154:LYS:HZ2  | 2.02                     | 0.73              |
| 7:AG:111:LEU:HB3   | 7:AG:112:PRO:HD3  | 1.68                     | 0.73              |
| 8:AH:7:LEU:HD22    | 8:AH:65:HIS:NE2   | 2.04                     | 0.73              |
| 8:AH:8:PRO:CD      | 8:AH:69:ARG:HH11  | 2.02                     | 0.73              |
| 9:AK:102:ALA:O     | 9:AK:105:GLY:CA   | 2.36                     | 0.73              |
| 13:AO:26:LYS:HG2   | 13:AO:70:LEU:HD13 | 1.69                     | 0.73              |
| 15:AQ:2:ASN:OD1    | 15:AQ:3:ARG:HG3   | 1.88                     | 0.73              |
| 16:AR:30:LYS:HD2   | 16:AR:30:LYS:H    | 1.54                     | 0.73              |
| 17:AS:28:GLU:CB    | 17:AS:94:LEU:HD12 | 2.16                     | 0.73              |
| 17:AS:62:LEU:CD1   | 17:AS:98:GLU:HG2  | 2.18                     | 0.73              |
| 22:AX:37:LEU:HD21  | 22:AX:60:PHE:CA   | 2.18                     | 0.73              |
| 24:AZ:5:LYS:HZ2    | 24:AZ:59:VAL:HG22 | 1.52                     | 0.73              |
| 25:Aa:59:PHE:N     | 25:Aa:62:ARG:CZ   | 2.52                     | 0.73              |
| 27:Ac:24:GLU:HG2   | 29:Ae:37:SER:CB   | 2.15                     | 0.73              |
| 34:BA:8:A:H4'      | 34:BA:9:G:OP1     | 1.88                     | 0.73              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:49:U:C5      | 34:BA:361:G:N2     | 2.56                     | 0.73              |
| 34:BA:191(C):G:H2' | 34:BA:191(D):U:H6  | 1.54                     | 0.73              |
| 34:BA:1162:C:N3    | 34:BA:1175:G:C2    | 2.57                     | 0.73              |
| 34:BA:1163:C:O2'   | 34:BA:1164:G:H5'   | 1.89                     | 0.73              |
| 34:BA:1382:C:H2'   | 34:BA:1383:C:C6    | 2.23                     | 0.73              |
| 34:BA:1412:C:C4    | 34:BA:1489:G:O6    | 2.42                     | 0.73              |
| 35:BF:102:LEU:HD12 | 35:BF:102:LEU:N    | 2.01                     | 0.73              |
| 36:BG:29:TYR:O     | 36:BG:32:LEU:HB2   | 1.89                     | 0.73              |
| 37:BH:107:ARG:HA   | 37:BH:107:ARG:NH1  | 2.00                     | 0.73              |
| 37:BH:194:LEU:HB3  | 37:BH:196:LEU:HD11 | 1.70                     | 0.73              |
| 43:BN:23:ILE:CG1   | 43:BN:85:LEU:HB3   | 2.18                     | 0.73              |
| 44:BO:44:SER:O     | 44:BO:48:ILE:HG12  | 1.87                     | 0.73              |
| 47:BR:26:ARG:CB    | 47:BR:43:CYS:HB2   | 2.17                     | 0.73              |
| 56:BD:65:G:C6      | 56:BD:66:U:N3      | 2.57                     | 0.73              |
| 57:BZ:12:ALA:HB3   | 57:BZ:76:PRO:HA    | 1.69                     | 0.73              |
| 57:BZ:67:ASP:CA    | 57:BZ:191:VAL:HG13 | 2.19                     | 0.73              |
| 57:BZ:157:GLN:HG2  | 57:BZ:158:LEU:HD12 | 1.69                     | 0.73              |
| 57:BZ:209:ILE:HG23 | 57:BZ:222:GLY:C    | 2.12                     | 0.73              |
| 57:BZ:243:GLU:HG2  | 57:BZ:244:GLY:N    | 2.02                     | 0.73              |
| 57:BZ:405:LEU:CD1  | 57:BZ:464:LEU:CD2  | 2.62                     | 0.73              |
| 57:BZ:481:GLY:CA   | 57:BZ:482:GLN:HB2  | 2.18                     | 0.73              |
| 1:AA:71:A:N3       | 1:AA:73:A:C6       | 2.57                     | 0.73              |
| 1:AA:152:G:H2'     | 1:AA:153:C:C5'     | 2.19                     | 0.73              |
| 1:AA:197:A:H3'     | 1:AA:198:C:C6      | 2.24                     | 0.73              |
| 1:AA:257:A:H2'     | 1:AA:258:G:O4'     | 1.87                     | 0.73              |
| 1:AA:449:A:O2'     | 1:AA:450:G:H5'     | 1.89                     | 0.73              |
| 1:AA:532:A:C8      | 1:AA:561:G:N2      | 2.57                     | 0.73              |
| 1:AA:691:C:C1'     | 4:AD:45:ASN:HD21   | 2.01                     | 0.73              |
| 1:AA:742:G:H4'     | 1:AA:1675:C:O2'    | 1.89                     | 0.73              |
| 1:AA:878:A:C6      | 1:AA:897:C:C2      | 2.41                     | 0.73              |
| 1:AA:896:A:N1      | 1:AA:897:C:N3      | 2.37                     | 0.73              |
| 1:AA:947:G:O5'     | 1:AA:947:G:H8      | 1.70                     | 0.73              |
| 1:AA:1047:G:C2     | 1:AA:1110:G:H3'    | 2.21                     | 0.73              |
| 1:AA:1087:G:H21    | 1:AA:1103:A:H2'    | 1.54                     | 0.73              |
| 1:AA:1872:A:H2'    | 1:AA:1878:G:C5'    | 2.13                     | 0.73              |
| 1:AA:2073:C:H2'    | 1:AA:2074:U:O4'    | 1.88                     | 0.73              |
| 1:AA:2309:A:N7     | 7:AG:80:PHE:CE2    | 2.57                     | 0.73              |
| 1:AA:2395:C:C4     | 1:AA:2396:G:N7     | 2.57                     | 0.73              |
| 1:AA:2408:U:O2'    | 1:AA:2409:G:H5'    | 1.88                     | 0.73              |
| 1:AA:2689:U:O2     | 1:AA:2713:A:P      | 2.46                     | 0.73              |
| 1:AA:2742:C:H5''   | 30:Af:35:ARG:CZ    | 2.19                     | 0.73              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2840:C:H5''  | 13:AO:53:HIS:HD2   | 1.51                     | 0.73              |
| 1:AA:2841:C:C2    | 1:AA:2842:G:N7     | 2.57                     | 0.73              |
| 1:AA:2848:G:OP2   | 15:AQ:99:LEU:HD12  | 1.88                     | 0.73              |
| 3:AC:68:LEU:HD22  | 3:AC:157:LYS:HA    | 1.71                     | 0.73              |
| 4:AD:85:ASP:C     | 4:AD:87:ASN:H      | 1.93                     | 0.73              |
| 5:AE:93:VAL:HG13  | 5:AE:180:ASN:HD21  | 1.53                     | 0.73              |
| 7:AG:125:PHE:HA   | 7:AG:132:ASN:CB    | 2.19                     | 0.73              |
| 7:AG:138:GLN:OE1  | 7:AG:152:LEU:HD12  | 1.88                     | 0.73              |
| 10:AL:38:VAL:HA   | 10:AL:59:LYS:O     | 1.88                     | 0.73              |
| 10:AL:63:VAL:HG21 | 10:AL:82:ASN:OD1   | 1.89                     | 0.73              |
| 11:AM:121:LYS:H   | 11:AM:137:LYS:CB   | 2.01                     | 0.73              |
| 12:AN:41:TRP:CA   | 12:AN:95:ALA:O     | 2.35                     | 0.73              |
| 13:AO:65:LEU:HD23 | 13:AO:65:LEU:C     | 2.13                     | 0.73              |
| 13:AO:86:ARG:NH1  | 13:AO:118:GLU:OE1  | 2.21                     | 0.73              |
| 14:AP:6:ALA:HA    | 14:AP:9:ARG:NH1    | 2.04                     | 0.73              |
| 15:AQ:48:ILE:HG12 | 15:AQ:49:VAL:O     | 1.88                     | 0.73              |
| 15:AQ:54:ARG:C    | 15:AQ:55:ASN:CG    | 2.53                     | 0.73              |
| 16:AR:32:PHE:N    | 16:AR:32:PHE:CD1   | 2.55                     | 0.73              |
| 16:AR:98:LEU:HA   | 16:AR:101:ARG:HG2  | 1.71                     | 0.73              |
| 29:Ae:3:LYS:HE2   | 29:Ae:59:LYS:CE    | 2.19                     | 0.73              |
| 32:AJ:98:ARG:CZ   | 32:AJ:100:THR:HA   | 2.19                     | 0.73              |
| 34:BA:174:C:O2'   | 34:BA:175:C:H5'    | 1.88                     | 0.73              |
| 34:BA:193:C:H2'   | 34:BA:194:C:C6     | 2.24                     | 0.73              |
| 34:BA:510:A:N3    | 34:BA:543:C:H1'    | 2.03                     | 0.73              |
| 34:BA:517:G:O2'   | 34:BA:530:G:H4'    | 1.87                     | 0.73              |
| 34:BA:936:C:C2'   | 34:BA:937:A:H5'    | 2.19                     | 0.73              |
| 34:BA:1026:G:H2'  | 34:BA:1027:C:H5'   | 1.69                     | 0.73              |
| 35:BF:144:ARG:O   | 35:BF:147:LYS:HB3  | 1.89                     | 0.73              |
| 37:BH:58:LEU:HD13 | 37:BH:59:ARG:NH1   | 2.04                     | 0.73              |
| 48:BS:54:ARG:HA   | 48:BS:57:LEU:CD2   | 2.17                     | 0.73              |
| 51:BV:53:ARG:HA   | 51:BV:63:GLN:HE21  | 1.53                     | 0.73              |
| 51:BV:56:THR:HB   | 51:BV:58:LEU:HD12  | 1.69                     | 0.73              |
| 56:BD:5:G:N1      | 56:BD:69:G:C5      | 2.52                     | 0.73              |
| 57:BZ:67:ASP:CB   | 57:BZ:191:VAL:HG22 | 2.18                     | 0.73              |
| 1:AA:270(J):G:H3' | 1:AA:270(K):C:C6   | 2.24                     | 0.73              |
| 1:AA:729:G:C3'    | 1:AA:730:C:H4'     | 2.19                     | 0.73              |
| 1:AA:740:U:C2'    | 1:AA:741:G:O5'     | 2.34                     | 0.73              |
| 1:AA:1165:U:H2'   | 1:AA:1166:C:C6     | 2.24                     | 0.73              |
| 1:AA:1242:A:N1    | 11:AM:6:LEU:HD11   | 2.04                     | 0.73              |
| 1:AA:1341:U:N3    | 1:AA:1398:C:H5'    | 2.02                     | 0.73              |
| 1:AA:1655:A:H2'   | 1:AA:1656:C:O4'    | 1.89                     | 0.73              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2017:U:C2'    | 1:AA:2018:G:OP1   | 2.37                     | 0.73              |
| 1:AA:2690:C:H3'    | 1:AA:2690:C:C6    | 2.22                     | 0.73              |
| 1:AA:2732:G:H3'    | 1:AA:2733:A:C5'   | 2.19                     | 0.73              |
| 1:AA:2839:G:H2'    | 1:AA:2840:C:H6    | 1.54                     | 0.73              |
| 4:AD:60:ARG:HA     | 4:AD:62:TYR:OH    | 1.88                     | 0.73              |
| 4:AD:263:ARG:O     | 4:AD:266:SER:HB3  | 1.88                     | 0.73              |
| 7:AG:55:LYS:HG3    | 7:AG:148:MET:CB   | 2.19                     | 0.73              |
| 9:AK:22:THR:HG23   | 9:AK:25:ARG:CZ    | 2.18                     | 0.73              |
| 9:AK:87:LEU:O      | 9:AK:91:LEU:HG    | 1.89                     | 0.73              |
| 10:AL:70:LYS:HD3   | 10:AL:107:ARG:NH1 | 2.04                     | 0.73              |
| 10:AL:76:ALA:HA    | 15:AQ:77:PRO:CG   | 2.18                     | 0.73              |
| 11:AM:122:PRO:CB   | 11:AM:138:LEU:N   | 2.51                     | 0.73              |
| 12:AN:59:ARG:NH2   | 21:AW:177:PRO:HB3 | 2.02                     | 0.73              |
| 14:AP:17:ARG:NH2   | 14:AP:89:ARG:HB2  | 2.04                     | 0.73              |
| 18:AT:41:LYS:HB3   | 18:AT:41:LYS:HZ3  | 1.52                     | 0.73              |
| 18:AT:98:LYS:O     | 18:AT:98:LYS:NZ   | 2.19                     | 0.73              |
| 21:AW:73:GLN:O     | 21:AW:74:VAL:HG23 | 1.89                     | 0.73              |
| 25:Aa:1:MET:O      | 25:Aa:2:LYS:HG3   | 1.88                     | 0.73              |
| 27:Ac:54:ILE:HD13  | 27:Ac:54:ILE:O    | 1.89                     | 0.73              |
| 32:AJ:100:THR:OG1  | 32:AJ:103:GLN:HB3 | 1.83                     | 0.73              |
| 34:BA:270:A:H2'    | 34:BA:271:C:C6    | 2.23                     | 0.73              |
| 34:BA:576:G:N7     | 34:BA:881:G:C1'   | 2.52                     | 0.73              |
| 34:BA:889:A:H4'    | 34:BA:890:G:O5'   | 1.85                     | 0.73              |
| 34:BA:961:U:H1'    | 34:BA:1201:A:N6   | 2.04                     | 0.73              |
| 34:BA:1172:C:O2'   | 34:BA:1173:G:H5'  | 1.89                     | 0.73              |
| 34:BA:1317:C:H6    | 34:BA:1317:C:O5'  | 1.72                     | 0.73              |
| 36:BG:76:VAL:O     | 36:BG:83:ARG:HG2  | 1.88                     | 0.73              |
| 37:BH:18:LYS:HE3   | 37:BH:33:MET:HB2  | 1.69                     | 0.73              |
| 40:BK:47:CYS:HA    | 40:BK:50:ILE:CD1  | 2.18                     | 0.73              |
| 40:BK:105:VAL:O    | 40:BK:108:ALA:HB3 | 1.88                     | 0.73              |
| 41:BL:36:LEU:HD12  | 41:BL:48:TYR:CG   | 2.24                     | 0.73              |
| 41:BL:85:ARG:HG2   | 41:BL:85:ARG:NH1  | 2.04                     | 0.73              |
| 44:BO:57:THR:CG2   | 44:BO:60:ALA:H    | 1.97                     | 0.73              |
| 44:BO:95:ILE:O     | 44:BO:98:LEU:HB2  | 1.89                     | 0.73              |
| 45:BP:84:LEU:HG    | 45:BP:85:ILE:N    | 2.04                     | 0.73              |
| 52:BW:3:ARG:NH1    | 52:BW:45:VAL:HG13 | 2.04                     | 0.73              |
| 53:BX:49:ALA:HB3   | 53:BX:99:LEU:CD1  | 2.19                     | 0.73              |
| 57:BZ:487:VAL:HG12 | 57:BZ:571:PHE:HE1 | 1.52                     | 0.73              |
| 1:AA:83:G:O6       | 1:AA:102:G:N3     | 2.22                     | 0.72              |
| 1:AA:273(C):C:H2'  | 1:AA:273(D):C:C6  | 2.24                     | 0.72              |
| 1:AA:533:G:H2'     | 1:AA:534:U:O4'    | 1.89                     | 0.72              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:545:G:C1'    | 1:AA:549:G:H22    | 1.97                     | 0.72              |
| 1:AA:771:G:C6     | 1:AA:772:C:N4     | 2.56                     | 0.72              |
| 1:AA:808:G:H2'    | 1:AA:809:G:C8     | 2.24                     | 0.72              |
| 1:AA:906:G:H2'    | 1:AA:906:G:N3     | 2.04                     | 0.72              |
| 1:AA:932:G:OP1    | 1:AA:932:G:H4'    | 1.88                     | 0.72              |
| 1:AA:1160:G:H2'   | 1:AA:1161:C:H5    | 1.53                     | 0.72              |
| 1:AA:1302:A:H5'   | 1:AA:1608:A:OP1   | 1.88                     | 0.72              |
| 1:AA:1342:A:C1'   | 1:AA:1345:C:H41   | 2.02                     | 0.72              |
| 1:AA:1518:C:H3'   | 1:AA:1519:G:C5'   | 2.17                     | 0.72              |
| 1:AA:1655:A:H5''  | 5:AE:114:ALA:N    | 2.03                     | 0.72              |
| 1:AA:1807:G:H21   | 1:AA:1809:A:C5'   | 2.02                     | 0.72              |
| 1:AA:2181:G:H21   | 1:AA:2182:G:N2    | 1.86                     | 0.72              |
| 1:AA:2423:U:H2'   | 1:AA:2423:U:O2    | 1.88                     | 0.72              |
| 1:AA:2631:G:N2    | 5:AE:61:ARG:HH12  | 1.86                     | 0.72              |
| 1:AA:2882:A:H2'   | 1:AA:2883:A:O5'   | 1.89                     | 0.72              |
| 2:AB:51:G:C2'     | 2:AB:52:A:O5'     | 2.35                     | 0.72              |
| 2:AB:84:C:H2'     | 2:AB:85:G:H5''    | 1.70                     | 0.72              |
| 2:AB:117:G:C2     | 2:AB:118:G:C8     | 2.76                     | 0.72              |
| 4:AD:10:THR:O     | 4:AD:11:PRO:C     | 2.31                     | 0.72              |
| 6:AF:132:VAL:HG13 | 6:AF:138:GLU:OE1  | 1.89                     | 0.72              |
| 7:AG:9:ARG:HD2    | 7:AG:10:LYS:NZ    | 2.03                     | 0.72              |
| 7:AG:28:VAL:O     | 7:AG:28:VAL:HG12  | 1.87                     | 0.72              |
| 13:AO:20:LEU:HD11 | 13:AO:24:GLN:OE1  | 1.89                     | 0.72              |
| 14:AP:6:ALA:HA    | 14:AP:9:ARG:HH12  | 1.53                     | 0.72              |
| 15:AQ:35:LYS:O    | 15:AQ:36:GLU:C    | 2.30                     | 0.72              |
| 16:AR:81:HIS:C    | 16:AR:117:GLN:NE2 | 2.46                     | 0.72              |
| 17:AS:16:PRO:HA   | 17:AS:98:GLU:HB2  | 1.71                     | 0.72              |
| 18:AT:14:PRO:C    | 18:AT:16:LYS:NZ   | 2.46                     | 0.72              |
| 18:AT:21:VAL:HA   | 18:AT:24:ILE:HG13 | 1.68                     | 0.72              |
| 19:AU:9:LEU:HD12  | 19:AU:9:LEU:N     | 2.03                     | 0.72              |
| 20:AV:38:ILE:HG23 | 20:AV:60:PHE:HZ   | 1.54                     | 0.72              |
| 20:AV:46:LYS:CE   | 20:AV:52:SER:HB2  | 2.18                     | 0.72              |
| 21:AW:102:LEU:HB2 | 21:AW:124:ILE:HA  | 1.71                     | 0.72              |
| 25:Aa:41:PRO:C    | 25:Aa:58:ARG:NH1  | 2.47                     | 0.72              |
| 32:AJ:27:LEU:CD1  | 32:AJ:57:ILE:HB   | 2.18                     | 0.72              |
| 32:AJ:112:MET:HG3 | 32:AJ:122:ALA:CB  | 2.01                     | 0.72              |
| 34:BA:687:A:H61   | 34:BA:703:G:H1'   | 1.54                     | 0.72              |
| 34:BA:781:A:H4'   | 34:BA:1522:U:HO2' | 1.52                     | 0.72              |
| 34:BA:1016:A:H2'  | 34:BA:1017:G:O4'  | 1.89                     | 0.72              |
| 34:BA:1310:G:C4   | 34:BA:1327:C:N3   | 2.55                     | 0.72              |
| 35:BF:141:GLU:CD  | 35:BF:142:LEU:N   | 2.47                     | 0.72              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 38:BI:28:PHE:O    | 38:BI:47:LYS:HA    | 1.89                     | 0.72              |
| 38:BI:143:ARG:O   | 38:BI:147:ASP:HB2  | 1.87                     | 0.72              |
| 40:BK:153:HIS:HE1 | 44:BO:58:PRO:HD2   | 1.53                     | 0.72              |
| 50:BU:59:ILE:HD11 | 50:BU:71:PHE:CB    | 2.15                     | 0.72              |
| 51:BV:74:ARG:HG3  | 51:BV:79:LEU:CD2   | 2.19                     | 0.72              |
| 52:BW:9:VAL:HG21  | 52:BW:43:GLU:H     | 1.52                     | 0.72              |
| 52:BW:33:THR:HG21 | 52:BW:49:ILE:HD12  | 1.69                     | 0.72              |
| 55:BC:61:C:H2'    | 55:BC:62:C:C6      | 2.24                     | 0.72              |
| 57:BZ:23:ASP:O    | 57:BZ:25:LEU:N     | 2.21                     | 0.72              |
| 57:BZ:206:GLN:HG2 | 57:BZ:227:LYS:HB2  | 0.75                     | 0.72              |
| 57:BZ:379:GLU:CD  | 57:BZ:581:THR:HG21 | 1.84                     | 0.72              |
| 1:AA:4:C:N3       | 1:AA:2899:G:C6     | 2.57                     | 0.72              |
| 1:AA:270(X):G:H2' | 1:AA:270(Y):G:C5'  | 2.17                     | 0.72              |
| 1:AA:361:G:H2'    | 1:AA:362:U:O4'     | 1.89                     | 0.72              |
| 1:AA:663:G:C5'    | 11:AM:18:ARG:HB3   | 2.17                     | 0.72              |
| 1:AA:750:A:O2'    | 1:AA:751:A:H5''    | 1.87                     | 0.72              |
| 1:AA:983:A:C2     | 1:AA:984:A:C2      | 2.77                     | 0.72              |
| 1:AA:1080:C:H4'   | 32:AJ:128:ALA:HB3  | 0.72                     | 0.72              |
| 1:AA:1473:G:N1    | 1:AA:1519:G:H1'    | 2.04                     | 0.72              |
| 1:AA:1655:A:N6    | 1:AA:2005:A:H1'    | 2.04                     | 0.72              |
| 1:AA:1670:C:H3'   | 1:AA:1671:U:H6     | 1.53                     | 0.72              |
| 1:AA:1707:G:H2'   | 1:AA:1708:C:H6     | 1.54                     | 0.72              |
| 1:AA:1799:G:C8    | 4:AD:268:ARG:NH1   | 2.57                     | 0.72              |
| 1:AA:2225:A:H5'   | 1:AA:2226:C:H6     | 1.54                     | 0.72              |
| 1:AA:2360:A:H2'   | 1:AA:2361:A:O4'    | 1.89                     | 0.72              |
| 1:AA:2597:G:C1'   | 4:AD:242:ARG:NH2   | 2.52                     | 0.72              |
| 1:AA:2720:U:H2'   | 1:AA:2720:U:O2     | 1.88                     | 0.72              |
| 1:AA:2848:G:H8    | 15:AQ:99:LEU:HD11  | 1.51                     | 0.72              |
| 1:AA:2877:G:H3'   | 1:AA:2878:U:C5     | 2.23                     | 0.72              |
| 3:AC:34:THR:HG22  | 3:AC:34:THR:O      | 1.88                     | 0.72              |
| 4:AD:46:GLN:CD    | 4:AD:51:VAL:HG23   | 2.13                     | 0.72              |
| 4:AD:63:ARG:NH1   | 4:AD:63:ARG:HB2    | 2.04                     | 0.72              |
| 4:AD:84:TYR:HB3   | 4:AD:91:ARG:HG3    | 1.71                     | 0.72              |
| 6:AF:80:ALA:N     | 6:AF:83:PHE:HE2    | 1.86                     | 0.72              |
| 6:AF:93:LYS:HG2   | 6:AF:94:PRO:O      | 1.88                     | 0.72              |
| 6:AF:157:VAL:HG22 | 6:AF:194:MET:CB    | 2.19                     | 0.72              |
| 7:AG:6:ALA:O      | 7:AG:9:ARG:HB3     | 1.89                     | 0.72              |
| 8:AH:103:LEU:C    | 8:AH:105:LEU:HG    | 2.14                     | 0.72              |
| 9:AK:38:HIS:C     | 9:AK:42:TRP:HE3    | 1.97                     | 0.72              |
| 9:AK:103:VAL:HG22 | 9:AK:104:LYS:N     | 2.04                     | 0.72              |
| 9:AK:103:VAL:HG22 | 9:AK:104:LYS:H     | 1.52                     | 0.72              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AL:3:GLN:HG2    | 10:AL:6:THR:CB     | 2.16                     | 0.72              |
| 10:AL:63:VAL:O     | 10:AL:64:ARG:HB3   | 1.88                     | 0.72              |
| 17:AS:15:GLU:CD    | 17:AS:16:PRO:HD2   | 2.14                     | 0.72              |
| 17:AS:21:ARG:HG3   | 17:AS:21:ARG:HH11  | 1.52                     | 0.72              |
| 21:AW:48:PHE:HB3   | 21:AW:54:HIS:CE1   | 2.23                     | 0.72              |
| 24:AZ:51:ALA:O     | 24:AZ:53:LEU:N     | 2.22                     | 0.72              |
| 34:BA:769:G:H5'    | 34:BA:1513:A:H4'   | 1.71                     | 0.72              |
| 34:BA:1290:G:H4'   | 40:BK:37:ASN:ND2   | 2.03                     | 0.72              |
| 34:BA:1316:G:C5'   | 34:BA:1360:A:C4    | 2.69                     | 0.72              |
| 34:BA:1345:U:C2    | 34:BA:1377:A:N6    | 2.57                     | 0.72              |
| 34:BA:1438:G:O2'   | 34:BA:1439:C:H5'   | 1.89                     | 0.72              |
| 34:BA:1517:G:N2    | 34:BA:1518:A:H1'   | 2.02                     | 0.72              |
| 35:BF:54:THR:CG2   | 35:BF:201:ILE:HD11 | 2.19                     | 0.72              |
| 35:BF:116:GLU:HG2  | 35:BF:117:GLU:N    | 2.04                     | 0.72              |
| 37:BH:19:LEU:H     | 37:BH:33:MET:CE    | 2.01                     | 0.72              |
| 37:BH:64:LEU:HD13  | 37:BH:65:ARG:N     | 2.03                     | 0.72              |
| 37:BH:159:ARG:O    | 37:BH:160:GLN:C    | 2.30                     | 0.72              |
| 38:BI:86:ALA:HB3   | 38:BI:130:ASN:ND2  | 2.03                     | 0.72              |
| 39:BJ:1:MET:CE     | 39:BJ:68:PRO:HG3   | 2.20                     | 0.72              |
| 41:BL:40:ALA:O     | 41:BL:43:GLY:N     | 2.22                     | 0.72              |
| 41:BL:70:GLN:NE2   | 41:BL:71:GLY:H     | 1.87                     | 0.72              |
| 46:BQ:73:GLU:O     | 46:BQ:77:ASN:OD1   | 2.08                     | 0.72              |
| 48:BS:63:ARG:HH22  | 48:BS:87:ILE:HG21  | 1.53                     | 0.72              |
| 50:BU:63:ARG:HG2   | 50:BU:64:PRO:CD    | 2.20                     | 0.72              |
| 53:BX:44:ALA:HB1   | 53:BX:91:LEU:HB2   | 1.70                     | 0.72              |
| 53:BX:57:ARG:HH21  | 53:BX:100:ILE:HB   | 1.54                     | 0.72              |
| 57:BZ:124:ILE:HA   | 57:BZ:161:ALA:HB2  | 1.70                     | 0.72              |
| 57:BZ:258:LEU:HD13 | 57:BZ:260:LEU:HD13 | 1.71                     | 0.72              |
| 57:BZ:398:GLU:HA   | 57:BZ:472:TYR:HD1  | 1.46                     | 0.72              |
| 1:AA:5:A:C5        | 1:AA:2899:G:C2     | 2.76                     | 0.72              |
| 1:AA:271(B):G:H5'' | 1:AA:271(C):U:C5'  | 2.19                     | 0.72              |
| 1:AA:448:U:C4      | 1:AA:583:G:H1'     | 2.23                     | 0.72              |
| 1:AA:558:G:OP1     | 9:AK:112:LEU:HG    | 1.88                     | 0.72              |
| 1:AA:598:G:O4'     | 11:AM:13:ASN:ND2   | 2.22                     | 0.72              |
| 1:AA:688:U:OP2     | 28:Ad:2:LYS:HE2    | 1.88                     | 0.72              |
| 1:AA:878:A:O4'     | 1:AA:899:A:N1      | 2.22                     | 0.72              |
| 1:AA:1062:G:C5     | 1:AA:1063:G:C5     | 2.77                     | 0.72              |
| 1:AA:1083:U:N1     | 1:AA:1085:A:N7     | 2.36                     | 0.72              |
| 1:AA:1105:U:C2     | 1:AA:1107:G:C6     | 2.78                     | 0.72              |
| 1:AA:1270:C:C4'    | 1:AA:1271:G:C5'    | 2.67                     | 0.72              |
| 1:AA:1299:G:H1     | 1:AA:1639:U:H3'    | 1.54                     | 0.72              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1315:C:H2'   | 1:AA:1316:U:H6     | 1.49                     | 0.72              |
| 1:AA:1782:C:N4    | 1:AA:2587:A:C6     | 2.56                     | 0.72              |
| 1:AA:1971:A:C8    | 1:AA:1971:A:C3'    | 2.72                     | 0.72              |
| 1:AA:2125:G:C1'   | 3:AC:218:MET:N     | 2.04                     | 0.72              |
| 1:AA:2231:C:H2'   | 1:AA:2232:U:H6     | 1.52                     | 0.72              |
| 1:AA:2284:C:O2'   | 1:AA:2325:G:N2     | 2.22                     | 0.72              |
| 1:AA:2507:C:H4'   | 56:BD:75:C:H1'     | 1.69                     | 0.72              |
| 1:AA:2646:C:O2'   | 1:AA:2647:U:H5'    | 1.89                     | 0.72              |
| 1:AA:2657:A:H2'   | 1:AA:2658:C:C5'    | 2.19                     | 0.72              |
| 1:AA:2745:C:H1'   | 8:AH:143:GLN:HG2   | 1.71                     | 0.72              |
| 1:AA:2815:C:C4'   | 26:Ab:42:PRO:HG3   | 2.19                     | 0.72              |
| 3:AC:43:VAL:CG2   | 3:AC:189:ILE:HD11  | 2.20                     | 0.72              |
| 5:AE:7:VAL:HG13   | 5:AE:194:GLY:O     | 1.88                     | 0.72              |
| 5:AE:200:GLU:HB3  | 5:AE:202:LYS:HZ3   | 1.54                     | 0.72              |
| 6:AF:74:ARG:CZ    | 6:AF:75:HIS:H      | 2.03                     | 0.72              |
| 7:AG:65:GLY:O     | 7:AG:66:GLN:HB2    | 1.89                     | 0.72              |
| 7:AG:113:ARG:HD3  | 7:AG:139:LEU:HD21  | 1.70                     | 0.72              |
| 7:AG:128:ARG:HH12 | 7:AG:162:THR:HA    | 1.54                     | 0.72              |
| 8:AH:29:PRO:HD3   | 8:AH:79:VAL:HA     | 1.71                     | 0.72              |
| 9:AK:123:TYR:CD2  | 9:AK:129:PRO:HB2   | 2.24                     | 0.72              |
| 9:AK:127:ASP:OD1  | 9:AK:128:HIS:N     | 2.23                     | 0.72              |
| 11:AM:23:PRO:HG2  | 11:AM:29:LYS:N     | 2.05                     | 0.72              |
| 14:AP:78:LEU:HD13 | 14:AP:79:ALA:H     | 1.52                     | 0.72              |
| 15:AQ:64:ARG:CZ   | 15:AQ:77:PRO:HB2   | 2.19                     | 0.72              |
| 15:AQ:79:HIS:HB2  | 15:AQ:82:LEU:HB2   | 1.70                     | 0.72              |
| 16:AR:108:GLU:HB2 | 16:AR:111:GLU:OE1  | 1.88                     | 0.72              |
| 17:AS:19:LYS:O    | 17:AS:96:ILE:HD11  | 1.89                     | 0.72              |
| 17:AS:69:LYS:HE2  | 17:AS:70:ILE:CD1   | 2.19                     | 0.72              |
| 19:AU:57:LEU:HD23 | 19:AU:58:HIS:N     | 2.04                     | 0.72              |
| 21:AW:109:ALA:C   | 21:AW:113:ALA:HB2  | 2.15                     | 0.72              |
| 26:Ab:12:SER:O    | 26:Ab:13:LYS:C     | 2.31                     | 0.72              |
| 27:Ac:25:LYS:CE   | 29:Ae:35:GLN:HB3   | 2.18                     | 0.72              |
| 32:AJ:33:ASN:HB3  | 32:AJ:63:ARG:CA    | 2.19                     | 0.72              |
| 34:BA:453:A:N6    | 34:BA:480:U:H3     | 1.88                     | 0.72              |
| 34:BA:762:C:H2'   | 34:BA:763:G:H8     | 1.54                     | 0.72              |
| 34:BA:842:C:H4'   | 34:BA:848:C:N3     | 2.04                     | 0.72              |
| 35:BF:23:ARG:NH1  | 35:BF:24:TRP:N     | 2.37                     | 0.72              |
| 36:BG:29:TYR:O    | 36:BG:29:TYR:HD2   | 1.72                     | 0.72              |
| 36:BG:156:ARG:HB3 | 36:BG:193:TYR:CD1  | 2.24                     | 0.72              |
| 38:BI:114:GLY:O   | 38:BI:115:VAL:HG13 | 1.89                     | 0.72              |
| 39:BJ:14:LEU:CD1  | 39:BJ:18:GLN:HB3   | 2.18                     | 0.72              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 39:BJ:98:LEU:CD2  | 39:BJ:101:ALA:HB2 | 2.17                     | 0.72              |
| 41:BL:88:LYS:HZ2  | 41:BL:88:LYS:N    | 1.85                     | 0.72              |
| 49:BT:41:PRO:O    | 49:BT:43:LYS:HD2  | 1.88                     | 0.72              |
| 49:BT:60:LEU:HA   | 49:BT:64:ALA:CB   | 2.19                     | 0.72              |
| 52:BW:5:LEU:HD23  | 52:BW:6:LYS:N     | 2.05                     | 0.72              |
| 56:BD:41:C:C3'    | 56:BD:42:C:H5''   | 2.17                     | 0.72              |
| 57:BZ:126:VAL:HA  | 57:BZ:163:VAL:HB  | 1.71                     | 0.72              |
| 57:BZ:129:LYS:HZ1 | 60:BZ:701:GCP:C1' | 2.02                     | 0.72              |
| 57:BZ:502:PHE:CE1 | 57:BZ:556:VAL:C   | 2.66                     | 0.72              |
| 57:BZ:575:ASP:CB  | 57:BZ:590:ARG:CB  | 2.52                     | 0.72              |
| 1:AA:17:G:H4'     | 16:AR:25:TRP:CH2  | 2.25                     | 0.72              |
| 1:AA:85:G:OP1     | 20:AV:8:LYS:HB3   | 1.90                     | 0.72              |
| 1:AA:126:A:H5'    | 28:Ad:47:ARG:HH12 | 1.54                     | 0.72              |
| 1:AA:245:G:C4     | 1:AA:246:C:H5     | 2.07                     | 0.72              |
| 1:AA:298:G:N1     | 1:AA:338:G:O2'    | 2.22                     | 0.72              |
| 1:AA:373:U:O2     | 1:AA:400:G:N2     | 2.22                     | 0.72              |
| 1:AA:389:G:H1     | 11:AM:64:LYS:HG2  | 1.54                     | 0.72              |
| 1:AA:445:C:H3'    | 16:AR:3:ARG:NE    | 2.01                     | 0.72              |
| 1:AA:617:G:C8     | 1:AA:618:G:N7     | 2.58                     | 0.72              |
| 1:AA:648:G:H2'    | 1:AA:649:G:C8     | 2.24                     | 0.72              |
| 1:AA:660:G:H5''   | 6:AF:99:TYR:CZ    | 2.25                     | 0.72              |
| 1:AA:724:U:C2'    | 1:AA:725:G:H5'    | 2.19                     | 0.72              |
| 1:AA:783:A:O2'    | 1:AA:784:A:OP1    | 2.08                     | 0.72              |
| 1:AA:899:A:O2'    | 1:AA:900:A:OP2    | 2.06                     | 0.72              |
| 1:AA:1053:C:H42   | 1:AA:1107:G:H1    | 1.36                     | 0.72              |
| 1:AA:1313:U:H2'   | 1:AA:1314:C:H6    | 1.55                     | 0.72              |
| 1:AA:1314:C:C2    | 1:AA:1315:C:C5    | 2.78                     | 0.72              |
| 1:AA:1364:G:H5''  | 1:AA:1809:A:C4    | 2.24                     | 0.72              |
| 1:AA:1799:G:H5''  | 4:AD:264:LYS:HE2  | 1.69                     | 0.72              |
| 1:AA:1851:U:H2'   | 1:AA:1852:C:C5    | 2.24                     | 0.72              |
| 1:AA:1864:U:H2'   | 1:AA:1869:G:C5'   | 2.18                     | 0.72              |
| 1:AA:2033:A:C6    | 1:AA:2036:C:C4    | 2.77                     | 0.72              |
| 1:AA:2631:G:C5    | 1:AA:2894:G:N7    | 2.58                     | 0.72              |
| 1:AA:2657:A:C8    | 1:AA:2664:G:N2    | 2.56                     | 0.72              |
| 1:AA:2781:A:C8    | 1:AA:2781:A:C3'   | 2.71                     | 0.72              |
| 1:AA:2811:G:C6    | 1:AA:2891:G:N2    | 2.57                     | 0.72              |
| 2:AB:29:A:H2'     | 2:AB:30:C:H6      | 1.52                     | 0.72              |
| 2:AB:101:A:C2'    | 2:AB:102:G:H8     | 1.99                     | 0.72              |
| 4:AD:37:LEU:HD11  | 4:AD:64:ILE:N     | 2.04                     | 0.72              |
| 5:AE:54:GLN:HB3   | 5:AE:57:LYS:HE2   | 1.71                     | 0.72              |
| 5:AE:147:PRO:HG2  | 5:AE:149:ARG:HD2  | 1.72                     | 0.72              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 6:AF:31:HIS:ND1   | 11:AM:14:LYS:HE3   | 2.03                     | 0.72              |
| 7:AG:82:LEU:HD22  | 56:BE:52:G:OP2     | 1.87                     | 0.72              |
| 9:AK:16:ILE:HB    | 9:AK:54:VAL:CG2    | 2.19                     | 0.72              |
| 10:AL:43:VAL:HG11 | 10:AL:54:GLU:OE1   | 1.89                     | 0.72              |
| 10:AL:76:ALA:CA   | 15:AQ:77:PRO:HD2   | 2.18                     | 0.72              |
| 12:AN:16:ARG:HG3  | 12:AN:72:LYS:HB3   | 1.72                     | 0.72              |
| 12:AN:74:TYR:O    | 12:AN:91:GLU:HG2   | 1.90                     | 0.72              |
| 17:AS:69:LYS:HG2  | 17:AS:70:ILE:H     | 1.55                     | 0.72              |
| 19:AU:16:LYS:HE2  | 19:AU:16:LYS:N     | 2.05                     | 0.72              |
| 20:AV:19:LYS:NZ   | 20:AV:39:VAL:O     | 2.21                     | 0.72              |
| 21:AW:9:TYR:HB3   | 21:AW:14:LYS:NZ    | 2.04                     | 0.72              |
| 23:AY:5:LEU:O     | 23:AY:9:ARG:HG2    | 1.90                     | 0.72              |
| 23:AY:51:GLN:O    | 23:AY:55:LEU:HD13  | 1.88                     | 0.72              |
| 24:AZ:40:THR:HG22 | 24:AZ:42:ALA:N     | 2.04                     | 0.72              |
| 27:Ac:48:VAL:O    | 27:Ac:49:HIS:CB    | 2.37                     | 0.72              |
| 30:Af:17:ILE:HG13 | 30:Af:26:ILE:HB    | 1.72                     | 0.72              |
| 32:AJ:81:ALA:O    | 32:AJ:99:ILE:HG21  | 1.89                     | 0.72              |
| 34:BA:81:G:O6     | 34:BA:87:A:N6      | 2.23                     | 0.72              |
| 34:BA:137:C:H2'   | 34:BA:138:G:O5'    | 1.86                     | 0.72              |
| 34:BA:411:A:C4    | 34:BA:413:G:H1'    | 2.25                     | 0.72              |
| 34:BA:474:G:H5'   | 49:BT:81:ARG:NE    | 2.04                     | 0.72              |
| 34:BA:484:G:H5'   | 34:BA:486:U:H1'    | 1.70                     | 0.72              |
| 34:BA:595:G:C8    | 34:BA:641:U:N3     | 2.57                     | 0.72              |
| 34:BA:716:A:C1'   | 44:BO:118:GLY:HA2  | 2.15                     | 0.72              |
| 34:BA:953:G:H2'   | 34:BA:954:G:H8     | 1.53                     | 0.72              |
| 34:BA:1049:U:H1'  | 34:BA:1201:A:O4'   | 1.87                     | 0.72              |
| 34:BA:1066:C:C6   | 34:BA:1067:A:N7    | 2.58                     | 0.72              |
| 34:BA:1115:C:H1'  | 34:BA:1186:G:C2    | 2.24                     | 0.72              |
| 34:BA:1126:U:H2'  | 34:BA:1127:G:H8    | 1.54                     | 0.72              |
| 38:BI:145:LYS:HA  | 38:BI:148:VAL:CG2  | 2.19                     | 0.72              |
| 40:BK:132:GLY:O   | 40:BK:136:LYS:CB   | 2.37                     | 0.72              |
| 40:BK:141:VAL:O   | 40:BK:144:MET:HE2  | 1.89                     | 0.72              |
| 41:BL:101:PRO:O   | 41:BL:102:ARG:HB2  | 1.87                     | 0.72              |
| 42:BM:6:GLY:HA2   | 42:BM:83:ARG:HB3   | 1.71                     | 0.72              |
| 42:BM:111:ARG:O   | 42:BM:119:ALA:HB2  | 1.90                     | 0.72              |
| 45:BP:100:ILE:C   | 45:BP:101:VAL:HG22 | 2.14                     | 0.72              |
| 46:BQ:37:THR:CB   | 46:BQ:56:LEU:CB    | 2.68                     | 0.72              |
| 48:BS:36:ILE:HA   | 48:BS:59:MET:HE1   | 1.71                     | 0.72              |
| 50:BU:34:LYS:HE2  | 50:BU:35:VAL:O     | 1.89                     | 0.72              |
| 51:BV:43:PHE:C    | 51:BV:51:LEU:HD22  | 2.13                     | 0.72              |
| 51:BV:66:LEU:HD12 | 51:BV:67:ALA:H     | 1.49                     | 0.72              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 55:BC:45:U:O2'     | 55:BC:46:G:H5'     | 1.89                     | 0.72              |
| 56:BE:18:G:N3      | 56:BE:58:A:O4'     | 2.22                     | 0.72              |
| 57:BZ:81:PHE:CB    | 57:BZ:344:ALA:HB3  | 2.17                     | 0.72              |
| 57:BZ:230:LYS:CA   | 57:BZ:231:VAL:HB   | 2.19                     | 0.72              |
| 1:AA:600:G:O2'     | 6:AF:105:VAL:HG22  | 1.87                     | 0.72              |
| 1:AA:792:G:N2      | 1:AA:2072:G:O2'    | 2.22                     | 0.72              |
| 1:AA:1067:A:H4'    | 32:AJ:21:PRO:CB    | 2.18                     | 0.72              |
| 1:AA:1071:G:O2'    | 1:AA:1089:G:C8     | 2.35                     | 0.72              |
| 1:AA:1079:C:C2'    | 1:AA:1080:C:H5'    | 2.20                     | 0.72              |
| 1:AA:1245:G:O2'    | 1:AA:1246:A:H5'    | 1.88                     | 0.72              |
| 1:AA:1280:G:O2'    | 1:AA:1281:G:H5'    | 1.89                     | 0.72              |
| 1:AA:1438:U:H3     | 1:AA:1553:A:N6     | 1.87                     | 0.72              |
| 1:AA:1557:C:C2     | 1:AA:1558:A:N7     | 2.57                     | 0.72              |
| 1:AA:1596:A:N6     | 1:AA:1597:A:C6     | 2.58                     | 0.72              |
| 1:AA:1797:C:C2     | 1:AA:1798:U:C5     | 2.76                     | 0.72              |
| 1:AA:1839:G:H2'    | 1:AA:1839:G:N3     | 2.03                     | 0.72              |
| 1:AA:1916:A:H2'    | 1:AA:1916:A:N3     | 2.05                     | 0.72              |
| 1:AA:1937:A:N6     | 1:AA:1939:U:C4     | 2.52                     | 0.72              |
| 1:AA:2019:A:H3'    | 1:AA:2020:A:C5'    | 2.18                     | 0.72              |
| 1:AA:2208:U:H1'    | 1:AA:2217:G:N1     | 2.03                     | 0.72              |
| 1:AA:2433:A:OP2    | 1:AA:2433:A:H3'    | 1.88                     | 0.72              |
| 1:AA:2450:A:OP1    | 1:AA:2497:A:N7     | 2.22                     | 0.72              |
| 1:AA:2547:U:H2'    | 1:AA:2548:G:H5''   | 1.71                     | 0.72              |
| 1:AA:2557:G:O2'    | 57:BZ:544:THR:HG22 | 1.89                     | 0.72              |
| 1:AA:2799:A:H1'    | 1:AA:2802:G:O6     | 1.88                     | 0.72              |
| 1:AA:2847:U:C5     | 1:AA:2848:G:N7     | 2.58                     | 0.72              |
| 3:AC:63:SER:O      | 3:AC:65:PRO:HD3    | 1.88                     | 0.72              |
| 5:AE:5:LEU:O       | 5:AE:5:LEU:HD22    | 1.90                     | 0.72              |
| 5:AE:151:TYR:CG    | 5:AE:152:LYS:N     | 2.57                     | 0.72              |
| 6:AF:36:VAL:HG11   | 6:AF:183:VAL:CG1   | 2.19                     | 0.72              |
| 9:AK:55:VAL:HG21   | 9:AK:127:ASP:CA    | 2.18                     | 0.72              |
| 10:AL:24:VAL:HG23  | 10:AL:26:LYS:HG2   | 1.71                     | 0.72              |
| 15:AQ:26:ASP:HA    | 15:AQ:100:TYR:CE2  | 2.24                     | 0.72              |
| 17:AS:40:LEU:CD2   | 17:AS:51:VAL:HG12  | 2.18                     | 0.72              |
| 21:AW:151:HIS:CB   | 21:AW:168:GLU:HG2  | 2.18                     | 0.72              |
| 25:Aa:23:GLU:HA    | 25:Aa:27:THR:O     | 1.90                     | 0.72              |
| 25:Aa:29:PRO:HG2   | 25:Aa:31:ILE:CG2   | 2.20                     | 0.72              |
| 34:BA:1142:G:O2'   | 34:BA:1143:G:H5'   | 1.90                     | 0.72              |
| 34:BA:1265:G:H2'   | 34:BA:1266:G:H5'   | 1.68                     | 0.72              |
| 35:BF:111:ARG:HH11 | 35:BF:111:ARG:CA   | 2.01                     | 0.72              |
| 39:BJ:49:ALA:HB1   | 51:BV:80:PRO:HD3   | 1.70                     | 0.72              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 41:BL:8:ASP:O     | 41:BL:12:ARG:HG3  | 1.89                     | 0.72              |
| 41:BL:11:THR:O    | 41:BL:12:ARG:C    | 2.32                     | 0.72              |
| 44:BO:13:GLN:HB3  | 44:BO:76:GLY:HA3  | 1.71                     | 0.72              |
| 45:BP:46:LYS:HE3  | 45:BP:47:LYS:NZ   | 2.04                     | 0.72              |
| 49:BT:56:ALA:O    | 49:BT:60:LEU:HG   | 1.90                     | 0.72              |
| 56:BD:72:C:N3     | 56:BD:73:A:C2     | 2.56                     | 0.72              |
| 57:BZ:204:PRO:C   | 57:BZ:290:ASP:OD1 | 2.32                     | 0.72              |
| 57:BZ:396:LYS:HB3 | 57:BZ:475:VAL:N   | 2.04                     | 0.72              |
| 1:AA:83:G:H1      | 1:AA:102:G:C2'    | 2.03                     | 0.72              |
| 1:AA:231:C:H42    | 1:AA:232:G:N2     | 1.87                     | 0.72              |
| 1:AA:261:G:O2'    | 1:AA:609:A:H4'    | 1.89                     | 0.72              |
| 1:AA:563:G:N2     | 16:AR:34:LYS:HE2  | 2.04                     | 0.72              |
| 1:AA:691:C:O2'    | 4:AD:45:ASN:ND2   | 2.22                     | 0.72              |
| 1:AA:760:G:C2'    | 1:AA:761:A:H5'    | 2.20                     | 0.72              |
| 1:AA:1198:U:H2'   | 1:AA:1199:U:C6    | 2.24                     | 0.72              |
| 1:AA:1266:G:N2    | 1:AA:2012:G:H2'   | 2.04                     | 0.72              |
| 1:AA:1341:U:O4    | 1:AA:1395:A:H2    | 1.72                     | 0.72              |
| 1:AA:1363:C:O2'   | 1:AA:1809:A:C8    | 2.41                     | 0.72              |
| 1:AA:1372:U:H2'   | 1:AA:1373:A:C5'   | 2.19                     | 0.72              |
| 1:AA:1517:G:H21   | 1:AA:1518:C:H1'   | 1.54                     | 0.72              |
| 1:AA:1520:U:H2'   | 1:AA:1521:G:C5'   | 2.06                     | 0.72              |
| 1:AA:1665:A:H5''  | 10:AL:65:THR:O    | 1.88                     | 0.72              |
| 1:AA:1817:G:C2'   | 1:AA:1818:U:H5'   | 2.19                     | 0.72              |
| 1:AA:1832:C:H2'   | 1:AA:1833:U:H5'   | 1.71                     | 0.72              |
| 1:AA:1952:A:H2    | 10:AL:22:ILE:HG12 | 1.53                     | 0.72              |
| 1:AA:2208:U:H2'   | 1:AA:2209:C:H5'   | 1.72                     | 0.72              |
| 1:AA:2331:G:H2'   | 1:AA:2332:U:O4'   | 1.90                     | 0.72              |
| 1:AA:2670:A:N3    | 1:AA:2671:A:N7    | 2.36                     | 0.72              |
| 1:AA:2695:C:H2'   | 1:AA:2696:U:C5    | 2.24                     | 0.72              |
| 1:AA:2721:A:H2'   | 1:AA:2722:G:H8    | 1.55                     | 0.72              |
| 2:AB:43:C:O2      | 7:AG:95:ARG:NE    | 2.23                     | 0.72              |
| 3:AC:22:ILE:HB    | 3:AC:228:SER:OXT  | 1.76                     | 0.72              |
| 3:AC:66:HIS:CG    | 3:AC:67:GLY:N     | 2.57                     | 0.72              |
| 3:AC:131:LEU:HD13 | 3:AC:137:LEU:HA   | 1.71                     | 0.72              |
| 4:AD:17:THR:C     | 4:AD:19:ALA:H     | 1.96                     | 0.72              |
| 4:AD:72:LYS:HZ1   | 4:AD:99:ASP:CG    | 1.98                     | 0.72              |
| 4:AD:161:THR:OG1  | 4:AD:196:VAL:HB   | 1.90                     | 0.72              |
| 5:AE:45:THR:OG1   | 5:AE:46:ALA:N     | 2.21                     | 0.72              |
| 5:AE:66:HIS:O     | 5:AE:67:PHE:C     | 2.32                     | 0.72              |
| 5:AE:128:SER:C    | 5:AE:130:GLY:H    | 1.98                     | 0.72              |
| 6:AF:45:ARG:HG2   | 6:AF:97:TYR:CD1   | 2.25                     | 0.72              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 6:AF:155:LEU:HA    | 6:AF:174:VAL:HG23  | 1.70                     | 0.72              |
| 7:AG:26:GLN:HG2    | 7:AG:29:TRP:CZ3    | 2.24                     | 0.72              |
| 8:AH:33:LEU:HD21   | 8:AH:35:VAL:HG13   | 1.71                     | 0.72              |
| 8:AH:94:TYR:HE2    | 8:AH:96:ALA:HB2    | 1.55                     | 0.72              |
| 9:AK:55:VAL:C      | 9:AK:57:ALA:N      | 2.40                     | 0.72              |
| 13:AO:56:LYS:O     | 13:AO:57:ARG:C     | 2.32                     | 0.72              |
| 13:AO:61:HIS:C     | 13:AO:64:ARG:HD3   | 2.14                     | 0.72              |
| 14:AP:30:ARG:HG2   | 14:AP:91:PRO:HG3   | 1.72                     | 0.72              |
| 15:AQ:29:ARG:CG    | 15:AQ:51:ARG:HG2   | 2.18                     | 0.72              |
| 15:AQ:53:ARG:HA    | 15:AQ:53:ARG:HE    | 1.51                     | 0.72              |
| 17:AS:12:TYR:CG    | 17:AS:13:ARG:N     | 2.54                     | 0.72              |
| 18:AT:81:ALA:HB1   | 18:AT:98:LYS:O     | 1.89                     | 0.72              |
| 20:AV:47:LYS:HB2   | 20:AV:49:VAL:CG2   | 2.18                     | 0.72              |
| 31:AI:54:ALA:HA    | 31:AI:83:TYR:O     | 1.89                     | 0.72              |
| 32:AJ:37:PHE:HZ    | 32:AJ:63:ARG:CD    | 1.91                     | 0.72              |
| 32:AJ:108:ALA:CA   | 32:AJ:109:LYS:HB2  | 2.20                     | 0.72              |
| 34:BA:410:G:C1'    | 34:BA:432:A:H61    | 2.03                     | 0.72              |
| 34:BA:1151:A:C6    | 34:BA:1152:A:N7    | 2.57                     | 0.72              |
| 34:BA:1200:C:H3'   | 34:BA:1201:A:C5'   | 2.19                     | 0.72              |
| 34:BA:1220:G:N2    | 52:BW:55:LYS:CG    | 2.53                     | 0.72              |
| 34:BA:1246:C:O2'   | 34:BA:1247:U:H5'   | 1.90                     | 0.72              |
| 34:BA:1261:A:N6    | 34:BA:1274:G:C1'   | 2.50                     | 0.72              |
| 34:BA:1308:U:O3'   | 46:BQ:92:HIS:CD2   | 2.41                     | 0.72              |
| 34:BA:1413:A:O2'   | 34:BA:1414:U:C5'   | 2.36                     | 0.72              |
| 34:BA:1417:G:N2    | 34:BA:1482:G:H2'   | 2.05                     | 0.72              |
| 34:BA:1449:C:N4    | 34:BA:1454:G:H1    | 1.87                     | 0.72              |
| 34:BA:1449:C:H2'   | 34:BA:1450:U:O5'   | 1.89                     | 0.72              |
| 35:BF:75:LYS:HA    | 35:BF:75:LYS:NZ    | 2.03                     | 0.72              |
| 35:BF:178:ARG:NH2  | 35:BF:196:LEU:HB2  | 2.01                     | 0.72              |
| 35:BF:208:ILE:CG1  | 35:BF:211:ILE:HD12 | 2.19                     | 0.72              |
| 35:BF:213:LEU:HD23 | 35:BF:213:LEU:C    | 2.14                     | 0.72              |
| 36:BG:31:HIS:O     | 36:BG:34:LEU:HB3   | 1.89                     | 0.72              |
| 36:BG:159:GLY:H    | 36:BG:193:TYR:HE1  | 1.35                     | 0.72              |
| 36:BG:186:PHE:HA   | 36:BG:198:VAL:O    | 1.88                     | 0.72              |
| 37:BH:14:ARG:CD    | 37:BH:14:ARG:C     | 2.62                     | 0.72              |
| 37:BH:109:GLY:O    | 37:BH:110:PHE:C    | 2.30                     | 0.72              |
| 38:BI:35:GLY:HA3   | 38:BI:41:VAL:CG1   | 2.20                     | 0.72              |
| 39:BJ:46:ARG:HH22  | 51:BV:37:VAL:CG1   | 2.03                     | 0.72              |
| 40:BK:76:ARG:CB    | 40:BK:156:TRP:HE1  | 1.93                     | 0.72              |
| 40:BK:106:GLN:O    | 40:BK:109:ASN:HB2  | 1.89                     | 0.72              |
| 41:BL:36:LEU:HD12  | 41:BL:48:TYR:CB    | 2.19                     | 0.72              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 44:BO:42:TRP:HE3   | 44:BO:43:SER:CA    | 2.03                     | 0.72              |
| 45:BP:25:PRO:C     | 45:BP:27:LEU:N     | 2.42                     | 0.72              |
| 48:BS:36:ILE:CD1   | 48:BS:60:VAL:HG13  | 2.20                     | 0.72              |
| 50:BU:58:GLU:O     | 50:BU:58:GLU:OE1   | 2.07                     | 0.72              |
| 52:BW:8:GLY:O      | 52:BW:10:PHE:N     | 2.22                     | 0.72              |
| 52:BW:19:VAL:HG22  | 52:BW:43:GLU:OE1   | 1.89                     | 0.72              |
| 57:BZ:146:ASP:HA   | 57:BZ:149:VAL:CG1  | 2.19                     | 0.72              |
| 57:BZ:181:GLU:CD   | 57:BZ:183:MET:HE2  | 2.14                     | 0.72              |
| 57:BZ:206:GLN:HB3  | 57:BZ:227:LYS:C    | 2.13                     | 0.72              |
| 57:BZ:239:ILE:CA   | 57:BZ:244:GLY:HA3  | 2.20                     | 0.72              |
| 57:BZ:248:ASN:ND2  | 57:BZ:273:ILE:HG12 | 2.04                     | 0.72              |
| 57:BZ:564:THR:HG22 | 57:BZ:566:GLU:HG3  | 1.70                     | 0.72              |
| 1:AA:75:G:H4'      | 23:AY:50:ARG:HH11  | 1.51                     | 0.72              |
| 1:AA:81:G:H4'      | 1:AA:294:A:H2      | 1.52                     | 0.72              |
| 1:AA:85:G:N3       | 1:AA:103:A:H2      | 1.88                     | 0.72              |
| 1:AA:265:A:H2'     | 1:AA:266:G:O4'     | 1.89                     | 0.72              |
| 1:AA:332:A:O2'     | 1:AA:334:C:OP2     | 2.05                     | 0.72              |
| 1:AA:592:G:H1'     | 29:Ae:1:MET:O      | 1.89                     | 0.72              |
| 1:AA:662:G:C4'     | 11:AM:18:ARG:H     | 1.99                     | 0.72              |
| 1:AA:1301:A:N6     | 1:AA:1303:G:N3     | 2.38                     | 0.72              |
| 1:AA:1532:C:O2'    | 1:AA:1533:C:O4'    | 2.07                     | 0.72              |
| 1:AA:1535:U:H2'    | 1:AA:1536:A:C1'    | 2.20                     | 0.72              |
| 1:AA:1537:C:C6     | 1:AA:1537:C:H3'    | 2.24                     | 0.72              |
| 1:AA:1668:A:N3     | 1:AA:1669:A:N1     | 2.37                     | 0.72              |
| 1:AA:1955:U:H3     | 1:AA:2552:U:HO2'   | 1.34                     | 0.72              |
| 1:AA:2114:A:H2'    | 1:AA:2115:G:C5'    | 2.19                     | 0.72              |
| 1:AA:2463:C:C2'    | 1:AA:2464:C:H5'    | 2.20                     | 0.72              |
| 1:AA:2469:A:C2     | 1:AA:2470:G:H1'    | 2.23                     | 0.72              |
| 1:AA:2497:A:O2'    | 1:AA:2498:C:C6     | 2.42                     | 0.72              |
| 1:AA:2623:G:N2     | 26:Ab:22:HIS:CE1   | 2.52                     | 0.72              |
| 3:AC:22:ILE:HG13   | 3:AC:225:ASN:O     | 1.88                     | 0.72              |
| 4:AD:5:LYS:CB      | 4:AD:29:PRO:HD3    | 2.19                     | 0.72              |
| 4:AD:8:PRO:HD2     | 4:AD:26:LYS:CA     | 2.19                     | 0.72              |
| 4:AD:46:GLN:C      | 4:AD:48:ARG:H      | 1.98                     | 0.72              |
| 4:AD:95:LEU:O      | 4:AD:102:LYS:HB3   | 1.88                     | 0.72              |
| 4:AD:186:HIS:HB2   | 4:AD:188:GLU:OE2   | 1.90                     | 0.72              |
| 6:AF:122:LYS:HA    | 6:AF:122:LYS:HZ3   | 1.51                     | 0.72              |
| 7:AG:36:LYS:HZ3    | 7:AG:38:VAL:N      | 1.88                     | 0.72              |
| 7:AG:41:GLN:HG3    | 7:AG:42:GLY:N      | 2.02                     | 0.72              |
| 7:AG:41:GLN:OE1    | 7:AG:155:MET:HE3   | 1.90                     | 0.72              |
| 7:AG:174:GLU:O     | 7:AG:179:PRO:HD3   | 1.88                     | 0.72              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 9:AK:86:PRO:HB2    | 9:AK:89:LYS:HZ2    | 1.53                     | 0.72              |
| 10:AL:10:VAL:HG22  | 10:AL:12:ASP:OD1   | 1.89                     | 0.72              |
| 10:AL:23:ARG:O     | 10:AL:39:ILE:HB    | 1.89                     | 0.72              |
| 11:AM:84:ASN:O     | 11:AM:85:LEU:HG    | 1.90                     | 0.72              |
| 13:AO:83:ILE:HG23  | 13:AO:86:ARG:NE    | 2.04                     | 0.72              |
| 16:AR:40:PHE:HB3   | 17:AS:78:LYS:CD    | 2.19                     | 0.72              |
| 16:AR:61:TRP:CA    | 16:AR:65:ILE:HD11  | 2.20                     | 0.72              |
| 21:AW:141:VAL:HG13 | 21:AW:142:SER:H    | 1.54                     | 0.72              |
| 23:AY:3:LYS:HA     | 23:AY:6:GLU:HG2    | 1.72                     | 0.72              |
| 25:Aa:14:ILE:HG13  | 25:Aa:39:CYS:HB2   | 1.70                     | 0.72              |
| 27:Ac:32:ASN:CG    | 27:Ac:33:LYS:N     | 2.39                     | 0.72              |
| 29:Ae:5:LYS:O      | 29:Ae:7:HIS:N      | 2.22                     | 0.72              |
| 31:AI:143:GLN:O    | 31:AI:147:ALA:HB3  | 1.88                     | 0.72              |
| 32:AJ:75:SER:HA    | 32:AJ:130:SER:CB   | 2.15                     | 0.72              |
| 33:Ag:8:UNK:CA     | 33:Ag:147:UNK:CB   | 2.67                     | 0.72              |
| 34:BA:414:A:H2'    | 34:BA:415:A:C8     | 2.24                     | 0.72              |
| 34:BA:671:G:N3     | 34:BA:672:U:H1'    | 2.04                     | 0.72              |
| 34:BA:873:A:H5'    | 34:BA:874:G:OP2    | 1.89                     | 0.72              |
| 34:BA:921:U:O2'    | 38:BI:19:MET:O     | 2.07                     | 0.72              |
| 34:BA:1167:A:C2    | 34:BA:1169:A:C4    | 2.78                     | 0.72              |
| 35:BF:171:ALA:O    | 35:BF:174:VAL:HB   | 1.88                     | 0.72              |
| 36:BG:15:THR:CG2   | 36:BG:181:ASN:HA   | 2.17                     | 0.72              |
| 36:BG:38:ARG:CB    | 36:BG:94:LEU:HD21  | 2.19                     | 0.72              |
| 38:BI:7:GLU:HG2    | 38:BI:112:LEU:HD21 | 1.71                     | 0.72              |
| 38:BI:16:THR:O     | 38:BI:26:PHE:HB2   | 1.90                     | 0.72              |
| 44:BO:21:ILE:HA    | 44:BO:30:VAL:HG22  | 1.71                     | 0.72              |
| 44:BO:84:VAL:HG23  | 44:BO:111:ASP:H    | 1.54                     | 0.72              |
| 44:BO:97:ALA:O     | 44:BO:100:ALA:HB3  | 1.89                     | 0.72              |
| 46:BQ:65:LYS:HA    | 46:BQ:66:LEU:CB    | 2.19                     | 0.72              |
| 52:BW:30:LEU:HG    | 52:BW:50:ALA:N     | 2.04                     | 0.72              |
| 52:BW:38:SER:O     | 52:BW:70:LYS:HA    | 1.90                     | 0.72              |
| 53:BX:44:ALA:HA    | 53:BX:92:LEU:HD21  | 1.72                     | 0.72              |
| 57:BZ:13:HIS:CD2   | 57:BZ:106:MET:CA   | 2.72                     | 0.72              |
| 57:BZ:395:ARG:CA   | 57:BZ:474:ASP:HB2  | 1.96                     | 0.72              |
| 1:AA:140:A:C2      | 1:AA:1408:C:H1'    | 2.24                     | 0.72              |
| 1:AA:245:G:C5      | 1:AA:246:C:H5      | 2.06                     | 0.72              |
| 1:AA:289:A:C4      | 1:AA:351:G:O6      | 2.43                     | 0.72              |
| 1:AA:535:C:C5'     | 16:AR:49:HIS:HB3   | 2.20                     | 0.72              |
| 1:AA:852:G:O2'     | 1:AA:853:G:H5'     | 1.90                     | 0.72              |
| 1:AA:996:A:H4'     | 16:AR:93:LYS:CG    | 2.20                     | 0.72              |
| 1:AA:1155:A:C2     | 1:AA:1157:G:H1'    | 2.25                     | 0.72              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1158:C:C4'    | 24:AZ:32:GLN:HE21  | 2.01                     | 0.72              |
| 1:AA:1368:G:H2'    | 1:AA:1369:G:H8     | 1.52                     | 0.72              |
| 1:AA:1702:G:C6     | 1:AA:1703:G:N7     | 2.57                     | 0.72              |
| 1:AA:1886:C:H2'    | 1:AA:1887:C:C6     | 2.24                     | 0.72              |
| 1:AA:1937:A:C2'    | 1:AA:1938:A:OP1    | 2.38                     | 0.72              |
| 1:AA:1960:A:H4'    | 34:BA:1483:A:C2    | 2.24                     | 0.72              |
| 1:AA:2649:U:H2'    | 1:AA:2650:U:C5     | 2.25                     | 0.72              |
| 1:AA:2784:C:C1'    | 5:AE:41:LYS:HZ3    | 2.03                     | 0.72              |
| 1:AA:2820:A:H2'    | 1:AA:2821:A:OP1    | 1.89                     | 0.72              |
| 2:AB:112:G:H2'     | 2:AB:112:G:N3      | 2.05                     | 0.72              |
| 4:AD:92:ILE:HA     | 4:AD:106:ILE:O     | 1.90                     | 0.72              |
| 7:AG:62:LEU:HD23   | 7:AG:143:GLU:HB2   | 1.71                     | 0.72              |
| 7:AG:135:LEU:HD11  | 7:AG:137:GLU:C     | 2.14                     | 0.72              |
| 8:AH:7:LEU:HB3     | 8:AH:65:HIS:NE2    | 2.05                     | 0.72              |
| 8:AH:98:LEU:H      | 8:AH:125:VAL:HG21  | 1.53                     | 0.72              |
| 9:AK:74:ARG:O      | 9:AK:75:TYR:C      | 2.31                     | 0.72              |
| 10:AL:75:SER:OG    | 15:AQ:77:PRO:O     | 2.04                     | 0.72              |
| 11:AM:92:GLU:H     | 11:AM:125:VAL:HG11 | 1.54                     | 0.72              |
| 12:AN:29:PHE:O     | 12:AN:29:PHE:HD1   | 1.72                     | 0.72              |
| 13:AO:26:LYS:HA    | 13:AO:29:LEU:HD12  | 1.72                     | 0.72              |
| 13:AO:97:VAL:HA    | 13:AO:114:VAL:CG2  | 2.20                     | 0.72              |
| 14:AP:57:LYS:HG3   | 14:AP:68:GLN:OE1   | 1.90                     | 0.72              |
| 15:AQ:79:HIS:ND1   | 15:AQ:79:HIS:N     | 2.33                     | 0.72              |
| 17:AS:17:GLY:HA3   | 17:AS:19:LYS:HZ3   | 1.52                     | 0.72              |
| 20:AV:46:LYS:CG    | 20:AV:58:GLY:H     | 2.03                     | 0.72              |
| 21:AW:28:MET:HE1   | 21:AW:88:PHE:HB2   | 1.72                     | 0.72              |
| 21:AW:98:MET:O     | 21:AW:126:VAL:HA   | 1.89                     | 0.72              |
| 32:AJ:112:MET:HG2  | 32:AJ:122:ALA:CB   | 2.19                     | 0.72              |
| 34:BA:122:G:N2     | 34:BA:123:C:H1'    | 2.04                     | 0.72              |
| 34:BA:440:A:H3'    | 34:BA:442:C:H6     | 1.53                     | 0.72              |
| 34:BA:563:A:H1'    | 34:BA:566:G:O2'    | 1.89                     | 0.72              |
| 34:BA:989:C:C2'    | 34:BA:990:C:H5'    | 2.20                     | 0.72              |
| 34:BA:1055:A:N3    | 34:BA:1055:A:H2'   | 2.03                     | 0.72              |
| 34:BA:1319:A:P     | 52:BW:12:ASP:OD1   | 2.48                     | 0.72              |
| 34:BA:1442:G:H21   | 34:BA:1446:A:H5''  | 1.53                     | 0.72              |
| 34:BA:1455:G:O2'   | 34:BA:1459:C:H5'   | 1.89                     | 0.72              |
| 34:BA:1500:A:OP1   | 34:BA:1508:G:P     | 2.48                     | 0.72              |
| 34:BA:1512:U:H2'   | 34:BA:1513:A:H8    | 1.54                     | 0.72              |
| 35:BF:14:GLY:O     | 35:BF:15:VAL:HG13  | 1.88                     | 0.72              |
| 35:BF:16:HIS:CA    | 35:BF:204:ASN:HB2  | 2.20                     | 0.72              |
| 35:BF:162:ILE:HD13 | 35:BF:162:ILE:H    | 1.55                     | 0.72              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 37:BH:59:ARG:HA   | 37:BH:59:ARG:CZ   | 2.18                     | 0.72              |
| 37:BH:106:TYR:HB3 | 37:BH:114:ARG:HE  | 1.53                     | 0.72              |
| 37:BH:180:GLY:O   | 37:BH:182:LYS:HG2 | 1.89                     | 0.72              |
| 38:BI:28:PHE:N    | 38:BI:28:PHE:CD1  | 2.58                     | 0.72              |
| 38:BI:63:ARG:O    | 38:BI:66:MET:HG2  | 1.88                     | 0.72              |
| 38:BI:102:ALA:HB1 | 38:BI:106:PRO:HB2 | 1.69                     | 0.72              |
| 40:BK:46:ALA:CA   | 40:BK:49:ILE:HD13 | 2.16                     | 0.72              |
| 40:BK:71:PRO:HG2  | 40:BK:96:GLN:HG3  | 1.72                     | 0.72              |
| 40:BK:113:GLU:CG  | 40:BK:118:VAL:HB  | 2.17                     | 0.72              |
| 41:BL:43:GLY:O    | 41:BL:44:PHE:HB2  | 1.88                     | 0.72              |
| 41:BL:92:ARG:HD2  | 41:BL:92:ARG:N    | 2.04                     | 0.72              |
| 42:BM:79:LEU:HD13 | 42:BM:101:PHE:CB  | 2.18                     | 0.72              |
| 42:BM:97:LYS:HZ1  | 42:BM:102:LEU:CD1 | 1.99                     | 0.72              |
| 43:BN:61:GLU:HG2  | 43:BN:62:HIS:N    | 2.04                     | 0.72              |
| 44:BO:16:SER:O    | 44:BO:35:PRO:HG3  | 1.90                     | 0.72              |
| 46:BQ:77:ASN:O    | 46:BQ:80:ARG:NH1  | 2.21                     | 0.72              |
| 46:BQ:87:TYR:OH   | 52:BW:75:ALA:HB3  | 1.90                     | 0.72              |
| 48:BS:75:PRO:HA   | 48:BS:78:TYR:CB   | 2.18                     | 0.72              |
| 50:BU:17:LYS:HE3  | 50:BU:48:GLU:HA   | 1.71                     | 0.72              |
| 51:BV:36:ASN:HB3  | 51:BV:40:LEU:CG   | 2.20                     | 0.72              |
| 52:BW:42:PRO:O    | 52:BW:45:VAL:HG23 | 1.89                     | 0.72              |
| 52:BW:62:ILE:HD11 | 52:BW:67:VAL:HG13 | 1.70                     | 0.72              |
| 57:BZ:69:ARG:NE   | 57:BZ:269:GLU:HG2 | 2.05                     | 0.72              |
| 57:BZ:200:ASP:HB3 | 57:BZ:228:ARG:HG2 | 1.72                     | 0.72              |
| 57:BZ:390:ARG:O   | 57:BZ:397:GLN:HB2 | 1.90                     | 0.72              |
| 57:BZ:502:PHE:CZ  | 57:BZ:556:VAL:C   | 2.66                     | 0.72              |
| 1:AA:6:A:C5       | 1:AA:2898:U:C2    | 2.77                     | 0.72              |
| 1:AA:293:U:H3'    | 1:AA:293:U:C6     | 2.25                     | 0.72              |
| 1:AA:662:G:O2'    | 11:AM:18:ARG:HB2  | 1.90                     | 0.72              |
| 1:AA:739:G:H2'    | 1:AA:1784:A:H61   | 1.55                     | 0.72              |
| 1:AA:760:G:H2'    | 1:AA:761:A:H5'    | 1.71                     | 0.72              |
| 1:AA:811:U:C6     | 1:AA:811:U:O5'    | 2.43                     | 0.72              |
| 1:AA:901:A:C4     | 1:AA:902:C:C6     | 2.78                     | 0.72              |
| 1:AA:1263:U:H5    | 1:AA:1265:A:N6    | 1.88                     | 0.72              |
| 1:AA:1372:U:H2'   | 1:AA:1373:A:H5'   | 1.70                     | 0.72              |
| 1:AA:1475:G:H1    | 1:AA:1477:A:H61   | 1.33                     | 0.72              |
| 1:AA:1504:C:O5'   | 1:AA:1504:C:H6    | 1.73                     | 0.72              |
| 1:AA:1546:C:H4'   | 1:AA:1547:C:H5    | 1.55                     | 0.72              |
| 1:AA:1566:A:O2'   | 1:AA:1567:A:OP1   | 2.07                     | 0.72              |
| 1:AA:1568:G:H5''  | 4:AD:60:ARG:O     | 1.88                     | 0.72              |
| 1:AA:1856:G:H2'   | 1:AA:1857:G:C5'   | 2.19                     | 0.72              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1934:C:C4'    | 1:AA:1974:C:H4'    | 2.19                     | 0.72              |
| 1:AA:2052:G:N9     | 5:AE:150:VAL:HG23  | 2.03                     | 0.72              |
| 1:AA:2152:G:P      | 3:AC:3:HIS:CA      | 2.77                     | 0.72              |
| 1:AA:2299:G:O2'    | 1:AA:2300:G:H5'    | 1.90                     | 0.72              |
| 1:AA:2306:C:C2     | 7:AG:46:ALA:HB2    | 2.24                     | 0.72              |
| 1:AA:2507:C:O2     | 59:AA:3002:8AN:C2  | 2.38                     | 0.72              |
| 1:AA:2631:G:P      | 1:AA:2894:G:H1'    | 2.18                     | 0.72              |
| 1:AA:2807:G:C2     | 1:AA:2808:U:C5     | 2.77                     | 0.72              |
| 4:AD:63:ARG:HG3    | 4:AD:64:ILE:H      | 1.53                     | 0.72              |
| 4:AD:146:GLU:O     | 4:AD:189:CYS:HB3   | 1.88                     | 0.72              |
| 6:AF:37:VAL:HA     | 6:AF:184:TYR:CZ    | 2.25                     | 0.72              |
| 7:AG:20:ILE:HG21   | 7:AG:28:VAL:HG13   | 1.72                     | 0.72              |
| 9:AK:116:LEU:HD23  | 9:AK:116:LEU:C     | 2.14                     | 0.72              |
| 11:AM:77:ARG:O     | 11:AM:81:GLN:HG3   | 1.90                     | 0.72              |
| 12:AN:127:ILE:HD13 | 12:AN:129:THR:CG2  | 2.19                     | 0.72              |
| 16:AR:74:LEU:HD22  | 16:AR:78:THR:CG2   | 2.20                     | 0.72              |
| 17:AS:40:LEU:HG    | 17:AS:54:GLY:C     | 2.14                     | 0.72              |
| 21:AW:57:ILE:C     | 21:AW:58:VAL:HG22  | 2.15                     | 0.72              |
| 32:AJ:74:ALA:HB1   | 32:AJ:126:MET:HE2  | 1.70                     | 0.72              |
| 34:BA:309:G:O2'    | 34:BA:310:G:C5'    | 2.37                     | 0.72              |
| 34:BA:703:G:O2'    | 34:BA:704:A:OP2    | 2.07                     | 0.72              |
| 34:BA:819:A:C2     | 34:BA:1529:G:O6    | 2.42                     | 0.72              |
| 34:BA:1200:C:H5''  | 34:BA:1201:A:O3'   | 1.90                     | 0.72              |
| 34:BA:1412:C:O2    | 34:BA:1489:G:C2    | 2.43                     | 0.72              |
| 34:BA:1414:U:O4    | 34:BA:1487:G:O6    | 2.06                     | 0.72              |
| 34:BA:1516:G:N2    | 34:BA:1518:A:O5'   | 2.23                     | 0.72              |
| 35:BF:223:ILE:HG22 | 35:BF:229:VAL:HA   | 1.70                     | 0.72              |
| 36:BG:85:ARG:HH21  | 36:BG:89:GLU:CB    | 2.01                     | 0.72              |
| 36:BG:140:ARG:HA   | 36:BG:143:GLU:HB2  | 1.71                     | 0.72              |
| 37:BH:169:LYS:HG2  | 37:BH:176:LEU:HD21 | 1.72                     | 0.72              |
| 38:BI:98:THR:HG21  | 38:BI:119:LEU:HD21 | 1.72                     | 0.72              |
| 42:BM:19:LEU:HD23  | 42:BM:20:ARG:H     | 1.55                     | 0.72              |
| 43:BN:5:ARG:HB2    | 43:BN:5:ARG:CZ     | 2.17                     | 0.72              |
| 43:BN:11:PHE:CE1   | 47:BR:55:GLY:HA3   | 2.24                     | 0.72              |
| 45:BP:36:VAL:HG23  | 45:BP:81:SER:C     | 2.15                     | 0.72              |
| 46:BQ:4:ILE:HD12   | 46:BQ:57:ARG:HG2   | 1.64                     | 0.72              |
| 46:BQ:14:ARG:HG3   | 46:BQ:16:ASP:OD2   | 1.90                     | 0.72              |
| 46:BQ:108:ARG:NH1  | 46:BQ:111:LYS:HB3  | 2.05                     | 0.72              |
| 56:BD:4:C:N4       | 56:BD:69:G:C5      | 2.54                     | 0.72              |
| 56:BD:67:C:H2'     | 56:BD:68:C:H5'     | 1.72                     | 0.72              |
| 57:BZ:233:PRO:HA   | 57:BZ:235:GLN:HB3  | 1.72                     | 0.72              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:6:A:N1       | 1:AA:2897:U:C4     | 2.55                     | 0.72              |
| 1:AA:6:A:N3       | 1:AA:2897:U:O2     | 2.23                     | 0.72              |
| 1:AA:125:G:O3'    | 28:Ad:47:ARG:NH1   | 2.22                     | 0.72              |
| 1:AA:290:G:OP2    | 1:AA:351:G:N2      | 2.21                     | 0.72              |
| 1:AA:531:C:H3'    | 1:AA:532:A:O4'     | 1.88                     | 0.72              |
| 1:AA:556:G:H2'    | 1:AA:557:U:H6      | 1.54                     | 0.72              |
| 1:AA:558:G:H5'    | 9:AK:112:LEU:HD12  | 1.71                     | 0.72              |
| 1:AA:781:A:C1'    | 4:AD:222:ARG:NH1   | 2.49                     | 0.72              |
| 1:AA:834:C:H1'    | 1:AA:2358:G:C2     | 2.25                     | 0.72              |
| 1:AA:879:G:C6     | 1:AA:897:C:C2'     | 2.56                     | 0.72              |
| 1:AA:911:A:H8     | 1:AA:2264:C:C1'    | 1.95                     | 0.72              |
| 1:AA:914:C:C6     | 1:AA:914:C:C3'     | 2.72                     | 0.72              |
| 1:AA:923:C:O4'    | 22:AX:26:TYR:HB2   | 1.89                     | 0.72              |
| 1:AA:1044:G:N2    | 1:AA:1046:A:N7     | 2.37                     | 0.72              |
| 1:AA:1313:U:O2'   | 1:AA:1314:C:H5'    | 1.89                     | 0.72              |
| 1:AA:1475:G:N2    | 1:AA:1476:C:H5''   | 2.03                     | 0.72              |
| 1:AA:1657:C:C5'   | 5:AE:133:LYS:HD3   | 2.17                     | 0.72              |
| 1:AA:1759:A:H5'   | 1:AA:2715:C:C1'    | 2.20                     | 0.72              |
| 1:AA:1775:U:C5    | 4:AD:208:LYS:HD2   | 2.25                     | 0.72              |
| 1:AA:2282:G:H4'   | 1:AA:2283:C:OP2    | 1.88                     | 0.72              |
| 1:AA:2417:C:H2'   | 1:AA:2418:A:H8     | 1.55                     | 0.72              |
| 1:AA:2498:C:C2'   | 1:AA:2499:C:H5''   | 2.20                     | 0.72              |
| 1:AA:2623:G:C5'   | 1:AA:2826:A:H1'    | 2.20                     | 0.72              |
| 1:AA:2701:C:C3'   | 1:AA:2702:U:H5''   | 2.10                     | 0.72              |
| 2:AB:12:C:C5      | 22:AX:74:ARG:HB2   | 2.24                     | 0.72              |
| 3:AC:40:THR:C     | 3:AC:216:THR:HG21  | 2.14                     | 0.72              |
| 3:AC:86:ALA:CA    | 3:AC:150:GLY:HA2   | 2.18                     | 0.72              |
| 3:AC:148:ASN:ND2  | 3:AC:152:ILE:HG13  | 2.04                     | 0.72              |
| 5:AE:51:PHE:CG    | 5:AE:52:LEU:N      | 2.57                     | 0.72              |
| 8:AH:11:VAL:HG13  | 8:AH:15:VAL:CG1    | 2.18                     | 0.72              |
| 8:AH:107:VAL:HG13 | 8:AH:152:ARG:HE    | 1.54                     | 0.72              |
| 10:AL:64:ARG:NH1  | 10:AL:67:LYS:N     | 2.25                     | 0.72              |
| 11:AM:96:THR:HG22 | 11:AM:99:LEU:HD12  | 1.71                     | 0.72              |
| 11:AM:99:LEU:HD22 | 11:AM:101:VAL:HG13 | 1.72                     | 0.72              |
| 12:AN:77:LYS:HB3  | 12:AN:78:PRO:HD3   | 1.71                     | 0.72              |
| 15:AQ:29:ARG:C    | 15:AQ:30:VAL:HG12  | 2.14                     | 0.72              |
| 16:AR:102:GLU:CB  | 16:AR:105:VAL:HB   | 2.20                     | 0.72              |
| 20:AV:72:VAL:CG2  | 20:AV:81:LYS:HE2   | 2.19                     | 0.72              |
| 21:AW:6:LYS:HG2   | 21:AW:7:ALA:H      | 1.54                     | 0.72              |
| 22:AX:19:LYS:CG   | 22:AX:20:ARG:H     | 2.03                     | 0.72              |
| 25:Aa:40:HIS:HB3  | 25:Aa:41:PRO:CD    | 2.19                     | 0.72              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:Aa:53:GLU:HG2   | 25:Aa:54:GLY:H     | 1.52                     | 0.72              |
| 32:AJ:104:VAL:HG12 | 32:AJ:127:ILE:HD12 | 0.80                     | 0.72              |
| 34:BA:160:A:H2'    | 34:BA:161:A:O4'    | 1.90                     | 0.72              |
| 34:BA:507:C:H2'    | 34:BA:508:C:H5     | 1.55                     | 0.72              |
| 34:BA:577:G:H21    | 34:BA:578:C:H1'    | 1.55                     | 0.72              |
| 34:BA:713:G:N2     | 34:BA:777:A:C1'    | 2.51                     | 0.72              |
| 34:BA:760:G:H1     | 50:BU:105:ALA:C    | 1.97                     | 0.72              |
| 34:BA:964:A:H1'    | 43:BN:55:LYS:NZ    | 2.04                     | 0.72              |
| 34:BA:970:C:H5''   | 34:BA:971:G:OP1    | 1.90                     | 0.72              |
| 34:BA:1015:A:H2'   | 34:BA:1016:A:C8    | 2.24                     | 0.72              |
| 34:BA:1142:G:H2'   | 34:BA:1143:G:H8    | 1.53                     | 0.72              |
| 34:BA:1158:C:O2'   | 35:BF:133:LYS:NZ   | 0.58                     | 0.72              |
| 38:BI:94:ALA:HB3   | 38:BI:117:ASP:C    | 2.15                     | 0.72              |
| 39:BJ:7:ASN:ND2    | 39:BJ:62:TRP:CD1   | 2.58                     | 0.72              |
| 39:BJ:10:LEU:HD21  | 39:BJ:61:LEU:HG    | 1.72                     | 0.72              |
| 39:BJ:30:LEU:HB3   | 39:BJ:35:ALA:HB3   | 1.72                     | 0.72              |
| 39:BJ:53:ALA:HB1   | 39:BJ:86:ARG:HH11  | 1.52                     | 0.72              |
| 40:BK:150:ALA:HA   | 44:BO:59:TYR:CG    | 2.25                     | 0.72              |
| 41:BL:120:THR:N    | 41:BL:123:GLU:OE1  | 2.23                     | 0.72              |
| 44:BO:85:ARG:HE    | 44:BO:111:ASP:HB3  | 1.55                     | 0.72              |
| 46:BQ:14:ARG:N     | 46:BQ:43:THR:O     | 2.23                     | 0.72              |
| 46:BQ:56:LEU:HD13  | 46:BQ:60:VAL:CG2   | 2.19                     | 0.72              |
| 47:BR:26:ARG:HE    | 47:BR:43:CYS:CA    | 2.02                     | 0.72              |
| 55:BC:34:G:H2'     | 55:BC:35:A:C5'     | 2.18                     | 0.72              |
| 57:BZ:25:LEU:O     | 57:BZ:27:GLN:HG3   | 1.89                     | 0.72              |
| 57:BZ:99:VAL:CG1   | 57:BZ:104:GLY:C    | 2.63                     | 0.72              |
| 57:BZ:204:PRO:C    | 57:BZ:229:GLY:HA3  | 2.15                     | 0.72              |
| 57:BZ:230:LYS:HB2  | 57:BZ:265:THR:CB   | 2.19                     | 0.72              |
| 57:BZ:407:VAL:HA   | 57:BZ:408:GLU:HB2  | 1.70                     | 0.72              |
| 57:BZ:509:LYS:HG3  | 57:BZ:561:ILE:HG21 | 1.72                     | 0.72              |
| 57:BZ:511:PHE:O    | 57:BZ:560:PRO:HG3  | 1.88                     | 0.72              |
| 1:AA:373:U:H4'     | 1:AA:374:A:C8      | 2.25                     | 0.71              |
| 1:AA:453:C:H4'     | 1:AA:457:A:N6      | 2.04                     | 0.71              |
| 1:AA:567:A:N1      | 1:AA:568:U:O2      | 2.23                     | 0.71              |
| 1:AA:586:A:N6      | 1:AA:1254:A:C2     | 2.58                     | 0.71              |
| 1:AA:685:A:C1'     | 1:AA:688:U:O4      | 2.37                     | 0.71              |
| 1:AA:696:G:O2'     | 1:AA:697:C:H5'     | 1.90                     | 0.71              |
| 1:AA:718:A:H5''    | 1:AA:719:C:C6      | 2.25                     | 0.71              |
| 1:AA:1005:C:C5     | 1:AA:1143:A:OP1    | 2.41                     | 0.71              |
| 1:AA:1718:G:C8     | 1:AA:1725:G:N7     | 2.58                     | 0.71              |
| 1:AA:1813:G:HO2'   | 4:AD:46:GLN:HG2    | 1.55                     | 0.71              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2031:A:N6    | 1:AA:2498:C:N1     | 2.37                     | 0.71              |
| 1:AA:2227:A:H1'   | 4:AD:262:ARG:HD2   | 1.70                     | 0.71              |
| 1:AA:2378:A:N1    | 1:AA:2379:G:H1'    | 2.05                     | 0.71              |
| 1:AA:2660:A:C2    | 57:BZ:453:SER:O    | 2.43                     | 0.71              |
| 1:AA:2666:C:H2'   | 1:AA:2667:C:C5'    | 2.19                     | 0.71              |
| 4:AD:164:GLN:HB3  | 4:AD:176:ARG:HB3   | 1.72                     | 0.71              |
| 5:AE:13:ARG:CZ    | 5:AE:20:ALA:HB3    | 2.19                     | 0.71              |
| 7:AG:37:VAL:HG22  | 7:AG:159:VAL:HG12  | 1.72                     | 0.71              |
| 7:AG:80:PHE:O     | 7:AG:83:ARG:NH2    | 2.23                     | 0.71              |
| 10:AL:10:VAL:HG23 | 10:AL:83:ALA:O     | 1.90                     | 0.71              |
| 10:AL:25:LEU:H    | 10:AL:39:ILE:HG22  | 1.55                     | 0.71              |
| 10:AL:112:MET:HA  | 10:AL:115:VAL:CG2  | 2.18                     | 0.71              |
| 12:AN:56:ARG:NH2  | 12:AN:57:HIS:HB2   | 2.05                     | 0.71              |
| 12:AN:58:PHE:C    | 12:AN:60:ARG:H     | 1.98                     | 0.71              |
| 17:AS:62:LEU:HB2  | 17:AS:64:HIS:ND1   | 2.05                     | 0.71              |
| 20:AV:72:VAL:HG11 | 20:AV:96:ILE:HG21  | 1.71                     | 0.71              |
| 21:AW:42:VAL:HB   | 21:AW:43:GLU:CD    | 2.14                     | 0.71              |
| 26:Ab:50:GLY:HA3  | 26:Ab:57:VAL:CG2   | 2.20                     | 0.71              |
| 28:Ad:24:THR:HG23 | 28:Ad:27:GLY:HA3   | 1.71                     | 0.71              |
| 34:BA:192:U:C1'   | 53:BX:103:GLY:HA2  | 2.20                     | 0.71              |
| 34:BA:1227:A:H8   | 34:BA:1228:C:O4'   | 1.72                     | 0.71              |
| 35:BF:31:TYR:HE2  | 35:BF:200:ILE:HG21 | 1.54                     | 0.71              |
| 37:BH:90:GLY:HA3  | 37:BH:200:GLU:CD   | 2.14                     | 0.71              |
| 37:BH:200:GLU:CG  | 37:BH:201:GLN:HE21 | 2.02                     | 0.71              |
| 38:BI:106:PRO:O   | 38:BI:109:ILE:HG22 | 1.89                     | 0.71              |
| 42:BM:48:GLU:N    | 42:BM:49:PRO:HD2   | 2.05                     | 0.71              |
| 42:BM:71:SER:HA   | 42:BM:74:ILE:HD12  | 1.72                     | 0.71              |
| 46:BQ:19:LEU:CB   | 46:BQ:25:ILE:HG21  | 2.19                     | 0.71              |
| 46:BQ:108:ARG:HA  | 46:BQ:108:ARG:NH1  | 2.00                     | 0.71              |
| 49:BT:72:ARG:NH2  | 49:BT:73:LEU:HB2   | 2.04                     | 0.71              |
| 51:BV:18:ARG:NH2  | 51:BV:21:LYS:HD3   | 2.05                     | 0.71              |
| 51:BV:63:GLN:OE1  | 51:BV:66:LEU:HD21  | 1.90                     | 0.71              |
| 52:BW:40:ILE:O    | 52:BW:68:GLY:HA2   | 1.90                     | 0.71              |
| 52:BW:51:VAL:CG1  | 52:BW:75:ALA:CB    | 2.67                     | 0.71              |
| 56:BD:67:C:H5     | 56:BD:68:C:N4      | 1.87                     | 0.71              |
| 57:BZ:13:HIS:HB2  | 57:BZ:108:GLN:C    | 2.14                     | 0.71              |
| 57:BZ:153:ALA:HB3 | 57:BZ:154:THR:C    | 2.15                     | 0.71              |
| 57:BZ:200:ASP:CB  | 57:BZ:228:ARG:CG   | 2.51                     | 0.71              |
| 1:AA:675:A:H1'    | 1:AA:2443:C:O2'    | 1.90                     | 0.71              |
| 1:AA:703:U:H3'    | 1:AA:704:G:H8      | 1.55                     | 0.71              |
| 1:AA:956:G:P      | 12:AN:87:LYS:HZ2   | 2.13                     | 0.71              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1025:G:H1'    | 1:AA:1134:G:C4'    | 2.19                     | 0.71              |
| 1:AA:1203:G:H1     | 1:AA:1206:G:H1     | 1.35                     | 0.71              |
| 1:AA:1565:C:N3     | 1:AA:1567:A:C1'    | 2.52                     | 0.71              |
| 1:AA:1617:C:OP2    | 1:AA:1617:C:C4'    | 2.38                     | 0.71              |
| 1:AA:1661:G:H2'    | 1:AA:1662:C:H6     | 1.55                     | 0.71              |
| 1:AA:2021:C:H5'    | 1:AA:2022:U:H5     | 1.55                     | 0.71              |
| 1:AA:2559:C:O2'    | 1:AA:2560:C:H5'    | 1.89                     | 0.71              |
| 1:AA:2569:G:C2     | 1:AA:2570:G:N7     | 2.57                     | 0.71              |
| 1:AA:2629:A:N1     | 1:AA:2801:A:H2     | 1.86                     | 0.71              |
| 3:AC:78:ALA:O      | 3:AC:119:VAL:HG11  | 1.89                     | 0.71              |
| 5:AE:119:ARG:HE    | 5:AE:120:TRP:N     | 1.87                     | 0.71              |
| 5:AE:119:ARG:NH2   | 5:AE:155:LYS:HD2   | 2.06                     | 0.71              |
| 6:AF:195:ASP:O     | 6:AF:197:ASP:N     | 2.22                     | 0.71              |
| 7:AG:5:VAL:CG1     | 7:AG:9:ARG:HH22    | 2.02                     | 0.71              |
| 8:AH:43:VAL:CG1    | 8:AH:44:VAL:N      | 2.54                     | 0.71              |
| 9:AK:74:ARG:HE     | 9:AK:82:LEU:HD11   | 1.54                     | 0.71              |
| 10:AL:9:GLU:CB     | 10:AL:82:ASN:HB3   | 2.17                     | 0.71              |
| 10:AL:97:ARG:NH2   | 10:AL:97:ARG:CB    | 2.39                     | 0.71              |
| 10:AL:101:PRO:HD3  | 10:AL:119:PRO:O    | 1.90                     | 0.71              |
| 12:AN:37:LEU:HA    | 12:AN:100:GLY:HA2  | 1.72                     | 0.71              |
| 12:AN:130:LYS:HZ1  | 12:AN:132:VAL:CG1  | 2.03                     | 0.71              |
| 14:AP:33:LYS:HG2   | 14:AP:54:LEU:HD21  | 1.72                     | 0.71              |
| 15:AQ:11:GLU:N     | 15:AQ:11:GLU:OE2   | 2.22                     | 0.71              |
| 15:AQ:27:THR:HG22  | 15:AQ:28:VAL:H     | 1.55                     | 0.71              |
| 20:AV:11:ASP:O     | 20:AV:73:ARG:HD2   | 1.91                     | 0.71              |
| 21:AW:95:PRO:HD2   | 21:AW:131:ARG:HG2  | 1.71                     | 0.71              |
| 28:Ad:17:GLY:C     | 28:Ad:21:ARG:HH12  | 1.97                     | 0.71              |
| 28:Ad:43:THR:C     | 28:Ad:45:ALA:N     | 2.47                     | 0.71              |
| 31:AI:140:GLY:O    | 33:Ag:136:UNK:CA   | 2.37                     | 0.71              |
| 34:BA:95:G:C2      | 34:BA:96:G:H1'     | 2.25                     | 0.71              |
| 34:BA:968:A:H4'    | 34:BA:969:A:OP2    | 1.89                     | 0.71              |
| 34:BA:1118:C:C6    | 34:BA:1179:A:N3    | 2.43                     | 0.71              |
| 34:BA:1403:C:O2'   | 34:BA:1499:A:N6    | 2.24                     | 0.71              |
| 34:BA:1405:G:O4'   | 34:BA:1519:A:H4'   | 1.89                     | 0.71              |
| 37:BH:52:SER:C     | 37:BH:54:TYR:N     | 2.40                     | 0.71              |
| 37:BH:106:TYR:HD2  | 37:BH:114:ARG:HG2  | 1.55                     | 0.71              |
| 37:BH:152:SER:O    | 37:BH:155:LEU:HD22 | 1.89                     | 0.71              |
| 41:BL:11:THR:HA    | 41:BL:14:ARG:CZ    | 2.20                     | 0.71              |
| 41:BL:93:VAL:O     | 41:BL:133:LEU:HG   | 1.89                     | 0.71              |
| 45:BP:101:VAL:HG23 | 45:BP:104:VAL:HG21 | 1.72                     | 0.71              |
| 46:BQ:16:ASP:OD2   | 46:BQ:34:LEU:HD11  | 1.90                     | 0.71              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 46:BQ:80:ARG:CB   | 52:BW:65:ASN:ND2  | 2.53                     | 0.71              |
| 46:BQ:108:ARG:HD2 | 46:BQ:108:ARG:N   | 2.05                     | 0.71              |
| 49:BT:6:LEU:O     | 49:BT:6:LEU:HD22  | 1.90                     | 0.71              |
| 56:BE:8:U:H1'     | 56:BE:48:C:H1'    | 1.71                     | 0.71              |
| 57:BZ:158:LEU:HA  | 57:BZ:159:ASP:HB3 | 1.71                     | 0.71              |
| 57:BZ:204:PRO:O   | 57:BZ:229:GLY:N   | 2.23                     | 0.71              |
| 57:BZ:293:ASN:N   | 57:BZ:294:VAL:HA  | 2.04                     | 0.71              |
| 57:BZ:407:VAL:HA  | 57:BZ:408:GLU:O   | 1.89                     | 0.71              |
| 57:BZ:495:LYS:O   | 57:BZ:538:LEU:CD1 | 2.38                     | 0.71              |
| 1:AA:270(X):G:C6  | 1:AA:270(Y):G:H1' | 2.26                     | 0.71              |
| 1:AA:443:A:N3     | 1:AA:1201:C:H1'   | 2.05                     | 0.71              |
| 1:AA:459:U:C5     | 1:AA:469:G:N2     | 2.58                     | 0.71              |
| 1:AA:510:C:O5'    | 1:AA:512:G:N1     | 2.24                     | 0.71              |
| 1:AA:514:A:C2     | 1:AA:515:A:N9     | 2.57                     | 0.71              |
| 1:AA:754:C:C2'    | 1:AA:755:C:H5'    | 2.19                     | 0.71              |
| 1:AA:786:C:C2'    | 1:AA:787:U:H5'    | 2.20                     | 0.71              |
| 1:AA:1019:U:OP2   | 1:AA:1036:G:O4'   | 2.07                     | 0.71              |
| 1:AA:1265:A:C8    | 1:AA:1267:U:O4    | 2.43                     | 0.71              |
| 1:AA:1286:A:N3    | 1:AA:1329:U:C4    | 2.58                     | 0.71              |
| 1:AA:1670:C:OP2   | 1:AA:1671:U:C5    | 2.43                     | 0.71              |
| 1:AA:1798:U:C5'   | 4:AD:257:LEU:HD12 | 2.20                     | 0.71              |
| 1:AA:1910:G:N2    | 1:AA:1921:G:N7    | 2.33                     | 0.71              |
| 1:AA:2110:G:H2'   | 1:AA:2120:G:C5'   | 2.19                     | 0.71              |
| 1:AA:2127:G:O2'   | 1:AA:2128:C:H5'   | 1.91                     | 0.71              |
| 1:AA:2250:G:N7    | 12:AN:83:MET:O    | 2.23                     | 0.71              |
| 1:AA:2415:G:H5''  | 11:AM:61:ARG:CD   | 2.19                     | 0.71              |
| 1:AA:2533:A:H1'   | 1:AA:2664:G:C4'   | 2.20                     | 0.71              |
| 1:AA:2647:U:C2'   | 1:AA:2648:C:H6    | 2.03                     | 0.71              |
| 2:AB:30:C:H1'     | 2:AB:58:A:C2      | 2.26                     | 0.71              |
| 3:AC:100:ILE:HA   | 3:AC:103:ILE:HD12 | 1.73                     | 0.71              |
| 4:AD:177:LEU:HD21 | 4:AD:181:GLU:HB3  | 1.70                     | 0.71              |
| 4:AD:201:HIS:CD2  | 4:AD:202:LYS:HE2  | 2.25                     | 0.71              |
| 4:AD:226:MET:HE1  | 4:AD:237:GLU:N    | 2.05                     | 0.71              |
| 6:AF:24:LEU:H     | 6:AF:25:PRO:HD2   | 1.55                     | 0.71              |
| 6:AF:156:LEU:HD12 | 6:AF:167:ALA:HB1  | 1.71                     | 0.71              |
| 8:AH:60:ARG:HG2   | 8:AH:64:LEU:HD12  | 1.72                     | 0.71              |
| 9:AK:67:LEU:H     | 9:AK:87:LEU:HD22  | 1.55                     | 0.71              |
| 9:AK:107:LEU:HB3  | 9:AK:117:PHE:CZ   | 2.25                     | 0.71              |
| 9:AK:122:VAL:HG23 | 9:AK:123:TYR:N    | 2.03                     | 0.71              |
| 10:AL:105:GLU:C   | 10:AL:111:PHE:HZ  | 1.96                     | 0.71              |
| 11:AM:51:PHE:O    | 11:AM:55:ARG:HG3  | 1.89                     | 0.71              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 11:AM:75:ILE:CG2  | 11:AM:115:LEU:HD11 | 2.17                     | 0.71              |
| 12:AN:32:TYR:CE1  | 12:AN:106:VAL:HG23 | 2.25                     | 0.71              |
| 12:AN:77:LYS:CB   | 12:AN:78:PRO:HD3   | 2.20                     | 0.71              |
| 14:AP:64:GLU:CD   | 14:AP:67:ARG:HB3   | 2.15                     | 0.71              |
| 16:AR:22:LYS:H    | 16:AR:24:TYR:HE1   | 1.37                     | 0.71              |
| 23:AY:19:LEU:HD13 | 23:AY:20:VAL:N     | 2.05                     | 0.71              |
| 24:AZ:29:ARG:O    | 24:AZ:30:ARG:C     | 2.33                     | 0.71              |
| 26:Ab:51:TYR:CD2  | 26:Ab:51:TYR:C     | 2.67                     | 0.71              |
| 27:Ac:31:PRO:C    | 27:Ac:32:ASN:HD22  | 1.97                     | 0.71              |
| 28:Ad:25:PRO:HA   | 28:Ad:28:ARG:NE    | 2.04                     | 0.71              |
| 32:AJ:82:ALA:HA   | 32:AJ:99:ILE:HG23  | 1.64                     | 0.71              |
| 34:BA:14:U:H2'    | 34:BA:16:A:OP2     | 1.89                     | 0.71              |
| 34:BA:259:G:H2'   | 34:BA:260:G:H8     | 1.53                     | 0.71              |
| 34:BA:517:G:H22   | 34:BA:533:A:P      | 2.13                     | 0.71              |
| 34:BA:708:C:H4'   | 44:BO:37:GLY:HA3   | 1.71                     | 0.71              |
| 34:BA:719:C:H3'   | 34:BA:720:C:C6     | 2.26                     | 0.71              |
| 34:BA:959:A:H3'   | 34:BA:960:U:C5'    | 2.18                     | 0.71              |
| 34:BA:1253:G:H21  | 34:BA:1254:C:H1'   | 1.54                     | 0.71              |
| 34:BA:1320:C:N4   | 52:BW:52:TYR:O     | 2.22                     | 0.71              |
| 36:BG:47:LEU:O    | 36:BG:52:LEU:HD22  | 1.90                     | 0.71              |
| 36:BG:120:VAL:CG1 | 36:BG:133:ALA:HB1  | 2.19                     | 0.71              |
| 37:BH:13:ARG:HH11 | 37:BH:36:ARG:HB2   | 1.56                     | 0.71              |
| 37:BH:20:TYR:HA   | 37:BH:33:MET:SD    | 2.30                     | 0.71              |
| 37:BH:166:LYS:NZ  | 37:BH:178:VAL:O    | 2.21                     | 0.71              |
| 38:BI:133:TYR:HD2 | 38:BI:136:MET:HG3  | 1.56                     | 0.71              |
| 39:BJ:33:TYR:HE2  | 39:BJ:74:ASP:CB    | 2.03                     | 0.71              |
| 40:BK:132:GLY:O   | 40:BK:136:LYS:HB3  | 1.90                     | 0.71              |
| 41:BL:14:ARG:HD2  | 41:BL:15:ASN:N     | 2.05                     | 0.71              |
| 41:BL:27:PRO:O    | 41:BL:32:LYS:HD3   | 1.90                     | 0.71              |
| 41:BL:113:SER:HA  | 41:BL:117:GLY:O    | 1.90                     | 0.71              |
| 43:BN:11:PHE:CD1  | 47:BR:55:GLY:HA3   | 2.25                     | 0.71              |
| 43:BN:76:ASN:C    | 43:BN:78:ASN:H     | 1.98                     | 0.71              |
| 44:BO:51:LYS:HD3  | 44:BO:52:GLY:H     | 1.55                     | 0.71              |
| 44:BO:71:LYS:O    | 44:BO:74:ALA:HB3   | 1.90                     | 0.71              |
| 44:BO:86:GLY:HA2  | 44:BO:112:THR:HG23 | 1.72                     | 0.71              |
| 45:BP:61:THR:O    | 45:BP:62:SER:OG    | 2.09                     | 0.71              |
| 46:BQ:19:LEU:CA   | 46:BQ:25:ILE:HG21  | 2.21                     | 0.71              |
| 46:BQ:20:THR:OG1  | 46:BQ:30:ALA:HB2   | 1.90                     | 0.71              |
| 56:BD:59:U:O2'    | 56:BD:60:U:H5'     | 1.89                     | 0.71              |
| 57:BZ:8:ILE:HD11  | 57:BZ:96:LEU:HD12  | 1.69                     | 0.71              |
| 57:BZ:84:GLU:HG3  | 57:BZ:85:VAL:N     | 2.06                     | 0.71              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:5:A:O2'      | 1:AA:6:A:H5'      | 1.90                     | 0.71              |
| 1:AA:270(Z):U:H4' | 1:AA:270(Z):U:OP1 | 1.87                     | 0.71              |
| 1:AA:465:G:N3     | 1:AA:683:C:O2'    | 2.19                     | 0.71              |
| 1:AA:578:A:C2     | 1:AA:2018:G:O4'   | 2.44                     | 0.71              |
| 1:AA:603:A:H2'    | 1:AA:604:G:H8     | 1.54                     | 0.71              |
| 1:AA:774:A:O2'    | 1:AA:775:G:C8     | 2.43                     | 0.71              |
| 1:AA:974(A):C:O2  | 1:AA:1186:G:N1    | 2.21                     | 0.71              |
| 1:AA:1051:G:O4'   | 1:AA:2752:C:OP1   | 2.07                     | 0.71              |
| 1:AA:1059:G:H1'   | 32:AJ:75:SER:N    | 2.02                     | 0.71              |
| 1:AA:1075:C:C6    | 32:AJ:90:LYS:NZ   | 2.58                     | 0.71              |
| 1:AA:1223:C:C2    | 1:AA:1227:A:N1    | 2.59                     | 0.71              |
| 1:AA:1322:A:P     | 18:AT:11:ARG:HH11 | 2.14                     | 0.71              |
| 1:AA:1788:C:O2    | 4:AD:222:ARG:NH2  | 2.23                     | 0.71              |
| 1:AA:1803:A:H2'   | 1:AA:1804:C:C6    | 2.24                     | 0.71              |
| 1:AA:1827:C:H1'   | 1:AA:1970:A:H2    | 1.56                     | 0.71              |
| 1:AA:1910:G:C8    | 1:AA:1921:G:C2    | 2.67                     | 0.71              |
| 1:AA:2178:C:H5'   | 3:AC:46:LYS:HB3   | 1.71                     | 0.71              |
| 1:AA:2225:A:H4'   | 1:AA:2226:C:O5'   | 1.90                     | 0.71              |
| 1:AA:2393:A:O2'   | 1:AA:2394:C:H5'   | 1.90                     | 0.71              |
| 1:AA:2415:G:H5''  | 11:AM:61:ARG:CG   | 2.21                     | 0.71              |
| 1:AA:2651:C:C4    | 1:AA:2670:A:N6    | 2.59                     | 0.71              |
| 1:AA:2659:G:H1'   | 1:AA:2663:G:N2    | 2.05                     | 0.71              |
| 1:AA:2663:G:H2'   | 1:AA:2664:G:C8    | 2.26                     | 0.71              |
| 1:AA:2670:A:H2'   | 1:AA:2671:A:H8    | 1.54                     | 0.71              |
| 1:AA:2787:C:C1'   | 5:AE:61:ARG:HD2   | 2.21                     | 0.71              |
| 1:AA:2875:C:H4'   | 15:AQ:3:ARG:HB2   | 1.71                     | 0.71              |
| 2:AB:48:A:H2'     | 2:AB:49:C:H6      | 1.51                     | 0.71              |
| 4:AD:154:LYS:O    | 4:AD:155:LEU:HB3  | 1.88                     | 0.71              |
| 5:AE:13:ARG:NH2   | 5:AE:20:ALA:CB    | 2.49                     | 0.71              |
| 6:AF:142:TRP:O    | 6:AF:145:GLU:HB2  | 1.91                     | 0.71              |
| 9:AK:11:PRO:HB2   | 9:AK:13:TRP:CZ3   | 2.25                     | 0.71              |
| 9:AK:86:PRO:HD2   | 9:AK:89:LYS:HD2   | 1.71                     | 0.71              |
| 10:AL:94:ARG:CG   | 10:AL:95:GLY:N    | 2.53                     | 0.71              |
| 12:AN:97:VAL:C    | 12:AN:98:LYS:HE2  | 2.15                     | 0.71              |
| 14:AP:12:PHE:O    | 14:AP:13:ARG:C    | 2.33                     | 0.71              |
| 15:AQ:3:ARG:O     | 15:AQ:4:GLY:C     | 2.34                     | 0.71              |
| 16:AR:94:ASN:O    | 16:AR:95:LEU:C    | 2.34                     | 0.71              |
| 17:AS:36:PRO:CA   | 17:AS:61:VAL:HG22 | 2.20                     | 0.71              |
| 19:AU:63:LYS:H    | 19:AU:72:LYS:CG   | 2.03                     | 0.71              |
| 32:AJ:23:VAL:HG11 | 32:AJ:37:PHE:HB2  | 1.71                     | 0.71              |
| 34:BA:120:A:N7    | 34:BA:122:G:C6    | 2.59                     | 0.71              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BA:192:U:H2'    | 34:BA:193:C:C6    | 2.25                     | 0.71              |
| 34:BA:498:A:H4'    | 34:BA:500:G:H5'   | 1.72                     | 0.71              |
| 34:BA:624:C:H4'    | 49:BT:10:GLY:O    | 1.90                     | 0.71              |
| 34:BA:959:A:H2'    | 34:BA:960:U:C4'   | 2.20                     | 0.71              |
| 34:BA:1129:C:OP1   | 42:BM:16:ARG:NH2  | 2.22                     | 0.71              |
| 35:BF:132:LYS:H    | 35:BF:132:LYS:CE  | 2.03                     | 0.71              |
| 36:BG:182:ILE:HG23 | 36:BG:203:PHE:HA  | 1.71                     | 0.71              |
| 37:BH:76:ARG:O     | 37:BH:79:PHE:HB3  | 1.91                     | 0.71              |
| 38:BI:37:ARG:HA    | 38:BI:112:LEU:O   | 1.89                     | 0.71              |
| 40:BK:15:ASP:H     | 40:BK:20:ASP:H    | 1.38                     | 0.71              |
| 41:BL:64:LYS:CG    | 41:BL:79:VAL:HG21 | 2.19                     | 0.71              |
| 41:BL:80:ILE:HD12  | 41:BL:80:ILE:N    | 2.03                     | 0.71              |
| 44:BO:111:ASP:CG   | 44:BO:113:PRO:HD3 | 2.16                     | 0.71              |
| 46:BQ:14:ARG:HA    | 46:BQ:43:THR:O    | 1.90                     | 0.71              |
| 46:BQ:19:LEU:O     | 46:BQ:25:ILE:CB   | 2.38                     | 0.71              |
| 47:BR:27:CYS:SG    | 47:BR:43:CYS:N    | 2.63                     | 0.71              |
| 49:BT:18:ARG:HH12  | 49:BT:35:LYS:HB2  | 0.74                     | 0.71              |
| 49:BT:58:TYR:CD1   | 49:BT:58:TYR:C    | 2.68                     | 0.71              |
| 50:BU:82:MET:HA    | 50:BU:85:VAL:CG2  | 2.20                     | 0.71              |
| 56:BD:3:C:O2       | 56:BD:70:G:C6     | 2.43                     | 0.71              |
| 57:BZ:13:HIS:CB    | 57:BZ:108:GLN:HB2 | 2.16                     | 0.71              |
| 1:AA:411:G:O4'     | 1:AA:2407:G:OP1   | 2.08                     | 0.71              |
| 1:AA:526:A:H5''    | 1:AA:527:C:OP2    | 1.91                     | 0.71              |
| 1:AA:652:C:O5'     | 1:AA:652:C:H6     | 1.73                     | 0.71              |
| 1:AA:663:G:H4'     | 11:AM:18:ARG:HE   | 1.55                     | 0.71              |
| 1:AA:801:G:N7      | 6:AF:54:ARG:HG2   | 2.06                     | 0.71              |
| 1:AA:885:C:N4      | 1:AA:889:C:O3'    | 2.23                     | 0.71              |
| 1:AA:957:A:N7      | 1:AA:959:A:N7     | 2.38                     | 0.71              |
| 1:AA:1182:A:C3'    | 1:AA:1183:G:H3'   | 2.19                     | 0.71              |
| 1:AA:1534:G:N2     | 1:AA:1537:C:H41   | 1.88                     | 0.71              |
| 1:AA:1697:G:H5''   | 1:AA:1698:A:C5'   | 2.21                     | 0.71              |
| 1:AA:1703:G:H21    | 1:AA:1704:G:H1'   | 1.55                     | 0.71              |
| 1:AA:1788:C:N4     | 1:AA:1789:A:C8    | 2.59                     | 0.71              |
| 1:AA:1955:U:O5'    | 1:AA:1956:U:O4    | 2.08                     | 0.71              |
| 1:AA:2001:A:H2'    | 1:AA:2002:G:C8    | 2.24                     | 0.71              |
| 1:AA:2024:G:H2'    | 1:AA:2025:C:O4'   | 1.89                     | 0.71              |
| 1:AA:2027:G:H1'    | 1:AA:2037:G:H22   | 1.52                     | 0.71              |
| 1:AA:2160:G:H2'    | 1:AA:2161:C:C6    | 2.25                     | 0.71              |
| 1:AA:2227:A:H5''   | 4:AD:260:ARG:HD2  | 1.72                     | 0.71              |
| 1:AA:2323:G:O2'    | 1:AA:2324:C:H5'   | 1.90                     | 0.71              |
| 1:AA:2522:U:H5'    | 1:AA:2523:G:OP2   | 1.91                     | 0.71              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2619:C:H4'   | 5:AE:152:LYS:CA    | 2.06                     | 0.71              |
| 1:AA:2629:A:H5'   | 1:AA:2895:U:C1'    | 2.20                     | 0.71              |
| 1:AA:2674:G:C4    | 1:AA:2675:A:N7     | 2.59                     | 0.71              |
| 1:AA:2685:G:H4'   | 10:AL:66:LYS:HE3   | 1.71                     | 0.71              |
| 1:AA:2756:U:H5'   | 30:Af:18:ARG:O     | 1.90                     | 0.71              |
| 1:AA:2807:G:N3    | 1:AA:2807:G:H2'    | 2.05                     | 0.71              |
| 3:AC:71:GLN:HG2   | 3:AC:174:PRO:CD    | 2.20                     | 0.71              |
| 4:AD:129:ASN:O    | 4:AD:193:VAL:CB    | 2.37                     | 0.71              |
| 5:AE:121:ASN:HB3  | 5:AE:122:PHE:HD1   | 1.54                     | 0.71              |
| 5:AE:128:SER:C    | 5:AE:130:GLY:N     | 2.46                     | 0.71              |
| 7:AG:44:GLY:H     | 7:AG:88:ILE:CG2    | 2.03                     | 0.71              |
| 7:AG:75:LYS:HD3   | 7:AG:85:GLY:N      | 2.05                     | 0.71              |
| 7:AG:141:PHE:HE2  | 7:AG:145:THR:HA    | 1.54                     | 0.71              |
| 8:AH:164:TYR:CE2  | 8:AH:167:GLU:HG2   | 2.25                     | 0.71              |
| 11:AM:99:LEU:HD22 | 11:AM:101:VAL:HG22 | 1.72                     | 0.71              |
| 11:AM:122:PRO:HG3 | 11:AM:137:LYS:O    | 1.91                     | 0.71              |
| 12:AN:93:TYR:O    | 12:AN:94:VAL:HG12  | 1.90                     | 0.71              |
| 12:AN:99:PRO:CG   | 12:AN:101:ARG:HE   | 2.02                     | 0.71              |
| 15:AQ:7:ILE:C     | 15:AQ:11:GLU:OE1   | 2.34                     | 0.71              |
| 18:AT:72:LYS:HB3  | 18:AT:108:GLY:HA3  | 1.72                     | 0.71              |
| 18:AT:72:LYS:O    | 18:AT:73:ALA:O     | 2.09                     | 0.71              |
| 21:AW:24:LEU:CD1  | 21:AW:83:PRO:HD2   | 2.19                     | 0.71              |
| 21:AW:100:VAL:O   | 21:AW:124:ILE:HG23 | 1.90                     | 0.71              |
| 21:AW:105:VAL:N   | 21:AW:140:ASP:OD1  | 2.22                     | 0.71              |
| 21:AW:141:VAL:CG1 | 21:AW:142:SER:N    | 2.53                     | 0.71              |
| 25:Aa:59:PHE:HD1  | 25:Aa:60:GLN:H     | 1.35                     | 0.71              |
| 26:Ab:10:LYS:O    | 26:Ab:12:SER:N     | 2.23                     | 0.71              |
| 32:AJ:104:VAL:O   | 32:AJ:127:ILE:HD11 | 1.89                     | 0.71              |
| 34:BA:524:G:O2'   | 34:BA:525:C:H5'    | 1.90                     | 0.71              |
| 34:BA:958:A:C5    | 52:BW:56:GLN:NE2   | 2.54                     | 0.71              |
| 34:BA:1002:G:N1   | 34:BA:1003:G:O6    | 2.23                     | 0.71              |
| 34:BA:1063:C:H5'' | 34:BA:1064:G:OP2   | 1.91                     | 0.71              |
| 34:BA:1157:A:H4'  | 34:BA:1158:C:O2    | 1.90                     | 0.71              |
| 34:BA:1196:U:H6   | 34:BA:1196:U:H3'   | 1.54                     | 0.71              |
| 34:BA:1313:U:H3   | 34:BA:1324:A:H2    | 0.77                     | 0.71              |
| 34:BA:1416:G:H2'  | 34:BA:1417:G:H8    | 1.55                     | 0.71              |
| 36:BG:77:ILE:HD11 | 36:BG:103:VAL:HG21 | 1.72                     | 0.71              |
| 36:BG:88:ARG:O    | 36:BG:91:LEU:HB3   | 1.89                     | 0.71              |
| 37:BH:61:LYS:HG3  | 37:BH:207:TYR:CE1  | 2.23                     | 0.71              |
| 37:BH:74:GLN:CA   | 37:BH:77:ASN:HD22  | 1.96                     | 0.71              |
| 37:BH:141:ARG:O   | 37:BH:143:GLY:N    | 2.24                     | 0.71              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 37:BH:148:VAL:HG21 | 37:BH:162:LEU:CD1  | 2.20                     | 0.71              |
| 41:BL:5:PRO:HA     | 41:BL:8:ASP:HB3    | 1.69                     | 0.71              |
| 44:BO:54:ARG:O     | 44:BO:57:THR:HG22  | 1.90                     | 0.71              |
| 45:BP:68:ALA:HB1   | 45:BP:98:TYR:O     | 1.91                     | 0.71              |
| 50:BU:7:THR:O      | 50:BU:23:VAL:HG23  | 1.90                     | 0.71              |
| 55:BC:39:U:C3'     | 55:BC:40:C:H5'     | 2.20                     | 0.71              |
| 57:BZ:35:ARG:HA    | 57:BZ:36:ALA:O     | 1.90                     | 0.71              |
| 57:BZ:221:ILE:HG22 | 57:BZ:223:ILE:HG13 | 1.71                     | 0.71              |
| 57:BZ:233:PRO:CB   | 57:BZ:234:ASN:HB2  | 2.19                     | 0.71              |
| 1:AA:37:C:H4'      | 1:AA:451:C:OP1     | 1.91                     | 0.71              |
| 1:AA:270(Q):C:C2   | 1:AA:270(R):G:C8   | 2.79                     | 0.71              |
| 1:AA:343:C:H2'     | 1:AA:344:G:C5'     | 2.21                     | 0.71              |
| 1:AA:352:G:N2      | 1:AA:353:G:H1'     | 2.05                     | 0.71              |
| 1:AA:557:U:H4'     | 9:AK:112:LEU:HD21  | 1.72                     | 0.71              |
| 1:AA:562:U:O2      | 1:AA:572:A:C1'     | 2.39                     | 0.71              |
| 1:AA:569:U:H1'     | 1:AA:947:G:C1'     | 2.21                     | 0.71              |
| 1:AA:569:U:H1'     | 1:AA:947:G:H1'     | 1.73                     | 0.71              |
| 1:AA:880:G:O6      | 1:AA:897:C:O2      | 2.02                     | 0.71              |
| 1:AA:989:G:OP1     | 24:AZ:31:LEU:HD23  | 1.90                     | 0.71              |
| 1:AA:1014:U:C2'    | 1:AA:1015:G:H5'    | 2.20                     | 0.71              |
| 1:AA:1355:G:H22    | 1:AA:1377:G:H1'    | 1.53                     | 0.71              |
| 1:AA:1453:A:N1     | 1:AA:1454:U:H1'    | 2.06                     | 0.71              |
| 1:AA:1799:G:H22    | 4:AD:157:ARG:HH22  | 1.39                     | 0.71              |
| 1:AA:1815:A:H1'    | 1:AA:1817:G:C5     | 2.26                     | 0.71              |
| 1:AA:2010:G:C2'    | 1:AA:2011:U:H5'    | 2.19                     | 0.71              |
| 1:AA:2168:G:H2'    | 1:AA:2170:A:OP2    | 1.89                     | 0.71              |
| 1:AA:2476:A:C8     | 1:AA:2477:C:C5     | 2.78                     | 0.71              |
| 3:AC:71:GLN:CG     | 3:AC:174:PRO:HG3   | 2.15                     | 0.71              |
| 3:AC:197:GLU:O     | 3:AC:200:LYS:HB3   | 1.90                     | 0.71              |
| 4:AD:91:ARG:CZ     | 4:AD:198:ASN:ND2   | 2.54                     | 0.71              |
| 4:AD:132:PRO:O     | 4:AD:133:LEU:C     | 2.34                     | 0.71              |
| 4:AD:230:ASP:O     | 4:AD:231:HIS:C     | 2.33                     | 0.71              |
| 7:AG:9:ARG:HG2     | 7:AG:13:GLU:OE2    | 1.90                     | 0.71              |
| 7:AG:40:ASN:ND2    | 7:AG:41:GLN:H      | 1.89                     | 0.71              |
| 10:AL:6:THR:O      | 10:AL:20:MET:CA    | 2.25                     | 0.71              |
| 10:AL:47:ILE:HD12  | 10:AL:52:VAL:CG2   | 2.21                     | 0.71              |
| 10:AL:94:ARG:HG3   | 10:AL:95:GLY:H     | 1.56                     | 0.71              |
| 11:AM:126:VAL:HB   | 11:AM:146:VAL:N    | 2.06                     | 0.71              |
| 12:AN:77:LYS:CB    | 12:AN:78:PRO:CD    | 2.68                     | 0.71              |
| 13:AO:100:LEU:O    | 26:Ab:44:THR:HG22  | 1.91                     | 0.71              |
| 14:AP:24:LEU:H     | 14:AP:86:ALA:CB    | 2.03                     | 0.71              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 21:AW:39:VAL:HG21  | 21:AW:86:VAL:CG2   | 2.20                     | 0.71              |
| 22:AX:4:LYS:HZ2    | 56:BE:75:C:H2'     | 0.89                     | 0.71              |
| 32:AJ:92:GLY:CA    | 32:AJ:93:ARG:HB2   | 2.18                     | 0.71              |
| 34:BA:122:G:O2'    | 34:BA:123:C:H5'    | 1.89                     | 0.71              |
| 34:BA:254:G:O2'    | 34:BA:255:G:H5'    | 1.89                     | 0.71              |
| 34:BA:575:G:N1     | 34:BA:821:G:C8     | 2.59                     | 0.71              |
| 34:BA:878:G:H5''   | 41:BL:89:PRO:HG2   | 1.73                     | 0.71              |
| 34:BA:1084:G:H2'   | 34:BA:1085:U:C6    | 2.25                     | 0.71              |
| 34:BA:1105:A:H2'   | 34:BA:1106:G:H8    | 1.54                     | 0.71              |
| 34:BA:1117:G:O6    | 34:BA:1184:G:C6    | 2.42                     | 0.71              |
| 34:BA:1129:C:H1'   | 34:BA:1130:A:N7    | 2.06                     | 0.71              |
| 34:BA:1158:C:HO2'  | 35:BF:133:LYS:NZ   | 1.28                     | 0.71              |
| 34:BA:1260:C:H4'   | 34:BA:1284:C:H5''  | 1.72                     | 0.71              |
| 34:BA:1309:G:H21   | 34:BA:1328:C:H2'   | 1.55                     | 0.71              |
| 34:BA:1311:G:N3    | 34:BA:1327:C:H1'   | 2.05                     | 0.71              |
| 34:BA:1347:G:H3'   | 42:BM:107:ARG:C    | 2.16                     | 0.71              |
| 34:BA:1358:U:OP2   | 34:BA:1359:C:H5    | 1.73                     | 0.71              |
| 34:BA:1412:C:H2'   | 34:BA:1413:A:C8    | 2.26                     | 0.71              |
| 35:BF:59:GLU:HB3   | 35:BF:221:LEU:CD2  | 2.17                     | 0.71              |
| 35:BF:82:ARG:CA    | 35:BF:94:ASN:HD21  | 2.03                     | 0.71              |
| 36:BG:22:TRP:CZ3   | 36:BG:32:LEU:HB3   | 2.25                     | 0.71              |
| 37:BH:15:GLU:HG2   | 37:BH:63:LYS:CB    | 2.20                     | 0.71              |
| 38:BI:89:ILE:CG1   | 38:BI:131:ILE:HD12 | 2.17                     | 0.71              |
| 38:BI:109:ILE:HG23 | 38:BI:110:LEU:HD23 | 1.71                     | 0.71              |
| 38:BI:147:ASP:HA   | 38:BI:150:ARG:CB   | 2.20                     | 0.71              |
| 39:BJ:48:LEU:CB    | 51:BV:78:LEU:HD23  | 2.20                     | 0.71              |
| 39:BJ:68:PRO:O     | 39:BJ:71:ARG:HG2   | 1.90                     | 0.71              |
| 40:BK:72:ARG:HG3   | 40:BK:73:MET:H     | 1.56                     | 0.71              |
| 40:BK:122:HIS:O    | 40:BK:125:MET:CG   | 2.38                     | 0.71              |
| 41:BL:70:GLN:HE22  | 41:BL:72:PRO:HD2   | 1.54                     | 0.71              |
| 44:BO:58:PRO:CB    | 44:BO:90:GLY:HA3   | 2.20                     | 0.71              |
| 45:BP:27:LEU:HB2   | 45:BP:64:TYR:OH    | 1.90                     | 0.71              |
| 47:BR:52:GLN:C     | 47:BR:53:LEU:HD23  | 2.16                     | 0.71              |
| 51:BV:46:GLU:H     | 51:BV:49:LYS:NZ    | 1.89                     | 0.71              |
| 52:BW:9:VAL:HG22   | 52:BW:42:PRO:HB2   | 0.75                     | 0.71              |
| 57:BZ:73:VAL:HG11  | 57:BZ:88:VAL:CG2   | 2.17                     | 0.71              |
| 57:BZ:157:GLN:C    | 57:BZ:158:LEU:HD12 | 2.15                     | 0.71              |
| 57:BZ:226:ILE:O    | 57:BZ:267:LEU:HG   | 1.90                     | 0.71              |
| 57:BZ:325:PHE:O    | 57:BZ:378:PHE:CE1  | 2.39                     | 0.71              |
| 1:AA:10:G:H2'      | 1:AA:11:G:H8       | 1.56                     | 0.71              |
| 1:AA:146:G:C3'     | 1:AA:147:U:H5''    | 2.19                     | 0.71              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:270(Q):C:O2' | 1:AA:270(R):G:H5'  | 1.91                     | 0.71              |
| 1:AA:336:C:O2'    | 1:AA:337:C:H5'     | 1.89                     | 0.71              |
| 1:AA:452:G:C3'    | 1:AA:453:C:H5''    | 2.13                     | 0.71              |
| 1:AA:573:G:H5'    | 1:AA:576:U:O4      | 1.91                     | 0.71              |
| 1:AA:628:G:O5'    | 1:AA:628:G:C8      | 2.42                     | 0.71              |
| 1:AA:750:A:OP1    | 18:AT:88:ARG:NH1   | 2.24                     | 0.71              |
| 1:AA:783:A:H3'    | 4:AD:227:ASN:HD21  | 1.53                     | 0.71              |
| 1:AA:997:G:OP1    | 16:AR:92:ARG:HD2   | 1.90                     | 0.71              |
| 1:AA:1238:G:H2'   | 1:AA:1239:G:O4'    | 1.91                     | 0.71              |
| 1:AA:1270:C:O2    | 1:AA:1325:G:N7     | 2.24                     | 0.71              |
| 1:AA:1598:C:C5'   | 19:AU:36:LYS:HB3   | 2.16                     | 0.71              |
| 1:AA:1657:C:H2'   | 1:AA:1658:C:O4'    | 1.90                     | 0.71              |
| 1:AA:1799:G:H3'   | 4:AD:183:ARG:HH21  | 1.52                     | 0.71              |
| 1:AA:1813:G:O2'   | 4:AD:46:GLN:HG2    | 1.91                     | 0.71              |
| 1:AA:1910:G:N3    | 1:AA:1921:G:N3     | 2.39                     | 0.71              |
| 1:AA:2031:A:N6    | 1:AA:2498:C:C2     | 2.59                     | 0.71              |
| 1:AA:2115:G:H5''  | 1:AA:2116:G:OP2    | 1.89                     | 0.71              |
| 1:AA:2352:A:N7    | 1:AA:2366:A:C6     | 2.59                     | 0.71              |
| 1:AA:2531:A:C2    | 1:AA:2658:C:C1'    | 2.33                     | 0.71              |
| 1:AA:2582:G:C2'   | 1:AA:2583:G:H5'    | 2.21                     | 0.71              |
| 4:AD:214:TRP:CZ2  | 4:AD:219:PRO:HB3   | 2.25                     | 0.71              |
| 7:AG:6:ALA:HA     | 7:AG:9:ARG:CZ      | 2.19                     | 0.71              |
| 7:AG:86:MET:H     | 7:AG:87:PRO:CD     | 2.03                     | 0.71              |
| 8:AH:8:PRO:CB     | 8:AH:51:ARG:HH12   | 2.01                     | 0.71              |
| 9:AK:26:LEU:O     | 9:AK:26:LEU:HD12   | 1.90                     | 0.71              |
| 9:AK:71:ILE:O     | 9:AK:85:ILE:HD12   | 1.91                     | 0.71              |
| 10:AL:34:THR:C    | 10:AL:61:VAL:HG11  | 2.15                     | 0.71              |
| 12:AN:45:GLN:O    | 12:AN:48:GLU:N     | 2.24                     | 0.71              |
| 12:AN:63:LYS:HZ2  | 12:AN:64:ILE:HG13  | 1.55                     | 0.71              |
| 13:AO:97:VAL:CA   | 13:AO:114:VAL:HG13 | 2.20                     | 0.71              |
| 15:AQ:45:PHE:CZ   | 15:AQ:87:ASP:HB2   | 2.25                     | 0.71              |
| 16:AR:27:LEU:C    | 16:AR:29:SER:H     | 1.96                     | 0.71              |
| 18:AT:13:SER:O    | 18:AT:16:LYS:NZ    | 2.23                     | 0.71              |
| 18:AT:66:GLU:HA   | 18:AT:69:LEU:HD13  | 1.71                     | 0.71              |
| 18:AT:69:LEU:HD23 | 18:AT:107:LEU:CD2  | 2.15                     | 0.71              |
| 26:Ab:11:THR:HG23 | 26:Ab:15:ARG:HB3   | 1.73                     | 0.71              |
| 29:Ae:8:LYS:H     | 29:Ae:8:LYS:CE     | 2.02                     | 0.71              |
| 30:Af:25:VAL:HG11 | 30:Af:34:GLN:NE2   | 2.05                     | 0.71              |
| 34:BA:659:U:H2'   | 34:BA:660:G:C8     | 2.26                     | 0.71              |
| 34:BA:697:U:H6    | 34:BA:697:U:O5'    | 1.72                     | 0.71              |
| 34:BA:922:G:N2    | 34:BA:923:A:H1'    | 2.06                     | 0.71              |

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| Atom-1              | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 34:BA:1005:A:H2'    | 34:BA:1006:C:H5'   | 1.70                     | 0.71              |
| 34:BA:1318:A:O2'    | 52:BW:37:ARG:N     | 2.24                     | 0.71              |
| 34:BA:1414:U:H2'    | 34:BA:1415:G:C8    | 2.25                     | 0.71              |
| 35:BF:115:LEU:HD13  | 35:BF:145:LEU:CB   | 2.19                     | 0.71              |
| 36:BG:11:ARG:CG     | 36:BG:16:ARG:HH21  | 2.02                     | 0.71              |
| 36:BG:146:ALA:O     | 36:BG:147:LYS:HD2  | 1.90                     | 0.71              |
| 37:BH:61:LYS:N      | 37:BH:203:VAL:HG22 | 2.06                     | 0.71              |
| 37:BH:156:GLU:O     | 37:BH:159:ARG:HB3  | 1.90                     | 0.71              |
| 38:BI:9:LYS:HG3     | 38:BI:112:LEU:HG   | 1.73                     | 0.71              |
| 39:BJ:62:TRP:CZ2    | 39:BJ:64:GLN:HB2   | 2.26                     | 0.71              |
| 45:BP:62:SER:O      | 45:BP:63:GLY:C     | 2.34                     | 0.71              |
| 46:BQ:16:ASP:CA     | 46:BQ:34:LEU:HG    | 2.20                     | 0.71              |
| 50:BU:43:LEU:HD11   | 50:BU:69:LYS:HG3   | 1.72                     | 0.71              |
| 50:BU:61:GLU:HA     | 50:BU:71:PHE:CE2   | 2.25                     | 0.71              |
| 50:BU:94:ASN:OD1    | 50:BU:104:LYS:HD2  | 1.91                     | 0.71              |
| 57:BZ:13:HIS:CB     | 57:BZ:109:THR:N    | 2.54                     | 0.71              |
| 1:AA:281:G:N2       | 1:AA:283:A:C5'     | 2.54                     | 0.71              |
| 1:AA:299:A:N1       | 1:AA:322:A:H2'     | 2.04                     | 0.71              |
| 1:AA:619:G:N7       | 1:AA:620:G:C2      | 2.59                     | 0.71              |
| 1:AA:807:U:C2'      | 1:AA:808:G:H5'     | 2.20                     | 0.71              |
| 1:AA:880:G:N1       | 1:AA:897:C:O2'     | 2.22                     | 0.71              |
| 1:AA:966:G:O2'      | 1:AA:2267:A:N6     | 2.23                     | 0.71              |
| 1:AA:1058:G:O2'     | 32:AJ:116:ASN:ND2  | 2.21                     | 0.71              |
| 1:AA:1142(A):A:H5'' | 1:AA:1143:A:OP2    | 1.91                     | 0.71              |
| 1:AA:1273:U:H4'     | 1:AA:1275:A:P      | 2.30                     | 0.71              |
| 1:AA:1332:G:C5      | 1:AA:1609:A:N6     | 2.58                     | 0.71              |
| 1:AA:1913:A:H2      | 56:BD:37:A:HO2'    | 1.38                     | 0.71              |
| 1:AA:2227:A:H1'     | 4:AD:262:ARG:HH11  | 1.55                     | 0.71              |
| 1:AA:2238:G:C2'     | 1:AA:2239:G:H5''   | 2.20                     | 0.71              |
| 1:AA:2284:C:O5'     | 27:Ac:9:LEU:HG     | 1.89                     | 0.71              |
| 1:AA:2597:G:C5'     | 4:AD:242:ARG:HG2   | 2.20                     | 0.71              |
| 1:AA:2679:A:O2'     | 1:AA:2680:C:H5'    | 1.91                     | 0.71              |
| 1:AA:2780:G:C2'     | 1:AA:2781:A:H5''   | 2.21                     | 0.71              |
| 3:AC:100:ILE:HD11   | 3:AC:123:VAL:CG2   | 2.20                     | 0.71              |
| 4:AD:54:ARG:HB3     | 4:AD:218:ARG:HB3   | 1.72                     | 0.71              |
| 4:AD:92:ILE:HA      | 4:AD:107:ALA:HB2   | 1.72                     | 0.71              |
| 5:AE:119:ARG:CD     | 5:AE:155:LYS:HB3   | 2.21                     | 0.71              |
| 6:AF:34:TRP:CE3     | 6:AF:34:TRP:HA     | 2.25                     | 0.71              |
| 6:AF:181:LEU:HD13   | 6:AF:181:LEU:N     | 2.05                     | 0.71              |
| 7:AG:18:GLU:CD      | 7:AG:22:ARG:HH11   | 1.97                     | 0.71              |
| 8:AH:113:VAL:HG12   | 8:AH:113:VAL:O     | 1.91                     | 0.71              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AL:97:ARG:NH1   | 10:AL:98:VAL:C     | 2.48                     | 0.71              |
| 12:AN:6:ARG:NH2    | 12:AN:8:LYS:HG3    | 2.04                     | 0.71              |
| 13:AO:20:LEU:O     | 13:AO:21:TYR:C     | 2.33                     | 0.71              |
| 13:AO:97:VAL:HA    | 13:AO:114:VAL:CG1  | 2.21                     | 0.71              |
| 14:AP:33:LYS:HG2   | 14:AP:54:LEU:HD11  | 1.72                     | 0.71              |
| 16:AR:74:LEU:HD13  | 16:AR:78:THR:CG2   | 2.20                     | 0.71              |
| 17:AS:5:VAL:CG1    | 17:AS:37:VAL:HG22  | 2.20                     | 0.71              |
| 17:AS:35:LEU:O     | 17:AS:61:VAL:HG13  | 1.90                     | 0.71              |
| 17:AS:62:LEU:HD13  | 17:AS:98:GLU:N     | 2.05                     | 0.71              |
| 21:AW:2:GLU:OE2    | 21:AW:58:VAL:CB    | 2.37                     | 0.71              |
| 21:AW:41:LEU:O     | 21:AW:44:PHE:HB2   | 1.91                     | 0.71              |
| 21:AW:157:LEU:CD1  | 21:AW:161:VAL:HG13 | 2.20                     | 0.71              |
| 26:Ab:41:PRO:O     | 26:Ab:42:PRO:O     | 2.09                     | 0.71              |
| 29:Ae:22:VAL:CG1   | 29:Ae:23:VAL:H     | 2.04                     | 0.71              |
| 32:AJ:10:LEU:H     | 32:AJ:56:GLU:CG    | 2.04                     | 0.71              |
| 34:BA:299:G:H2'    | 34:BA:300:A:C8     | 2.24                     | 0.71              |
| 34:BA:578:C:O2'    | 34:BA:728:A:N3     | 2.22                     | 0.71              |
| 34:BA:582:U:C5'    | 48:BS:64:ARG:HH21  | 2.02                     | 0.71              |
| 34:BA:716:A:O2'    | 34:BA:717:C:H5'    | 1.91                     | 0.71              |
| 34:BA:1128:C:C5    | 34:BA:1139:G:O6    | 2.44                     | 0.71              |
| 34:BA:1226:C:N4    | 46:BQ:104:ARG:CD   | 2.53                     | 0.71              |
| 34:BA:1267:C:N4    | 34:BA:1311:G:O2'   | 2.24                     | 0.71              |
| 34:BA:1466:C:O3'   | 34:BA:1467:G:O4'   | 2.09                     | 0.71              |
| 35:BF:48:MET:HA    | 35:BF:51:LEU:CD1   | 2.21                     | 0.71              |
| 35:BF:132:LYS:O    | 35:BF:135:GLN:HB2  | 1.90                     | 0.71              |
| 35:BF:134:GLU:OE1  | 35:BF:134:GLU:HA   | 1.89                     | 0.71              |
| 35:BF:164:VAL:HG12 | 35:BF:186:ALA:CB   | 2.21                     | 0.71              |
| 37:BH:144:ASP:C    | 37:BH:184:LYS:HD3  | 2.16                     | 0.71              |
| 38:BI:76:ILE:HG21  | 38:BI:142:LEU:HB3  | 1.73                     | 0.71              |
| 40:BK:111:ARG:NH1  | 40:BK:111:ARG:HB3  | 2.05                     | 0.71              |
| 41:BL:126:LYS:HZ2  | 41:BL:127:LEU:HD23 | 1.54                     | 0.71              |
| 43:BN:39:PRO:O     | 43:BN:40:LEU:HB2   | 1.90                     | 0.71              |
| 44:BO:102:GLY:C    | 44:BO:104:GLN:H    | 1.95                     | 0.71              |
| 46:BQ:13:LYS:N     | 46:BQ:44:ARG:C     | 2.48                     | 0.71              |
| 46:BQ:91:ARG:NH1   | 46:BQ:97:PRO:O     | 2.23                     | 0.71              |
| 48:BS:15:PHE:CD1   | 48:BS:30:ALA:HB2   | 2.25                     | 0.71              |
| 50:BU:8:GLY:O      | 50:BU:56:VAL:HA    | 1.91                     | 0.71              |
| 51:BV:70:ILE:CG2   | 51:BV:74:ARG:HE    | 2.01                     | 0.71              |
| 56:BD:43:C:H2'     | 56:BD:44:G:O4'     | 1.91                     | 0.71              |
| 57:BZ:56:ILE:O     | 57:BZ:71:ASN:HA    | 1.90                     | 0.71              |
| 57:BZ:101:ALA:HA   | 57:BZ:140:VAL:HG21 | 1.71                     | 0.71              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:BZ:178:ASP:O   | 57:BZ:180:ALA:N   | 2.23                     | 0.71              |
| 57:BZ:309:MET:CE  | 57:BZ:366:LEU:HB3 | 2.19                     | 0.71              |
| 57:BZ:560:PRO:HB2 | 57:BZ:562:ARG:HB3 | 1.72                     | 0.71              |
| 1:AA:51:G:H1'     | 1:AA:118:A:H62    | 1.53                     | 0.71              |
| 1:AA:299:A:O2'    | 1:AA:319:C:H4'    | 1.91                     | 0.71              |
| 1:AA:460:A:C2'    | 1:AA:461:C:H6     | 2.02                     | 0.71              |
| 1:AA:566:U:O4     | 1:AA:575:A:N1     | 2.24                     | 0.71              |
| 1:AA:586:A:C6     | 1:AA:1254:A:C2    | 2.78                     | 0.71              |
| 1:AA:899:A:C2     | 1:AA:900:A:H2     | 2.07                     | 0.71              |
| 1:AA:1081:U:C6    | 1:AA:1082:U:C5    | 2.79                     | 0.71              |
| 1:AA:1142(A):A:C6 | 1:AA:1143:A:C8    | 2.79                     | 0.71              |
| 1:AA:1350:C:O2'   | 1:AA:1351:C:H5'   | 1.91                     | 0.71              |
| 1:AA:1579:A:N7    | 1:AA:1580:A:N3    | 2.38                     | 0.71              |
| 1:AA:1624:G:H2'   | 1:AA:1625:C:C5    | 2.26                     | 0.71              |
| 1:AA:1665:A:C8    | 1:AA:2726:U:N3    | 2.58                     | 0.71              |
| 1:AA:1672:C:C5    | 1:AA:1673:U:C6    | 2.79                     | 0.71              |
| 1:AA:1804:C:H4'   | 4:AD:250:TRP:CZ2  | 2.24                     | 0.71              |
| 1:AA:1878:G:H2'   | 1:AA:1879:C:H6    | 1.56                     | 0.71              |
| 1:AA:1992:G:H4'   | 1:AA:1993:U:C4    | 2.26                     | 0.71              |
| 1:AA:2111:C:OP2   | 1:AA:2111:C:C6    | 2.44                     | 0.71              |
| 1:AA:2283:C:C2    | 1:AA:2389:G:N2    | 2.57                     | 0.71              |
| 1:AA:2283:C:C5    | 1:AA:2389:G:N3    | 2.59                     | 0.71              |
| 1:AA:2286:A:H1'   | 27:Ac:37:ARG:HH21 | 1.55                     | 0.71              |
| 1:AA:2376:A:OP1   | 1:AA:2376:A:H8    | 1.74                     | 0.71              |
| 1:AA:2517:C:O2'   | 1:AA:2518:A:O5'   | 2.08                     | 0.71              |
| 1:AA:2584:U:C2'   | 1:AA:2585:U:C5    | 2.73                     | 0.71              |
| 1:AA:2799:A:OP2   | 1:AA:2799:A:H3'   | 1.91                     | 0.71              |
| 3:AC:180:PHE:HE2  | 3:AC:184:LYS:CG   | 2.04                     | 0.71              |
| 4:AD:206:LEU:HD13 | 4:AD:206:LEU:H    | 1.54                     | 0.71              |
| 5:AE:14:ILE:HA    | 5:AE:19:ARG:HA    | 1.73                     | 0.71              |
| 6:AF:186:ILE:HG22 | 6:AF:187:VAL:N    | 2.06                     | 0.71              |
| 6:AF:197:ASP:O    | 6:AF:200:GLU:OE1  | 2.08                     | 0.71              |
| 7:AG:29:TRP:C     | 7:AG:31:VAL:H     | 1.98                     | 0.71              |
| 7:AG:163:ALA:CB   | 7:AG:172:LEU:HD23 | 2.20                     | 0.71              |
| 14:AP:23:ARG:O    | 14:AP:24:LEU:HD12 | 1.91                     | 0.71              |
| 14:AP:53:SER:O    | 14:AP:55:ALA:N    | 2.23                     | 0.71              |
| 15:AQ:57:PHE:C    | 15:AQ:58:ASN:HD22 | 1.98                     | 0.71              |
| 15:AQ:86:ILE:HG22 | 15:AQ:87:ASP:N    | 2.05                     | 0.71              |
| 16:AR:105:VAL:O   | 16:AR:108:GLU:OE1 | 2.09                     | 0.71              |
| 24:AZ:16:PRO:HG2  | 24:AZ:19:GLN:HB3  | 1.73                     | 0.71              |
| 29:Ae:25:MET:HE3  | 29:Ae:44:LYS:CE   | 2.20                     | 0.71              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:26:A:H61    | 34:BA:558:G:C2'    | 2.03                     | 0.71              |
| 34:BA:88:C:O2'    | 34:BA:89:U:C6      | 2.40                     | 0.71              |
| 34:BA:109:A:N7    | 34:BA:326:G:N3     | 2.37                     | 0.71              |
| 34:BA:359:U:H2'   | 34:BA:360:A:H8     | 1.54                     | 0.71              |
| 34:BA:484:G:C8    | 34:BA:486:U:N3     | 2.59                     | 0.71              |
| 34:BA:519:C:OP2   | 45:BP:50:SER:O     | 2.08                     | 0.71              |
| 34:BA:646:U:O2'   | 34:BA:647:C:H5'    | 1.90                     | 0.71              |
| 34:BA:777:A:H2'   | 34:BA:778:G:C8     | 2.23                     | 0.71              |
| 34:BA:803:G:O2'   | 34:BA:804:U:H5'    | 1.91                     | 0.71              |
| 34:BA:973:G:N2    | 34:BA:974:A:C6     | 2.58                     | 0.71              |
| 34:BA:1068:G:H2'  | 34:BA:1069:C:H6    | 1.55                     | 0.71              |
| 34:BA:1126:U:O2'  | 34:BA:1127:G:H5'   | 1.91                     | 0.71              |
| 34:BA:1216:G:H2'  | 34:BA:1217:C:H6    | 1.55                     | 0.71              |
| 34:BA:1270:C:O4'  | 34:BA:1313:U:H4'   | 1.91                     | 0.71              |
| 34:BA:1274:G:H22  | 34:BA:1275:A:H62   | 1.38                     | 0.71              |
| 34:BA:1311:G:N1   | 34:BA:1327:C:C5    | 2.45                     | 0.71              |
| 35:BF:12:GLU:O    | 35:BF:14:GLY:N     | 2.22                     | 0.71              |
| 35:BF:101:MET:C   | 35:BF:103:THR:H    | 1.99                     | 0.71              |
| 36:BG:28:GLN:HA   | 36:BG:30:ARG:CZ    | 2.21                     | 0.71              |
| 37:BH:50:ARG:HG2  | 37:BH:51:PRO:CD    | 2.17                     | 0.71              |
| 37:BH:177:ASP:OD1 | 37:BH:179:GLU:HB3  | 1.91                     | 0.71              |
| 40:BK:42:ILE:HG22 | 40:BK:120:ILE:HD11 | 1.73                     | 0.71              |
| 41:BL:85:ARG:HD2  | 41:BL:134:ILE:O    | 1.90                     | 0.71              |
| 43:BN:79:ARG:HH22 | 43:BN:82:ILE:CD1   | 2.02                     | 0.71              |
| 43:BN:82:ILE:HG23 | 43:BN:86:MET:SD    | 2.31                     | 0.71              |
| 44:BO:22:HIS:ND1  | 44:BO:29:ILE:HD11  | 2.05                     | 0.71              |
| 44:BO:95:ILE:CA   | 44:BO:98:LEU:HG    | 2.20                     | 0.71              |
| 45:BP:56:ALA:HB2  | 45:BP:70:ILE:HG12  | 1.73                     | 0.71              |
| 45:BP:82:VAL:O    | 45:BP:106:ASP:HB2  | 1.91                     | 0.71              |
| 48:BS:36:ILE:HG22 | 48:BS:37:ASN:ND2   | 2.06                     | 0.71              |
| 49:BT:20:VAL:HA   | 49:BT:36:ILE:HG12  | 1.72                     | 0.71              |
| 51:BV:40:LEU:O    | 51:BV:43:PHE:HD1   | 1.73                     | 0.71              |
| 52:BW:22:LEU:CG   | 52:BW:25:LYS:HZ1   | 2.01                     | 0.71              |
| 57:BZ:116:ALA:O   | 57:BZ:119:TYR:HB2  | 1.91                     | 0.71              |
| 57:BZ:204:PRO:CA  | 57:BZ:290:ASP:OD1  | 2.39                     | 0.71              |
| 57:BZ:377:GLY:CA  | 57:BZ:582:PRO:HG2  | 2.16                     | 0.71              |
| 57:BZ:426:LEU:CB  | 57:BZ:441:TYR:CE2  | 2.69                     | 0.71              |
| 1:AA:196:A:H3'    | 1:AA:197:A:H5''    | 1.72                     | 0.71              |
| 1:AA:200:U:H5'    | 1:AA:201:C:OP2     | 1.91                     | 0.71              |
| 1:AA:464:U:O2'    | 28:Ad:12:ARG:NH2   | 2.23                     | 0.71              |
| 1:AA:572:A:N7     | 1:AA:573:G:C6      | 2.59                     | 0.71              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:871:U:H2'    | 1:AA:872:A:H8     | 1.56                     | 0.71              |
| 1:AA:974:G:O4'    | 1:AA:1187:G:H1'   | 1.90                     | 0.71              |
| 1:AA:1059:G:C3'   | 32:AJ:74:ALA:N    | 2.54                     | 0.71              |
| 1:AA:1274:A:C2    | 1:AA:1302:A:H2    | 2.08                     | 0.71              |
| 1:AA:1382:G:H2'   | 1:AA:1383:C:C6    | 2.25                     | 0.71              |
| 1:AA:1543:A:H5''  | 1:AA:1544:C:OP2   | 1.90                     | 0.71              |
| 1:AA:1609:A:N7    | 1:AA:1616:A:N3    | 2.38                     | 0.71              |
| 1:AA:1665:A:H5'   | 10:AL:66:LYS:HD3  | 1.71                     | 0.71              |
| 1:AA:1910:G:C4    | 1:AA:1921:G:N3    | 2.43                     | 0.71              |
| 1:AA:1992:G:C1'   | 1:AA:1993:U:O4    | 2.38                     | 0.71              |
| 1:AA:2143:C:N4    | 1:AA:2144:U:O4    | 2.24                     | 0.71              |
| 1:AA:2307:G:H3'   | 1:AA:2308:G:C4'   | 2.20                     | 0.71              |
| 1:AA:2423:U:O2'   | 1:AA:2425:A:H3'   | 1.91                     | 0.71              |
| 1:AA:2466:C:H2'   | 1:AA:2467:C:H6    | 1.56                     | 0.71              |
| 1:AA:2670:A:C2    | 1:AA:2671:A:N7    | 2.58                     | 0.71              |
| 2:AB:75:G:H22     | 21:AW:87:ASP:CG   | 1.98                     | 0.71              |
| 3:AC:162:GLU:CG   | 3:AC:163:PHE:H    | 2.02                     | 0.71              |
| 4:AD:75:ILE:HD13  | 4:AD:99:ASP:HB3   | 1.72                     | 0.71              |
| 4:AD:261:LYS:O    | 4:AD:263:ARG:N    | 2.24                     | 0.71              |
| 5:AE:5:LEU:HD22   | 5:AE:5:LEU:C      | 2.15                     | 0.71              |
| 5:AE:8:LYS:HG2    | 15:AQ:6:LEU:HD11  | 1.71                     | 0.71              |
| 5:AE:115:GLY:HA2  | 5:AE:157:ALA:HA   | 1.71                     | 0.71              |
| 5:AE:172:VAL:HA   | 5:AE:184:VAL:HG12 | 1.72                     | 0.71              |
| 6:AF:12:LEU:HB3   | 6:AF:127:GLU:HB3  | 1.71                     | 0.71              |
| 8:AH:35:VAL:HG12  | 8:AH:71:LEU:HD23  | 1.72                     | 0.71              |
| 8:AH:71:LEU:O     | 8:AH:74:ASN:HB3   | 1.91                     | 0.71              |
| 8:AH:149:ARG:HA   | 8:AH:162:ILE:HD13 | 1.72                     | 0.71              |
| 12:AN:74:TYR:N    | 12:AN:74:TYR:CD2  | 2.49                     | 0.71              |
| 13:AO:44:LEU:HD11 | 13:AO:48:VAL:HG21 | 1.72                     | 0.71              |
| 13:AO:64:ARG:NH1  | 13:AO:65:LEU:HB2  | 2.06                     | 0.71              |
| 14:AP:58:LEU:O    | 14:AP:65:VAL:HG12 | 1.90                     | 0.71              |
| 14:AP:75:GLU:O    | 14:AP:78:LEU:HB3  | 1.89                     | 0.71              |
| 20:AV:77:PRO:HG2  | 20:AV:78:ALA:H    | 1.56                     | 0.71              |
| 28:Ad:2:LYS:C     | 28:Ad:4:THR:H     | 1.99                     | 0.71              |
| 28:Ad:27:GLY:O    | 28:Ad:31:LEU:HG   | 1.91                     | 0.71              |
| 34:BA:34:C:H2'    | 34:BA:35:G:H8     | 1.55                     | 0.71              |
| 34:BA:66:G:C4'    | 34:BA:173:U:C4    | 2.73                     | 0.71              |
| 34:BA:267:C:C4    | 34:BA:268:C:N4    | 2.59                     | 0.71              |
| 34:BA:716:A:H1'   | 44:BO:118:GLY:CA  | 2.18                     | 0.71              |
| 34:BA:800:G:O5'   | 34:BA:800:G:C8    | 2.44                     | 0.71              |
| 34:BA:878:G:H2'   | 34:BA:879:C:H6    | 1.54                     | 0.71              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BA:890:G:H2'    | 34:BA:906:G:O6    | 1.90                     | 0.71              |
| 34:BA:949:A:H2'    | 34:BA:950:U:C6    | 2.26                     | 0.71              |
| 34:BA:1013:G:H2'   | 34:BA:1015:A:OP2  | 1.91                     | 0.71              |
| 34:BA:1108:G:H2'   | 34:BA:1109:C:C6   | 2.26                     | 0.71              |
| 34:BA:1117:G:N3    | 34:BA:1184:G:C4   | 2.58                     | 0.71              |
| 34:BA:1192:C:C6    | 34:BA:1192:C:C3'  | 2.69                     | 0.71              |
| 34:BA:1276:G:H2'   | 34:BA:1277:C:O4'  | 1.90                     | 0.71              |
| 34:BA:1315:U:O3'   | 34:BA:1360:A:H1'  | 1.91                     | 0.71              |
| 34:BA:1513:A:H2'   | 34:BA:1514:C:C6   | 2.26                     | 0.71              |
| 35:BF:21:ARG:O     | 35:BF:23:ARG:N    | 2.24                     | 0.71              |
| 35:BF:187:LEU:HD13 | 35:BF:188:ALA:N   | 2.06                     | 0.71              |
| 36:BG:91:LEU:HD11  | 36:BG:99:VAL:H    | 1.55                     | 0.71              |
| 39:BJ:98:LEU:HG    | 51:BV:28:GLU:HG3  | 1.73                     | 0.71              |
| 40:BK:50:ILE:HG21  | 40:BK:58:PRO:HA   | 1.71                     | 0.71              |
| 41:BL:14:ARG:O     | 41:BL:18:ARG:NE   | 2.24                     | 0.71              |
| 43:BN:31:GLY:HA3   | 43:BN:74:ILE:HG21 | 1.72                     | 0.71              |
| 45:BP:100:ILE:HD13 | 45:BP:100:ILE:N   | 2.06                     | 0.71              |
| 49:BT:33:ILE:O     | 49:BT:34:GLU:HB2  | 1.89                     | 0.71              |
| 55:BC:39:U:H2'     | 55:BC:40:C:H5'    | 1.73                     | 0.71              |
| 56:BE:4:C:C2       | 56:BE:6:G:H8      | 2.07                     | 0.71              |
| 57:BZ:15:ASP:CB    | 57:BZ:16:HIS:HD1  | 2.00                     | 0.71              |
| 57:BZ:27:GLN:CG    | 57:BZ:28:GLN:NE2  | 2.54                     | 0.71              |
| 57:BZ:169:ASN:ND2  | 57:BZ:181:GLU:OE1 | 2.24                     | 0.71              |
| 1:AA:324:A:N7      | 1:AA:340:A:H1'    | 2.05                     | 0.70              |
| 1:AA:648:G:N3      | 1:AA:649:G:C8     | 2.59                     | 0.70              |
| 1:AA:668:G:C2      | 1:AA:670:A:C6     | 2.79                     | 0.70              |
| 1:AA:709:U:H2'     | 1:AA:710:G:C8     | 2.26                     | 0.70              |
| 1:AA:781:A:H5'     | 1:AA:782:A:OP1    | 1.91                     | 0.70              |
| 1:AA:953:A:H2'     | 1:AA:954:G:C5'    | 2.09                     | 0.70              |
| 1:AA:1024:G:C2     | 1:AA:1025:G:N7    | 2.59                     | 0.70              |
| 1:AA:1068:G:O4'    | 1:AA:1096:A:H1'   | 1.91                     | 0.70              |
| 1:AA:1317:A:H2'    | 1:AA:1318:C:H6    | 1.54                     | 0.70              |
| 1:AA:1353:A:H2'    | 1:AA:1354:A:H8    | 1.52                     | 0.70              |
| 1:AA:1554:A:O2'    | 1:AA:1555:G:OP1   | 2.09                     | 0.70              |
| 1:AA:1660:C:H42    | 1:AA:2001:A:N6    | 1.87                     | 0.70              |
| 1:AA:1966:A:N3     | 1:AA:2593:U:C5'   | 2.53                     | 0.70              |
| 1:AA:2305:A:C8     | 1:AA:2306:C:C5'   | 2.73                     | 0.70              |
| 1:AA:2307:G:C5     | 1:AA:2308:G:H1'   | 2.26                     | 0.70              |
| 1:AA:2423:U:H1'    | 1:AA:2425:A:C4    | 2.25                     | 0.70              |
| 1:AA:2688:U:H1'    | 1:AA:2721:A:H61   | 1.56                     | 0.70              |
| 4:AD:12:SER:HA     | 4:AD:22:SER:O     | 1.90                     | 0.70              |

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| Atom-1             | Atom-2              | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 4:AD:209:ALA:O     | 4:AD:210:GLY:C      | 2.34                     | 0.70              |
| 4:AD:250:TRP:CE3   | 4:AD:250:TRP:HA     | 2.25                     | 0.70              |
| 5:AE:91:VAL:HG23   | 5:AE:180:ASN:OD1    | 1.91                     | 0.70              |
| 5:AE:152:LYS:HD2   | 5:AE:152:LYS:O      | 1.91                     | 0.70              |
| 6:AF:41:LEU:HB3    | 6:AF:184:TYR:HE1    | 1.53                     | 0.70              |
| 6:AF:110:LEU:CD2   | 6:AF:186:ILE:HD11   | 2.21                     | 0.70              |
| 6:AF:122:LYS:HZ1   | 6:AF:192:LEU:HB3    | 1.54                     | 0.70              |
| 7:AG:49:ASP:O      | 7:AG:53:LEU:CB      | 2.33                     | 0.70              |
| 8:AH:7:LEU:HD22    | 8:AH:65:HIS:CD2     | 2.25                     | 0.70              |
| 8:AH:132:ARG:HD3   | 8:AH:132:ARG:N      | 2.06                     | 0.70              |
| 9:AK:37:LYS:HD2    | 9:AK:43:THR:CA      | 2.21                     | 0.70              |
| 10:AL:108:GLU:O    | 10:AL:109:LYS:HB2   | 1.89                     | 0.70              |
| 11:AM:45:LEU:HB3   | 11:AM:46:LYS:CE     | 2.21                     | 0.70              |
| 11:AM:124:LYS:HA   | 11:AM:143:GLY:HA3   | 1.72                     | 0.70              |
| 13:AO:96:ARG:HB2   | 13:AO:117:VAL:HB    | 1.73                     | 0.70              |
| 17:AS:50:PRO:HB2   | 17:AS:53:GLU:OE1    | 1.90                     | 0.70              |
| 18:AT:28:SER:HB2   | 18:AT:69:LEU:O      | 1.91                     | 0.70              |
| 29:Ae:22:VAL:N     | 29:Ae:48:PHE:CE1    | 2.59                     | 0.70              |
| 29:Ae:60:LEU:HD21  | 29:Ae:64:TYR:O      | 1.91                     | 0.70              |
| 30:Af:20:HIS:HB2   | 30:Af:22:ARG:CG     | 2.16                     | 0.70              |
| 31:AI:52:PHE:O     | 31:AI:54:ALA:N      | 2.22                     | 0.70              |
| 32:AJ:55:VAL:HG21  | 32:AJ:69:THR:HG22   | 1.73                     | 0.70              |
| 34:BA:397:A:C2     | 34:BA:548:G:O6      | 2.43                     | 0.70              |
| 34:BA:1032:A:C5    | 34:BA:1032(A):G:H1' | 2.26                     | 0.70              |
| 34:BA:1037:C:N4    | 34:BA:1038:C:N4     | 2.39                     | 0.70              |
| 34:BA:1117:G:C2    | 34:BA:1184:G:C8     | 2.79                     | 0.70              |
| 34:BA:1206:G:C5'   | 36:BG:194:GLY:HA2   | 2.21                     | 0.70              |
| 35:BF:16:HIS:HA    | 35:BF:204:ASN:CB    | 2.20                     | 0.70              |
| 35:BF:72:GLY:HA3   | 35:BF:81:VAL:HG21   | 1.71                     | 0.70              |
| 35:BF:115:LEU:HD13 | 35:BF:145:LEU:CG    | 2.21                     | 0.70              |
| 37:BH:139:ARG:HG2  | 37:BH:140:VAL:N     | 2.06                     | 0.70              |
| 37:BH:173:TRP:HA   | 37:BH:186:LEU:HD12  | 1.70                     | 0.70              |
| 40:BK:69:VAL:HG11  | 40:BK:104:LEU:CG    | 2.20                     | 0.70              |
| 45:BP:48:PRO:HG2   | 45:BP:49:ASN:H      | 1.56                     | 0.70              |
| 46:BQ:78:ILE:HA    | 46:BQ:81:LEU:CD1    | 2.15                     | 0.70              |
| 51:BV:76:LEU:HD22  | 51:BV:76:LEU:N      | 2.05                     | 0.70              |
| 53:BX:87:LYS:HE3   | 53:BX:87:LYS:CA     | 2.19                     | 0.70              |
| 56:BE:9:A:N6       | 56:BE:22:G:C8       | 2.58                     | 0.70              |
| 57:BZ:21:LEU:CD1   | 57:BZ:98:VAL:HG21   | 2.21                     | 0.70              |
| 57:BZ:230:LYS:CB   | 57:BZ:265:THR:HB    | 2.20                     | 0.70              |
| 1:AA:64:A:H2'      | 1:AA:65:C:H5'       | 1.72                     | 0.70              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:336:C:H4'    | 20:AV:67:LEU:CD2  | 2.21                     | 0.70              |
| 1:AA:411:G:N2     | 1:AA:2407:G:C6    | 2.59                     | 0.70              |
| 1:AA:442:G:C4'    | 6:AF:46:ARG:HG3   | 2.20                     | 0.70              |
| 1:AA:688:U:O2'    | 1:AA:689:A:H5'    | 1.90                     | 0.70              |
| 1:AA:823:G:N3     | 1:AA:823:G:H2'    | 2.04                     | 0.70              |
| 1:AA:864:G:H2'    | 1:AA:865:C:H1'    | 1.73                     | 0.70              |
| 1:AA:1105:U:O4'   | 1:AA:1106:G:P     | 2.31                     | 0.70              |
| 1:AA:1160:G:H2'   | 1:AA:1161:C:C5    | 2.26                     | 0.70              |
| 1:AA:1483:G:N3    | 1:AA:1483:G:H2'   | 2.06                     | 0.70              |
| 1:AA:1819:A:P     | 4:AD:157:ARG:HA   | 2.30                     | 0.70              |
| 1:AA:1959:G:H2'   | 34:BA:1418:A:C2   | 2.22                     | 0.70              |
| 1:AA:2033:A:N1    | 1:AA:2036:C:C4    | 2.60                     | 0.70              |
| 1:AA:2311:A:C3'   | 1:AA:2312:U:H5    | 2.03                     | 0.70              |
| 1:AA:2507:C:H5''  | 1:AA:2573:C:N4    | 2.01                     | 0.70              |
| 1:AA:2556:C:C4'   | 57:BZ:550:GLY:HA2 | 2.21                     | 0.70              |
| 1:AA:2697:G:O2'   | 1:AA:2698:U:H5'   | 1.91                     | 0.70              |
| 1:AA:2721:A:H2'   | 1:AA:2722:G:C8    | 2.26                     | 0.70              |
| 2:AB:114:G:H2'    | 2:AB:115:G:O4'    | 1.91                     | 0.70              |
| 6:AF:150:GLY:O    | 6:AF:152:GLU:N    | 2.23                     | 0.70              |
| 10:AL:7:TYR:CB    | 10:AL:18:LYS:HE3  | 2.21                     | 0.70              |
| 10:AL:106:LEU:O   | 10:AL:109:LYS:HA  | 1.90                     | 0.70              |
| 11:AM:13:ASN:ND2  | 11:AM:14:LYS:H    | 1.87                     | 0.70              |
| 11:AM:65:ARG:NH1  | 11:AM:67:MET:N    | 2.36                     | 0.70              |
| 11:AM:137:LYS:HA  | 11:AM:137:LYS:CE  | 2.21                     | 0.70              |
| 15:AQ:85:LYS:HB3  | 15:AQ:85:LYS:HZ2  | 1.56                     | 0.70              |
| 16:AR:94:ASN:HD22 | 17:AS:6:LYS:NZ    | 1.89                     | 0.70              |
| 16:AR:114:LYS:CG  | 16:AR:115:ALA:N   | 2.54                     | 0.70              |
| 17:AS:63:GLY:O    | 17:AS:97:LYS:HB2  | 1.91                     | 0.70              |
| 19:AU:44:GLU:CG   | 19:AU:51:VAL:HG23 | 2.14                     | 0.70              |
| 21:AW:56:VAL:O    | 21:AW:57:ILE:O    | 2.09                     | 0.70              |
| 21:AW:96:VAL:O    | 21:AW:128:VAL:HA  | 1.92                     | 0.70              |
| 25:Aa:58:ARG:N    | 25:Aa:61:ARG:NH1  | 2.39                     | 0.70              |
| 32:AJ:17:ALA:CB   | 32:AJ:41:PHE:C    | 2.54                     | 0.70              |
| 34:BA:489:C:H2'   | 34:BA:490:G:C8    | 2.27                     | 0.70              |
| 34:BA:611:A:N1    | 34:BA:629:G:N2    | 2.37                     | 0.70              |
| 34:BA:674:G:H2'   | 34:BA:675:A:H8    | 1.54                     | 0.70              |
| 34:BA:769:G:N1    | 34:BA:811:C:O2    | 2.23                     | 0.70              |
| 34:BA:893:C:O2'   | 34:BA:894:G:H5'   | 1.92                     | 0.70              |
| 34:BA:1043:C:H2'  | 34:BA:1044:A:O4'  | 1.91                     | 0.70              |
| 34:BA:1115:C:N3   | 34:BA:1186:G:O6   | 2.24                     | 0.70              |
| 34:BA:1164:G:C6   | 34:BA:1165:C:N3   | 2.60                     | 0.70              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1394:A:N6    | 34:BA:1500:A:O2'   | 2.25                     | 0.70              |
| 35:BF:31:TYR:CE2   | 35:BF:200:ILE:CG2  | 2.74                     | 0.70              |
| 36:BG:142:MET:HE3  | 36:BG:143:GLU:CA   | 2.21                     | 0.70              |
| 37:BH:82:ALA:HB3   | 37:BH:89:THR:CG2   | 2.17                     | 0.70              |
| 37:BH:191:ARG:HH11 | 37:BH:192:GLU:HA   | 1.54                     | 0.70              |
| 38:BI:145:LYS:HA   | 38:BI:148:VAL:HG23 | 1.72                     | 0.70              |
| 39:BJ:68:PRO:HB2   | 39:BJ:71:ARG:HG3   | 1.71                     | 0.70              |
| 41:BL:29:SER:HB2   | 41:BL:32:LYS:NZ    | 2.05                     | 0.70              |
| 46:BQ:16:ASP:CA    | 46:BQ:34:LEU:HD12  | 2.03                     | 0.70              |
| 46:BQ:25:ILE:HG22  | 46:BQ:26:GLY:N     | 2.04                     | 0.70              |
| 56:BD:1:G:C4       | 56:BD:2:C:C4       | 2.79                     | 0.70              |
| 56:BE:21:A:C6      | 56:BE:46:G:C6      | 2.78                     | 0.70              |
| 57:BZ:207:MET:CE   | 57:BZ:224:GLY:C    | 2.55                     | 0.70              |
| 57:BZ:300:LEU:CB   | 57:BZ:301:SER:HA   | 2.17                     | 0.70              |
| 57:BZ:575:ASP:CB   | 57:BZ:590:ARG:HB2  | 2.18                     | 0.70              |
| 1:AA:18:C:OP1      | 16:AR:26:GLY:HA2   | 1.90                     | 0.70              |
| 1:AA:131:G:H2'     | 1:AA:132:G:C8      | 2.26                     | 0.70              |
| 1:AA:152:G:H22     | 1:AA:175:G:C1'     | 2.02                     | 0.70              |
| 1:AA:197:A:H61     | 1:AA:248:G:N2      | 1.88                     | 0.70              |
| 1:AA:332:A:H4'     | 1:AA:333:G:OP1     | 1.90                     | 0.70              |
| 1:AA:452:G:N1      | 1:AA:458:G:C2      | 2.59                     | 0.70              |
| 1:AA:609:A:H61     | 1:AA:619:G:N2      | 1.89                     | 0.70              |
| 1:AA:720:C:O2'     | 1:AA:721:C:H5'     | 1.91                     | 0.70              |
| 1:AA:792:G:C5      | 1:AA:2440:C:C2     | 2.79                     | 0.70              |
| 1:AA:960:A:O2'     | 1:AA:961:C:H5'     | 1.91                     | 0.70              |
| 1:AA:1050:A:N6     | 1:AA:2751:G:C8     | 2.59                     | 0.70              |
| 1:AA:1284:A:N1     | 1:AA:1285:G:N2     | 2.40                     | 0.70              |
| 1:AA:1292:U:O2'    | 1:AA:1293:C:H5'    | 1.91                     | 0.70              |
| 1:AA:1306:C:O2'    | 1:AA:1307:A:H5'    | 1.91                     | 0.70              |
| 1:AA:1324:G:H5''   | 1:AA:1325:G:O2'    | 1.91                     | 0.70              |
| 1:AA:1750:G:O2'    | 1:AA:1751:C:H5'    | 1.91                     | 0.70              |
| 1:AA:1788:C:H2'    | 4:AD:222:ARG:HE    | 1.54                     | 0.70              |
| 1:AA:2068:U:O2     | 1:AA:2430:A:N1     | 2.24                     | 0.70              |
| 1:AA:2072:G:H2'    | 1:AA:2073:C:C6     | 2.26                     | 0.70              |
| 1:AA:2226:C:O2     | 1:AA:2227:A:C1'    | 2.39                     | 0.70              |
| 1:AA:2241:A:H2'    | 1:AA:2242:G:C8     | 2.25                     | 0.70              |
| 1:AA:2262:U:O2'    | 1:AA:2328:A:N3     | 2.24                     | 0.70              |
| 1:AA:2344:U:H3'    | 1:AA:2344:U:O2     | 1.92                     | 0.70              |
| 2:AB:49:C:OP1      | 14:AP:97:ARG:N     | 2.23                     | 0.70              |
| 4:AD:8:PRO:HG2     | 4:AD:26:LYS:HG3    | 1.73                     | 0.70              |
| 4:AD:177:LEU:HD11  | 4:AD:268:ARG:CZ    | 2.21                     | 0.70              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 5:AE:176:ILE:HG23 | 5:AE:176:ILE:O     | 1.91                     | 0.70              |
| 6:AF:74:ARG:NH1   | 6:AF:76:GLY:N      | 2.38                     | 0.70              |
| 7:AG:37:VAL:HB    | 7:AG:99:MET:SD     | 2.30                     | 0.70              |
| 8:AH:11:VAL:HB    | 8:AH:50:VAL:CG2    | 2.21                     | 0.70              |
| 8:AH:55:PRO:HG2   | 8:AH:61:HIS:CE1    | 2.26                     | 0.70              |
| 9:AK:34:LEU:HB3   | 9:AK:116:LEU:HD21  | 1.74                     | 0.70              |
| 10:AL:73:ASP:O    | 15:AQ:79:HIS:CE1   | 2.43                     | 0.70              |
| 12:AN:46:GLN:OE1  | 12:AN:126:PRO:HB3  | 1.90                     | 0.70              |
| 13:AO:17:ARG:HG3  | 13:AO:18:LEU:H     | 1.56                     | 0.70              |
| 13:AO:97:VAL:C    | 13:AO:98:LEU:HG    | 2.14                     | 0.70              |
| 15:AQ:108:ARG:H   | 15:AQ:108:ARG:HH11 | 1.39                     | 0.70              |
| 16:AR:50:ARG:HD3  | 16:AR:50:ARG:H     | 1.55                     | 0.70              |
| 16:AR:50:ARG:NE   | 17:AS:75:PHE:CE2   | 2.56                     | 0.70              |
| 17:AS:25:LEU:HA   | 17:AS:28:GLU:CD    | 2.16                     | 0.70              |
| 18:AT:90:ARG:HH21 | 18:AT:90:ARG:N     | 1.89                     | 0.70              |
| 22:AX:4:LYS:CE    | 56:BE:75:C:H2'     | 2.17                     | 0.70              |
| 23:AY:6:GLU:C     | 23:AY:10:LYS:HE2   | 2.16                     | 0.70              |
| 25:Aa:10:VAL:O    | 25:Aa:10:VAL:HG12  | 1.91                     | 0.70              |
| 25:Aa:42:PHE:N    | 25:Aa:57:GLU:OE2   | 2.25                     | 0.70              |
| 29:Ae:26:LYS:HD2  | 29:Ae:44:LYS:N     | 2.05                     | 0.70              |
| 34:BA:9:G:C5'     | 38:BI:126:ARG:HD3  | 2.17                     | 0.70              |
| 34:BA:421:U:H5''  | 34:BA:422:C:OP2    | 1.92                     | 0.70              |
| 34:BA:447:G:H8    | 34:BA:447:G:O5'    | 1.74                     | 0.70              |
| 34:BA:519:C:C2'   | 34:BA:520:A:H5'    | 2.21                     | 0.70              |
| 34:BA:623:C:O2'   | 34:BA:624:C:H5'    | 1.91                     | 0.70              |
| 34:BA:1315:U:C2'  | 34:BA:1360:A:C2'   | 2.51                     | 0.70              |
| 34:BA:1318:A:C1'  | 52:BW:35:SER:HG    | 1.82                     | 0.70              |
| 34:BA:1333:A:O2'  | 34:BA:1334:G:H5'   | 1.91                     | 0.70              |
| 34:BA:1400:C:H1'  | 56:BE:34:G:C6      | 2.26                     | 0.70              |
| 34:BA:1422:G:H2'  | 34:BA:1423:G:H8    | 1.55                     | 0.70              |
| 35:BF:220:ASP:O   | 35:BF:224:GLN:HG3  | 1.89                     | 0.70              |
| 37:BH:78:LEU:CD1  | 37:BH:96:LEU:HB3   | 2.22                     | 0.70              |
| 38:BI:94:ALA:HB2  | 38:BI:119:LEU:HD21 | 1.73                     | 0.70              |
| 41:BL:26:VAL:HG13 | 41:BL:27:PRO:N     | 2.06                     | 0.70              |
| 41:BL:36:LEU:HA   | 41:BL:39:LEU:HB2   | 1.73                     | 0.70              |
| 43:BN:8:LEU:CD1   | 43:BN:94:VAL:HG11  | 2.18                     | 0.70              |
| 45:BP:68:ALA:HB1  | 45:BP:99:HIS:HA    | 1.73                     | 0.70              |
| 46:BQ:64:TRP:C    | 46:BQ:65:LYS:HD3   | 2.15                     | 0.70              |
| 46:BQ:66:LEU:N    | 46:BQ:70:LEU:HB2   | 2.05                     | 0.70              |
| 48:BS:11:VAL:HA   | 48:BS:14:GLU:OE2   | 1.91                     | 0.70              |
| 52:BW:40:ILE:HB   | 52:BW:67:VAL:O     | 1.91                     | 0.70              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 55:BC:36:A:H2'    | 55:BC:37:A:C5'     | 2.21                     | 0.70              |
| 57:BZ:156:GLU:N   | 57:BZ:157:GLN:HB3  | 2.06                     | 0.70              |
| 57:BZ:227:LYS:O   | 57:BZ:267:LEU:HD13 | 1.88                     | 0.70              |
| 1:AA:4:C:N3       | 1:AA:2900:A:C6     | 2.49                     | 0.70              |
| 1:AA:226:G:C2     | 1:AA:227:A:N3      | 2.59                     | 0.70              |
| 1:AA:282:A:H2'    | 1:AA:284:U:OP1     | 1.91                     | 0.70              |
| 1:AA:297:C:N4     | 1:AA:298:G:C2      | 2.59                     | 0.70              |
| 1:AA:308:G:H22    | 1:AA:329:G:H2'     | 1.55                     | 0.70              |
| 1:AA:371:A:H62    | 1:AA:424:G:C4'     | 2.04                     | 0.70              |
| 1:AA:663:G:HO2'   | 1:AA:940:G:H4'     | 1.55                     | 0.70              |
| 1:AA:731:C:O2'    | 1:AA:732:C:H5'     | 1.92                     | 0.70              |
| 1:AA:899:A:H2     | 1:AA:900:A:C2      | 2.04                     | 0.70              |
| 1:AA:957:A:C2     | 1:AA:2459:A:H5''   | 2.27                     | 0.70              |
| 1:AA:1335:U:OP1   | 19:AU:65:ARG:HG3   | 1.91                     | 0.70              |
| 1:AA:1484:G:H2'   | 1:AA:1485:G:C5'    | 2.21                     | 0.70              |
| 1:AA:1568:G:OP1   | 4:AD:61:LEU:CB     | 2.34                     | 0.70              |
| 1:AA:1695:G:C2'   | 1:AA:1696:G:H5'    | 2.21                     | 0.70              |
| 1:AA:1807:G:H21   | 1:AA:1809:A:H5'    | 1.55                     | 0.70              |
| 1:AA:1853:A:H2'   | 1:AA:1854:A:C8     | 2.27                     | 0.70              |
| 1:AA:1899:G:N2    | 1:AA:1902:C:H41    | 1.89                     | 0.70              |
| 1:AA:1913:A:H5'   | 1:AA:1914:C:OP1    | 1.91                     | 0.70              |
| 1:AA:2092:U:C5    | 1:AA:2227:A:N6     | 2.58                     | 0.70              |
| 1:AA:2104:G:N2    | 1:AA:2105:C:C2     | 2.59                     | 0.70              |
| 1:AA:2265:U:H2'   | 1:AA:2266:A:OP1    | 1.92                     | 0.70              |
| 1:AA:2468:G:P     | 1:AA:2476:A:H61    | 2.15                     | 0.70              |
| 1:AA:2660:A:C4    | 57:BZ:457:THR:HA   | 2.26                     | 0.70              |
| 1:AA:2794:C:C2    | 1:AA:2799:A:N3     | 2.59                     | 0.70              |
| 2:AB:27:C:H3'     | 2:AB:28:C:C6       | 2.26                     | 0.70              |
| 3:AC:86:ALA:HB2   | 3:AC:149:ILE:C     | 2.17                     | 0.70              |
| 4:AD:5:LYS:HZ3    | 4:AD:31:LYS:HZ1    | 0.74                     | 0.70              |
| 4:AD:5:LYS:CD     | 4:AD:29:PRO:HB3    | 2.18                     | 0.70              |
| 4:AD:136:ILE:HB   | 4:AD:168:ARG:HH21  | 1.54                     | 0.70              |
| 4:AD:252:TRP:N    | 4:AD:255:LYS:HZ1   | 1.84                     | 0.70              |
| 4:AD:270:ILE:HG22 | 4:AD:271:ILE:O     | 1.90                     | 0.70              |
| 5:AE:5:LEU:CD2    | 5:AE:196:VAL:HB    | 2.21                     | 0.70              |
| 5:AE:119:ARG:HD2  | 5:AE:156:MET:H     | 1.55                     | 0.70              |
| 7:AG:17:PRO:HA    | 7:AG:20:ILE:HB     | 1.73                     | 0.70              |
| 8:AH:7:LEU:C      | 8:AH:51:ARG:NH2    | 2.48                     | 0.70              |
| 9:AK:7:LYS:HD3    | 9:AK:39:ARG:CZ     | 2.21                     | 0.70              |
| 9:AK:91:LEU:CD2   | 9:AK:98:VAL:HG21   | 2.21                     | 0.70              |
| 10:AL:64:ARG:HG3  | 10:AL:65:THR:N     | 2.01                     | 0.70              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 10:AL:64:ARG:HE   | 10:AL:67:LYS:N     | 1.90                     | 0.70              |
| 11:AM:46:LYS:CB   | 11:AM:49:ARG:CZ    | 2.68                     | 0.70              |
| 12:AN:42:ILE:HD11 | 12:AN:46:GLN:CB    | 2.20                     | 0.70              |
| 16:AR:81:HIS:HB3  | 16:AR:117:GLN:CD   | 2.16                     | 0.70              |
| 16:AR:92:ARG:HA   | 16:AR:95:LEU:HG    | 1.73                     | 0.70              |
| 19:AU:12:VAL:HG23 | 19:AU:28:PHE:C     | 2.17                     | 0.70              |
| 20:AV:86:ARG:O    | 20:AV:91:GLU:HG2   | 1.90                     | 0.70              |
| 21:AW:42:VAL:HB   | 21:AW:43:GLU:OE1   | 1.90                     | 0.70              |
| 22:AX:41:ARG:HB3  | 22:AX:41:ARG:HH11  | 1.56                     | 0.70              |
| 25:Aa:41:PRO:C    | 25:Aa:58:ARG:HH11  | 1.99                     | 0.70              |
| 27:Ac:48:VAL:O    | 27:Ac:49:HIS:HB2   | 1.91                     | 0.70              |
| 32:AJ:12:LEU:HD21 | 32:AJ:57:ILE:CG2   | 2.21                     | 0.70              |
| 32:AJ:104:VAL:CG1 | 32:AJ:127:ILE:HD12 | 1.29                     | 0.70              |
| 33:Ag:290:UNK:CA  | 33:Ag:343:UNK:CB   | 2.68                     | 0.70              |
| 34:BA:317:G:OP1   | 34:BA:353:A:N6     | 2.25                     | 0.70              |
| 34:BA:519:C:H2'   | 34:BA:520:A:C5'    | 2.21                     | 0.70              |
| 34:BA:624:C:H2'   | 34:BA:625:G:H8     | 1.57                     | 0.70              |
| 34:BA:858:G:H22   | 34:BA:870:U:P      | 2.15                     | 0.70              |
| 34:BA:1036:G:C8   | 34:BA:1037:C:C5    | 2.78                     | 0.70              |
| 34:BA:1104:G:H2'  | 34:BA:1105:A:H8    | 1.57                     | 0.70              |
| 34:BA:1306:A:N6   | 34:BA:1331:G:H1'   | 2.07                     | 0.70              |
| 34:BA:1319:A:H8   | 52:BW:70:LYS:NZ    | 1.88                     | 0.70              |
| 34:BA:1321:C:C5   | 34:BA:1322:C:H2'   | 2.27                     | 0.70              |
| 34:BA:1324:A:O4'  | 34:BA:1362:C:H4'   | 1.91                     | 0.70              |
| 34:BA:1327:C:H5'' | 54:BY:20:LYS:CE    | 2.19                     | 0.70              |
| 34:BA:1382:C:H2'  | 34:BA:1383:C:H6    | 1.56                     | 0.70              |
| 34:BA:1394:A:H62  | 34:BA:1501:C:C5'   | 2.05                     | 0.70              |
| 34:BA:1407:C:H2'  | 34:BA:1408:A:H5'   | 1.74                     | 0.70              |
| 35:BF:35:GLU:CD   | 35:BF:35:GLU:C     | 2.59                     | 0.70              |
| 35:BF:175:ARG:HA  | 35:BF:178:ARG:CG   | 2.21                     | 0.70              |
| 36:BG:87:LEU:HB2  | 36:BG:101:LEU:CD1  | 2.20                     | 0.70              |
| 38:BI:78:HIS:NE2  | 38:BI:142:LEU:HB3  | 2.06                     | 0.70              |
| 40:BK:74:GLU:HA   | 40:BK:145:ALA:CB   | 2.21                     | 0.70              |
| 41:BL:9:MET:HG2   | 41:BL:13:ILE:CD1   | 2.22                     | 0.70              |
| 41:BL:78:GLN:HG3  | 41:BL:80:ILE:O     | 1.89                     | 0.70              |
| 41:BL:94:TYR:HE1  | 41:BL:132:GLU:OE1  | 1.74                     | 0.70              |
| 42:BM:38:GLN:OE1  | 42:BM:38:GLN:HA    | 1.92                     | 0.70              |
| 42:BM:45:ALA:HB3  | 42:BM:74:ILE:CG2   | 2.21                     | 0.70              |
| 45:BP:41:ARG:HB3  | 45:BP:41:ARG:HH11  | 1.53                     | 0.70              |
| 45:BP:82:VAL:N    | 45:BP:106:ASP:OD1  | 2.24                     | 0.70              |
| 48:BS:63:ARG:HH22 | 48:BS:87:ILE:HD13  | 1.56                     | 0.70              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 49:BT:51:VAL:CG2  | 49:BT:73:LEU:HD11  | 2.22                     | 0.70              |
| 49:BT:57:ARG:O    | 49:BT:60:LEU:HB2   | 1.91                     | 0.70              |
| 50:BU:22:LEU:HD21 | 50:BU:39:SER:OG    | 1.91                     | 0.70              |
| 51:BV:36:ASN:HB3  | 51:BV:40:LEU:HG    | 1.74                     | 0.70              |
| 57:BZ:13:HIS:ND1  | 57:BZ:109:THR:CG2  | 2.50                     | 0.70              |
| 57:BZ:181:GLU:OE2 | 57:BZ:183:MET:N    | 2.24                     | 0.70              |
| 1:AA:7:G:N1       | 1:AA:2897:U:O5'    | 2.18                     | 0.70              |
| 1:AA:95:G:O2'     | 23:AY:42:ASN:HB2   | 1.91                     | 0.70              |
| 1:AA:202:U:H2'    | 1:AA:203:C:C6      | 2.26                     | 0.70              |
| 1:AA:270(E):G:H2' | 1:AA:270(F):U:H6   | 1.56                     | 0.70              |
| 1:AA:296:C:O2'    | 1:AA:297:C:O4'     | 2.09                     | 0.70              |
| 1:AA:534:U:H2'    | 1:AA:535:C:C5      | 2.26                     | 0.70              |
| 1:AA:663:G:H4'    | 11:AM:18:ARG:NE    | 2.06                     | 0.70              |
| 1:AA:779:U:O4     | 1:AA:780:G:C2      | 2.44                     | 0.70              |
| 1:AA:1064:C:H2'   | 1:AA:1065:U:H5'    | 1.72                     | 0.70              |
| 1:AA:1213:A:H61   | 1:AA:1236:G:H1'    | 1.56                     | 0.70              |
| 1:AA:1580:A:H2'   | 1:AA:1581:G:C8     | 2.27                     | 0.70              |
| 1:AA:1647:G:C4'   | 1:AA:1648:C:OP1    | 2.40                     | 0.70              |
| 1:AA:1910:G:N9    | 1:AA:1921:G:N2     | 2.38                     | 0.70              |
| 1:AA:2373:G:O2'   | 1:AA:2374:C:O5'    | 2.09                     | 0.70              |
| 1:AA:2519:U:N1    | 1:AA:2542:A:N1     | 2.39                     | 0.70              |
| 2:AB:33:G:H2'     | 2:AB:34:U:H6       | 1.54                     | 0.70              |
| 2:AB:43:C:N3      | 2:AB:45:A:C8       | 2.60                     | 0.70              |
| 3:AC:167:LYS:HG3  | 3:AC:168:THR:H     | 1.57                     | 0.70              |
| 5:AE:13:ARG:HE    | 5:AE:21:VAL:C      | 1.99                     | 0.70              |
| 5:AE:41:LYS:O     | 5:AE:43:GLY:N      | 2.24                     | 0.70              |
| 7:AG:34:LEU:HD13  | 7:AG:100:TRP:HE1   | 1.56                     | 0.70              |
| 8:AH:76:VAL:HA    | 8:AH:79:VAL:HG22   | 1.73                     | 0.70              |
| 10:AL:67:LYS:HE2  | 10:AL:67:LYS:CA    | 2.21                     | 0.70              |
| 10:AL:68:GLU:HA   | 10:AL:104:ARG:CZ   | 2.21                     | 0.70              |
| 10:AL:88:ASN:O    | 10:AL:90:GLN:N     | 2.24                     | 0.70              |
| 12:AN:6:ARG:HG2   | 12:AN:70:PRO:HB3   | 1.72                     | 0.70              |
| 12:AN:34:LEU:HD22 | 12:AN:118:LEU:HB3  | 1.71                     | 0.70              |
| 13:AO:5:LYS:HZ1   | 13:AO:6:SER:C      | 1.99                     | 0.70              |
| 14:AP:31:SER:HB3  | 14:AP:34:HIS:CD2   | 2.27                     | 0.70              |
| 15:AQ:51:ARG:NH1  | 15:AQ:114:LEU:HD13 | 2.05                     | 0.70              |
| 16:AR:74:LEU:HB3  | 16:AR:78:THR:OG1   | 1.91                     | 0.70              |
| 21:AW:15:PRO:O    | 21:AW:18:LEU:HB2   | 1.90                     | 0.70              |
| 21:AW:95:PRO:CG   | 21:AW:131:ARG:H    | 2.03                     | 0.70              |
| 21:AW:103:ARG:HA  | 21:AW:103:ARG:NE   | 2.05                     | 0.70              |
| 21:AW:136:PHE:HB3 | 21:AW:138:GLU:OE2  | 1.91                     | 0.70              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 23:AY:8:ALA:O     | 23:AY:9:ARG:C      | 2.35                     | 0.70              |
| 26:Ab:9:LYS:O     | 26:Ab:10:LYS:HB2   | 1.90                     | 0.70              |
| 34:BA:109:A:C2    | 34:BA:327:A:N1     | 2.60                     | 0.70              |
| 34:BA:323:U:H5    | 34:BA:324:G:C4     | 2.09                     | 0.70              |
| 34:BA:1073:U:O2'  | 34:BA:1074:G:H5'   | 1.91                     | 0.70              |
| 34:BA:1144:G:N2   | 34:BA:1146:A:N6    | 2.39                     | 0.70              |
| 34:BA:1349:A:H2'  | 34:BA:1350:A:H8    | 1.56                     | 0.70              |
| 36:BG:42:LEU:HD12 | 36:BG:94:LEU:HD12  | 1.72                     | 0.70              |
| 38:BI:45:PHE:CE1  | 38:BI:47:LYS:HD2   | 2.27                     | 0.70              |
| 38:BI:105:VAL:CG2 | 38:BI:132:ALA:HB2  | 2.21                     | 0.70              |
| 39:BJ:14:LEU:HD12 | 39:BJ:15:ASP:O     | 1.91                     | 0.70              |
| 41:BL:112:LEU:HB2 | 41:BL:133:LEU:HA   | 1.72                     | 0.70              |
| 45:BP:72:GLY:HA3  | 45:BP:102:ARG:HD2  | 1.72                     | 0.70              |
| 50:BU:104:LYS:HD3 | 50:BU:105:ALA:N    | 2.06                     | 0.70              |
| 56:BE:21:A:C5     | 56:BE:46:G:N1      | 2.58                     | 0.70              |
| 57:BZ:122:LYS:HZ1 | 57:BZ:153:ALA:HB1  | 1.55                     | 0.70              |
| 57:BZ:157:GLN:C   | 57:BZ:159:ASP:HB3  | 2.17                     | 0.70              |
| 57:BZ:165:ALA:HB2 | 57:BZ:171:ILE:HG22 | 1.62                     | 0.70              |
| 57:BZ:207:MET:HE3 | 57:BZ:224:GLY:O    | 1.91                     | 0.70              |
| 1:AA:558:G:OP1    | 9:AK:111:PRO:HG2   | 1.91                     | 0.70              |
| 1:AA:595:C:H2'    | 1:AA:596:G:H8      | 1.56                     | 0.70              |
| 1:AA:693:C:OP1    | 4:AD:60:ARG:CZ     | 2.40                     | 0.70              |
| 1:AA:915:C:H2'    | 1:AA:916:G:H8      | 1.57                     | 0.70              |
| 1:AA:979:G:N7     | 1:AA:981:A:OP1     | 2.25                     | 0.70              |
| 1:AA:1028:A:C2    | 1:AA:2486:G:O2'    | 2.43                     | 0.70              |
| 1:AA:1034:G:N1    | 1:AA:1122:G:N7     | 2.38                     | 0.70              |
| 1:AA:1075:C:O2'   | 32:AJ:90:LYS:HD3   | 1.90                     | 0.70              |
| 1:AA:1617:C:H5'   | 1:AA:1618:A:OP2    | 1.91                     | 0.70              |
| 1:AA:1730:U:O2'   | 1:AA:1731:G:C5     | 2.44                     | 0.70              |
| 1:AA:1906:G:C4    | 1:AA:1929:G:N7     | 2.51                     | 0.70              |
| 1:AA:2046:G:OP1   | 26:Ab:18:ALA:CB    | 2.39                     | 0.70              |
| 1:AA:2129:C:C5'   | 3:AC:6:ARG:CD      | 2.51                     | 0.70              |
| 1:AA:2246:G:N2    | 1:AA:2247:A:C5     | 2.60                     | 0.70              |
| 1:AA:2278:A:N7    | 22:AX:14:ARG:HB3   | 2.06                     | 0.70              |
| 1:AA:2616:C:H2'   | 1:AA:2617:C:C6     | 2.27                     | 0.70              |
| 1:AA:2680:C:OP1   | 5:AE:190:GLY:HA2   | 1.91                     | 0.70              |
| 3:AC:10:LEU:HD11  | 3:AC:32:LEU:CB     | 2.22                     | 0.70              |
| 3:AC:62:VAL:CG1   | 3:AC:192:PHE:CA    | 2.70                     | 0.70              |
| 4:AD:5:LYS:CA     | 4:AD:29:PRO:HD3    | 2.21                     | 0.70              |
| 4:AD:65:ILE:HD12  | 4:AD:104:TYR:HB3   | 1.74                     | 0.70              |
| 4:AD:119:ALA:HA   | 4:AD:123:ALA:HB2   | 1.73                     | 0.70              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 5:AE:154:LYS:NZ   | 5:AE:155:LYS:O     | 2.20                     | 0.70              |
| 6:AF:34:TRP:CE3   | 6:AF:37:VAL:HG21   | 2.26                     | 0.70              |
| 7:AG:37:VAL:O     | 7:AG:99:MET:SD     | 2.49                     | 0.70              |
| 7:AG:39:ILE:HD13  | 7:AG:92:VAL:CG1    | 2.22                     | 0.70              |
| 7:AG:39:ILE:HG13  | 7:AG:157:ILE:CD1   | 2.21                     | 0.70              |
| 8:AH:15:VAL:HG13  | 8:AH:17:VAL:HB     | 1.74                     | 0.70              |
| 8:AH:103:LEU:O    | 8:AH:105:LEU:HG    | 1.90                     | 0.70              |
| 9:AK:75:TYR:HD1   | 9:AK:75:TYR:H      | 1.40                     | 0.70              |
| 11:AM:76:LYS:HA   | 11:AM:101:VAL:CG1  | 2.21                     | 0.70              |
| 11:AM:111:ARG:NH2 | 11:AM:113:LYS:HB2  | 2.07                     | 0.70              |
| 14:AP:9:ARG:HH11  | 14:AP:9:ARG:N      | 1.88                     | 0.70              |
| 15:AQ:65:LYS:HA   | 15:AQ:76:PHE:O     | 1.90                     | 0.70              |
| 16:AR:74:LEU:CD2  | 16:AR:78:THR:HG21  | 2.21                     | 0.70              |
| 16:AR:97:ASP:CB   | 16:AR:101:ARG:HH21 | 2.05                     | 0.70              |
| 16:AR:111:GLU:HA  | 16:AR:114:LYS:HE3  | 1.73                     | 0.70              |
| 16:AR:115:ALA:O   | 16:AR:118:GLY:N    | 2.25                     | 0.70              |
| 17:AS:83:ARG:CD   | 17:AS:83:ARG:C     | 2.63                     | 0.70              |
| 26:Ab:21:SER:O    | 26:Ab:22:HIS:C     | 2.34                     | 0.70              |
| 31:AI:51:LEU:N    | 31:AI:90:ALA:HB2   | 2.06                     | 0.70              |
| 32:AJ:35:MET:O    | 32:AJ:36:GLU:HG2   | 1.91                     | 0.70              |
| 34:BA:711:G:O2'   | 34:BA:712:A:H5'    | 1.92                     | 0.70              |
| 34:BA:863:U:O2    | 34:BA:863:U:C2'    | 2.40                     | 0.70              |
| 34:BA:959:A:H2    | 34:BA:1221:G:N3    | 1.90                     | 0.70              |
| 34:BA:1045:C:H2'  | 34:BA:1046:A:C8    | 2.27                     | 0.70              |
| 34:BA:1102:A:C6   | 34:BA:1103:C:N4    | 2.60                     | 0.70              |
| 34:BA:1164:G:C2   | 34:BA:1165:C:C2    | 2.80                     | 0.70              |
| 34:BA:1203:C:O2'  | 34:BA:1204:A:H5'   | 1.91                     | 0.70              |
| 34:BA:1268:A:H1'  | 34:BA:1311:G:H21   | 1.57                     | 0.70              |
| 34:BA:1298:C:H41  | 40:BK:114:ARG:HB3  | 1.56                     | 0.70              |
| 35:BF:24:TRP:CZ3  | 35:BF:26:PRO:HA    | 2.27                     | 0.70              |
| 36:BG:11:ARG:HG3  | 36:BG:16:ARG:NH2   | 2.06                     | 0.70              |
| 36:BG:59:ARG:NH2  | 36:BG:64:VAL:HG13  | 2.07                     | 0.70              |
| 36:BG:113:ALA:HB2 | 36:BG:202:ILE:HG13 | 1.73                     | 0.70              |
| 37:BH:20:TYR:C    | 37:BH:26:CYS:SG    | 2.75                     | 0.70              |
| 40:BK:54:THR:OG1  | 40:BK:56:GLN:HG2   | 1.90                     | 0.70              |
| 48:BS:49:ASP:CG   | 48:BS:52:SER:HB2   | 2.17                     | 0.70              |
| 49:BT:6:LEU:CD2   | 49:BT:17:TYR:HD2   | 2.03                     | 0.70              |
| 50:BU:44:ALA:HB1  | 50:BU:72:ARG:CA    | 2.22                     | 0.70              |
| 53:BX:63:ILE:O    | 53:BX:66:ALA:HB3   | 1.92                     | 0.70              |
| 56:BD:6:G:N1      | 56:BD:67:C:N3      | 2.38                     | 0.70              |
| 57:BZ:13:HIS:NE2  | 57:BZ:106:MET:N    | 2.40                     | 0.70              |

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| Atom-1              | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 57:BZ:405:LEU:O     | 57:BZ:407:VAL:HG13 | 1.91                     | 0.70              |
| 57:BZ:406:ASP:HA    | 57:BZ:407:VAL:HG13 | 1.74                     | 0.70              |
| 57:BZ:407:VAL:HA    | 57:BZ:408:GLU:CB   | 2.21                     | 0.70              |
| 57:BZ:541:LYS:HG3   | 57:BZ:542:LYS:CB   | 2.21                     | 0.70              |
| 1:AA:26:G:H22       | 1:AA:27:G:H21      | 1.36                     | 0.70              |
| 1:AA:33:U:O2'       | 1:AA:34:C:H5       | 1.73                     | 0.70              |
| 1:AA:126:A:N7       | 1:AA:127:A:C5      | 2.59                     | 0.70              |
| 1:AA:131:G:H2'      | 1:AA:132:G:H8      | 1.55                     | 0.70              |
| 1:AA:172:C:C4       | 1:AA:173:G:C5      | 2.79                     | 0.70              |
| 1:AA:253:C:H2'      | 1:AA:254:G:C5'     | 2.22                     | 0.70              |
| 1:AA:312:G:H3'      | 1:AA:313:C:H5      | 1.55                     | 0.70              |
| 1:AA:532:A:OP1      | 1:AA:532:A:H4'     | 1.92                     | 0.70              |
| 1:AA:571:A:H1'      | 1:AA:573:G:N7      | 2.07                     | 0.70              |
| 1:AA:950:G:H2'      | 1:AA:951:C:H6      | 1.56                     | 0.70              |
| 1:AA:1174:A:H2'     | 1:AA:1174:A:N3     | 2.06                     | 0.70              |
| 1:AA:1241:A:N3      | 1:AA:1241:A:C4'    | 2.55                     | 0.70              |
| 1:AA:1263:U:N3      | 1:AA:1264:G:N2     | 2.38                     | 0.70              |
| 1:AA:1606:G:H4'     | 1:AA:1608:A:N3     | 2.06                     | 0.70              |
| 1:AA:1632:A:C2      | 1:AA:1633:G:N2     | 2.60                     | 0.70              |
| 1:AA:1785:A:OP2     | 1:AA:1785:A:H8     | 1.75                     | 0.70              |
| 1:AA:1829:A:N1      | 1:AA:1830:C:H1'    | 2.07                     | 0.70              |
| 1:AA:2077:A:H1'     | 1:AA:2434:A:O2'    | 1.91                     | 0.70              |
| 1:AA:2550:G:H2'     | 1:AA:2551:C:C6     | 2.26                     | 0.70              |
| 1:AA:2564:A:C6      | 1:AA:2647:U:O4'    | 2.45                     | 0.70              |
| 1:AA:2757:A:H2'     | 1:AA:2758:A:C5'    | 2.20                     | 0.70              |
| 1:AA:2779:U:H5'     | 1:AA:2781:A:OP2    | 1.91                     | 0.70              |
| 59:AA:3003:8AN:H5'A | 56:BE:75:C:H3'     | 1.73                     | 0.70              |
| 2:AB:114:G:O4'      | 14:AP:47:THR:HB    | 1.91                     | 0.70              |
| 3:AC:14:VAL:HG12    | 3:AC:16:PRO:HD3    | 1.73                     | 0.70              |
| 3:AC:46:LYS:O       | 3:AC:210:ARG:N     | 2.25                     | 0.70              |
| 4:AD:5:LYS:NZ       | 4:AD:31:LYS:NZ     | 2.27                     | 0.70              |
| 5:AE:104:VAL:HG13   | 5:AE:198:VAL:HA    | 1.72                     | 0.70              |
| 6:AF:171:PRO:O      | 6:AF:173:VAL:N     | 2.25                     | 0.70              |
| 7:AG:68:PRO:HB3     | 7:AG:72:ARG:CZ     | 2.21                     | 0.70              |
| 7:AG:126:ASP:HA     | 7:AG:166:ASP:OD2   | 1.92                     | 0.70              |
| 8:AH:156:ALA:HA     | 8:AH:171:LEU:CD2   | 2.21                     | 0.70              |
| 10:AL:8:LEU:CD1     | 10:AL:82:ASN:HA    | 2.20                     | 0.70              |
| 11:AM:45:LEU:CD1    | 29:Ae:59:LYS:HZ1   | 2.04                     | 0.70              |
| 12:AN:127:ILE:HD13  | 12:AN:129:THR:HG21 | 1.72                     | 0.70              |
| 13:AO:47:PHE:C      | 13:AO:49:ASP:N     | 2.43                     | 0.70              |
| 13:AO:90:ARG:NH2    | 13:AO:117:VAL:HG13 | 2.06                     | 0.70              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:AQ:30:VAL:HG13 | 15:AQ:32:TYR:OH   | 1.90                     | 0.70              |
| 15:AQ:53:ARG:NH2  | 15:AQ:102:ILE:CD1 | 2.55                     | 0.70              |
| 15:AQ:55:ASN:ND2  | 15:AQ:57:PHE:CZ   | 2.60                     | 0.70              |
| 18:AT:11:ARG:H    | 18:AT:11:ARG:NH2  | 1.87                     | 0.70              |
| 18:AT:36:LEU:HD11 | 18:AT:47:VAL:HG21 | 1.71                     | 0.70              |
| 25:Aa:10:VAL:N    | 25:Aa:11:PRO:CD   | 2.55                     | 0.70              |
| 29:Ae:6:THR:O     | 29:Ae:6:THR:HG23  | 1.92                     | 0.70              |
| 34:BA:130:A:N7    | 50:BU:64:PRO:HD2  | 2.07                     | 0.70              |
| 34:BA:453:A:N6    | 34:BA:480:U:N3    | 2.40                     | 0.70              |
| 34:BA:595:G:O6    | 34:BA:641:U:H3'   | 1.92                     | 0.70              |
| 34:BA:760:G:O2'   | 50:BU:103:GLY:HA3 | 1.91                     | 0.70              |
| 34:BA:787:A:H2'   | 34:BA:788:U:C5'   | 2.21                     | 0.70              |
| 34:BA:891:U:H5    | 34:BA:906:G:N1    | 1.89                     | 0.70              |
| 34:BA:1161:C:C2   | 34:BA:1162:C:C5   | 2.80                     | 0.70              |
| 37:BH:13:ARG:C    | 37:BH:40:PRO:HD3  | 2.17                     | 0.70              |
| 38:BI:81:GLU:HA   | 38:BI:89:ILE:O    | 1.92                     | 0.70              |
| 39:BJ:79:LEU:HB2  | 39:BJ:88:VAL:HG11 | 1.74                     | 0.70              |
| 45:BP:88:GLY:HA3  | 45:BP:99:HIS:CE1  | 2.27                     | 0.70              |
| 46:BQ:14:ARG:CA   | 46:BQ:43:THR:O    | 2.40                     | 0.70              |
| 51:BV:33:ASP:OD2  | 51:BV:36:ASN:HB2  | 1.91                     | 0.70              |
| 52:BW:40:ILE:C    | 52:BW:68:GLY:HA2  | 2.16                     | 0.70              |
| 53:BX:23:ARG:HD3  | 53:BX:24:LEU:N    | 2.07                     | 0.70              |
| 56:BD:52:G:C6     | 56:BD:63:G:C6     | 2.80                     | 0.70              |
| 56:BE:15:G:C2     | 56:BE:16:U:C4     | 2.79                     | 0.70              |
| 57:BZ:62:ALA:N    | 57:BZ:63:ALA:HA   | 2.06                     | 0.70              |
| 57:BZ:172:ALA:HA  | 57:BZ:179:MET:CE  | 2.14                     | 0.70              |
| 57:BZ:173:GLY:N   | 57:BZ:174:LEU:O   | 2.24                     | 0.70              |
| 57:BZ:568:ALA:HB1 | 57:BZ:587:ILE:CD1 | 2.21                     | 0.70              |
| 1:AA:197:A:O4'    | 1:AA:2068:U:N3    | 2.25                     | 0.70              |
| 1:AA:247:G:H22    | 29:Ae:8:LYS:CD    | 2.04                     | 0.70              |
| 1:AA:307:G:N2     | 1:AA:310:A:C8     | 2.60                     | 0.70              |
| 1:AA:323:G:N2     | 1:AA:333:G:H1'    | 2.06                     | 0.70              |
| 1:AA:619:G:C8     | 1:AA:619:G:H3'    | 2.27                     | 0.70              |
| 1:AA:673:C:C4'    | 6:AF:82:ILE:HD12  | 2.22                     | 0.70              |
| 1:AA:740:U:O4     | 1:AA:757:U:O2     | 2.10                     | 0.70              |
| 1:AA:791:C:C4     | 1:AA:794:G:H1'    | 2.26                     | 0.70              |
| 1:AA:1012:U:C4    | 9:AK:25:ARG:HB3   | 2.27                     | 0.70              |
| 1:AA:1036:G:P     | 8:AH:59:ARG:CZ    | 2.79                     | 0.70              |
| 1:AA:1080:C:C1'   | 32:AJ:129:GLY:H   | 2.05                     | 0.70              |
| 1:AA:1342:A:OP1   | 19:AU:55:ASN:HB3  | 1.91                     | 0.70              |
| 1:AA:1473:G:H2'   | 1:AA:1474:C:C6    | 2.26                     | 0.70              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1557:C:H5''   | 1:AA:1558:A:OP2    | 1.92                     | 0.70              |
| 1:AA:1931:U:C5     | 1:AA:1932:A:C5     | 2.79                     | 0.70              |
| 1:AA:1935:G:H2'    | 1:AA:1962:C:N3     | 2.07                     | 0.70              |
| 1:AA:2089:U:H2'    | 1:AA:2090:G:C8     | 2.26                     | 0.70              |
| 1:AA:2194:G:C2     | 1:AA:2195:C:N4     | 2.60                     | 0.70              |
| 1:AA:2262:U:H4'    | 1:AA:2328:A:H2     | 1.56                     | 0.70              |
| 1:AA:2376:A:H2'    | 1:AA:2377:A:O4'    | 1.92                     | 0.70              |
| 1:AA:2433:A:H2'    | 1:AA:2433:A:N3     | 2.03                     | 0.70              |
| 1:AA:2805:G:H2'    | 1:AA:2807:G:O4'    | 1.92                     | 0.70              |
| 1:AA:2810:A:O2'    | 5:AE:61:ARG:NH2    | 2.24                     | 0.70              |
| 3:AC:158:ALA:H     | 3:AC:159:GLY:N     | 1.82                     | 0.70              |
| 4:AD:59:LYS:HE3    | 4:AD:59:LYS:O      | 1.92                     | 0.70              |
| 7:AG:44:GLY:C      | 7:AG:72:ARG:HB3    | 2.16                     | 0.70              |
| 7:AG:148:MET:HG2   | 7:AG:151:ALA:N     | 2.06                     | 0.70              |
| 8:AH:119:GLU:C     | 8:AH:121:ILE:H     | 1.99                     | 0.70              |
| 8:AH:119:GLU:O     | 8:AH:121:ILE:N     | 2.24                     | 0.70              |
| 8:AH:157:TYR:HD1   | 8:AH:158:HIS:N     | 1.90                     | 0.70              |
| 9:AK:17:ASP:HB3    | 9:AK:21:LYS:CE     | 2.21                     | 0.70              |
| 9:AK:107:LEU:HD11  | 9:AK:113:GLY:O     | 1.92                     | 0.70              |
| 10:AL:8:LEU:HD13   | 10:AL:9:GLU:O      | 1.92                     | 0.70              |
| 11:AM:126:VAL:HG23 | 11:AM:146:VAL:O    | 1.92                     | 0.70              |
| 12:AN:26:TYR:H     | 12:AN:102:VAL:HB   | 1.51                     | 0.70              |
| 12:AN:99:PRO:O     | 12:AN:100:GLY:C    | 2.33                     | 0.70              |
| 13:AO:11:ASN:ND2   | 13:AO:12:ARG:H     | 1.90                     | 0.70              |
| 13:AO:34:ILE:C     | 13:AO:113:LEU:HD22 | 2.16                     | 0.70              |
| 13:AO:61:HIS:O     | 13:AO:64:ARG:HD3   | 1.91                     | 0.70              |
| 13:AO:105:ARG:HA   | 13:AO:105:ARG:NE   | 2.05                     | 0.70              |
| 15:AQ:32:TYR:O     | 15:AQ:47:GLY:CA    | 2.32                     | 0.70              |
| 20:AV:9:LYS:HB2    | 20:AV:110:GLU:OE2  | 1.92                     | 0.70              |
| 21:AW:51:ALA:C     | 21:AW:53:ILE:H     | 1.94                     | 0.70              |
| 21:AW:144:LEU:HB3  | 21:AW:174:VAL:CG1  | 2.14                     | 0.70              |
| 22:AX:40:GLN:HB3   | 22:AX:45:PHE:CE1   | 2.27                     | 0.70              |
| 27:Ac:20:ASN:ND2   | 27:Ac:43:CYS:SG    | 2.65                     | 0.70              |
| 27:Ac:48:VAL:HG13  | 27:Ac:49:HIS:N     | 2.01                     | 0.70              |
| 30:Af:10:ILE:H     | 30:Af:14:CYS:HB2   | 1.56                     | 0.70              |
| 34:BA:51:A:C6      | 34:BA:353:A:C2     | 2.79                     | 0.70              |
| 34:BA:517:G:N2     | 34:BA:533:A:OP2    | 2.25                     | 0.70              |
| 34:BA:795:C:O2'    | 34:BA:1506:U:H1'   | 1.91                     | 0.70              |
| 34:BA:1211:U:O2'   | 34:BA:1213:A:H1'   | 1.92                     | 0.70              |
| 34:BA:1306:A:H2'   | 34:BA:1307:U:O4'   | 1.91                     | 0.70              |
| 34:BA:1414:U:N1    | 34:BA:1487:G:N2    | 2.38                     | 0.70              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BF:102:LEU:HB3  | 35:BF:180:LEU:CD1  | 2.22                     | 0.70              |
| 35:BF:168:THR:CG2  | 35:BF:192:SER:HA   | 2.22                     | 0.70              |
| 37:BH:127:THR:O    | 37:BH:146:ILE:HG22 | 1.91                     | 0.70              |
| 37:BH:152:SER:O    | 37:BH:158:ILE:HG13 | 1.91                     | 0.70              |
| 38:BI:81:GLU:CB    | 38:BI:90:VAL:HG22  | 2.21                     | 0.70              |
| 38:BI:86:ALA:O     | 38:BI:125:SER:HB3  | 1.91                     | 0.70              |
| 38:BI:150:ARG:O    | 38:BI:150:ARG:HD3  | 1.92                     | 0.70              |
| 39:BJ:52:ILE:HG22  | 39:BJ:53:ALA:N     | 2.05                     | 0.70              |
| 40:BK:104:LEU:HD23 | 40:BK:134:ALA:HB1  | 1.73                     | 0.70              |
| 41:BL:40:ALA:HB2   | 41:BL:45:ILE:HG12  | 1.72                     | 0.70              |
| 41:BL:47:GLY:O     | 41:BL:61:VAL:HG13  | 1.91                     | 0.70              |
| 41:BL:70:GLN:HE21  | 41:BL:70:GLN:CA    | 2.04                     | 0.70              |
| 44:BO:30:VAL:O     | 44:BO:42:TRP:HB2   | 1.91                     | 0.70              |
| 48:BS:36:ILE:HD11  | 48:BS:60:VAL:CG1   | 2.22                     | 0.70              |
| 56:BE:6:G:C5       | 56:BE:69:G:C2      | 2.74                     | 0.70              |
| 57:BZ:69:ARG:HE    | 57:BZ:269:GLU:HG2  | 1.57                     | 0.70              |
| 57:BZ:170:GLY:O    | 57:BZ:179:MET:HB3  | 1.89                     | 0.70              |
| 57:BZ:233:PRO:CB   | 57:BZ:248:ASN:HB3  | 2.22                     | 0.70              |
| 1:AA:38:A:H2'      | 1:AA:39:C:C6       | 2.27                     | 0.70              |
| 1:AA:114:U:H2'     | 1:AA:115:C:C6      | 2.27                     | 0.70              |
| 1:AA:145:G:H2'     | 1:AA:146:G:C8      | 2.27                     | 0.70              |
| 1:AA:213:A:H2'     | 1:AA:214:G:H5'     | 1.74                     | 0.70              |
| 1:AA:412:A:C2      | 1:AA:413:C:H1'     | 2.27                     | 0.70              |
| 1:AA:686:G:H5''    | 1:AA:686:G:N3      | 2.05                     | 0.70              |
| 1:AA:835:A:H4'     | 1:AA:2358:G:H1'    | 1.73                     | 0.70              |
| 1:AA:893:C:C2      | 1:AA:894:C:C6      | 2.80                     | 0.70              |
| 1:AA:1263:U:H4'    | 26:Ab:10:LYS:CG    | 2.21                     | 0.70              |
| 1:AA:1487:G:N2     | 1:AA:1503:U:C2     | 2.60                     | 0.70              |
| 1:AA:1567:A:H2'    | 1:AA:1567:A:N3     | 2.05                     | 0.70              |
| 1:AA:1770:G:H2'    | 1:AA:1771:C:H6     | 1.57                     | 0.70              |
| 1:AA:1944:U:H1'    | 1:AA:1955:U:H6     | 1.53                     | 0.70              |
| 1:AA:1955:U:C2'    | 1:AA:1956:U:OP1    | 2.40                     | 0.70              |
| 1:AA:2059:A:N1     | 1:AA:2503:A:C6     | 2.60                     | 0.70              |
| 1:AA:2090:G:C6     | 1:AA:2230:G:O6     | 2.44                     | 0.70              |
| 1:AA:2177:C:H5''   | 3:AC:223:ARG:CZ    | 2.20                     | 0.70              |
| 1:AA:2213:U:C5'    | 1:AA:2215:G:N7     | 2.53                     | 0.70              |
| 1:AA:2219:G:H2'    | 1:AA:2224:G:C5'    | 2.22                     | 0.70              |
| 1:AA:2484:G:C2'    | 1:AA:2485:G:H5'    | 2.22                     | 0.70              |
| 1:AA:2583:G:H1     | 59:AA:3002:8AN:H2' | 1.57                     | 0.70              |
| 1:AA:2791:C:O2'    | 1:AA:2792:G:H5'    | 1.92                     | 0.70              |
| 1:AA:2807:G:C2     | 1:AA:2808:U:C6     | 2.80                     | 0.70              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:2815:C:O2'    | 26:Ab:42:PRO:CB    | 2.40                     | 0.70              |
| 1:AA:2850:A:H2'    | 1:AA:2851:A:H8     | 1.56                     | 0.70              |
| 4:AD:39:LYS:HA     | 4:AD:62:TYR:CB     | 2.20                     | 0.70              |
| 4:AD:146:GLU:HG2   | 4:AD:147:LEU:O     | 1.92                     | 0.70              |
| 5:AE:147:PRO:CB    | 5:AE:149:ARG:HD2   | 2.22                     | 0.70              |
| 7:AG:39:ILE:CD1    | 7:AG:92:VAL:HG12   | 2.22                     | 0.70              |
| 7:AG:148:MET:HB3   | 7:AG:151:ALA:HB2   | 1.72                     | 0.70              |
| 8:AH:99:VAL:HG23   | 8:AH:104:GLU:HG2   | 1.74                     | 0.70              |
| 12:AN:134:ARG:NH2  | 12:AN:137:TYR:N    | 2.40                     | 0.70              |
| 14:AP:28:VAL:O     | 14:AP:29:PHE:HB2   | 1.90                     | 0.70              |
| 24:AZ:23:LEU:HD11  | 24:AZ:53:LEU:HD13  | 1.74                     | 0.70              |
| 26:Ab:50:GLY:O     | 26:Ab:55:ARG:HA    | 1.92                     | 0.70              |
| 31:AI:152:VAL:O    | 31:AI:155:GLY:C    | 2.35                     | 0.70              |
| 32:AJ:72:PRO:CB    | 32:AJ:77:LEU:CD2   | 2.22                     | 0.70              |
| 34:BA:61:G:C5      | 34:BA:62:U:C4      | 2.80                     | 0.70              |
| 34:BA:129(A):G:H4' | 34:BA:130:A:C5'    | 2.22                     | 0.70              |
| 34:BA:168:G:N1     | 34:BA:169:C:N4     | 2.40                     | 0.70              |
| 34:BA:192:U:H5'    | 53:BX:102:GLY:CA   | 2.21                     | 0.70              |
| 34:BA:695:A:H2'    | 34:BA:696:A:O4'    | 1.91                     | 0.70              |
| 34:BA:1129:C:OP1   | 42:BM:16:ARG:NH1   | 2.24                     | 0.70              |
| 34:BA:1200:C:H5''  | 34:BA:1201:A:C3'   | 2.22                     | 0.70              |
| 34:BA:1200:C:O5'   | 34:BA:1202:G:OP1   | 2.08                     | 0.70              |
| 34:BA:1226:C:H42   | 46:BQ:104:ARG:HE   | 1.38                     | 0.70              |
| 34:BA:1319:A:C4'   | 52:BW:37:ARG:CA    | 2.56                     | 0.70              |
| 35:BF:118:LEU:CD2  | 35:BF:142:LEU:HB2  | 2.21                     | 0.70              |
| 35:BF:212:GLN:OE1  | 35:BF:215:LEU:HB3  | 1.92                     | 0.70              |
| 36:BG:122:GLU:HA   | 36:BG:125:GLU:CG   | 2.19                     | 0.70              |
| 39:BJ:99:ALA:CB    | 51:BV:31:LEU:HD11  | 2.22                     | 0.70              |
| 40:BK:63:LYS:HE2   | 40:BK:63:LYS:CA    | 2.21                     | 0.70              |
| 41:BL:86:ILE:HG21  | 41:BL:133:LEU:CB   | 2.15                     | 0.70              |
| 43:BN:68:HIS:HB3   | 43:BN:70:ARG:NH2   | 2.05                     | 0.70              |
| 44:BO:32:ILE:HD12  | 44:BO:41:THR:OG1   | 1.91                     | 0.70              |
| 45:BP:32:PHE:HB3   | 45:BP:84:LEU:HD21  | 1.74                     | 0.70              |
| 50:BU:29:HIS:CE1   | 50:BU:30:PRO:HG2   | 2.27                     | 0.70              |
| 52:BW:63:THR:O     | 52:BW:66:MET:HG2   | 1.92                     | 0.70              |
| 52:BW:80:TYR:CZ    | 52:BW:81:ARG:HG3   | 2.25                     | 0.70              |
| 56:BE:21:A:C6      | 56:BE:46:G:N1      | 2.60                     | 0.70              |
| 57:BZ:400:TYR:N    | 57:BZ:469:PHE:HA   | 2.07                     | 0.70              |
| 57:BZ:405:LEU:CB   | 57:BZ:455:PHE:HZ   | 2.05                     | 0.70              |
| 57:BZ:568:ALA:HB1  | 57:BZ:587:ILE:HD11 | 1.73                     | 0.70              |
| 1:AA:4:C:N4        | 1:AA:2899:G:O6     | 2.25                     | 0.70              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:292:C:C3'    | 1:AA:293:U:N3      | 2.55                     | 0.70              |
| 1:AA:298:G:O2'    | 1:AA:322:A:N1      | 2.24                     | 0.70              |
| 1:AA:300:A:O2'    | 1:AA:318:C:H1'     | 1.92                     | 0.70              |
| 1:AA:374:A:H3'    | 1:AA:375:C:C6      | 2.26                     | 0.70              |
| 1:AA:530:G:O2'    | 1:AA:531:C:P       | 2.50                     | 0.70              |
| 1:AA:532:A:H3'    | 1:AA:533:G:O4'     | 1.92                     | 0.70              |
| 1:AA:613:U:O5'    | 1:AA:615:G:H1'     | 1.92                     | 0.70              |
| 1:AA:687:C:H1'    | 1:AA:788:A:C5'     | 2.21                     | 0.70              |
| 1:AA:861:A:C2'    | 1:AA:862:G:H5'     | 2.20                     | 0.70              |
| 1:AA:991:C:OP2    | 1:AA:1186:G:OP2    | 2.09                     | 0.70              |
| 1:AA:1029:A:O5'   | 1:AA:1029:A:H8     | 1.72                     | 0.70              |
| 1:AA:1057:A:H2'   | 1:AA:1058:G:C8     | 2.27                     | 0.70              |
| 1:AA:1166:C:H2'   | 1:AA:1167:U:H6     | 1.56                     | 0.70              |
| 1:AA:1175:U:H5'   | 1:AA:1176:G:OP2    | 1.91                     | 0.70              |
| 1:AA:1264:G:N7    | 1:AA:1265:A:C4     | 2.59                     | 0.70              |
| 1:AA:1332:G:C4    | 1:AA:1609:A:N1     | 2.59                     | 0.70              |
| 1:AA:1375:C:C2    | 1:AA:1376:C:C5     | 2.80                     | 0.70              |
| 1:AA:1479:G:N2    | 1:AA:1515:C:C2     | 2.59                     | 0.70              |
| 1:AA:1545(A):A:H8 | 1:AA:1545(A):A:O5' | 1.75                     | 0.70              |
| 1:AA:1602:U:C6    | 1:AA:1602:U:C3'    | 2.69                     | 0.70              |
| 1:AA:2011:U:H2'   | 1:AA:2012:G:O4'    | 1.92                     | 0.70              |
| 1:AA:2114:A:C2'   | 1:AA:2115:G:H5'    | 2.22                     | 0.70              |
| 1:AA:2134:A:H2'   | 1:AA:2135:A:C5'    | 2.22                     | 0.70              |
| 1:AA:2178:C:C5'   | 3:AC:211:SER:HB3   | 2.21                     | 0.70              |
| 1:AA:2584:U:H6    | 1:AA:2584:U:H3'    | 1.57                     | 0.70              |
| 1:AA:2748:A:C2    | 1:AA:2757:A:N6     | 2.60                     | 0.70              |
| 1:AA:2848:G:N2    | 1:AA:2867:G:N3     | 2.40                     | 0.70              |
| 3:AC:59:ARG:NH1   | 3:AC:164:ARG:HG2   | 2.07                     | 0.70              |
| 3:AC:103:ILE:HD12 | 3:AC:127:LEU:HD11  | 1.74                     | 0.70              |
| 4:AD:61:LEU:HD13  | 4:AD:86:PRO:CD     | 2.22                     | 0.70              |
| 5:AE:22:PRO:HA    | 5:AE:185:LYS:CA    | 2.21                     | 0.70              |
| 5:AE:91:VAL:HG22  | 5:AE:93:VAL:N      | 2.05                     | 0.70              |
| 5:AE:176:ILE:HG21 | 5:AE:181:LEU:HB2   | 1.73                     | 0.70              |
| 6:AF:9:ILE:CG1    | 6:AF:122:LYS:HG3   | 2.22                     | 0.70              |
| 6:AF:122:LYS:HD3  | 6:AF:123:LEU:N     | 2.06                     | 0.70              |
| 8:AH:94:TYR:OH    | 8:AH:128:PRO:HG2   | 1.91                     | 0.70              |
| 9:AK:42:TRP:CD1   | 16:AR:64:ARG:HG2   | 2.27                     | 0.70              |
| 10:AL:43:VAL:CG1  | 10:AL:54:GLU:HA    | 2.21                     | 0.70              |
| 11:AM:74:GLU:HB2  | 11:AM:107:LYS:NZ   | 2.07                     | 0.70              |
| 11:AM:121:LYS:H   | 11:AM:122:PRO:HD3  | 1.56                     | 0.70              |
| 12:AN:27:VAL:HG13 | 12:AN:104:PHE:HE2  | 1.57                     | 0.70              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 12:AN:110:THR:O   | 12:AN:111:GLU:CB  | 2.39                     | 0.70              |
| 14:AP:26:LEU:HD22 | 14:AP:27:SER:H    | 1.55                     | 0.70              |
| 15:AQ:31:SER:OG   | 15:AQ:49:VAL:HG22 | 1.91                     | 0.70              |
| 16:AR:50:ARG:HH11 | 16:AR:50:ARG:CB   | 2.04                     | 0.70              |
| 16:AR:66:ASN:C    | 16:AR:70:ARG:HE   | 2.00                     | 0.70              |
| 18:AT:60:ASN:HD21 | 18:AT:61:ASN:ND2  | 1.89                     | 0.70              |
| 20:AV:107:ASP:O   | 20:AV:109:GLU:N   | 2.25                     | 0.70              |
| 22:AX:53:MET:HE1  | 22:AX:59:LEU:HG   | 1.73                     | 0.70              |
| 25:Aa:5:ILE:O     | 25:Aa:6:HIS:HB2   | 1.90                     | 0.70              |
| 25:Aa:20:ASN:CB   | 25:Aa:30:GLU:CD   | 2.64                     | 0.70              |
| 26:Ab:9:LYS:O     | 26:Ab:10:LYS:CB   | 2.40                     | 0.70              |
| 27:Ac:30:THR:O    | 27:Ac:32:ASN:N    | 2.24                     | 0.70              |
| 27:Ac:50:ARG:NH2  | 27:Ac:52:VAL:HG21 | 2.05                     | 0.70              |
| 34:BA:330:C:O2'   | 34:BA:331:G:H5'   | 1.90                     | 0.70              |
| 34:BA:344:A:H5''  | 34:BA:345:C:C5    | 2.26                     | 0.70              |
| 34:BA:474:G:H5'   | 49:BT:81:ARG:CG   | 2.22                     | 0.70              |
| 34:BA:517:G:N2    | 34:BA:533:A:P     | 2.65                     | 0.70              |
| 34:BA:540:G:C6    | 34:BA:541:G:C5    | 2.80                     | 0.70              |
| 34:BA:573:A:C2    | 34:BA:574:A:C6    | 2.80                     | 0.70              |
| 34:BA:948:C:H2'   | 34:BA:949:A:H8    | 1.57                     | 0.70              |
| 34:BA:1329:A:C4'  | 46:BQ:29:ARG:HH21 | 1.51                     | 0.70              |
| 34:BA:1463:C:C2'  | 34:BA:1464:G:H5'  | 2.22                     | 0.70              |
| 35:BF:35:GLU:O    | 35:BF:36:ARG:CZ   | 2.40                     | 0.70              |
| 35:BF:61:LEU:HD11 | 35:BF:68:ILE:HD11 | 1.73                     | 0.70              |
| 35:BF:115:LEU:HB2 | 35:BF:145:LEU:HG  | 1.74                     | 0.70              |
| 37:BH:20:TYR:CA   | 37:BH:26:CYS:O    | 2.39                     | 0.70              |
| 37:BH:63:LYS:HG2  | 37:BH:64:LEU:N    | 2.07                     | 0.70              |
| 37:BH:78:LEU:HD21 | 37:BH:96:LEU:HD22 | 1.73                     | 0.70              |
| 37:BH:145:GLU:HG2 | 37:BH:184:LYS:HE2 | 1.72                     | 0.70              |
| 40:BK:5:ARG:CD    | 40:BK:7:ALA:H     | 2.03                     | 0.70              |
| 40:BK:87:VAL:HG13 | 40:BK:152:ALA:CA  | 2.21                     | 0.70              |
| 41:BL:114:THR:HA  | 41:BL:131:GLY:HA3 | 1.71                     | 0.70              |
| 42:BM:15:ALA:HB1  | 42:BM:77:ILE:HG13 | 1.73                     | 0.70              |
| 46:BQ:80:ARG:NH2  | 46:BQ:81:LEU:HB3  | 2.06                     | 0.70              |
| 48:BS:77:ARG:O    | 48:BS:80:ALA:HB3  | 1.92                     | 0.70              |
| 51:BV:47:THR:O    | 51:BV:82:THR:HA   | 1.92                     | 0.70              |
| 57:BZ:8:ILE:CD1   | 57:BZ:96:LEU:CD1  | 2.70                     | 0.70              |
| 57:BZ:74:ASP:O    | 57:BZ:75:THR:OG1  | 2.08                     | 0.70              |
| 57:BZ:82:GLY:N    | 57:BZ:361:ARG:HB3 | 2.07                     | 0.70              |
| 57:BZ:88:VAL:HG13 | 57:BZ:92:VAL:CG1  | 2.20                     | 0.70              |
| 1:AA:91:A:H3'     | 1:AA:92:G:C8      | 2.27                     | 0.69              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:162:U:H3'     | 1:AA:163:U:C5'    | 2.22                     | 0.69              |
| 1:AA:221:A:N7      | 1:AA:266:G:C6     | 2.61                     | 0.69              |
| 1:AA:280:C:H5''    | 1:AA:282:A:OP1    | 1.91                     | 0.69              |
| 1:AA:533:G:OP1     | 16:AR:24:TYR:HB3  | 1.92                     | 0.69              |
| 1:AA:666:G:H2'     | 1:AA:667:U:C6     | 2.27                     | 0.69              |
| 1:AA:728:G:O3'     | 4:AD:13:ARG:NH2   | 2.25                     | 0.69              |
| 1:AA:1044:G:N3     | 31:AI:6:ASN:CB    | 2.53                     | 0.69              |
| 1:AA:1077:A:C2     | 32:AJ:133:SER:HA  | 2.26                     | 0.69              |
| 1:AA:1116:C:H2'    | 1:AA:1117:G:C8    | 2.26                     | 0.69              |
| 1:AA:1139:G:P      | 9:AK:63:THR:HG21  | 2.32                     | 0.69              |
| 1:AA:1312:U:H5     | 19:AU:62:LYS:HG3  | 1.56                     | 0.69              |
| 1:AA:1473:G:H2'    | 1:AA:1474:C:H6    | 1.56                     | 0.69              |
| 1:AA:1488:G:C3'    | 1:AA:1489:U:H5'   | 2.21                     | 0.69              |
| 1:AA:1527:G:H2'    | 1:AA:1528:A:O4'   | 1.92                     | 0.69              |
| 1:AA:1735:C:C4     | 1:AA:1741:C:N4    | 2.60                     | 0.69              |
| 1:AA:1748:G:H2'    | 1:AA:1749:A:C8    | 2.27                     | 0.69              |
| 1:AA:1789:A:C4'    | 4:AD:222:ARG:CZ   | 2.71                     | 0.69              |
| 1:AA:1809:A:H61    | 25:Aa:3:GLU:CG    | 2.03                     | 0.69              |
| 1:AA:1935:G:H2'    | 1:AA:1962:C:H42   | 1.53                     | 0.69              |
| 1:AA:2014:A:H8     | 1:AA:2014:A:O5'   | 1.74                     | 0.69              |
| 1:AA:2051:A:C6     | 1:AA:2614:A:C5    | 2.79                     | 0.69              |
| 1:AA:2083:G:C2     | 1:AA:2084:C:C2    | 2.80                     | 0.69              |
| 1:AA:2305:A:H1'    | 7:AG:154:GLY:C    | 2.17                     | 0.69              |
| 1:AA:2416:C:O5'    | 1:AA:2416:C:H6    | 1.75                     | 0.69              |
| 1:AA:2433:A:N6     | 25:Aa:32:TYR:CE2  | 2.55                     | 0.69              |
| 1:AA:2764:A:H5'    | 1:AA:2765:A:OP2   | 1.92                     | 0.69              |
| 1:AA:2765:A:N3     | 1:AA:2765:A:C2'   | 2.55                     | 0.69              |
| 2:AB:23:G:H2'      | 2:AB:24:G:C8      | 2.27                     | 0.69              |
| 2:AB:45:A:H1'      | 7:AG:95:ARG:CZ    | 2.22                     | 0.69              |
| 3:AC:213:TYR:CB    | 3:AC:223:ARG:HA   | 2.16                     | 0.69              |
| 5:AE:4:ILE:O       | 5:AE:4:ILE:HG13   | 1.90                     | 0.69              |
| 5:AE:49:LEU:CA     | 5:AE:76:ARG:O     | 2.38                     | 0.69              |
| 7:AG:4:ASP:HA      | 7:AG:7:LEU:HD12   | 1.72                     | 0.69              |
| 7:AG:68:PRO:HG3    | 7:AG:72:ARG:HH12  | 1.55                     | 0.69              |
| 8:AH:126:PRO:CG    | 8:AH:132:ARG:HH22 | 2.03                     | 0.69              |
| 8:AH:159:GLU:OE2   | 8:AH:161:GLY:N    | 2.20                     | 0.69              |
| 10:AL:10:VAL:HG12  | 10:AL:17:ARG:CA   | 2.22                     | 0.69              |
| 10:AL:63:VAL:HG22  | 10:AL:82:ASN:H    | 1.56                     | 0.69              |
| 10:AL:106:LEU:HD12 | 10:AL:107:ARG:N   | 2.06                     | 0.69              |
| 11:AM:36:LYS:NZ    | 11:AM:42:SER:OG   | 2.21                     | 0.69              |
| 12:AN:134:ARG:HG3  | 12:AN:134:ARG:NH1 | 2.07                     | 0.69              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 13:AO:58:GLY:HA2   | 13:AO:80:PHE:CZ   | 2.27                     | 0.69              |
| 16:AR:61:TRP:O     | 16:AR:65:ILE:HG12 | 1.92                     | 0.69              |
| 16:AR:70:ARG:CG    | 16:AR:75:ASN:HA   | 2.20                     | 0.69              |
| 20:AV:84:ARG:HG2   | 20:AV:86:ARG:H    | 1.55                     | 0.69              |
| 21:AW:129:SER:HB3  | 21:AW:133:ILE:CG2 | 2.21                     | 0.69              |
| 24:AZ:31:LEU:CD1   | 24:AZ:32:GLN:HE22 | 2.04                     | 0.69              |
| 29:Ae:12:LYS:O     | 29:Ae:13:ARG:C    | 2.34                     | 0.69              |
| 29:Ae:30:ARG:O     | 29:Ae:32:LEU:HG   | 1.91                     | 0.69              |
| 29:Ae:30:ARG:NH1   | 29:Ae:41:ILE:HG22 | 2.07                     | 0.69              |
| 32:AJ:90:LYS:HB3   | 32:AJ:91:PRO:HD3  | 1.73                     | 0.69              |
| 34:BA:60:A:C2      | 34:BA:107:G:N3    | 2.60                     | 0.69              |
| 34:BA:692:U:H2'    | 34:BA:694:A:OP2   | 1.91                     | 0.69              |
| 34:BA:865:A:H5'    | 34:BA:1078:U:C4   | 2.27                     | 0.69              |
| 34:BA:1391:U:H2'   | 34:BA:1392:G:C8   | 2.27                     | 0.69              |
| 34:BA:1393:U:C4'   | 34:BA:1501:C:O2'  | 2.38                     | 0.69              |
| 35:BF:21:ARG:N     | 35:BF:21:ARG:HE   | 1.90                     | 0.69              |
| 36:BG:110:ASN:HD21 | 36:BG:140:ARG:HG2 | 1.56                     | 0.69              |
| 36:BG:138:VAL:HG22 | 36:BG:151:VAL:CG2 | 2.22                     | 0.69              |
| 40:BK:143:ARG:CD   | 40:BK:144:MET:N   | 2.55                     | 0.69              |
| 41:BL:17:THR:CG2   | 41:BL:18:ARG:NH2  | 2.55                     | 0.69              |
| 41:BL:48:TYR:CB    | 41:BL:61:VAL:HG22 | 2.22                     | 0.69              |
| 46:BQ:16:ASP:OD1   | 46:BQ:34:LEU:CD1  | 2.39                     | 0.69              |
| 48:BS:34:LEU:HG    | 48:BS:35:ARG:N    | 2.06                     | 0.69              |
| 53:BX:23:ARG:CA    | 53:BX:26:ASN:OD1  | 2.40                     | 0.69              |
| 57:BZ:13:HIS:CB    | 57:BZ:108:GLN:HG3 | 2.21                     | 0.69              |
| 57:BZ:54:ILE:HG13  | 57:BZ:211:GLN:NE2 | 2.05                     | 0.69              |
| 57:BZ:507:ARG:C    | 57:BZ:528:SER:HG  | 1.98                     | 0.69              |
| 1:AA:143:C:C2      | 1:AA:144:C:C5     | 2.80                     | 0.69              |
| 1:AA:241:A:C2'     | 1:AA:242:G:H4'    | 2.23                     | 0.69              |
| 1:AA:498:G:H8      | 1:AA:498:G:O5'    | 1.74                     | 0.69              |
| 1:AA:513:A:C6      | 1:AA:514:A:N7     | 2.59                     | 0.69              |
| 1:AA:695:G:C6      | 1:AA:768:G:O6     | 2.45                     | 0.69              |
| 1:AA:783:A:H3'     | 4:AD:227:ASN:CG   | 2.17                     | 0.69              |
| 1:AA:902:C:H2'     | 1:AA:903:C:C4     | 2.27                     | 0.69              |
| 1:AA:935:C:C2      | 1:AA:936:C:C5     | 2.80                     | 0.69              |
| 1:AA:959:A:H2'     | 1:AA:960:A:C8     | 2.27                     | 0.69              |
| 1:AA:1036:G:C5'    | 8:AH:59:ARG:NH2   | 2.54                     | 0.69              |
| 1:AA:1046:A:C4     | 31:AI:11:ALA:HB3  | 2.27                     | 0.69              |
| 1:AA:1388:G:O2'    | 1:AA:1525:G:H5'   | 1.91                     | 0.69              |
| 1:AA:1398:C:H2'    | 1:AA:1399:C:H6    | 1.56                     | 0.69              |
| 1:AA:1504:C:C6     | 1:AA:1504:C:O5'   | 2.46                     | 0.69              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:1508:A:H3'    | 1:AA:1510:A:C8    | 2.27                     | 0.69              |
| 1:AA:1799:G:H8     | 4:AD:268:ARG:HH12 | 1.39                     | 0.69              |
| 1:AA:2124:G:O3'    | 3:AC:42:GLU:CD    | 2.35                     | 0.69              |
| 1:AA:2228:G:N7     | 1:AA:2229:C:C6    | 2.60                     | 0.69              |
| 1:AA:2291:U:H2'    | 1:AA:2292:C:C6    | 2.27                     | 0.69              |
| 1:AA:2448:A:P      | 1:AA:2499:C:OP2   | 2.50                     | 0.69              |
| 1:AA:2484:G:H2'    | 1:AA:2485:G:H5'   | 1.74                     | 0.69              |
| 1:AA:2556:C:H5'    | 57:BZ:550:GLY:HA3 | 1.73                     | 0.69              |
| 1:AA:2656:U:H2'    | 1:AA:2657:A:C5'   | 2.21                     | 0.69              |
| 3:AC:165:ASN:HA    | 3:AC:170:ALA:O    | 1.91                     | 0.69              |
| 4:AD:182:LEU:HD12  | 4:AD:270:ILE:HD11 | 1.72                     | 0.69              |
| 4:AD:226:MET:CE    | 4:AD:237:GLU:O    | 2.39                     | 0.69              |
| 5:AE:15:PHE:CD2    | 5:AE:16:ARG:HG3   | 2.27                     | 0.69              |
| 5:AE:98:PRO:HA     | 5:AE:172:VAL:CG2  | 2.22                     | 0.69              |
| 10:AL:70:LYS:HE2   | 10:AL:104:ARG:CG  | 2.22                     | 0.69              |
| 11:AM:78:PRO:HG2   | 11:AM:117:GLU:OE2 | 1.93                     | 0.69              |
| 12:AN:37:LEU:HD23  | 12:AN:100:GLY:HA3 | 1.74                     | 0.69              |
| 12:AN:56:ARG:HD2   | 12:AN:57:HIS:N    | 2.07                     | 0.69              |
| 12:AN:137:TYR:O    | 12:AN:138:ASP:OD1 | 2.10                     | 0.69              |
| 13:AO:20:LEU:HD13  | 13:AO:21:TYR:N    | 2.07                     | 0.69              |
| 15:AQ:64:ARG:O     | 15:AQ:65:LYS:C    | 2.35                     | 0.69              |
| 15:AQ:85:LYS:H     | 15:AQ:85:LYS:NZ   | 1.90                     | 0.69              |
| 16:AR:94:ASN:HA    | 16:AR:97:ASP:OD1  | 1.91                     | 0.69              |
| 18:AT:13:SER:HB3   | 18:AT:16:LYS:HE2  | 1.75                     | 0.69              |
| 18:AT:16:LYS:N     | 18:AT:16:LYS:NZ   | 2.37                     | 0.69              |
| 19:AU:54:VAL:C     | 19:AU:55:ASN:HD22 | 1.99                     | 0.69              |
| 21:AW:7:ALA:HB2    | 21:AW:38:TYR:CG   | 2.27                     | 0.69              |
| 21:AW:18:LEU:HD11  | 21:AW:38:TYR:CD1  | 2.27                     | 0.69              |
| 21:AW:49:ARG:O     | 21:AW:50:GLN:C    | 2.34                     | 0.69              |
| 21:AW:102:LEU:HD22 | 21:AW:137:ILE:HB  | 1.72                     | 0.69              |
| 22:AX:51:VAL:HG11  | 22:AX:79:VAL:HG21 | 1.74                     | 0.69              |
| 25:Aa:56:VAL:HG12  | 25:Aa:57:GLU:N    | 2.06                     | 0.69              |
| 25:Aa:68:ARG:N     | 25:Aa:68:ARG:CD   | 2.55                     | 0.69              |
| 29:Ae:4:MET:HE1    | 29:Ae:62:LEU:CG   | 2.22                     | 0.69              |
| 34:BA:264:U:O2     | 34:BA:264:U:C2'   | 2.40                     | 0.69              |
| 34:BA:535:A:H4'    | 34:BA:536:C:OP2   | 1.92                     | 0.69              |
| 34:BA:684:A:O3'    | 44:BO:12:ARG:NH2  | 2.25                     | 0.69              |
| 34:BA:1289:A:O2'   | 34:BA:1290:G:H5'  | 1.92                     | 0.69              |
| 34:BA:1326:C:H5''  | 54:BY:12:LYS:NZ   | 2.07                     | 0.69              |
| 34:BA:1407:C:O2'   | 34:BA:1408:A:H5'  | 1.92                     | 0.69              |
| 34:BA:1415:G:N1    | 34:BA:1486:G:C6   | 2.60                     | 0.69              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1453:G:H2'   | 53:BX:36:LEU:HD11  | 1.71                     | 0.69              |
| 34:BA:1520:G:H2'   | 34:BA:1521:G:H8    | 1.57                     | 0.69              |
| 35:BF:97:TRP:CZ2   | 35:BF:102:LEU:HD13 | 2.24                     | 0.69              |
| 35:BF:192:SER:O    | 35:BF:194:PRO:HD3  | 1.92                     | 0.69              |
| 35:BF:196:LEU:HD12 | 35:BF:196:LEU:C    | 2.18                     | 0.69              |
| 36:BG:30:ARG:HG2   | 36:BG:31:HIS:N     | 2.04                     | 0.69              |
| 38:BI:20:GLN:HE22  | 38:BI:21:ALA:HB3   | 1.56                     | 0.69              |
| 42:BM:8:GLY:HA3    | 42:BM:76:ALA:O     | 1.92                     | 0.69              |
| 43:BN:84:GLN:HA    | 43:BN:88:LEU:HD12  | 1.73                     | 0.69              |
| 44:BO:91:ARG:O     | 44:BO:94:ALA:HB3   | 1.92                     | 0.69              |
| 52:BW:51:VAL:HG11  | 52:BW:75:ALA:HB2   | 1.74                     | 0.69              |
| 53:BX:66:ALA:O     | 53:BX:67:ALA:C     | 2.33                     | 0.69              |
| 53:BX:100:ILE:O    | 53:BX:102:GLY:N    | 2.19                     | 0.69              |
| 57:BZ:6:ARG:CZ     | 57:BZ:195:PRO:C    | 2.65                     | 0.69              |
| 57:BZ:119:TYR:HD2  | 57:BZ:121:LEU:HG   | 1.57                     | 0.69              |
| 57:BZ:509:LYS:CG   | 57:BZ:561:ILE:HD13 | 2.22                     | 0.69              |
| 1:AA:29:U:OP1      | 1:AA:583:G:H4'     | 1.91                     | 0.69              |
| 1:AA:149:A:N7      | 1:AA:150:C:C2      | 2.60                     | 0.69              |
| 1:AA:272:G:O2'     | 1:AA:273:G:H5'     | 1.92                     | 0.69              |
| 1:AA:284:U:OP2     | 1:AA:284:U:C6      | 2.45                     | 0.69              |
| 1:AA:455:C:O2'     | 1:AA:456:C:H5'     | 1.92                     | 0.69              |
| 1:AA:491:G:H2'     | 1:AA:492:A:C8      | 2.28                     | 0.69              |
| 1:AA:718:A:H3'     | 1:AA:719:C:C6      | 2.24                     | 0.69              |
| 1:AA:720:C:H2'     | 1:AA:721:C:H6      | 1.56                     | 0.69              |
| 1:AA:781:A:O2'     | 4:AD:222:ARG:NH2   | 2.25                     | 0.69              |
| 1:AA:1041:C:C2     | 1:AA:1115:G:C6     | 2.81                     | 0.69              |
| 1:AA:1080:C:H5'    | 32:AJ:128:ALA:C    | 2.17                     | 0.69              |
| 1:AA:1205:U:O2'    | 1:AA:1206:G:N7     | 2.24                     | 0.69              |
| 1:AA:1567:A:O2'    | 1:AA:1568:G:C6     | 2.45                     | 0.69              |
| 1:AA:1754:C:C2     | 1:AA:1755:A:H1'    | 2.28                     | 0.69              |
| 1:AA:1996:C:C2'    | 5:AE:123:ALA:HB3   | 2.22                     | 0.69              |
| 1:AA:2009:G:H1'    | 13:AO:107:ASP:HA   | 1.74                     | 0.69              |
| 1:AA:2129:C:H4'    | 3:AC:6:ARG:CB      | 2.20                     | 0.69              |
| 1:AA:2231:C:H2'    | 1:AA:2232:U:C6     | 2.27                     | 0.69              |
| 1:AA:2287:A:C8     | 1:AA:2289:G:N7     | 2.60                     | 0.69              |
| 1:AA:2532:G:H4'    | 1:AA:2657:A:N3     | 2.01                     | 0.69              |
| 3:AC:6:ARG:NH1     | 3:AC:7:TYR:HA      | 2.06                     | 0.69              |
| 3:AC:62:VAL:HB     | 3:AC:191:ALA:O     | 1.90                     | 0.69              |
| 3:AC:104:LEU:HD22  | 3:AC:127:LEU:HD23  | 1.74                     | 0.69              |
| 3:AC:153:ILE:O     | 3:AC:156:ILE:HB    | 1.92                     | 0.69              |
| 4:AD:5:LYS:HB2     | 4:AD:82:ILE:HD12   | 1.73                     | 0.69              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 4:AD:37:LEU:CD1   | 4:AD:63:ARG:HA     | 2.21                     | 0.69              |
| 4:AD:45:ASN:C     | 4:AD:46:GLN:HG3    | 2.17                     | 0.69              |
| 5:AE:44:TYR:HD2   | 5:AE:45:THR:H      | 1.36                     | 0.69              |
| 6:AF:41:LEU:O     | 6:AF:44:ARG:CG     | 2.40                     | 0.69              |
| 6:AF:200:GLU:OE1  | 6:AF:201:VAL:N     | 2.22                     | 0.69              |
| 8:AH:88:LEU:HD23  | 8:AH:88:LEU:C      | 2.16                     | 0.69              |
| 10:AL:37:ASP:H    | 10:AL:61:VAL:CB    | 2.06                     | 0.69              |
| 10:AL:68:GLU:HG2  | 10:AL:76:ALA:O     | 1.92                     | 0.69              |
| 10:AL:85:VAL:HG12 | 10:AL:93:PRO:HB3   | 1.74                     | 0.69              |
| 10:AL:103:ALA:HB1 | 10:AL:107:ARG:NE   | 2.07                     | 0.69              |
| 11:AM:113:LYS:HA  | 11:AM:129:ALA:O    | 1.92                     | 0.69              |
| 12:AN:6:ARG:NH2   | 12:AN:8:LYS:H      | 1.90                     | 0.69              |
| 12:AN:22:LYS:CD   | 12:AN:23:GLY:H     | 2.04                     | 0.69              |
| 12:AN:35:VAL:HG12 | 12:AN:130:LYS:O    | 1.90                     | 0.69              |
| 12:AN:42:ILE:HG23 | 12:AN:42:ILE:O     | 1.92                     | 0.69              |
| 13:AO:41:ALA:CB   | 13:AO:114:VAL:HG21 | 2.22                     | 0.69              |
| 14:AP:17:ARG:NE   | 14:AP:89:ARG:HB2   | 2.07                     | 0.69              |
| 15:AQ:109:GLU:O   | 15:AQ:113:LYS:HB2  | 1.92                     | 0.69              |
| 16:AR:94:ASN:HA   | 16:AR:97:ASP:CG    | 2.17                     | 0.69              |
| 18:AT:34:ASN:HA   | 18:AT:37:ARG:NE    | 2.05                     | 0.69              |
| 19:AU:7:VAL:O     | 19:AU:8:ILE:HG23   | 1.92                     | 0.69              |
| 22:AX:59:LEU:HD13 | 22:AX:79:VAL:HG11  | 1.74                     | 0.69              |
| 24:AZ:5:LYS:HZ2   | 24:AZ:59:VAL:CG2   | 2.04                     | 0.69              |
| 25:Aa:68:ARG:HD3  | 25:Aa:68:ARG:H     | 1.56                     | 0.69              |
| 27:Ac:22:ALA:HB1  | 27:Ac:39:TYR:CE2   | 2.26                     | 0.69              |
| 27:Ac:38:LYS:O    | 27:Ac:49:HIS:HB3   | 1.91                     | 0.69              |
| 29:Ae:38:GLY:O    | 29:Ae:41:ILE:HG12  | 1.91                     | 0.69              |
| 29:Ae:39:LYS:HG2  | 29:Ae:40:GLU:N     | 2.05                     | 0.69              |
| 34:BA:19:C:O2     | 34:BA:572:A:H2     | 1.75                     | 0.69              |
| 34:BA:336:C:H2'   | 34:BA:337:C:H6     | 1.57                     | 0.69              |
| 34:BA:452:A:H2'   | 34:BA:453:A:C8     | 2.26                     | 0.69              |
| 34:BA:518:C:O2'   | 45:BP:50:SER:HB3   | 1.92                     | 0.69              |
| 34:BA:684:A:H2    | 34:BA:706:A:H61    | 1.40                     | 0.69              |
| 34:BA:750:G:O4'   | 48:BS:22:THR:OG1   | 2.11                     | 0.69              |
| 34:BA:865:A:C4    | 34:BA:866:C:O2     | 2.45                     | 0.69              |
| 34:BA:953:G:H2'   | 34:BA:954:G:C8     | 2.27                     | 0.69              |
| 34:BA:1430:C:C2   | 34:BA:1431:C:H5    | 2.09                     | 0.69              |
| 36:BG:70:VAL:O    | 36:BG:105:GLU:HA   | 1.91                     | 0.69              |
| 39:BJ:76:ALA:CB   | 39:BJ:80:ARG:NH2   | 2.55                     | 0.69              |
| 41:BL:9:MET:O     | 41:BL:13:ILE:HG13  | 1.93                     | 0.69              |
| 44:BO:48:ILE:O    | 44:BO:49:GLY:C     | 2.36                     | 0.69              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 48:BS:34:LEU:CG   | 48:BS:35:ARG:N    | 2.55                     | 0.69              |
| 51:BV:37:VAL:HG12 | 51:BV:41:LYS:HE3  | 1.72                     | 0.69              |
| 57:BZ:184:THR:H   | 57:BZ:185:PRO:HD3 | 1.58                     | 0.69              |
| 1:AA:174:C:C2'    | 1:AA:175:G:H5'    | 2.21                     | 0.69              |
| 1:AA:464:U:H2'    | 1:AA:465:G:C8     | 2.27                     | 0.69              |
| 1:AA:532:A:H8     | 1:AA:533:G:H1'    | 1.57                     | 0.69              |
| 1:AA:665:C:OP2    | 1:AA:665:C:H6     | 1.76                     | 0.69              |
| 1:AA:727:A:C6     | 1:AA:729:G:O6     | 2.45                     | 0.69              |
| 1:AA:880:G:C6     | 1:AA:897:C:O2     | 2.45                     | 0.69              |
| 1:AA:883:G:C6     | 1:AA:884:C:H5     | 2.11                     | 0.69              |
| 1:AA:1270:C:H5''  | 1:AA:1271:G:H5''  | 1.74                     | 0.69              |
| 1:AA:1271:G:O5'   | 1:AA:1272:A:OP1   | 2.10                     | 0.69              |
| 1:AA:1418:G:N3    | 1:AA:1581:G:N2    | 2.40                     | 0.69              |
| 1:AA:1690:A:C2    | 1:AA:1691:C:C1'   | 2.75                     | 0.69              |
| 1:AA:1779:U:C6    | 1:AA:1779:U:O5'   | 2.46                     | 0.69              |
| 1:AA:1779:U:O5'   | 1:AA:1779:U:H6    | 1.75                     | 0.69              |
| 1:AA:1859:A:H2'   | 1:AA:1860:G:O4'   | 1.93                     | 0.69              |
| 1:AA:1936:A:C1'   | 1:AA:1940:U:C4    | 2.75                     | 0.69              |
| 1:AA:2067:G:N2    | 1:AA:2069:G:H1'   | 2.08                     | 0.69              |
| 1:AA:2126:A:H1'   | 1:AA:2162:G:N2    | 2.07                     | 0.69              |
| 1:AA:2177:C:H5''  | 3:AC:223:ARG:HB2  | 1.72                     | 0.69              |
| 1:AA:2177:C:O3'   | 3:AC:211:SER:HB2  | 1.91                     | 0.69              |
| 1:AA:2296:U:H3'   | 1:AA:2296:U:C6    | 2.23                     | 0.69              |
| 1:AA:2549:G:O2'   | 1:AA:2550:G:H5'   | 1.92                     | 0.69              |
| 1:AA:2636:U:H4'   | 5:AE:79:ARG:NH2   | 2.08                     | 0.69              |
| 1:AA:2849:U:H3'   | 1:AA:2849:U:C6    | 2.27                     | 0.69              |
| 3:AC:42:GLU:OE2   | 3:AC:174:PRO:HB3  | 1.91                     | 0.69              |
| 3:AC:46:LYS:HD3   | 3:AC:210:ARG:HB3  | 1.75                     | 0.69              |
| 3:AC:82:LYS:CD    | 3:AC:116:THR:HG21 | 2.19                     | 0.69              |
| 3:AC:163:PHE:HA   | 3:AC:171:ILE:HD11 | 1.73                     | 0.69              |
| 4:AD:27:THR:C     | 4:AD:29:PRO:HD2   | 2.17                     | 0.69              |
| 4:AD:202:LYS:H    | 4:AD:202:LYS:CD   | 2.05                     | 0.69              |
| 6:AF:185:ASP:O    | 6:AF:189:THR:HG23 | 1.92                     | 0.69              |
| 7:AG:103:LEU:HD21 | 7:AG:176:LEU:CD1  | 2.23                     | 0.69              |
| 7:AG:139:LEU:HD13 | 7:AG:142:PRO:CA   | 2.23                     | 0.69              |
| 8:AH:8:PRO:N      | 8:AH:69:ARG:HH11  | 1.90                     | 0.69              |
| 10:AL:64:ARG:HH11 | 10:AL:67:LYS:H    | 0.77                     | 0.69              |
| 14:AP:54:LEU:HG   | 14:AP:56:LEU:HD22 | 1.73                     | 0.69              |
| 18:AT:33:ARG:HE   | 18:AT:33:ARG:CA   | 2.04                     | 0.69              |
| 20:AV:88:LYS:HB3  | 20:AV:91:GLU:OE2  | 1.93                     | 0.69              |
| 21:AW:9:TYR:HB3   | 21:AW:14:LYS:HZ3  | 1.57                     | 0.69              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:Aa:41:PRO:HB2  | 25:Aa:57:GLU:OE2   | 1.91                     | 0.69              |
| 34:BA:310:G:H2'   | 34:BA:311:C:H6     | 1.54                     | 0.69              |
| 34:BA:745:C:H5''  | 34:BA:851:G:H1'    | 1.72                     | 0.69              |
| 34:BA:792:A:H2'   | 34:BA:794:A:N6     | 2.00                     | 0.69              |
| 34:BA:944:G:H3'   | 34:BA:945:G:C5'    | 2.21                     | 0.69              |
| 34:BA:1120:G:O5'  | 34:BA:1120:G:H8    | 1.75                     | 0.69              |
| 34:BA:1213:A:C6   | 34:BA:1215:G:C2    | 2.81                     | 0.69              |
| 35:BF:212:GLN:O   | 35:BF:216:SER:CB   | 2.41                     | 0.69              |
| 36:BG:22:TRP:HB3  | 36:BG:59:ARG:HB3   | 1.74                     | 0.69              |
| 37:BH:31:CYS:O    | 37:BH:33:MET:N     | 2.24                     | 0.69              |
| 37:BH:67:ILE:HD12 | 37:BH:67:ILE:C     | 2.17                     | 0.69              |
| 38:BI:118:ILE:O   | 38:BI:119:LEU:HD23 | 1.92                     | 0.69              |
| 39:BJ:7:ASN:CG    | 39:BJ:62:TRP:HD1   | 2.01                     | 0.69              |
| 40:BK:78:ARG:HE   | 40:BK:80:VAL:HG23  | 1.57                     | 0.69              |
| 45:BP:27:LEU:HD23 | 45:BP:33:ARG:HD3   | 1.74                     | 0.69              |
| 49:BT:74:LEU:HD22 | 49:BT:79:VAL:HG21  | 1.73                     | 0.69              |
| 50:BU:7:THR:HG21  | 50:BU:56:VAL:HG12  | 1.73                     | 0.69              |
| 52:BW:48:THR:HA   | 52:BW:60:VAL:O     | 1.93                     | 0.69              |
| 56:BE:20:U:H4'    | 56:BE:20:U:OP1     | 1.92                     | 0.69              |
| 1:AA:58:G:H1'     | 1:AA:70:G:N2       | 2.07                     | 0.69              |
| 1:AA:64:A:H2'     | 1:AA:65:C:C5'      | 2.23                     | 0.69              |
| 1:AA:541:C:H2'    | 1:AA:542:C:H6      | 1.57                     | 0.69              |
| 1:AA:672:C:OP2    | 11:AM:38:GLN:HG2   | 1.92                     | 0.69              |
| 1:AA:685:A:O2'    | 1:AA:686:G:OP2     | 2.10                     | 0.69              |
| 1:AA:920:G:C2'    | 1:AA:921:G:H5'     | 2.23                     | 0.69              |
| 1:AA:945:A:N3     | 1:AA:945:A:H2'     | 2.05                     | 0.69              |
| 1:AA:1470:G:H3'   | 1:AA:1470:G:H8     | 1.58                     | 0.69              |
| 1:AA:1529:A:H8    | 1:AA:1530:G:C8     | 2.11                     | 0.69              |
| 1:AA:1613:G:N2    | 1:AA:1619:G:C4     | 2.60                     | 0.69              |
| 1:AA:1735:C:N4    | 1:AA:1741:C:N4     | 2.39                     | 0.69              |
| 1:AA:1780:A:OP2   | 1:AA:1782:C:P      | 2.51                     | 0.69              |
| 1:AA:1835:G:C2'   | 1:AA:1836:C:H5'    | 2.23                     | 0.69              |
| 1:AA:1966:A:C4    | 1:AA:2593:U:H5'    | 2.27                     | 0.69              |
| 1:AA:2067:G:H5''  | 1:AA:2068:U:OP2    | 1.93                     | 0.69              |
| 1:AA:2096:U:H2'   | 1:AA:2097:C:H5     | 1.56                     | 0.69              |
| 1:AA:2175:C:P     | 3:AC:7:TYR:CB      | 2.80                     | 0.69              |
| 1:AA:2191:G:N2    | 1:AA:2192:G:N3     | 2.40                     | 0.69              |
| 1:AA:2205:C:O2'   | 1:AA:2206:C:H5'    | 1.92                     | 0.69              |
| 1:AA:2329:G:N1    | 1:AA:2386:C:N4     | 2.39                     | 0.69              |
| 1:AA:2392:A:C2    | 1:AA:2429:G:C2     | 2.81                     | 0.69              |
| 1:AA:2615:U:H2'   | 1:AA:2616:C:H6     | 1.58                     | 0.69              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 3:AC:76:ALA:HB2    | 3:AC:153:ILE:HD12  | 1.74                     | 0.69              |
| 3:AC:182:PRO:HG2   | 3:AC:183:GLU:CD    | 2.16                     | 0.69              |
| 4:AD:176:ARG:HH11  | 4:AD:176:ARG:CG    | 2.04                     | 0.69              |
| 4:AD:261:LYS:C     | 4:AD:263:ARG:N     | 2.46                     | 0.69              |
| 5:AE:164:ARG:C     | 5:AE:165:VAL:CG2   | 2.64                     | 0.69              |
| 8:AH:69:ARG:HG3    | 8:AH:70:THR:H      | 1.57                     | 0.69              |
| 9:AK:37:LYS:HE2    | 9:AK:43:THR:HG22   | 1.73                     | 0.69              |
| 10:AL:3:GLN:HE22   | 10:AL:33:ALA:HB3   | 0.68                     | 0.69              |
| 14:AP:9:ARG:NH1    | 14:AP:9:ARG:H      | 1.89                     | 0.69              |
| 15:AQ:6:LEU:CD2    | 15:AQ:7:ILE:HG23   | 2.21                     | 0.69              |
| 17:AS:11:GLN:OE1   | 17:AS:22:VAL:HB    | 1.93                     | 0.69              |
| 17:AS:18:LEU:HD12  | 17:AS:66:ARG:NH1   | 2.06                     | 0.69              |
| 18:AT:98:LYS:HZ3   | 18:AT:98:LYS:C     | 2.00                     | 0.69              |
| 20:AV:28:LYS:O     | 20:AV:28:LYS:HG2   | 1.92                     | 0.69              |
| 20:AV:33:LYS:HB3   | 20:AV:35:TYR:CE2   | 2.27                     | 0.69              |
| 20:AV:97:ARG:CZ    | 20:AV:101:LYS:HG2  | 2.21                     | 0.69              |
| 21:AW:48:PHE:CE2   | 21:AW:86:VAL:HG11  | 2.27                     | 0.69              |
| 21:AW:157:LEU:HD13 | 21:AW:161:VAL:CG1  | 2.21                     | 0.69              |
| 23:AY:54:ARG:HG2   | 23:AY:54:ARG:HH21  | 1.57                     | 0.69              |
| 25:Aa:20:ASN:HB2   | 25:Aa:30:GLU:HB2   | 1.73                     | 0.69              |
| 27:Ac:20:ASN:HD21  | 27:Ac:43:CYS:CA    | 2.06                     | 0.69              |
| 34:BA:195:A:H4'    | 53:BX:68:LYS:NZ    | 2.08                     | 0.69              |
| 34:BA:219:C:H2'    | 34:BA:220:G:O4'    | 1.91                     | 0.69              |
| 34:BA:264:U:H2'    | 50:BU:64:PRO:HB2   | 1.73                     | 0.69              |
| 34:BA:403:C:O2'    | 37:BH:122:ARG:CZ   | 2.39                     | 0.69              |
| 34:BA:427:U:O5'    | 34:BA:427:U:H6     | 1.74                     | 0.69              |
| 34:BA:608:A:H2'    | 34:BA:608:A:N3     | 2.08                     | 0.69              |
| 34:BA:1125:U:C4    | 43:BN:5:ARG:NH2    | 2.57                     | 0.69              |
| 34:BA:1230:C:H5'   | 56:BE:30:G:H5'     | 1.74                     | 0.69              |
| 34:BA:1269:A:C1'   | 34:BA:1312:G:N2    | 2.55                     | 0.69              |
| 34:BA:1459:C:P     | 53:BX:31:SER:OG    | 2.51                     | 0.69              |
| 34:BA:1506:U:C4'   | 34:BA:1507:A:OP2   | 2.41                     | 0.69              |
| 37:BH:60:GLU:HA    | 37:BH:63:LYS:HD3   | 1.74                     | 0.69              |
| 39:BJ:28:ARG:HG2   | 39:BJ:28:ARG:NH1   | 2.08                     | 0.69              |
| 41:BL:68:ARG:CZ    | 41:BL:74:PRO:HB3   | 2.22                     | 0.69              |
| 42:BM:98:PRO:C     | 42:BM:100:GLY:N    | 2.49                     | 0.69              |
| 43:BN:15:THR:HG23  | 43:BN:16:LEU:CD2   | 2.21                     | 0.69              |
| 44:BO:82:VAL:HG12  | 44:BO:108:ILE:HG23 | 1.74                     | 0.69              |
| 44:BO:104:GLN:NE2  | 44:BO:106:LYS:H    | 1.91                     | 0.69              |
| 48:BS:36:ILE:HD12  | 48:BS:63:ARG:CD    | 2.22                     | 0.69              |
| 50:BU:6:LEU:HD12   | 50:BU:6:LEU:C      | 2.17                     | 0.69              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 50:BU:75:ARG:HH12 | 50:BU:77:VAL:HG22  | 1.55                     | 0.69              |
| 50:BU:104:LYS:HD3 | 50:BU:105:ALA:H    | 1.58                     | 0.69              |
| 51:BV:26:LEU:HG   | 51:BV:27:GLY:O     | 1.93                     | 0.69              |
| 53:BX:87:LYS:O    | 53:BX:88:VAL:C     | 2.36                     | 0.69              |
| 57:BZ:84:GLU:HG3  | 57:BZ:85:VAL:H     | 1.56                     | 0.69              |
| 57:BZ:89:MET:HG2  | 57:BZ:119:TYR:CE2  | 2.28                     | 0.69              |
| 57:BZ:392:ILE:C   | 57:BZ:392:ILE:HD12 | 2.17                     | 0.69              |
| 57:BZ:431:PRO:HA  | 57:BZ:437:VAL:HG23 | 1.73                     | 0.69              |
| 57:BZ:515:GLY:O   | 57:BZ:516:ALA:C    | 2.33                     | 0.69              |
| 1:AA:363(A):A:N3  | 1:AA:363(A):A:H2'  | 2.06                     | 0.69              |
| 1:AA:388:G:N3     | 1:AA:390:A:C6      | 2.60                     | 0.69              |
| 1:AA:391:G:H2'    | 1:AA:392:C:H6      | 1.56                     | 0.69              |
| 1:AA:411:G:O4'    | 1:AA:2407:G:P      | 2.50                     | 0.69              |
| 1:AA:585:G:C6     | 1:AA:1251:C:C5     | 2.81                     | 0.69              |
| 1:AA:621:A:N7     | 1:AA:622:G:O4'     | 2.25                     | 0.69              |
| 1:AA:630:G:H1     | 1:AA:634:C:N4      | 1.91                     | 0.69              |
| 1:AA:636:G:H2'    | 11:AM:113:LYS:HZ1  | 1.56                     | 0.69              |
| 1:AA:881:G:C4     | 1:AA:896:A:C2      | 2.80                     | 0.69              |
| 1:AA:1000:A:N7    | 1:AA:1001:A:C6     | 2.60                     | 0.69              |
| 1:AA:1007:C:O2'   | 9:AK:108:PRO:HB3   | 1.92                     | 0.69              |
| 1:AA:1009:A:H4'   | 16:AR:62:ILE:HG21  | 1.73                     | 0.69              |
| 1:AA:1203:G:O2'   | 1:AA:1204:A:OP1    | 2.11                     | 0.69              |
| 1:AA:1417:C:N3    | 1:AA:1581:G:N2     | 2.40                     | 0.69              |
| 1:AA:1451:C:OP2   | 1:AA:1451:C:O4'    | 2.11                     | 0.69              |
| 1:AA:1773:A:C2    | 1:AA:1977:A:N6     | 2.60                     | 0.69              |
| 1:AA:1837:C:O2'   | 1:AA:1927:A:H1'    | 1.92                     | 0.69              |
| 1:AA:1955:U:C3'   | 1:AA:1956:U:H5     | 2.05                     | 0.69              |
| 1:AA:1995:U:C5    | 1:AA:1996:C:C5     | 2.80                     | 0.69              |
| 1:AA:2175:C:P     | 3:AC:7:TYR:HB2     | 2.32                     | 0.69              |
| 1:AA:2178:C:O5'   | 3:AC:213:TYR:OH    | 2.11                     | 0.69              |
| 1:AA:2207:C:H2'   | 1:AA:2208:U:C4'    | 2.23                     | 0.69              |
| 1:AA:2228:G:N7    | 1:AA:2229:C:C5     | 2.60                     | 0.69              |
| 1:AA:2286:A:N6    | 27:Ac:32:ASN:H     | 1.88                     | 0.69              |
| 1:AA:2572:A:C2    | 5:AE:144:ARG:NH1   | 2.61                     | 0.69              |
| 1:AA:2749:A:H5'   | 8:AH:62:LYS:C      | 2.18                     | 0.69              |
| 4:AD:150:LYS:C    | 4:AD:152:GLY:H     | 2.00                     | 0.69              |
| 4:AD:239:ARG:HD2  | 4:AD:239:ARG:N     | 2.07                     | 0.69              |
| 5:AE:8:LYS:HB3    | 5:AE:24:THR:CB     | 2.23                     | 0.69              |
| 5:AE:32:PRO:HB2   | 5:AE:35:GLN:HE22   | 1.56                     | 0.69              |
| 5:AE:47:VAL:HG13  | 5:AE:79:ARG:HB2    | 1.73                     | 0.69              |
| 5:AE:154:LYS:HZ3  | 5:AE:156:MET:CE    | 1.94                     | 0.69              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 6:AF:36:VAL:HG11   | 6:AF:183:VAL:HG11 | 1.72                     | 0.69              |
| 7:AG:20:ILE:HD12   | 7:AG:28:VAL:HG13  | 1.75                     | 0.69              |
| 7:AG:75:LYS:NZ     | 7:AG:85:GLY:HA3   | 2.08                     | 0.69              |
| 8:AH:118:PRO:N     | 8:AH:121:ILE:HG21 | 2.08                     | 0.69              |
| 9:AK:55:VAL:N      | 9:AK:130:HIS:CE1  | 2.60                     | 0.69              |
| 10:AL:35:VAL:HA    | 10:AL:61:VAL:CG1  | 2.23                     | 0.69              |
| 13:AO:56:LYS:O     | 13:AO:58:GLY:N    | 2.25                     | 0.69              |
| 14:AP:31:SER:O     | 14:AP:35:ILE:HB   | 1.93                     | 0.69              |
| 16:AR:45:TYR:HB3   | 16:AR:49:HIS:HE1  | 1.57                     | 0.69              |
| 16:AR:108:GLU:OE1  | 16:AR:109:LEU:N   | 2.24                     | 0.69              |
| 17:AS:78:LYS:CB    | 17:AS:84:LYS:HB3  | 2.22                     | 0.69              |
| 20:AV:35:TYR:HE1   | 20:AV:65:ALA:O    | 1.76                     | 0.69              |
| 20:AV:42:VAL:HG23  | 20:AV:61:ILE:HG12 | 1.74                     | 0.69              |
| 21:AW:9:TYR:CB     | 21:AW:14:LYS:HG2  | 2.22                     | 0.69              |
| 21:AW:45:ASP:N     | 21:AW:45:ASP:OD1  | 2.25                     | 0.69              |
| 24:AZ:35:ARG:HH12  | 24:AZ:47:VAL:CG2  | 2.04                     | 0.69              |
| 27:Ac:44:ARG:HB2   | 27:Ac:47:THR:CG2  | 2.22                     | 0.69              |
| 30:Af:20:HIS:C     | 30:Af:22:ARG:N    | 2.45                     | 0.69              |
| 32:AJ:14:ALA:C     | 32:AJ:48:MET:O    | 2.35                     | 0.69              |
| 34:BA:465:A:N7     | 34:BA:467:G:C2    | 2.60                     | 0.69              |
| 34:BA:572:A:OP1    | 34:BA:573:A:OP1   | 2.10                     | 0.69              |
| 34:BA:899:C:N4     | 34:BA:900:A:N1    | 2.40                     | 0.69              |
| 34:BA:1152:A:O2'   | 34:BA:1153:C:H5'  | 1.93                     | 0.69              |
| 34:BA:1221:G:H5'   | 52:BW:52:TYR:O    | 1.91                     | 0.69              |
| 34:BA:1221:G:OP1   | 52:BW:52:TYR:O    | 2.11                     | 0.69              |
| 34:BA:1244:C:H2'   | 34:BA:1245:A:C8   | 2.26                     | 0.69              |
| 34:BA:1283:G:O2'   | 34:BA:1284:C:H5'  | 1.91                     | 0.69              |
| 34:BA:1309:G:O2'   | 46:BQ:74:VAL:HG22 | 1.93                     | 0.69              |
| 34:BA:1454:G:O2'   | 34:BA:1455:G:H8   | 1.75                     | 0.69              |
| 35:BF:43:ASP:OD1   | 35:BF:44:LEU:HG   | 1.93                     | 0.69              |
| 35:BF:60:ASP:HB3   | 35:BF:64:ARG:NH1  | 2.07                     | 0.69              |
| 35:BF:185:ILE:HG22 | 35:BF:199:TYR:HB2 | 1.73                     | 0.69              |
| 35:BF:223:ILE:HG21 | 35:BF:229:VAL:HA  | 1.73                     | 0.69              |
| 38:BI:9:LYS:HE2    | 38:BI:9:LYS:HA    | 1.75                     | 0.69              |
| 40:BK:38:LEU:HA    | 40:BK:41:ARG:CG   | 2.22                     | 0.69              |
| 41:BL:51:VAL:HG11  | 41:BL:60:ARG:NH2  | 2.07                     | 0.69              |
| 42:BM:37:PHE:HD2   | 42:BM:37:PHE:N    | 1.90                     | 0.69              |
| 56:BD:67:C:C2'     | 56:BD:68:C:H5'    | 2.23                     | 0.69              |
| 57:BZ:64:ILE:HG21  | 57:BZ:188:GLN:OE1 | 1.93                     | 0.69              |
| 57:BZ:164:TYR:N    | 57:BZ:172:ALA:C   | 2.50                     | 0.69              |
| 57:BZ:179:MET:HB2  | 57:BZ:182:ASP:HB3 | 1.73                     | 0.69              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:BZ:207:MET:HE1 | 57:BZ:209:ILE:HA   | 1.74                     | 0.69              |
| 57:BZ:580:VAL:CG1 | 57:BZ:585:ILE:HD12 | 2.22                     | 0.69              |
| 1:AA:200:U:C4     | 1:AA:201:C:H1'     | 2.27                     | 0.69              |
| 1:AA:353:G:C6     | 1:AA:354:G:C6      | 2.80                     | 0.69              |
| 1:AA:512:G:OP2    | 1:AA:1235:G:H5'    | 1.92                     | 0.69              |
| 1:AA:527:C:O4'    | 1:AA:2779:U:C4     | 2.46                     | 0.69              |
| 1:AA:624:C:N4     | 11:AM:104:GLY:HA2  | 2.05                     | 0.69              |
| 1:AA:668:G:C2     | 1:AA:670:A:N6      | 2.60                     | 0.69              |
| 1:AA:715:G:H21    | 48:BS:43:LEU:CD1   | 2.05                     | 0.69              |
| 1:AA:751:A:N7     | 1:AA:789:A:C6      | 2.61                     | 0.69              |
| 1:AA:774:A:O2'    | 1:AA:775:G:O5'     | 2.10                     | 0.69              |
| 1:AA:1019:U:C2    | 1:AA:1144:G:N2     | 2.61                     | 0.69              |
| 1:AA:1033:U:H5'   | 30:Af:16:VAL:CG2   | 2.23                     | 0.69              |
| 1:AA:1309:G:H2'   | 1:AA:1310:G:C5'    | 2.22                     | 0.69              |
| 1:AA:1613:G:H3'   | 1:AA:1614:A:C5'    | 2.17                     | 0.69              |
| 1:AA:1858:G:H22   | 1:AA:1884:A:H1'    | 1.57                     | 0.69              |
| 1:AA:1936:A:H5'   | 1:AA:1937:A:C2     | 2.28                     | 0.69              |
| 1:AA:2075:U:H5    | 1:AA:2435:A:C2     | 2.09                     | 0.69              |
| 1:AA:2266:A:H5''  | 1:AA:2267:A:O5'    | 1.93                     | 0.69              |
| 1:AA:2468:G:H4'   | 12:AN:120:ILE:HD13 | 1.73                     | 0.69              |
| 1:AA:2472:G:OP1   | 57:BZ:529:ARG:CG   | 2.41                     | 0.69              |
| 1:AA:2708:G:OP1   | 13:AO:68:ARG:HG2   | 1.92                     | 0.69              |
| 1:AA:2848:G:N2    | 1:AA:2849:U:H3     | 1.91                     | 0.69              |
| 4:AD:155:LEU:HG   | 4:AD:157:ARG:HE    | 1.57                     | 0.69              |
| 5:AE:49:LEU:CD1   | 5:AE:74:PRO:HB2    | 2.22                     | 0.69              |
| 5:AE:105:THR:HG23 | 5:AE:197:ILE:CD1   | 2.23                     | 0.69              |
| 6:AF:19:GLU:C     | 6:AF:20:LEU:CD2    | 2.50                     | 0.69              |
| 6:AF:82:ILE:CD1   | 6:AF:82:ILE:N      | 2.56                     | 0.69              |
| 7:AG:43:LEU:HD11  | 7:AG:88:ILE:O      | 1.93                     | 0.69              |
| 8:AH:25:LYS:HD3   | 8:AH:27:LYS:NZ     | 2.07                     | 0.69              |
| 8:AH:97:ARG:H     | 8:AH:104:GLU:HB2   | 1.57                     | 0.69              |
| 9:AK:74:ARG:HG3   | 9:AK:82:LEU:CD2    | 2.11                     | 0.69              |
| 9:AK:139:GLU:O    | 9:AK:140:VAL:CG2   | 2.41                     | 0.69              |
| 11:AM:77:ARG:HG2  | 11:AM:79:ARG:HB3   | 1.74                     | 0.69              |
| 11:AM:96:THR:C    | 11:AM:102:ARG:HD3  | 2.17                     | 0.69              |
| 11:AM:128:HIS:CG  | 11:AM:129:ALA:H    | 2.05                     | 0.69              |
| 12:AN:66:ILE:N    | 12:AN:105:GLU:OE2  | 2.25                     | 0.69              |
| 13:AO:50:HIS:NE2  | 13:AO:54:LEU:HD11  | 2.08                     | 0.69              |
| 14:AP:33:LYS:HG2  | 14:AP:54:LEU:CD1   | 2.21                     | 0.69              |
| 15:AQ:11:GLU:O    | 15:AQ:12:SER:C     | 2.33                     | 0.69              |
| 16:AR:98:LEU:HD12 | 16:AR:105:VAL:CG2  | 2.19                     | 0.69              |

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| Atom-1             | Atom-2              | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 17:AS:4:ILE:N      | 17:AS:4:ILE:HD12    | 2.06                     | 0.69              |
| 23:AY:33:GLN:HB3   | 23:AY:41:GLN:OE1    | 1.92                     | 0.69              |
| 23:AY:63:ARG:O     | 23:AY:66:ASN:HB3    | 1.93                     | 0.69              |
| 24:AZ:6:VAL:CG1    | 24:AZ:56:VAL:HA     | 2.23                     | 0.69              |
| 26:Ab:13:LYS:HB3   | 26:Ab:16:ARG:NH1    | 2.08                     | 0.69              |
| 27:Ac:19:ARG:HB2   | 27:Ac:43:CYS:SG     | 2.33                     | 0.69              |
| 28:Ad:24:THR:O     | 28:Ad:28:ARG:HG3    | 1.93                     | 0.69              |
| 34:BA:195:A:H4'    | 53:BX:68:LYS:HZ3    | 1.57                     | 0.69              |
| 34:BA:345:C:H5''   | 34:BA:346:G:OP1     | 1.93                     | 0.69              |
| 34:BA:640:A:C2'    | 34:BA:641:U:H5'     | 2.23                     | 0.69              |
| 34:BA:654:G:C2     | 34:BA:753:A:H1'     | 2.27                     | 0.69              |
| 34:BA:1115:C:C1'   | 34:BA:1186:G:C2     | 2.76                     | 0.69              |
| 34:BA:1224:G:H1    | 34:BA:1362(A):C:H42 | 1.38                     | 0.69              |
| 34:BA:1230:C:C5'   | 56:BE:30:G:H5'      | 2.23                     | 0.69              |
| 34:BA:1442:G:N3    | 34:BA:1442:G:H3'    | 2.08                     | 0.69              |
| 35:BF:9:GLU:HG2    | 35:BF:10:LEU:H      | 1.55                     | 0.69              |
| 35:BF:82:ARG:H     | 35:BF:94:ASN:HD21   | 1.35                     | 0.69              |
| 36:BG:41:GLY:O     | 36:BG:45:LYS:HB2    | 1.93                     | 0.69              |
| 36:BG:116:VAL:HG11 | 36:BG:141:VAL:CG2   | 2.22                     | 0.69              |
| 38:BI:79:GLU:HB3   | 38:BI:91:LEU:O      | 1.93                     | 0.69              |
| 39:BJ:8:ILE:HG23   | 39:BJ:88:VAL:HA     | 1.73                     | 0.69              |
| 41:BL:18:ARG:NH1   | 41:BL:18:ARG:HG3    | 2.02                     | 0.69              |
| 42:BM:16:ARG:NE    | 42:BM:18:PHE:CZ     | 2.61                     | 0.69              |
| 45:BP:58:VAL:CG1   | 45:BP:59:ARG:N      | 2.54                     | 0.69              |
| 48:BS:15:PHE:HD1   | 48:BS:30:ALA:HB2    | 1.55                     | 0.69              |
| 49:BT:51:VAL:HG21  | 49:BT:73:LEU:HD11   | 1.73                     | 0.69              |
| 51:BV:73:ALA:C     | 51:BV:79:LEU:HD11   | 2.16                     | 0.69              |
| 53:BX:48:LYS:HB3   | 53:BX:51:GLU:CG     | 2.22                     | 0.69              |
| 55:BC:28:G:H2'     | 55:BC:29:G:C8       | 2.27                     | 0.69              |
| 56:BD:1:G:O2'      | 56:BD:2:C:OP2       | 2.10                     | 0.69              |
| 56:BD:41:C:H2'     | 56:BD:42:C:O4'      | 1.93                     | 0.69              |
| 57:BZ:39:GLN:HA    | 57:BZ:40:GLU:HG3    | 1.75                     | 0.69              |
| 57:BZ:230:LYS:HA   | 57:BZ:231:VAL:HB    | 1.74                     | 0.69              |
| 57:BZ:231:VAL:O    | 57:BZ:265:THR:OG1   | 2.10                     | 0.69              |
| 57:BZ:250:LYS:N    | 57:BZ:275:ALA:CB    | 2.47                     | 0.69              |
| 1:AA:28:A:C2'      | 1:AA:29:U:H5'       | 2.23                     | 0.69              |
| 1:AA:126:A:H2'     | 1:AA:127:A:H5'      | 1.73                     | 0.69              |
| 1:AA:211:A:H2'     | 1:AA:212:G:O4'      | 1.92                     | 0.69              |
| 1:AA:312:G:H3'     | 1:AA:313:C:C5       | 2.28                     | 0.69              |
| 1:AA:746:A:C6      | 1:AA:2611:U:H4'     | 2.28                     | 0.69              |
| 1:AA:865:C:N4      | 1:AA:909:A:N6       | 2.37                     | 0.69              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:866:A:N6     | 1:AA:913:U:O2'    | 2.21                     | 0.69              |
| 1:AA:930:U:O2'    | 1:AA:931:G:O5'    | 2.10                     | 0.69              |
| 1:AA:955:C:H2'    | 1:AA:956:G:O5'    | 1.93                     | 0.69              |
| 1:AA:1153:C:H2'   | 1:AA:1154:G:C8    | 2.27                     | 0.69              |
| 1:AA:1212:G:O2'   | 1:AA:1213:A:H8    | 1.74                     | 0.69              |
| 1:AA:1241:A:H5''  | 1:AA:1241:A:C4    | 2.28                     | 0.69              |
| 1:AA:1287:A:O4'   | 13:AO:104:ARG:HD2 | 1.93                     | 0.69              |
| 1:AA:1335:U:O2'   | 1:AA:1336:A:H5'   | 1.93                     | 0.69              |
| 1:AA:1618:A:H8    | 1:AA:1618:A:OP1   | 1.76                     | 0.69              |
| 1:AA:1698:A:O2'   | 1:AA:1699:G:O5'   | 2.10                     | 0.69              |
| 1:AA:1708:C:H2'   | 1:AA:1709:U:C5'   | 2.23                     | 0.69              |
| 1:AA:1785:A:C5'   | 1:AA:1982:C:H4'   | 2.22                     | 0.69              |
| 1:AA:1929:G:O2'   | 1:AA:1930:G:H5''  | 1.92                     | 0.69              |
| 1:AA:1931:U:H5    | 1:AA:1932:A:N7    | 1.90                     | 0.69              |
| 1:AA:1995:U:H5''  | 1:AA:1996:C:H5''  | 1.75                     | 0.69              |
| 1:AA:2056:G:OP2   | 1:AA:2057:A:OP2   | 2.10                     | 0.69              |
| 1:AA:2061:G:N2    | 1:AA:2063:C:O4'   | 2.26                     | 0.69              |
| 1:AA:2355:C:H1'   | 22:AX:39:ARG:HH21 | 1.57                     | 0.69              |
| 1:AA:2618:G:C2    | 1:AA:2619:C:C6    | 2.80                     | 0.69              |
| 1:AA:2668:G:C2    | 1:AA:2669:G:C5    | 2.80                     | 0.69              |
| 1:AA:2708:G:H2'   | 1:AA:2709:G:C8    | 2.27                     | 0.69              |
| 1:AA:2725:A:C2'   | 1:AA:2726:U:H3'   | 2.16                     | 0.69              |
| 1:AA:2792:G:C2    | 1:AA:2793:G:C5    | 2.81                     | 0.69              |
| 2:AB:4:C:C2       | 2:AB:117:G:N2     | 2.61                     | 0.69              |
| 3:AC:22:ILE:CG2   | 3:AC:190:ARG:HH22 | 1.98                     | 0.69              |
| 3:AC:133:PRO:O    | 55:BC:56:C:OP2    | 2.11                     | 0.69              |
| 4:AD:178:PRO:O    | 4:AD:180:GLY:N    | 2.25                     | 0.69              |
| 4:AD:234:GLY:HA3  | 4:AD:241:PRO:HG3  | 1.74                     | 0.69              |
| 4:AD:246:PRO:HD2  | 4:AD:250:TRP:C    | 2.18                     | 0.69              |
| 7:AG:126:ASP:HA   | 7:AG:166:ASP:CG   | 2.18                     | 0.69              |
| 9:AK:54:VAL:O     | 9:AK:122:VAL:HB   | 1.93                     | 0.69              |
| 9:AK:78:TYR:CB    | 9:AK:79:PRO:HD2   | 2.21                     | 0.69              |
| 9:AK:103:VAL:HG22 | 9:AK:104:LYS:HD3  | 1.75                     | 0.69              |
| 11:AM:6:LEU:O     | 11:AM:6:LEU:HD23  | 1.92                     | 0.69              |
| 12:AN:75:THR:HA   | 12:AN:91:GLU:CD   | 2.18                     | 0.69              |
| 14:AP:19:LYS:O    | 14:AP:20:ARG:C    | 2.34                     | 0.69              |
| 14:AP:26:LEU:HD21 | 14:AP:37:ALA:CB   | 2.22                     | 0.69              |
| 14:AP:49:VAL:HG22 | 14:AP:76:LYS:NZ   | 2.07                     | 0.69              |
| 15:AQ:29:ARG:HG2  | 15:AQ:51:ARG:CG   | 2.20                     | 0.69              |
| 16:AR:48:ALA:HA   | 16:AR:51:LYS:HD2  | 1.75                     | 0.69              |
| 17:AS:20:LEU:CD1  | 17:AS:68:LYS:HZ3  | 1.97                     | 0.69              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 17:AS:61:VAL:HG12 | 17:AS:62:LEU:N     | 2.07                     | 0.69              |
| 18:AT:17:VAL:O    | 18:AT:20:VAL:CG1   | 2.38                     | 0.69              |
| 18:AT:28:SER:H    | 18:AT:31:GLU:CD    | 2.01                     | 0.69              |
| 18:AT:73:ALA:O    | 18:AT:106:ILE:HG22 | 1.92                     | 0.69              |
| 19:AU:47:PHE:HZ   | 19:AU:92:LEU:HD11  | 1.56                     | 0.69              |
| 19:AU:66:LEU:O    | 19:AU:66:LEU:HD12  | 1.93                     | 0.69              |
| 23:AY:58:VAL:O    | 23:AY:59:LEU:C     | 2.36                     | 0.69              |
| 25:Aa:63:TYR:O    | 25:Aa:66:SER:HB2   | 1.92                     | 0.69              |
| 27:Ac:25:LYS:C    | 27:Ac:26:ASN:CG    | 2.57                     | 0.69              |
| 28:Ad:22:MET:O    | 28:Ad:28:ARG:HG2   | 1.92                     | 0.69              |
| 29:Ae:6:THR:O     | 29:Ae:9:GLY:N      | 2.26                     | 0.69              |
| 32:AJ:104:VAL:CG1 | 32:AJ:127:ILE:CD1  | 0.82                     | 0.69              |
| 32:AJ:105:LEU:CD2 | 32:AJ:123:ALA:CB   | 2.70                     | 0.69              |
| 34:BA:153:C:H2'   | 34:BA:154:C:C6     | 2.27                     | 0.69              |
| 34:BA:197:A:O4'   | 34:BA:197:A:P      | 2.50                     | 0.69              |
| 34:BA:208:U:H4'   | 34:BA:209:U:OP1    | 1.92                     | 0.69              |
| 34:BA:236:G:C3'   | 34:BA:237:C:H6     | 2.05                     | 0.69              |
| 34:BA:277:C:C5'   | 50:BU:68:ARG:HH12  | 2.06                     | 0.69              |
| 34:BA:306:G:O2'   | 34:BA:307:C:H5'    | 1.92                     | 0.69              |
| 34:BA:379:C:H2'   | 34:BA:380:G:H5'    | 1.75                     | 0.69              |
| 34:BA:517:G:H5'   | 34:BA:519:C:N4     | 2.06                     | 0.69              |
| 34:BA:517:G:HO2'  | 34:BA:530:G:H4'    | 1.58                     | 0.69              |
| 34:BA:564:C:OP1   | 45:BP:15:ARG:CZ    | 2.41                     | 0.69              |
| 34:BA:580:U:H4'   | 48:BS:58:MET:HG2   | 1.73                     | 0.69              |
| 34:BA:698:G:H2'   | 34:BA:699:C:H6     | 1.58                     | 0.69              |
| 34:BA:858:G:N1    | 34:BA:869:G:H3'    | 2.07                     | 0.69              |
| 34:BA:942:G:N2    | 42:BM:124:GLN:HE22 | 1.90                     | 0.69              |
| 34:BA:1147:C:N3   | 34:BA:1148:U:C4    | 2.61                     | 0.69              |
| 34:BA:1152:A:N1   | 34:BA:1153:C:C4    | 2.61                     | 0.69              |
| 34:BA:1202:G:H1'  | 47:BR:29:ARG:HD2   | 1.75                     | 0.69              |
| 34:BA:1220:G:O3'  | 52:BW:52:TYR:O     | 2.11                     | 0.69              |
| 34:BA:1256:A:O3'  | 34:BA:1257:U:C4'   | 2.41                     | 0.69              |
| 34:BA:1347:G:C8   | 42:BM:107:ARG:HB3  | 2.28                     | 0.69              |
| 34:BA:1399:C:N4   | 34:BA:1502:A:N7    | 2.39                     | 0.69              |
| 34:BA:1504:G:OP2  | 34:BA:1504:G:H3'   | 1.93                     | 0.69              |
| 35:BF:175:ARG:O   | 35:BF:176:GLU:C    | 2.33                     | 0.69              |
| 37:BH:205:GLU:CD  | 38:BI:100:VAL:HB   | 2.17                     | 0.69              |
| 38:BI:43:LEU:HD23 | 38:BI:43:LEU:C     | 2.16                     | 0.69              |
| 38:BI:78:HIS:H    | 38:BI:78:HIS:HD2   | 1.41                     | 0.69              |
| 38:BI:86:ALA:HB3  | 38:BI:130:ASN:HD21 | 1.58                     | 0.69              |
| 39:BJ:7:ASN:C     | 39:BJ:8:ILE:HG12   | 2.18                     | 0.69              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 41:BL:46:LYS:HZ1   | 41:BL:65:TYR:H     | 1.39                     | 0.69              |
| 41:BL:53:VAL:O     | 41:BL:56:LYS:HB2   | 1.93                     | 0.69              |
| 41:BL:109:ILE:CD1  | 41:BL:137:VAL:HB   | 2.23                     | 0.69              |
| 41:BL:119:LEU:HB3  | 41:BL:123:GLU:OE1  | 1.91                     | 0.69              |
| 43:BN:76:ASN:O     | 43:BN:78:ASN:N     | 2.26                     | 0.69              |
| 45:BP:84:LEU:CG    | 45:BP:85:ILE:N     | 2.56                     | 0.69              |
| 46:BQ:6:GLY:N      | 46:BQ:67:GLU:CD    | 2.51                     | 0.69              |
| 46:BQ:12:ASN:HA    | 46:BQ:44:ARG:O     | 1.93                     | 0.69              |
| 46:BQ:20:THR:HG23  | 46:BQ:26:GLY:HA3   | 0.70                     | 0.69              |
| 46:BQ:36:LYS:HB3   | 46:BQ:56:LEU:HD21  | 1.74                     | 0.69              |
| 49:BT:51:VAL:HG21  | 49:BT:73:LEU:CD1   | 2.23                     | 0.69              |
| 50:BU:4:LYS:O      | 50:BU:5:VAL:HG23   | 1.93                     | 0.69              |
| 50:BU:5:VAL:CG1    | 50:BU:6:LEU:N      | 2.56                     | 0.69              |
| 52:BW:3:ARG:C      | 52:BW:5:LEU:HB3    | 2.18                     | 0.69              |
| 53:BX:40:ALA:HA    | 53:BX:55:ILE:HD13  | 1.74                     | 0.69              |
| 53:BX:42:GLN:O     | 53:BX:45:GLN:HB2   | 1.92                     | 0.69              |
| 53:BX:55:ILE:O     | 53:BX:57:ARG:N     | 2.26                     | 0.69              |
| 56:BE:2:C:H2'      | 56:BE:70:G:C2      | 2.27                     | 0.69              |
| 57:BZ:5:LEU:HG     | 57:BZ:269:GLU:HG3  | 1.73                     | 0.69              |
| 57:BZ:176:HIS:ND1  | 57:BZ:177:GLU:HB3  | 2.08                     | 0.69              |
| 57:BZ:211:GLN:CB   | 57:BZ:223:ILE:HG21 | 2.23                     | 0.69              |
| 57:BZ:267:LEU:HD23 | 57:BZ:268:ALA:N    | 2.06                     | 0.69              |
| 57:BZ:374:ARG:CZ   | 57:BZ:581:THR:H    | 2.06                     | 0.69              |
| 1:AA:112:U:C4      | 1:AA:113:G:H1'     | 2.28                     | 0.69              |
| 1:AA:371:A:O2'     | 1:AA:372:G:P       | 2.51                     | 0.69              |
| 1:AA:534:U:O2'     | 16:AR:49:HIS:CD2   | 2.46                     | 0.69              |
| 1:AA:1166:C:H2'    | 1:AA:1167:U:C6     | 2.28                     | 0.69              |
| 1:AA:1215:G:H2'    | 1:AA:1216:G:O4'    | 1.92                     | 0.69              |
| 1:AA:1498:C:H1'    | 1:AA:1576:U:C4'    | 2.23                     | 0.69              |
| 1:AA:1773:A:H2     | 1:AA:1977:A:H61    | 1.37                     | 0.69              |
| 1:AA:1961:C:C4'    | 34:BA:1484:C:H4'   | 2.23                     | 0.69              |
| 1:AA:2176:A:C1'    | 3:AC:44:HIS:HD2    | 2.05                     | 0.69              |
| 1:AA:2226:C:O2     | 1:AA:2227:A:O4'    | 2.10                     | 0.69              |
| 1:AA:2226:C:O2'    | 4:AD:262:ARG:HG2   | 1.93                     | 0.69              |
| 1:AA:2371:G:H4'    | 27:Ac:46:HIS:CB    | 2.19                     | 0.69              |
| 1:AA:2460:U:H5'    | 1:AA:2461:C:OP2    | 1.92                     | 0.69              |
| 1:AA:2472:G:O5'    | 1:AA:2472:G:H8     | 1.75                     | 0.69              |
| 1:AA:2556:C:O2'    | 1:AA:2557:G:H5'    | 1.92                     | 0.69              |
| 1:AA:2588:G:N7     | 1:AA:2589:A:N7     | 2.41                     | 0.69              |
| 2:AB:4:C:N3        | 2:AB:117:G:N2      | 2.41                     | 0.69              |
| 2:AB:42:C:N3       | 7:AG:93:THR:HB     | 2.07                     | 0.69              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 2:AB:83:G:N2       | 2:AB:84:C:C2       | 2.60                     | 0.69              |
| 4:AD:57:GLY:C      | 4:AD:58:HIS:ND1    | 2.51                     | 0.69              |
| 4:AD:89:SER:HB2    | 4:AD:202:LYS:HZ1   | 1.58                     | 0.69              |
| 4:AD:119:ALA:CB    | 4:AD:130:ALA:H     | 2.05                     | 0.69              |
| 4:AD:252:TRP:N     | 4:AD:255:LYS:NZ    | 2.41                     | 0.69              |
| 5:AE:14:ILE:HD11   | 15:AQ:14:TYR:HB3   | 1.73                     | 0.69              |
| 7:AG:96:ARG:O      | 7:AG:100:TRP:CE3   | 2.46                     | 0.69              |
| 9:AK:10:GLU:HB3    | 9:AK:39:ARG:NH1    | 2.08                     | 0.69              |
| 9:AK:34:LEU:HD22   | 9:AK:120:LEU:HB2   | 1.75                     | 0.69              |
| 11:AM:51:PHE:C     | 11:AM:55:ARG:HG3   | 2.18                     | 0.69              |
| 11:AM:122:PRO:HA   | 11:AM:134:ALA:HA   | 1.75                     | 0.69              |
| 12:AN:16:ARG:HG3   | 12:AN:72:LYS:CD    | 2.22                     | 0.69              |
| 15:AQ:50:ILE:HD12  | 15:AQ:66:VAL:HG23  | 1.75                     | 0.69              |
| 16:AR:25:TRP:CE3   | 16:AR:26:GLY:N     | 2.61                     | 0.69              |
| 17:AS:4:ILE:HA     | 17:AS:12:TYR:CD2   | 2.27                     | 0.69              |
| 17:AS:13:ARG:O     | 17:AS:14:VAL:HG22  | 1.93                     | 0.69              |
| 20:AV:56:PRO:O     | 20:AV:57:GLN:HG3   | 1.93                     | 0.69              |
| 21:AW:28:MET:CE    | 21:AW:88:PHE:HB2   | 2.22                     | 0.69              |
| 21:AW:104:PHE:CZ   | 21:AW:171:ILE:HD11 | 2.27                     | 0.69              |
| 25:Aa:14:ILE:HG22  | 25:Aa:14:ILE:O     | 1.93                     | 0.69              |
| 25:Aa:64:GLY:O     | 25:Aa:68:ARG:CZ    | 2.40                     | 0.69              |
| 26:Ab:18:ALA:C     | 26:Ab:21:SER:OG    | 2.36                     | 0.69              |
| 27:Ac:29:ASN:O     | 27:Ac:30:THR:O     | 2.10                     | 0.69              |
| 27:Ac:30:THR:CG2   | 27:Ac:31:PRO:HD3   | 2.21                     | 0.69              |
| 30:Af:22:ARG:HB3   | 30:Af:24:TYR:CD1   | 2.28                     | 0.69              |
| 30:Af:29:ASN:HB3   | 30:Af:32:HIS:ND1   | 2.08                     | 0.69              |
| 32:AJ:104:VAL:CG1  | 32:AJ:127:ILE:HD11 | 1.48                     | 0.69              |
| 33:Ag:289:UNK:O    | 33:Ag:344:UNK:N    | 2.26                     | 0.69              |
| 34:BA:129(A):G:O2' | 34:BA:130:A:OP2    | 2.07                     | 0.69              |
| 34:BA:529:G:C8     | 34:BA:529:G:C3'    | 2.75                     | 0.69              |
| 34:BA:679:C:H2'    | 34:BA:680:C:H6     | 1.56                     | 0.69              |
| 34:BA:856:C:N3     | 34:BA:857:C:C5     | 2.61                     | 0.69              |
| 34:BA:888:G:H21    | 34:BA:909:A:H62    | 0.75                     | 0.69              |
| 34:BA:1201:A:O2'   | 34:BA:1202:G:H5''  | 1.92                     | 0.69              |
| 34:BA:1315:U:N1    | 34:BA:1361:G:O4'   | 2.25                     | 0.69              |
| 34:BA:1423:G:H2'   | 34:BA:1424:C:C6    | 2.28                     | 0.69              |
| 39:BJ:10:LEU:N     | 39:BJ:10:LEU:CD2   | 2.55                     | 0.69              |
| 39:BJ:49:ALA:CB    | 51:BV:80:PRO:HD3   | 2.23                     | 0.69              |
| 41:BL:10:LEU:CD1   | 41:BL:85:ARG:HD3   | 2.21                     | 0.69              |
| 41:BL:10:LEU:HD22  | 41:BL:135:CYS:SG   | 2.32                     | 0.69              |
| 46:BQ:19:LEU:O     | 46:BQ:25:ILE:HD12  | 1.93                     | 0.69              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 47:BR:46:GLU:O    | 47:BR:49:HIS:HB2   | 1.93                     | 0.69              |
| 48:BS:75:PRO:O    | 48:BS:78:TYR:HB3   | 1.93                     | 0.69              |
| 50:BU:5:VAL:CG2   | 50:BU:60:ILE:HA    | 2.11                     | 0.69              |
| 56:BD:59:U:C2'    | 56:BD:60:U:H5'     | 2.23                     | 0.69              |
| 57:BZ:37:GLU:HA   | 57:BZ:39:GLN:HB2   | 1.74                     | 0.69              |
| 57:BZ:48:LEU:CD2  | 57:BZ:50:LYS:HG3   | 2.23                     | 0.69              |
| 57:BZ:163:VAL:CG1 | 57:BZ:164:TYR:N    | 2.55                     | 0.69              |
| 57:BZ:227:LYS:CA  | 57:BZ:267:LEU:HD11 | 2.23                     | 0.69              |
| 57:BZ:306:THR:OG1 | 57:BZ:307:VAL:N    | 2.26                     | 0.69              |
| 57:BZ:398:GLU:O   | 57:BZ:471:HIS:O    | 2.11                     | 0.69              |
| 57:BZ:455:PHE:CE2 | 57:BZ:465:LEU:HD23 | 2.28                     | 0.69              |
| 1:AA:7:G:O2'      | 1:AA:8:A:H5'       | 1.93                     | 0.69              |
| 1:AA:223:A:C2     | 1:AA:422:A:N7      | 2.61                     | 0.69              |
| 1:AA:594:U:C4     | 1:AA:595:C:N4      | 2.60                     | 0.69              |
| 1:AA:657:U:H2'    | 1:AA:658:C:C6      | 2.28                     | 0.69              |
| 1:AA:673:C:N4     | 1:AA:808:G:N1      | 2.41                     | 0.69              |
| 1:AA:810:U:OP1    | 1:AA:1253:A:N7     | 2.26                     | 0.69              |
| 1:AA:969:U:C2'    | 1:AA:970:C:H5'     | 2.23                     | 0.69              |
| 1:AA:1067:A:H5''  | 32:AJ:21:PRO:HG3   | 0.76                     | 0.69              |
| 1:AA:1819:A:C3'   | 4:AD:178:PRO:HB2   | 2.22                     | 0.69              |
| 1:AA:1907:G:C6    | 58:AA:3001:NMY:H81 | 2.23                     | 0.69              |
| 1:AA:2152:G:C4'   | 3:AC:2:LYS:HB2     | 2.21                     | 0.69              |
| 1:AA:2212:A:N3    | 1:AA:2212:A:C2'    | 2.56                     | 0.69              |
| 1:AA:2436:G:H2'   | 1:AA:2437:U:C6     | 2.28                     | 0.69              |
| 1:AA:2468:G:C8    | 1:AA:2476:A:N1     | 2.61                     | 0.69              |
| 1:AA:2492:U:O2    | 1:AA:2492:U:C2'    | 2.40                     | 0.69              |
| 1:AA:2524:G:C5'   | 1:AA:2764:A:O2'    | 2.41                     | 0.69              |
| 1:AA:2561:A:H2'   | 1:AA:2562:U:O4'    | 1.93                     | 0.69              |
| 1:AA:2583:G:H1    | 59:AA:3002:8AN:C2' | 2.05                     | 0.69              |
| 1:AA:2697:G:N2    | 1:AA:2698:U:H1'    | 2.08                     | 0.69              |
| 1:AA:2893:G:O5'   | 1:AA:2894:G:P      | 2.49                     | 0.69              |
| 4:AD:106:ILE:O    | 4:AD:107:ALA:HB2   | 1.93                     | 0.69              |
| 4:AD:178:PRO:HG2  | 4:AD:179:SER:H     | 1.58                     | 0.69              |
| 4:AD:180:GLY:O    | 4:AD:270:ILE:HG21  | 1.93                     | 0.69              |
| 4:AD:232:PRO:HG2  | 4:AD:246:PRO:C     | 2.18                     | 0.69              |
| 7:AG:37:VAL:CG2   | 7:AG:159:VAL:HG12  | 2.23                     | 0.69              |
| 7:AG:151:ALA:C    | 7:AG:152:LEU:HG    | 2.17                     | 0.69              |
| 9:AK:13:TRP:O     | 9:AK:14:VAL:HG22   | 1.93                     | 0.69              |
| 9:AK:18:ALA:HB2   | 9:AK:54:VAL:CG2    | 2.22                     | 0.69              |
| 9:AK:87:LEU:HA    | 9:AK:90:MET:HG2    | 1.75                     | 0.69              |
| 10:AL:11:ALA:HB1  | 10:AL:97:ARG:HH12  | 1.58                     | 0.69              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 11:AM:113:LYS:HZ2 | 11:AM:115:LEU:HD12 | 1.55                     | 0.69              |
| 15:AQ:24:PRO:O    | 15:AQ:25:GLY:O     | 2.10                     | 0.69              |
| 15:AQ:65:LYS:HD3  | 15:AQ:75:ILE:CD1   | 2.23                     | 0.69              |
| 16:AR:111:GLU:CA  | 16:AR:114:LYS:HZ1  | 2.05                     | 0.69              |
| 17:AS:18:LEU:H    | 17:AS:18:LEU:CD2   | 2.05                     | 0.69              |
| 17:AS:20:LEU:HB3  | 17:AS:95:LEU:HD13  | 1.74                     | 0.69              |
| 21:AW:10:ARG:HB3  | 21:AW:36:LYS:CD    | 2.19                     | 0.69              |
| 21:AW:158:PRO:HB2 | 21:AW:159:PRO:CD   | 2.23                     | 0.69              |
| 23:AY:45:ILE:CG1  | 23:AY:46:ARG:N     | 2.56                     | 0.69              |
| 30:Af:1:MET:H1    | 30:Af:33:LYS:HB2   | 1.57                     | 0.69              |
| 31:AI:97:ALA:CA   | 31:AI:132:ASP:O    | 2.41                     | 0.69              |
| 34:BA:359:U:H2'   | 34:BA:360:A:C8     | 2.28                     | 0.69              |
| 34:BA:608:A:C2    | 34:BA:609:A:C8     | 2.81                     | 0.69              |
| 34:BA:1064:G:N3   | 34:BA:1066:C:N4    | 2.40                     | 0.69              |
| 34:BA:1067:A:H2   | 34:BA:1068:G:N3    | 1.90                     | 0.69              |
| 34:BA:1129:C:OP1  | 42:BM:16:ARG:CZ    | 2.41                     | 0.69              |
| 34:BA:1209:C:O2'  | 34:BA:1210:C:H5'   | 1.93                     | 0.69              |
| 34:BA:1329:A:C3'  | 46:BQ:24:GLY:O     | 2.40                     | 0.69              |
| 35:BF:130:ARG:CB  | 35:BF:131:PRO:HD2  | 2.23                     | 0.69              |
| 35:BF:136:VAL:HA  | 35:BF:139:LYS:NZ   | 2.08                     | 0.69              |
| 36:BG:38:ARG:HB2  | 36:BG:94:LEU:CD1   | 2.22                     | 0.69              |
| 36:BG:118:GLN:O   | 36:BG:122:GLU:HG3  | 1.93                     | 0.69              |
| 36:BG:187:ALA:H   | 36:BG:198:VAL:HG22 | 1.56                     | 0.69              |
| 37:BH:26:CYS:HA   | 37:BH:31:CYS:CB    | 2.23                     | 0.69              |
| 38:BI:43:LEU:HB3  | 38:BI:136:MET:HE2  | 1.75                     | 0.69              |
| 38:BI:55:VAL:HG12 | 38:BI:56:GLN:N     | 2.08                     | 0.69              |
| 38:BI:103:GLY:O   | 38:BI:106:PRO:HD2  | 1.92                     | 0.69              |
| 41:BL:21:LYS:C    | 41:BL:63:LEU:HD13  | 2.18                     | 0.69              |
| 44:BO:41:THR:CB   | 44:BO:71:LYS:HD3   | 2.22                     | 0.69              |
| 45:BP:52:LEU:N    | 45:BP:52:LEU:HD23  | 2.09                     | 0.69              |
| 48:BS:53:HIS:O    | 48:BS:56:LEU:HB3   | 1.92                     | 0.69              |
| 48:BS:81:LEU:CD2  | 48:BS:85:LEU:HD13  | 2.23                     | 0.69              |
| 48:BS:81:LEU:HD23 | 48:BS:85:LEU:HD13  | 1.74                     | 0.69              |
| 49:BT:28:ARG:HG3  | 49:BT:29:ASP:OD2   | 1.92                     | 0.69              |
| 51:BV:46:GLU:N    | 51:BV:49:LYS:HZ1   | 1.90                     | 0.69              |
| 55:BC:38:A:H2'    | 55:BC:39:U:O4'     | 1.93                     | 0.69              |
| 57:BZ:390:ARG:CG  | 57:BZ:391:GLU:HG2  | 2.10                     | 0.69              |
| 1:AA:66:C:H2'     | 1:AA:67:U:O5'      | 1.93                     | 0.68              |
| 1:AA:172:C:C2'    | 1:AA:173:G:H8      | 2.05                     | 0.68              |
| 1:AA:193:U:H4'    | 1:AA:803:U:H4'     | 1.74                     | 0.68              |
| 1:AA:418:G:O2'    | 1:AA:419:C:H5'     | 1.91                     | 0.68              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:704:G:N2      | 1:AA:726:G:H1'    | 2.07                     | 0.68              |
| 1:AA:1009:A:O4'    | 16:AR:59:ARG:NH1  | 2.25                     | 0.68              |
| 1:AA:1266:G:O2'    | 1:AA:2012:G:N1    | 2.22                     | 0.68              |
| 1:AA:1455:G:N2     | 1:AA:1456:G:H1'   | 2.08                     | 0.68              |
| 1:AA:1473:G:H2'    | 1:AA:1474:C:O4'   | 1.93                     | 0.68              |
| 1:AA:1491:G:C5     | 1:AA:1492:G:H1'   | 2.28                     | 0.68              |
| 1:AA:1521:G:O5'    | 1:AA:1522:G:OP2   | 2.10                     | 0.68              |
| 1:AA:1743:G:C6     | 1:AA:1746:G:C5    | 2.80                     | 0.68              |
| 1:AA:1759:A:C5'    | 1:AA:2715:C:O4'   | 2.41                     | 0.68              |
| 1:AA:1782:C:N4     | 1:AA:2587:A:H61   | 1.92                     | 0.68              |
| 1:AA:1858:G:C5     | 1:AA:1883:G:N1    | 2.60                     | 0.68              |
| 1:AA:2058:A:C2'    | 1:AA:2059:A:H8    | 1.98                     | 0.68              |
| 1:AA:2172:U:O2'    | 1:AA:2173:A:OP1   | 2.10                     | 0.68              |
| 1:AA:2286:A:O3'    | 1:AA:2287:A:O4'   | 2.09                     | 0.68              |
| 1:AA:2346:A:C4'    | 1:AA:2383:G:O4'   | 2.41                     | 0.68              |
| 1:AA:2537:U:C4     | 1:AA:2538:C:N4    | 2.60                     | 0.68              |
| 1:AA:2546:U:H4'    | 1:AA:2565:A:C2    | 2.28                     | 0.68              |
| 1:AA:2661:G:C6     | 8:AH:175:LYS:CE   | 2.62                     | 0.68              |
| 1:AA:2704:C:H2'    | 1:AA:2705:A:C8    | 2.28                     | 0.68              |
| 3:AC:46:LYS:HG3    | 3:AC:211:SER:HB3  | 0.69                     | 0.68              |
| 3:AC:103:ILE:CB    | 3:AC:127:LEU:HD21 | 2.23                     | 0.68              |
| 3:AC:212:VAL:O     | 3:AC:223:ARG:HG3  | 1.93                     | 0.68              |
| 4:AD:54:ARG:HA     | 4:AD:219:PRO:CG   | 2.20                     | 0.68              |
| 5:AE:40:GLU:C      | 5:AE:41:LYS:HE3   | 2.18                     | 0.68              |
| 5:AE:102:VAL:HG23  | 5:AE:200:GLU:CD   | 2.18                     | 0.68              |
| 6:AF:41:LEU:HA     | 6:AF:44:ARG:HE    | 1.58                     | 0.68              |
| 6:AF:205:ARG:O     | 6:AF:208:GLY:N    | 2.26                     | 0.68              |
| 7:AG:181:ARG:H     | 7:AG:181:ARG:NH2  | 1.91                     | 0.68              |
| 8:AH:7:LEU:N       | 8:AH:69:ARG:HE    | 1.91                     | 0.68              |
| 8:AH:70:THR:O      | 8:AH:73:ALA:HB3   | 1.92                     | 0.68              |
| 9:AK:54:VAL:CG1    | 9:AK:122:VAL:HB   | 2.21                     | 0.68              |
| 11:AM:47:ASP:OD1   | 11:AM:48:PRO:HD3  | 1.94                     | 0.68              |
| 11:AM:108:LYS:CD   | 11:AM:109:GLY:H   | 2.05                     | 0.68              |
| 12:AN:55:VAL:HG22  | 12:AN:64:ILE:HD11 | 1.73                     | 0.68              |
| 16:AR:50:ARG:NH2   | 17:AS:75:PHE:CD2  | 2.59                     | 0.68              |
| 21:AW:27:VAL:HG21  | 21:AW:85:HIS:CE1  | 2.27                     | 0.68              |
| 34:BA:129(A):G:H3' | 34:BA:129(A):G:C8 | 2.27                     | 0.68              |
| 34:BA:529:G:N1     | 45:BP:49:ASN:ND2  | 2.40                     | 0.68              |
| 34:BA:720:C:O5'    | 34:BA:720:C:H6    | 1.76                     | 0.68              |
| 34:BA:790:A:H2'    | 34:BA:791:G:O5'   | 1.92                     | 0.68              |
| 34:BA:1201:A:N3    | 34:BA:1201:A:H2'  | 2.07                     | 0.68              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1206:G:H4'  | 36:BG:192:THR:C    | 2.18                     | 0.68              |
| 34:BA:1360:A:H2'  | 34:BA:1360:A:N3    | 2.01                     | 0.68              |
| 34:BA:1367:C:P    | 42:BM:115:GLY:HA2  | 2.32                     | 0.68              |
| 35:BF:19:HIS:CE1  | 35:BF:204:ASN:HD21 | 2.11                     | 0.68              |
| 35:BF:49:GLU:O    | 35:BF:52:GLU:CD    | 2.36                     | 0.68              |
| 35:BF:83:MET:HB2  | 35:BF:234:PRO:HG3  | 1.75                     | 0.68              |
| 35:BF:173:ALA:O   | 35:BF:176:GLU:HB2  | 1.93                     | 0.68              |
| 37:BH:47:ARG:HB2  | 37:BH:47:ARG:CZ    | 2.22                     | 0.68              |
| 41:BL:91:ARG:HG3  | 45:BP:7:ILE:HD12   | 1.74                     | 0.68              |
| 42:BM:40:LEU:C    | 42:BM:42:ARG:N     | 2.45                     | 0.68              |
| 45:BP:53:ARG:HB3  | 45:BP:69:TYR:HE1   | 1.58                     | 0.68              |
| 49:BT:39:TYR:CD1  | 49:BT:40:ASP:N     | 2.61                     | 0.68              |
| 50:BU:88:TYR:O    | 50:BU:92:ARG:CB    | 2.41                     | 0.68              |
| 51:BV:63:GLN:O    | 51:BV:67:ALA:HB2   | 1.93                     | 0.68              |
| 53:BX:40:ALA:HB2  | 53:BX:55:ILE:HG21  | 1.75                     | 0.68              |
| 55:BC:67:C:H2'    | 55:BC:68:C:C6      | 2.29                     | 0.68              |
| 57:BZ:446:ARG:NH1 | 57:BZ:480:VAL:H    | 1.89                     | 0.68              |
| 1:AA:142:G:H2'    | 1:AA:143:C:C6      | 2.28                     | 0.68              |
| 1:AA:270(K):C:H3' | 1:AA:270(L):U:H6   | 1.57                     | 0.68              |
| 1:AA:307:G:C2     | 1:AA:309:G:H5''    | 2.29                     | 0.68              |
| 1:AA:501:A:O5'    | 1:AA:501:A:C8      | 2.46                     | 0.68              |
| 1:AA:503:A:H4'    | 1:AA:504:U:H5''    | 1.75                     | 0.68              |
| 1:AA:823:G:H3'    | 1:AA:824:A:H8      | 1.57                     | 0.68              |
| 1:AA:1038:C:H5'   | 1:AA:1039:G:OP1    | 1.92                     | 0.68              |
| 1:AA:1174:A:N6    | 1:AA:1177:A:C2     | 2.61                     | 0.68              |
| 1:AA:1742:C:C4    | 1:AA:1743:G:H8     | 2.11                     | 0.68              |
| 1:AA:1935:G:H2'   | 1:AA:1962:C:C4     | 2.28                     | 0.68              |
| 1:AA:2073:C:O2'   | 1:AA:2074:U:H5'    | 1.94                     | 0.68              |
| 1:AA:2121:G:O2'   | 3:AC:167:LYS:HG2   | 1.93                     | 0.68              |
| 1:AA:2482:G:C2'   | 1:AA:2483:C:H5'    | 2.24                     | 0.68              |
| 1:AA:2498:C:H2'   | 1:AA:2498:C:O2     | 1.92                     | 0.68              |
| 1:AA:2665:A:N3    | 1:AA:2666:C:N3     | 2.40                     | 0.68              |
| 1:AA:2811:G:H5''  | 5:AE:59:VAL:HG13   | 1.75                     | 0.68              |
| 2:AB:117:G:N2     | 2:AB:118:G:C8      | 2.62                     | 0.68              |
| 3:AC:48:GLY:N     | 3:AC:210:ARG:CG    | 2.54                     | 0.68              |
| 5:AE:176:ILE:CG2  | 5:AE:181:LEU:HB2   | 2.23                     | 0.68              |
| 6:AF:121:GLY:O    | 6:AF:191:ARG:HG3   | 1.93                     | 0.68              |
| 7:AG:125:PHE:CD2  | 7:AG:130:ASN:N     | 2.60                     | 0.68              |
| 8:AH:45:VAL:HG22  | 8:AH:50:VAL:CG1    | 2.22                     | 0.68              |
| 10:AL:79:PHE:HB2  | 15:AQ:73:GLU:HG3   | 1.73                     | 0.68              |
| 10:AL:97:ARG:HH11 | 10:AL:98:VAL:CA    | 2.05                     | 0.68              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AL:105:GLU:C    | 10:AL:111:PHE:CZ   | 2.71                     | 0.68              |
| 11:AM:45:LEU:HD22  | 29:Ae:59:LYS:HD2   | 1.75                     | 0.68              |
| 12:AN:62:GLY:HA2   | 21:AW:177:PRO:HA   | 1.74                     | 0.68              |
| 12:AN:116:GLU:OE1  | 12:AN:119:ARG:HD3  | 1.93                     | 0.68              |
| 13:AO:96:ARG:HG2   | 13:AO:98:LEU:CD1   | 2.23                     | 0.68              |
| 15:AQ:34:VAL:HG21  | 15:AQ:36:GLU:OE2   | 1.93                     | 0.68              |
| 19:AU:15:GLU:HB3   | 19:AU:16:LYS:CE    | 2.23                     | 0.68              |
| 19:AU:50:LYS:HZ2   | 19:AU:85:PRO:HD2   | 1.59                     | 0.68              |
| 22:AX:7:LEU:HD13   | 56:BE:74:C:N3      | 2.08                     | 0.68              |
| 25:Aa:66:SER:HA    | 25:Aa:69:LYS:CD    | 2.15                     | 0.68              |
| 34:BA:191(C):G:H2' | 34:BA:191(D):U:O4' | 1.93                     | 0.68              |
| 34:BA:370:C:C2     | 34:BA:371:G:C8     | 2.81                     | 0.68              |
| 34:BA:663:A:N6     | 34:BA:742:G:O6     | 2.18                     | 0.68              |
| 34:BA:745:C:H5'    | 34:BA:851:G:N3     | 2.08                     | 0.68              |
| 34:BA:945:G:C2     | 34:BA:946:A:C8     | 2.81                     | 0.68              |
| 34:BA:968:A:H5''   | 34:BA:969:A:O5'    | 1.94                     | 0.68              |
| 34:BA:1239:A:H1'   | 34:BA:1241:G:N9    | 2.08                     | 0.68              |
| 34:BA:1250:A:N3    | 34:BA:1370:G:O2'   | 2.26                     | 0.68              |
| 34:BA:1322:C:H5''  | 34:BA:1323:G:OP1   | 1.93                     | 0.68              |
| 34:BA:1413:A:C5    | 34:BA:1488:G:C2    | 2.62                     | 0.68              |
| 35:BF:184:VAL:O    | 35:BF:198:ASP:CB   | 2.36                     | 0.68              |
| 36:BG:7:PRO:O      | 36:BG:11:ARG:HG2   | 1.93                     | 0.68              |
| 37:BH:104:VAL:HA   | 37:BH:107:ARG:HB2  | 1.74                     | 0.68              |
| 37:BH:121:VAL:O    | 37:BH:134:ASP:HB2  | 1.93                     | 0.68              |
| 37:BH:187:ARG:HE   | 37:BH:188:LEU:HG   | 1.57                     | 0.68              |
| 37:BH:192:GLU:N    | 37:BH:192:GLU:OE1  | 2.27                     | 0.68              |
| 38:BI:26:PHE:N     | 38:BI:26:PHE:CD1   | 2.60                     | 0.68              |
| 46:BQ:14:ARG:CB    | 46:BQ:41:PRO:C     | 2.47                     | 0.68              |
| 52:BW:5:LEU:CG     | 52:BW:6:LYS:H      | 2.06                     | 0.68              |
| 52:BW:9:VAL:HA     | 52:BW:41:VAL:CB    | 2.21                     | 0.68              |
| 52:BW:16:LEU:HD12  | 52:BW:19:VAL:CG1   | 2.22                     | 0.68              |
| 53:BX:59:ALA:O     | 53:BX:60:GLU:C     | 2.36                     | 0.68              |
| 56:BD:3:C:O2       | 56:BD:70:G:N1      | 2.26                     | 0.68              |
| 57:BZ:565:LEU:H    | 57:BZ:567:GLN:N    | 1.90                     | 0.68              |
| 1:AA:27:G:N1       | 1:AA:512:G:C2'     | 2.56                     | 0.68              |
| 1:AA:284:U:OP2     | 1:AA:284:U:H6      | 1.76                     | 0.68              |
| 1:AA:371:A:C5'     | 1:AA:423:A:N7      | 2.54                     | 0.68              |
| 1:AA:455:C:OP1     | 1:AA:472:A:N1      | 2.27                     | 0.68              |
| 1:AA:727:A:C6      | 1:AA:729:G:C6      | 2.81                     | 0.68              |
| 1:AA:778:G:N2      | 1:AA:787:U:C2      | 2.61                     | 0.68              |
| 1:AA:781:A:C2      | 1:AA:1776:G:N3     | 2.61                     | 0.68              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:887:A:HO2'    | 1:AA:888:C:C1'     | 2.05                     | 0.68              |
| 1:AA:988:A:O2'     | 1:AA:1157:G:H5'    | 1.94                     | 0.68              |
| 1:AA:1158:C:H5'    | 24:AZ:31:LEU:CB    | 2.23                     | 0.68              |
| 1:AA:1314:C:C2'    | 1:AA:1315:C:H5'    | 2.23                     | 0.68              |
| 1:AA:1404:C:O2'    | 1:AA:1405:U:H5'    | 1.93                     | 0.68              |
| 1:AA:1449:A:C2     | 1:AA:1449(A):G:H1' | 2.29                     | 0.68              |
| 1:AA:1908:C:H2'    | 1:AA:1909:C:C5     | 2.28                     | 0.68              |
| 1:AA:1970:A:O2'    | 1:AA:1971:A:P      | 2.50                     | 0.68              |
| 1:AA:2121:G:C1'    | 3:AC:167:LYS:CE    | 2.69                     | 0.68              |
| 1:AA:2226:C:C2     | 4:AD:262:ARG:CZ    | 2.76                     | 0.68              |
| 1:AA:2360:A:OP2    | 1:AA:2360:A:C8     | 2.47                     | 0.68              |
| 1:AA:2495:G:O3'    | 12:AN:83:MET:SD    | 2.52                     | 0.68              |
| 1:AA:2868:A:O2'    | 1:AA:2869:G:H5'    | 1.94                     | 0.68              |
| 3:AC:86:ALA:HB1    | 3:AC:153:ILE:HD12  | 1.73                     | 0.68              |
| 3:AC:97:GLU:HB3    | 3:AC:126:LYS:NZ    | 2.08                     | 0.68              |
| 4:AD:224:ALA:H     | 4:AD:233:HIS:CE1   | 2.12                     | 0.68              |
| 5:AE:48:GLN:N      | 5:AE:48:GLN:CD     | 2.51                     | 0.68              |
| 8:AH:13:LYS:HG3    | 8:AH:15:VAL:H      | 1.57                     | 0.68              |
| 12:AN:6:ARG:HG2    | 12:AN:7:MET:N      | 2.08                     | 0.68              |
| 12:AN:16:ARG:CZ    | 12:AN:72:LYS:HA    | 2.24                     | 0.68              |
| 15:AQ:70:VAL:HG21  | 15:AQ:74:ARG:HD3   | 1.76                     | 0.68              |
| 17:AS:62:LEU:HD13  | 17:AS:97:LYS:C     | 2.18                     | 0.68              |
| 17:AS:68:LYS:HG2   | 17:AS:95:LEU:HD11  | 1.74                     | 0.68              |
| 18:AT:82:LEU:H     | 18:AT:98:LYS:NZ    | 1.92                     | 0.68              |
| 19:AU:7:VAL:HG21   | 23:AY:28:MET:HG2   | 1.73                     | 0.68              |
| 23:AY:27:LEU:HG    | 23:AY:48:LEU:HD23  | 1.75                     | 0.68              |
| 23:AY:42:ASN:O     | 23:AY:45:ILE:HG13  | 1.93                     | 0.68              |
| 26:Ab:58:LEU:HD13  | 26:Ab:59:GLU:HB2   | 1.76                     | 0.68              |
| 30:Af:10:ILE:CD1   | 30:Af:32:HIS:HD2   | 2.07                     | 0.68              |
| 32:AJ:17:ALA:CB    | 32:AJ:41:PHE:HB2   | 2.22                     | 0.68              |
| 34:BA:79:G:H2'     | 34:BA:80:G:O4'     | 1.93                     | 0.68              |
| 34:BA:572:A:O2'    | 34:BA:916:G:O2'    | 2.11                     | 0.68              |
| 34:BA:843:U:H3'    | 34:BA:848:C:H5'    | 1.74                     | 0.68              |
| 34:BA:887:G:H2'    | 34:BA:888:G:C8     | 2.29                     | 0.68              |
| 34:BA:992:U:O2'    | 34:BA:993:G:OP2    | 2.11                     | 0.68              |
| 34:BA:1128:C:C1'   | 34:BA:1146:A:H61   | 2.05                     | 0.68              |
| 34:BA:1274:G:N2    | 34:BA:1275:A:N7    | 2.40                     | 0.68              |
| 34:BA:1314:C:N4    | 34:BA:1324:A:N6    | 2.42                     | 0.68              |
| 34:BA:1414:U:O2    | 34:BA:1487:G:N2    | 2.00                     | 0.68              |
| 35:BF:222:ILE:HD12 | 35:BF:223:ILE:HG13 | 1.74                     | 0.68              |
| 36:BG:182:ILE:CA   | 36:BG:204:LEU:HG   | 2.21                     | 0.68              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 37:BH:90:GLY:HA3   | 37:BH:200:GLU:OE2 | 1.93                     | 0.68              |
| 37:BH:146:ILE:HD12 | 37:BH:183:GLY:O   | 1.93                     | 0.68              |
| 37:BH:199:ASN:CG   | 37:BH:200:GLU:H   | 1.99                     | 0.68              |
| 41:BL:10:LEU:HA    | 41:BL:13:ILE:HD12 | 1.74                     | 0.68              |
| 41:BL:61:VAL:CG1   | 41:BL:62:TYR:N    | 2.56                     | 0.68              |
| 42:BM:62:TYR:C     | 42:BM:63:ILE:HD12 | 2.18                     | 0.68              |
| 44:BO:68:ALA:O     | 44:BO:71:LYS:HG3  | 1.94                     | 0.68              |
| 45:BP:37:CYS:CB    | 45:BP:58:VAL:HG22 | 2.24                     | 0.68              |
| 49:BT:6:LEU:HD22   | 49:BT:6:LEU:C     | 2.17                     | 0.68              |
| 50:BU:58:GLU:CD    | 50:BU:74:LEU:HB3  | 2.19                     | 0.68              |
| 53:BX:13:LEU:O     | 53:BX:14:LYS:C    | 2.36                     | 0.68              |
| 57:BZ:305:PRO:CB   | 57:BZ:361:ARG:CG  | 2.65                     | 0.68              |
| 57:BZ:313:VAL:HG23 | 57:BZ:354:ASP:HB3 | 1.76                     | 0.68              |
| 57:BZ:390:ARG:HB3  | 57:BZ:391:GLU:CB  | 2.21                     | 0.68              |
| 57:BZ:401:GLU:HB3  | 57:BZ:468:THR:H   | 1.56                     | 0.68              |
| 1:AA:139:G:H2'     | 1:AA:140:A:O5'    | 1.94                     | 0.68              |
| 1:AA:280:C:OP2     | 1:AA:280:C:C6     | 2.41                     | 0.68              |
| 1:AA:280:C:H41     | 1:AA:283:A:H62    | 1.38                     | 0.68              |
| 1:AA:470:A:N3      | 1:AA:471:A:H1'    | 2.08                     | 0.68              |
| 1:AA:668:G:C5      | 1:AA:670:A:N7     | 2.61                     | 0.68              |
| 1:AA:783:A:C5'     | 1:AA:2589:A:OP1   | 2.35                     | 0.68              |
| 1:AA:904:C:C2'     | 1:AA:905:U:H5'    | 2.24                     | 0.68              |
| 1:AA:1058:G:H1'    | 32:AJ:116:ASN:CG  | 2.17                     | 0.68              |
| 1:AA:1142:U:H6     | 1:AA:1142(A):A:H8 | 1.38                     | 0.68              |
| 1:AA:1174:A:C2'    | 1:AA:1175:U:H5''  | 2.17                     | 0.68              |
| 1:AA:1188:U:C2'    | 1:AA:1189:A:H5'   | 2.24                     | 0.68              |
| 1:AA:1345:C:OP1    | 1:AA:1385:G:H5''  | 1.92                     | 0.68              |
| 1:AA:1472:A:H1'    | 1:AA:1473:G:C8    | 2.28                     | 0.68              |
| 1:AA:1497:U:O4     | 1:AA:1577:C:C4'   | 2.42                     | 0.68              |
| 1:AA:2097:C:N4     | 1:AA:2193:G:O6    | 2.26                     | 0.68              |
| 1:AA:2112:G:O4'    | 55:BC:19:G:C8     | 2.44                     | 0.68              |
| 1:AA:2271:G:OP1    | 22:AX:19:LYS:O    | 2.12                     | 0.68              |
| 1:AA:2320:A:H8     | 1:AA:2320:A:OP2   | 1.77                     | 0.68              |
| 1:AA:2521:C:C2     | 1:AA:2522:U:C6    | 2.81                     | 0.68              |
| 1:AA:2581:G:N2     | 1:AA:2610:C:C6    | 2.62                     | 0.68              |
| 1:AA:2631:G:N7     | 1:AA:2894:G:N7    | 2.42                     | 0.68              |
| 2:AB:14:U:H1'      | 2:AB:107:U:C1'    | 2.22                     | 0.68              |
| 4:AD:159:ALA:CA    | 4:AD:196:VAL:HG11 | 2.23                     | 0.68              |
| 5:AE:2:LYS:HD3     | 5:AE:83:ASP:CB    | 2.24                     | 0.68              |
| 5:AE:38:THR:HB     | 5:AE:39:PRO:HD3   | 1.75                     | 0.68              |
| 6:AF:4:VAL:O       | 6:AF:20:LEU:HD11  | 1.92                     | 0.68              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 6:AF:188:ARG:HG2   | 6:AF:188:ARG:NH2   | 2.08                     | 0.68              |
| 7:AG:9:ARG:HG2     | 7:AG:13:GLU:CD     | 2.19                     | 0.68              |
| 7:AG:144:ILE:HD12  | 7:AG:147:ASP:OD2   | 1.93                     | 0.68              |
| 9:AK:23:LEU:HD11   | 9:AK:62:VAL:HA     | 1.75                     | 0.68              |
| 10:AL:106:LEU:HD13 | 15:AQ:39:ARG:NH2   | 2.08                     | 0.68              |
| 11:AM:112:LEU:O    | 11:AM:128:HIS:CE1  | 2.46                     | 0.68              |
| 15:AQ:49:VAL:C     | 15:AQ:50:ILE:HG12  | 2.17                     | 0.68              |
| 17:AS:40:LEU:C     | 17:AS:51:VAL:HG13  | 2.18                     | 0.68              |
| 19:AU:73:ARG:CG    | 19:AU:74:PRO:HD2   | 2.22                     | 0.68              |
| 20:AV:99:CYS:O     | 20:AV:101:LYS:HD2  | 1.94                     | 0.68              |
| 21:AW:9:TYR:HB2    | 21:AW:14:LYS:HG2   | 1.74                     | 0.68              |
| 21:AW:63:ASP:CG    | 21:AW:64:GLY:N     | 2.51                     | 0.68              |
| 25:Aa:17:GLY:HA3   | 25:Aa:33:VAL:O     | 1.93                     | 0.68              |
| 25:Aa:31:ILE:H     | 25:Aa:31:ILE:CD1   | 2.05                     | 0.68              |
| 26:Ab:15:ARG:CG    | 26:Ab:16:ARG:N     | 2.56                     | 0.68              |
| 26:Ab:29:THR:C     | 26:Ab:30:LEU:HG    | 2.19                     | 0.68              |
| 27:Ac:25:LYS:CE    | 29:Ae:35:GLN:O     | 2.40                     | 0.68              |
| 28:Ad:2:LYS:O      | 28:Ad:4:THR:N      | 2.27                     | 0.68              |
| 30:Af:9:ARG:HD3    | 30:Af:14:CYS:O     | 1.93                     | 0.68              |
| 34:BA:130:A:C4     | 34:BA:264:U:H1'    | 2.28                     | 0.68              |
| 34:BA:193:C:C2     | 34:BA:194:C:C5     | 2.81                     | 0.68              |
| 34:BA:642:A:N7     | 41:BL:115:SER:HA   | 2.08                     | 0.68              |
| 34:BA:870:U:H5'    | 34:BA:871:U:OP1    | 1.94                     | 0.68              |
| 34:BA:946:A:C2'    | 34:BA:947:G:C8     | 2.75                     | 0.68              |
| 34:BA:1085:U:H5'   | 34:BA:1094:G:H21   | 1.58                     | 0.68              |
| 34:BA:1191:A:N3    | 34:BA:1191:A:H2'   | 2.08                     | 0.68              |
| 34:BA:1229:A:O3'   | 56:BE:29:G:O3'     | 2.11                     | 0.68              |
| 34:BA:1388:C:H2'   | 34:BA:1389:C:C6    | 2.29                     | 0.68              |
| 34:BA:1402:C:H2'   | 34:BA:1403:C:H6    | 1.57                     | 0.68              |
| 34:BA:1412:C:H2'   | 34:BA:1413:A:H8    | 1.57                     | 0.68              |
| 35:BF:15:VAL:HG23  | 35:BF:16:HIS:CE1   | 2.28                     | 0.68              |
| 35:BF:23:ARG:NH1   | 35:BF:23:ARG:HB2   | 2.09                     | 0.68              |
| 37:BH:34:GLU:O     | 37:BH:35:ARG:HB2   | 1.92                     | 0.68              |
| 37:BH:88:VAL:HG22  | 38:BI:97:GLY:H     | 1.59                     | 0.68              |
| 37:BH:204:ILE:HD12 | 37:BH:204:ILE:H    | 1.58                     | 0.68              |
| 40:BK:113:GLU:OE1  | 40:BK:118:VAL:HG12 | 1.91                     | 0.68              |
| 41:BL:54:ASP:O     | 41:BL:56:LYS:HD2   | 1.92                     | 0.68              |
| 46:BQ:19:LEU:O     | 46:BQ:25:ILE:HB    | 1.93                     | 0.68              |
| 51:BV:36:ASN:HB3   | 51:BV:40:LEU:CD2   | 2.23                     | 0.68              |
| 57:BZ:19:THR:HB    | 57:BZ:22:VAL:CG2   | 2.19                     | 0.68              |
| 57:BZ:27:GLN:H     | 57:BZ:28:GLN:HB3   | 0.85                     | 0.68              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 57:BZ:146:ASP:CA | 57:BZ:149:VAL:HG12 | 2.23                     | 0.68              |
| 57:BZ:167:ALA:CB | 60:BZ:701:GCP:HN1  | 1.97                     | 0.68              |
| 57:BZ:406:ASP:HA | 57:BZ:407:VAL:CG1  | 2.23                     | 0.68              |
| 1:AA:99:U:H5'    | 1:AA:101:G:H5''    | 1.76                     | 0.68              |
| 1:AA:106:C:H1'   | 1:AA:294:A:H4'     | 1.76                     | 0.68              |
| 1:AA:221:A:O2'   | 1:AA:271(B):G:C6   | 2.46                     | 0.68              |
| 1:AA:585:G:H1    | 1:AA:1253:A:P      | 2.17                     | 0.68              |
| 1:AA:645:C:H5'   | 1:AA:646:A:OP1     | 1.94                     | 0.68              |
| 1:AA:660:G:H2'   | 1:AA:661:C:C6      | 2.29                     | 0.68              |
| 1:AA:846:C:HO2'  | 1:AA:847:U:P       | 2.14                     | 0.68              |
| 1:AA:851:U:O2'   | 24:AZ:46:ASN:N     | 2.27                     | 0.68              |
| 1:AA:1023:U:H5'  | 1:AA:1123:C:OP1    | 1.94                     | 0.68              |
| 1:AA:1024:G:C6   | 1:AA:1025:G:C8     | 2.82                     | 0.68              |
| 1:AA:1321:A:O3'  | 18:AT:11:ARG:NH1   | 2.27                     | 0.68              |
| 1:AA:1354:A:H2'  | 1:AA:1355:G:H5'    | 1.75                     | 0.68              |
| 1:AA:1591:G:C6   | 1:AA:1592:C:N4     | 2.62                     | 0.68              |
| 1:AA:1698:A:HO2' | 1:AA:1699:G:C3'    | 2.06                     | 0.68              |
| 1:AA:1728:G:H2'  | 1:AA:1728:G:N3     | 2.08                     | 0.68              |
| 1:AA:1815:A:O2'  | 1:AA:1816:G:H4'    | 1.94                     | 0.68              |
| 1:AA:1939:U:H1'  | 1:AA:2592:G:H1'    | 1.72                     | 0.68              |
| 1:AA:2126:A:H1'  | 1:AA:2162:G:H21    | 1.56                     | 0.68              |
| 1:AA:2168:G:N2   | 1:AA:2170:A:H3'    | 2.08                     | 0.68              |
| 1:AA:2282:G:C2   | 1:AA:2425:A:C8     | 2.81                     | 0.68              |
| 1:AA:2659:G:C1'  | 1:AA:2663:G:N2     | 2.51                     | 0.68              |
| 3:AC:162:GLU:C   | 3:AC:163:PHE:CD2   | 2.66                     | 0.68              |
| 4:AD:246:PRO:O   | 4:AD:250:TRP:HB2   | 1.92                     | 0.68              |
| 4:AD:252:TRP:CE3 | 4:AD:252:TRP:HA    | 2.29                     | 0.68              |
| 5:AE:27:LEU:HD11 | 5:AE:30:PRO:CD     | 2.23                     | 0.68              |
| 5:AE:60:ASN:HA   | 5:AE:63:LEU:CD1    | 2.22                     | 0.68              |
| 5:AE:80:GLU:N    | 5:AE:80:GLU:OE1    | 2.26                     | 0.68              |
| 5:AE:92:THR:C    | 5:AE:94:GLU:N      | 2.49                     | 0.68              |
| 6:AF:70:THR:C    | 6:AF:72:ARG:N      | 2.41                     | 0.68              |
| 7:AG:36:LYS:CB   | 7:AG:95:ARG:HD3    | 2.22                     | 0.68              |
| 7:AG:116:ASP:O   | 7:AG:118:ARG:N     | 2.27                     | 0.68              |
| 8:AH:105:LEU:CB  | 8:AH:113:VAL:HG11  | 2.23                     | 0.68              |
| 8:AH:107:VAL:CG1 | 8:AH:152:ARG:HD2   | 2.22                     | 0.68              |
| 9:AK:72:TYR:CD2  | 9:AK:72:TYR:C      | 2.71                     | 0.68              |
| 13:AO:37:THR:H   | 13:AO:40:LYS:HD2   | 1.58                     | 0.68              |
| 13:AO:105:ARG:CZ | 13:AO:105:ARG:CA   | 2.65                     | 0.68              |
| 15:AQ:72:VAL:HB  | 15:AQ:74:ARG:CZ    | 2.23                     | 0.68              |
| 16:AR:74:LEU:HB3 | 16:AR:78:THR:CB    | 2.23                     | 0.68              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 19:AU:32:PRO:HA    | 19:AU:77:LYS:CD    | 2.17                     | 0.68              |
| 20:AV:1:MET:HE2    | 20:AV:67:LEU:HD23  | 1.76                     | 0.68              |
| 21:AW:57:ILE:HG23  | 21:AW:58:VAL:H     | 1.55                     | 0.68              |
| 21:AW:70:LEU:O     | 21:AW:88:PHE:HA    | 1.94                     | 0.68              |
| 21:AW:127:LYS:HZ3  | 21:AW:165:VAL:HB   | 1.58                     | 0.68              |
| 22:AX:28:GLY:CA    | 22:AX:67:VAL:HB    | 2.23                     | 0.68              |
| 22:AX:59:LEU:CD2   | 22:AX:79:VAL:HG21  | 2.23                     | 0.68              |
| 24:AZ:7:LYS:HA     | 24:AZ:33:GLN:O     | 1.93                     | 0.68              |
| 29:Ae:30:ARG:NH2   | 29:Ae:41:ILE:O     | 2.27                     | 0.68              |
| 34:BA:287:U:H2'    | 34:BA:288:A:H5'    | 1.74                     | 0.68              |
| 34:BA:346:G:O2'    | 34:BA:347:G:H5'    | 1.94                     | 0.68              |
| 34:BA:831:U:H2'    | 34:BA:832:C:H6     | 1.59                     | 0.68              |
| 34:BA:1082:G:C2'   | 34:BA:1083:U:H5'   | 2.23                     | 0.68              |
| 34:BA:1412:C:C2    | 34:BA:1489:G:C2    | 2.81                     | 0.68              |
| 34:BA:1465:C:H2'   | 34:BA:1466:C:C5'   | 2.22                     | 0.68              |
| 34:BA:1487:G:O2'   | 34:BA:1488:G:H5'   | 1.94                     | 0.68              |
| 37:BH:120:LEU:HB2  | 37:BH:125:HIS:CD2  | 2.29                     | 0.68              |
| 37:BH:128:VAL:HG21 | 37:BH:133:VAL:HB   | 1.75                     | 0.68              |
| 38:BI:68:GLU:O     | 38:BI:70:PRO:HD3   | 1.93                     | 0.68              |
| 39:BJ:11:ASN:HD22  | 39:BJ:86:ARG:HH22  | 1.41                     | 0.68              |
| 40:BK:74:GLU:HA    | 40:BK:145:ALA:HB1  | 1.75                     | 0.68              |
| 40:BK:155:ARG:HA   | 40:BK:155:ARG:NE   | 2.02                     | 0.68              |
| 41:BL:50:ARG:HG2   | 41:BL:50:ARG:NH1   | 2.03                     | 0.68              |
| 41:BL:129:VAL:HG22 | 41:BL:130:GLY:N    | 2.04                     | 0.68              |
| 44:BO:81:ASP:OD1   | 44:BO:106:LYS:HD2  | 1.93                     | 0.68              |
| 53:BX:56:MET:CG    | 53:BX:88:VAL:HG21  | 2.22                     | 0.68              |
| 57:BZ:35:ARG:HA    | 57:BZ:36:ALA:C     | 2.19                     | 0.68              |
| 57:BZ:55:THR:CB    | 57:BZ:254:VAL:HG11 | 2.20                     | 0.68              |
| 57:BZ:512:LEU:CG   | 57:BZ:524:ILE:HG22 | 2.22                     | 0.68              |
| 57:BZ:560:PRO:HG2  | 57:BZ:562:ARG:HB2  | 1.73                     | 0.68              |
| 1:AA:138:G:N2      | 1:AA:140:A:H62     | 1.91                     | 0.68              |
| 1:AA:230:U:H2'     | 1:AA:231:C:H6      | 1.59                     | 0.68              |
| 1:AA:257:A:O5'     | 1:AA:257:A:H8      | 1.77                     | 0.68              |
| 1:AA:297:C:H2'     | 1:AA:298:G:O4'     | 1.93                     | 0.68              |
| 1:AA:309:G:H5'     | 1:AA:310:A:OP2     | 1.93                     | 0.68              |
| 1:AA:310:A:H2'     | 1:AA:312:G:C8      | 2.29                     | 0.68              |
| 1:AA:447:A:N6      | 1:AA:473:G:H1'     | 2.08                     | 0.68              |
| 1:AA:586:A:H2      | 1:AA:809:G:N2      | 1.90                     | 0.68              |
| 1:AA:636:G:H4'     | 1:AA:638:G:O2'     | 1.92                     | 0.68              |
| 1:AA:783:A:H2'     | 1:AA:784:A:C5'     | 2.23                     | 0.68              |
| 1:AA:1075:C:N1     | 32:AJ:90:LYS:NZ    | 2.37                     | 0.68              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1077:A:H5''   | 1:AA:1078:U:O2     | 1.94                     | 0.68              |
| 1:AA:1288:U:C5'    | 1:AA:1289:C:OP2    | 2.40                     | 0.68              |
| 1:AA:1352:U:H1'    | 1:AA:1570:A:C2     | 2.28                     | 0.68              |
| 1:AA:1464:C:H2'    | 1:AA:1465:G:H8     | 1.58                     | 0.68              |
| 1:AA:1700:A:OP1    | 1:AA:1700:A:O3'    | 2.11                     | 0.68              |
| 1:AA:1839:G:N9     | 1:AA:1927:A:H5'    | 2.09                     | 0.68              |
| 1:AA:1992:G:O4'    | 1:AA:1993:U:O4     | 2.12                     | 0.68              |
| 1:AA:2219:G:H2'    | 1:AA:2224:G:H5'    | 1.74                     | 0.68              |
| 1:AA:2428:G:H4'    | 1:AA:2429:G:O5'    | 1.94                     | 0.68              |
| 1:AA:2482:G:C5     | 1:AA:2483:C:C6     | 2.81                     | 0.68              |
| 1:AA:2648:C:N3     | 1:AA:2649:U:N3     | 2.42                     | 0.68              |
| 3:AC:103:ILE:CD1   | 3:AC:127:LEU:HD11  | 2.24                     | 0.68              |
| 4:AD:29:PRO:CB     | 4:AD:82:ILE:O      | 2.42                     | 0.68              |
| 4:AD:127:VAL:CG1   | 4:AD:194:GLY:HA3   | 2.14                     | 0.68              |
| 5:AE:114:ALA:HB3   | 5:AE:118:LYS:CB    | 2.23                     | 0.68              |
| 5:AE:137:HIS:CB    | 5:AE:138:PRO:HD2   | 2.23                     | 0.68              |
| 11:AM:54:GLY:HA2   | 29:Ae:12:LYS:HD3   | 1.76                     | 0.68              |
| 11:AM:114:ILE:HG21 | 11:AM:134:ALA:CB   | 2.24                     | 0.68              |
| 13:AO:21:TYR:HB3   | 13:AO:47:PHE:CD2   | 2.29                     | 0.68              |
| 13:AO:44:LEU:O     | 13:AO:48:VAL:HG23  | 1.93                     | 0.68              |
| 13:AO:83:ILE:HD12  | 13:AO:86:ARG:NE    | 2.08                     | 0.68              |
| 18:AT:11:ARG:HH21  | 18:AT:11:ARG:HB3   | 1.56                     | 0.68              |
| 18:AT:25:ARG:HA    | 18:AT:71:VAL:CG1   | 2.24                     | 0.68              |
| 21:AW:92:SER:O     | 21:AW:93:ASP:HB2   | 1.94                     | 0.68              |
| 21:AW:179:ASP:HB2  | 56:BD:56:C:H4'     | 1.74                     | 0.68              |
| 24:AZ:55:ARG:HA    | 24:AZ:55:ARG:NH2   | 2.09                     | 0.68              |
| 27:Ac:52:VAL:HG12  | 27:Ac:53:LYS:H     | 1.57                     | 0.68              |
| 32:AJ:104:VAL:HG12 | 32:AJ:127:ILE:CD1  | 0.45                     | 0.68              |
| 34:BA:314:C:H5''   | 34:BA:315:A:OP2    | 1.94                     | 0.68              |
| 34:BA:563:A:H3'    | 45:BP:15:ARG:NH1   | 2.09                     | 0.68              |
| 34:BA:571:U:H6     | 34:BA:571:U:H5''   | 1.58                     | 0.68              |
| 34:BA:735:C:O2'    | 51:BV:75:ILE:HD13  | 1.94                     | 0.68              |
| 34:BA:1221:G:OP1   | 34:BA:1320:C:N4    | 2.27                     | 0.68              |
| 34:BA:1229:A:O3'   | 56:BE:30:G:P       | 2.52                     | 0.68              |
| 34:BA:1307:U:O5'   | 34:BA:1307:U:H6    | 1.77                     | 0.68              |
| 34:BA:1497:G:C2'   | 34:BA:1498:U:H5'   | 2.24                     | 0.68              |
| 37:BH:112:VAL:CG2  | 37:BH:161:ASN:HD21 | 2.06                     | 0.68              |
| 37:BH:148:VAL:CG2  | 37:BH:162:LEU:HD21 | 2.24                     | 0.68              |
| 38:BI:11:ILE:HB    | 38:BI:31:LEU:CD2   | 2.24                     | 0.68              |
| 38:BI:35:GLY:HA3   | 38:BI:41:VAL:HG13  | 1.75                     | 0.68              |
| 40:BK:2:ALA:HB1    | 40:BK:5:ARG:O      | 1.94                     | 0.68              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 41:BL:26:VAL:CG2  | 41:BL:27:PRO:HD2   | 2.23                     | 0.68              |
| 41:BL:32:LYS:O    | 41:BL:36:LEU:HD23  | 1.93                     | 0.68              |
| 43:BN:50:ILE:HB   | 47:BR:41:ARG:HE    | 1.58                     | 0.68              |
| 46:BQ:96:LEU:H    | 46:BQ:96:LEU:HD23  | 1.59                     | 0.68              |
| 50:BU:51:TYR:HD1  | 50:BU:51:TYR:H     | 1.41                     | 0.68              |
| 50:BU:88:TYR:CA   | 50:BU:91:ARG:HH21  | 2.06                     | 0.68              |
| 55:BC:2:C:H42     | 55:BC:71:G:H1      | 1.41                     | 0.68              |
| 57:BZ:25:LEU:O    | 57:BZ:28:GLN:NE2   | 2.26                     | 0.68              |
| 57:BZ:88:VAL:HG12 | 57:BZ:92:VAL:HG21  | 1.76                     | 0.68              |
| 57:BZ:105:PRO:O   | 57:BZ:106:MET:HE2  | 1.93                     | 0.68              |
| 57:BZ:239:ILE:N   | 57:BZ:244:GLY:CA   | 2.42                     | 0.68              |
| 57:BZ:306:THR:O   | 57:BZ:360:GLY:O    | 2.12                     | 0.68              |
| 57:BZ:374:ARG:NE  | 57:BZ:581:THR:H    | 1.91                     | 0.68              |
| 57:BZ:512:LEU:CD2 | 57:BZ:518:VAL:HG13 | 2.22                     | 0.68              |
| 1:AA:58:G:H2'     | 1:AA:73:A:H2       | 1.59                     | 0.68              |
| 1:AA:179:G:H5'    | 28:Ad:32:LYS:HZ3   | 1.58                     | 0.68              |
| 1:AA:242:G:H5''   | 29:Ae:4:MET:CE     | 2.23                     | 0.68              |
| 1:AA:270:A:N1     | 1:AA:370:G:C1'     | 2.56                     | 0.68              |
| 1:AA:748:G:H3'    | 1:AA:750:A:OP2     | 1.93                     | 0.68              |
| 1:AA:972:G:OP1    | 1:AA:974(A):C:H3'  | 1.94                     | 0.68              |
| 1:AA:1092:C:N4    | 1:AA:1093:G:N3     | 2.41                     | 0.68              |
| 1:AA:1128:A:N3    | 1:AA:1128:A:H2'    | 2.07                     | 0.68              |
| 1:AA:1250:G:O2'   | 1:AA:1251:C:P      | 2.52                     | 0.68              |
| 1:AA:1264:G:C5'   | 1:AA:1265:A:H5''   | 2.22                     | 0.68              |
| 1:AA:1291:C:H4'   | 1:AA:1535:U:O3'    | 1.93                     | 0.68              |
| 1:AA:1352:U:O2'   | 1:AA:1353:A:H5'    | 1.93                     | 0.68              |
| 1:AA:1376:C:C2    | 1:AA:1377:G:C8     | 2.82                     | 0.68              |
| 1:AA:1418:G:H1'   | 1:AA:1581:G:N2     | 2.08                     | 0.68              |
| 1:AA:1559:G:C4    | 1:AA:1559:G:C3'    | 2.76                     | 0.68              |
| 1:AA:1711:C:H2'   | 1:AA:1712:C:C6     | 2.29                     | 0.68              |
| 1:AA:1933:G:N2    | 1:AA:1974:C:H5'    | 2.02                     | 0.68              |
| 1:AA:1988:C:O2'   | 1:AA:1989:G:H5'    | 1.93                     | 0.68              |
| 1:AA:2019:A:N1    | 1:AA:2020:A:N3     | 2.41                     | 0.68              |
| 1:AA:2150:U:C2    | 1:AA:2151:G:N7     | 2.60                     | 0.68              |
| 1:AA:2178:C:C5'   | 3:AC:211:SER:CB    | 2.72                     | 0.68              |
| 1:AA:2277:G:H5''  | 22:AX:12:ASN:ND2   | 2.08                     | 0.68              |
| 1:AA:2329:G:H2'   | 1:AA:2330:G:H8     | 1.58                     | 0.68              |
| 1:AA:2593:U:OP2   | 1:AA:2593:U:H6     | 1.77                     | 0.68              |
| 1:AA:2615:U:C2    | 26:Ab:7:PRO:HA     | 2.29                     | 0.68              |
| 3:AC:161:ILE:CG2  | 3:AC:188:ASN:HD22  | 2.06                     | 0.68              |
| 4:AD:176:ARG:HB2  | 4:AD:182:LEU:HD21  | 1.75                     | 0.68              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 4:AD:261:LYS:O     | 4:AD:262:ARG:C    | 2.36                     | 0.68              |
| 5:AE:147:PRO:CG    | 5:AE:149:ARG:HD2  | 2.23                     | 0.68              |
| 6:AF:133:ASN:HB3   | 6:AF:165:ARG:HH22 | 1.57                     | 0.68              |
| 6:AF:192:LEU:HD13  | 6:AF:192:LEU:C    | 2.18                     | 0.68              |
| 6:AF:200:GLU:OE1   | 6:AF:201:VAL:CG2  | 2.36                     | 0.68              |
| 7:AG:124:SER:OG    | 7:AG:133:LEU:HD23 | 1.93                     | 0.68              |
| 9:AK:45:ASN:N      | 9:AK:45:ASN:OD1   | 2.26                     | 0.68              |
| 9:AK:55:VAL:HG22   | 9:AK:125:GLY:O    | 1.93                     | 0.68              |
| 10:AL:77:ILE:HD13  | 15:AQ:65:LYS:NZ   | 2.08                     | 0.68              |
| 12:AN:122:GLY:O    | 12:AN:123:HIS:C   | 2.37                     | 0.68              |
| 13:AO:74:LYS:HA    | 13:AO:77:ARG:HH22 | 1.59                     | 0.68              |
| 17:AS:61:VAL:O     | 17:AS:62:LEU:HD23 | 1.94                     | 0.68              |
| 17:AS:62:LEU:HD11  | 17:AS:96:ILE:HD13 | 1.75                     | 0.68              |
| 18:AT:11:ARG:HH21  | 18:AT:11:ARG:N    | 1.89                     | 0.68              |
| 18:AT:11:ARG:HG2   | 18:AT:11:ARG:O    | 1.92                     | 0.68              |
| 21:AW:4:ARG:HD3    | 21:AW:38:TYR:C    | 2.18                     | 0.68              |
| 21:AW:29:TYR:HD1   | 21:AW:34:ASN:HD22 | 1.39                     | 0.68              |
| 21:AW:127:LYS:HA   | 21:AW:164:ALA:HB3 | 1.75                     | 0.68              |
| 24:AZ:7:LYS:HB3    | 24:AZ:55:ARG:HB3  | 1.74                     | 0.68              |
| 24:AZ:29:ARG:HB2   | 24:AZ:30:ARG:CZ   | 2.23                     | 0.68              |
| 28:Ad:31:LEU:C     | 28:Ad:35:ARG:HD3  | 2.18                     | 0.68              |
| 29:Ae:6:THR:O      | 29:Ae:7:HIS:C     | 2.36                     | 0.68              |
| 30:Af:25:VAL:CB    | 30:Af:34:GLN:HB2  | 2.22                     | 0.68              |
| 32:AJ:53:VAL:CB    | 32:AJ:71:THR:O    | 2.41                     | 0.68              |
| 34:BA:16:A:C1'     | 38:BI:17:ALA:HB3  | 2.22                     | 0.68              |
| 34:BA:20:U:O2'     | 34:BA:21:G:H5'    | 1.93                     | 0.68              |
| 34:BA:197:A:H62    | 34:BA:221:C:H5'   | 1.59                     | 0.68              |
| 34:BA:645:C:H2'    | 34:BA:646:U:H6    | 1.58                     | 0.68              |
| 34:BA:692:U:H1'    | 34:BA:694:A:N7    | 2.09                     | 0.68              |
| 34:BA:821:G:H2'    | 34:BA:822:C:H6    | 1.58                     | 0.68              |
| 34:BA:999:U:H2'    | 34:BA:1000:A:O4'  | 1.93                     | 0.68              |
| 34:BA:1287:A:N6    | 34:BA:1371:G:O4'  | 2.27                     | 0.68              |
| 34:BA:1292:U:H2'   | 34:BA:1293:G:H8   | 1.59                     | 0.68              |
| 34:BA:1412:C:O2    | 34:BA:1489:G:N1   | 2.27                     | 0.68              |
| 35:BF:47:THR:HG22  | 35:BF:51:LEU:HD11 | 1.73                     | 0.68              |
| 35:BF:60:ASP:O     | 35:BF:63:MET:HB3  | 1.93                     | 0.68              |
| 35:BF:82:ARG:O     | 35:BF:86:GLU:HG3  | 1.93                     | 0.68              |
| 35:BF:118:LEU:HD11 | 35:BF:141:GLU:OE2 | 1.93                     | 0.68              |
| 37:BH:35:ARG:O     | 37:BH:37:PRO:N    | 2.27                     | 0.68              |
| 37:BH:61:LYS:CG    | 37:BH:207:TYR:HE1 | 2.06                     | 0.68              |
| 37:BH:113:SER:HB3  | 37:BH:116:GLN:HG3 | 1.75                     | 0.68              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 39:BJ:4:TYR:CE1    | 39:BJ:72:VAL:HG11 | 2.28                     | 0.68              |
| 43:BN:65:LEU:HD13  | 47:BR:36:PHE:CE2  | 2.29                     | 0.68              |
| 44:BO:69:ALA:O     | 44:BO:72:ALA:HB3  | 1.92                     | 0.68              |
| 45:BP:82:VAL:HG12  | 45:BP:83:VAL:N    | 2.08                     | 0.68              |
| 47:BR:27:CYS:H     | 47:BR:43:CYS:HB3  | 1.58                     | 0.68              |
| 48:BS:25:THR:O     | 48:BS:29:VAL:HG23 | 1.93                     | 0.68              |
| 53:BX:43:LEU:HD23  | 53:BX:46:GLU:OE2  | 1.94                     | 0.68              |
| 57:BZ:130:VAL:CG2  | 57:BZ:165:ALA:O   | 2.41                     | 0.68              |
| 57:BZ:221:ILE:HD12 | 57:BZ:221:ILE:N   | 2.08                     | 0.68              |
| 57:BZ:401:GLU:HB3  | 57:BZ:467:SER:HB2 | 1.75                     | 0.68              |
| 57:BZ:497:VAL:CA   | 57:BZ:514:HIS:HE1 | 1.95                     | 0.68              |
| 57:BZ:546:MET:CB   | 57:BZ:547:ARG:HG2 | 2.17                     | 0.68              |
| 1:AA:242:G:N7      | 29:Ae:2:PRO:HG2   | 2.08                     | 0.68              |
| 1:AA:321:G:OP2     | 6:AF:135:LYS:HE3  | 1.94                     | 0.68              |
| 1:AA:392:C:H5''    | 1:AA:409:C:H5''   | 1.75                     | 0.68              |
| 1:AA:879:G:C2      | 1:AA:898:C:C2     | 2.79                     | 0.68              |
| 1:AA:947:G:O2'     | 1:AA:948:G:H5'    | 1.94                     | 0.68              |
| 1:AA:1061:U:H2'    | 32:AJ:52:ILE:CD1  | 2.21                     | 0.68              |
| 1:AA:1758:G:O2'    | 1:AA:1759:A:OP1   | 2.11                     | 0.68              |
| 1:AA:1817:G:H2'    | 1:AA:1818:U:O4'   | 1.93                     | 0.68              |
| 1:AA:1902:C:C5     | 1:AA:1903:G:C8    | 2.81                     | 0.68              |
| 1:AA:2015:A:H8     | 1:AA:2016:U:C6    | 2.11                     | 0.68              |
| 1:AA:2081:C:O2'    | 1:AA:2082:A:H5'   | 1.94                     | 0.68              |
| 1:AA:2151:G:O3'    | 3:AC:3:HIS:CA     | 2.31                     | 0.68              |
| 1:AA:2256:G:N2     | 1:AA:2275:C:H41   | 1.92                     | 0.68              |
| 1:AA:2740:A:N6     | 1:AA:2764:A:C1'   | 2.57                     | 0.68              |
| 4:AD:91:ARG:NH1    | 4:AD:198:ASN:HB2  | 2.03                     | 0.68              |
| 4:AD:147:LEU:CB    | 4:AD:185:VAL:HG22 | 2.16                     | 0.68              |
| 4:AD:196:VAL:HG12  | 4:AD:198:ASN:H    | 1.59                     | 0.68              |
| 5:AE:147:PRO:CD    | 5:AE:148:GLY:H    | 2.04                     | 0.68              |
| 6:AF:51:THR:O      | 6:AF:52:LYS:HG3   | 1.94                     | 0.68              |
| 7:AG:174:GLU:OE2   | 7:AG:175:LEU:HG   | 1.93                     | 0.68              |
| 8:AH:83:TYR:H      | 8:AH:136:ILE:HA   | 1.58                     | 0.68              |
| 8:AH:126:PRO:HG3   | 8:AH:132:ARG:HH12 | 1.58                     | 0.68              |
| 9:AK:29:LYS:O      | 9:AK:31:ALA:N     | 2.26                     | 0.68              |
| 9:AK:87:LEU:HD23   | 9:AK:88:GLU:OE2   | 1.94                     | 0.68              |
| 10:AL:69:VAL:H     | 10:AL:104:ARG:NH2 | 1.90                     | 0.68              |
| 10:AL:121:VAL:C    | 15:AQ:70:VAL:O    | 2.36                     | 0.68              |
| 11:AM:19:VAL:O     | 11:AM:19:VAL:HG23 | 1.94                     | 0.68              |
| 11:AM:64:LYS:C     | 11:AM:64:LYS:HD2  | 2.19                     | 0.68              |
| 12:AN:34:LEU:HB2   | 12:AN:67:ARG:NH2  | 2.03                     | 0.68              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 12:AN:126:PRO:C    | 12:AN:127:ILE:HG13 | 2.19                     | 0.68              |
| 13:AO:73:VAL:HG23  | 13:AO:74:LYS:N     | 2.08                     | 0.68              |
| 14:AP:73:LEU:HA    | 14:AP:76:LYS:HD2   | 1.75                     | 0.68              |
| 15:AQ:59:THR:N     | 15:AQ:61:PHE:CZ    | 2.61                     | 0.68              |
| 20:AV:82:PRO:HD2   | 20:AV:96:ILE:HA    | 1.75                     | 0.68              |
| 21:AW:128:VAL:HG23 | 21:AW:164:ALA:HB2  | 1.75                     | 0.68              |
| 23:AY:41:GLN:O     | 23:AY:43:HIS:N     | 2.26                     | 0.68              |
| 29:Ae:1:MET:N      | 29:Ae:2:PRO:HD2    | 2.08                     | 0.68              |
| 29:Ae:25:MET:O     | 29:Ae:26:LYS:C     | 2.35                     | 0.68              |
| 31:AI:53:VAL:CA    | 31:AI:86:PRO:N     | 2.57                     | 0.68              |
| 32:AJ:122:ALA:HA   | 32:AJ:126:MET:CB   | 2.24                     | 0.68              |
| 34:BA:125:U:H2'    | 34:BA:126:G:C8     | 2.28                     | 0.68              |
| 34:BA:137:C:C2     | 34:BA:227:G:N2     | 2.62                     | 0.68              |
| 34:BA:394:G:C4     | 34:BA:395:C:C5     | 2.82                     | 0.68              |
| 34:BA:511:C:O2'    | 34:BA:512:U:H6     | 1.75                     | 0.68              |
| 34:BA:518:C:O2'    | 34:BA:519:C:P      | 2.51                     | 0.68              |
| 34:BA:627:G:O2'    | 34:BA:628:G:H5'    | 1.93                     | 0.68              |
| 34:BA:992:U:O4     | 34:BA:1043:C:OP2   | 2.11                     | 0.68              |
| 34:BA:1077:G:N2    | 34:BA:1080:A:OP2   | 2.27                     | 0.68              |
| 34:BA:1115:C:O2'   | 34:BA:1116:C:H5'   | 1.92                     | 0.68              |
| 35:BF:112:VAL:HG22 | 35:BF:149:LEU:HD11 | 1.76                     | 0.68              |
| 35:BF:187:LEU:HD22 | 35:BF:201:ILE:O    | 1.92                     | 0.68              |
| 36:BG:6:HIS:HB3    | 47:BR:49:HIS:CE1   | 2.28                     | 0.68              |
| 38:BI:74:GLY:O     | 38:BI:115:VAL:HG12 | 1.92                     | 0.68              |
| 41:BL:19:VAL:HB    | 41:BL:21:LYS:HG2   | 1.74                     | 0.68              |
| 41:BL:45:ILE:HB    | 41:BL:61:VAL:HG11  | 1.75                     | 0.68              |
| 41:BL:51:VAL:CG2   | 41:BL:60:ARG:HH21  | 2.06                     | 0.68              |
| 48:BS:43:LEU:HD11  | 48:BS:56:LEU:HD23  | 1.74                     | 0.68              |
| 51:BV:53:ARG:CG    | 51:BV:63:GLN:HE21  | 2.05                     | 0.68              |
| 52:BW:9:VAL:HG13   | 52:BW:41:VAL:CB    | 2.23                     | 0.68              |
| 53:BX:12:ALA:O     | 53:BX:15:ARG:HG2   | 1.94                     | 0.68              |
| 53:BX:56:MET:SD    | 53:BX:84:LEU:HD12  | 2.33                     | 0.68              |
| 56:BE:19:G:C4      | 56:BE:57:G:N2      | 2.62                     | 0.68              |
| 57:BZ:13:HIS:HB3   | 57:BZ:109:THR:N    | 2.09                     | 0.68              |
| 57:BZ:119:TYR:CB   | 57:BZ:120:GLY:HA3  | 2.24                     | 0.68              |
| 57:BZ:200:ASP:CB   | 57:BZ:228:ARG:HD3  | 2.24                     | 0.68              |
| 57:BZ:490:SER:O    | 57:BZ:534:THR:HG22 | 1.91                     | 0.68              |
| 1:AA:253:C:H2'     | 1:AA:254:G:H5'     | 1.76                     | 0.68              |
| 1:AA:311:A:H62     | 1:AA:329:G:H5'     | 1.59                     | 0.68              |
| 1:AA:665:C:C2      | 1:AA:666:G:N7      | 2.62                     | 0.68              |
| 1:AA:810:U:OP1     | 1:AA:1253:A:C5     | 2.46                     | 0.68              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:997:G:C5'    | 16:AR:92:ARG:HD2  | 2.24                     | 0.68              |
| 1:AA:1110:G:O6    | 31:AI:60:ARG:CB   | 2.42                     | 0.68              |
| 1:AA:1196:C:N3    | 1:AA:1250:G:O6    | 2.27                     | 0.68              |
| 1:AA:1283:G:N2    | 1:AA:1286:A:O4'   | 2.26                     | 0.68              |
| 1:AA:1352:U:O2    | 1:AA:1352:U:H2'   | 1.94                     | 0.68              |
| 1:AA:1501:C:O4'   | 4:AD:100:GLY:HA2  | 1.93                     | 0.68              |
| 1:AA:1638:C:H2'   | 1:AA:1639:U:O4'   | 1.94                     | 0.68              |
| 1:AA:1731:G:H22   | 1:AA:1733:G:N2    | 1.91                     | 0.68              |
| 1:AA:1996:C:O2    | 1:AA:1997:G:H4'   | 1.94                     | 0.68              |
| 1:AA:2018:G:H2'   | 1:AA:2019:A:O4'   | 1.94                     | 0.68              |
| 1:AA:2125:G:H22   | 1:AA:2172:U:H5'   | 1.59                     | 0.68              |
| 1:AA:2195:C:C2    | 1:AA:2196:C:C6    | 2.82                     | 0.68              |
| 1:AA:2384:G:H3'   | 1:AA:2385:C:O3'   | 1.93                     | 0.68              |
| 1:AA:2415:G:H5''  | 11:AM:61:ARG:CB   | 2.23                     | 0.68              |
| 1:AA:2419:U:O4    | 29:Ae:31:HIS:CE1  | 2.47                     | 0.68              |
| 1:AA:2507:C:N1    | 59:AA:3002:8AN:N3 | 2.41                     | 0.68              |
| 1:AA:2674:G:O2'   | 10:AL:29:ASN:HB3  | 1.93                     | 0.68              |
| 1:AA:2767:C:C2    | 1:AA:2768:C:H5    | 2.12                     | 0.68              |
| 1:AA:2784:C:C4'   | 5:AE:41:LYS:HE2   | 2.24                     | 0.68              |
| 1:AA:2834:G:O6    | 1:AA:2835:A:C2    | 2.47                     | 0.68              |
| 3:AC:100:ILE:HG23 | 3:AC:127:LEU:CG   | 2.16                     | 0.68              |
| 4:AD:29:PRO:HB2   | 4:AD:82:ILE:O     | 1.94                     | 0.68              |
| 4:AD:246:PRO:HG2  | 4:AD:250:TRP:CD1  | 2.29                     | 0.68              |
| 5:AE:64:LYS:CA    | 5:AE:67:PHE:HB2   | 2.23                     | 0.68              |
| 9:AK:7:LYS:HZ2    | 9:AK:10:GLU:N     | 1.91                     | 0.68              |
| 11:AM:28:GLY:C    | 11:AM:29:LYS:HG3  | 2.19                     | 0.68              |
| 11:AM:97:PRO:N    | 11:AM:102:ARG:CZ  | 2.57                     | 0.68              |
| 12:AN:111:GLU:C   | 12:AN:113:GLN:H   | 2.01                     | 0.68              |
| 13:AO:52:ILE:HD12 | 13:AO:94:TYR:CD1  | 2.28                     | 0.68              |
| 15:AQ:29:ARG:HA   | 15:AQ:50:ILE:O    | 1.94                     | 0.68              |
| 15:AQ:58:ASN:N    | 15:AQ:58:ASN:ND2  | 2.29                     | 0.68              |
| 15:AQ:95:ARG:NH2  | 15:AQ:96:ARG:HH21 | 1.90                     | 0.68              |
| 16:AR:104:GLN:O   | 16:AR:108:GLU:OE2 | 2.12                     | 0.68              |
| 21:AW:7:ALA:HB2   | 21:AW:38:TYR:CD1  | 2.28                     | 0.68              |
| 23:AY:27:LEU:CD2  | 23:AY:48:LEU:HB3  | 2.23                     | 0.68              |
| 32:AJ:52:ILE:HG13 | 32:AJ:76:TYR:CB   | 2.22                     | 0.68              |
| 34:BA:394:G:H2'   | 34:BA:395:C:H6    | 1.58                     | 0.68              |
| 34:BA:474:G:H5'   | 49:BT:81:ARG:HE   | 1.58                     | 0.68              |
| 34:BA:826:C:H5'   | 41:BL:12:ARG:HE   | 1.59                     | 0.68              |
| 34:BA:1129:C:N4   | 34:BA:1139:G:C5   | 2.62                     | 0.68              |
| 34:BA:1220:G:H21  | 52:BW:55:LYS:HB2  | 1.40                     | 0.68              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1305:G:N2    | 34:BA:1331:G:H2'   | 2.09                     | 0.68              |
| 34:BA:1333:A:H2'   | 34:BA:1334:G:O4'   | 1.94                     | 0.68              |
| 35:BF:15:VAL:HG21  | 35:BF:209:ARG:HB3  | 1.74                     | 0.68              |
| 35:BF:173:ALA:HA   | 35:BF:176:GLU:HG3  | 1.76                     | 0.68              |
| 36:BG:66:VAL:C     | 36:BG:102:ASN:HD22 | 2.02                     | 0.68              |
| 37:BH:190:ASP:O    | 37:BH:193:ASP:OD1  | 2.12                     | 0.68              |
| 38:BI:88:LYS:HB3   | 38:BI:123:LEU:O    | 1.94                     | 0.68              |
| 41:BL:36:LEU:O     | 41:BL:39:LEU:HB3   | 1.94                     | 0.68              |
| 43:BN:27:ALA:HB2   | 43:BN:85:LEU:HG    | 1.75                     | 0.68              |
| 44:BO:42:TRP:CE3   | 44:BO:43:SER:HA    | 2.28                     | 0.68              |
| 46:BQ:15:VAL:CG2   | 46:BQ:39:ILE:CD1   | 0.74                     | 0.68              |
| 47:BR:16:PHE:HE1   | 52:BW:14:HIS:CE1   | 2.09                     | 0.68              |
| 48:BS:16:ALA:CB    | 48:BS:21:ASP:HB3   | 2.17                     | 0.68              |
| 48:BS:34:LEU:HD12  | 48:BS:35:ARG:N     | 2.09                     | 0.68              |
| 49:BT:20:VAL:HG13  | 49:BT:21:VAL:H     | 1.59                     | 0.68              |
| 49:BT:73:LEU:HD13  | 49:BT:73:LEU:O     | 1.94                     | 0.68              |
| 50:BU:24:GLU:N     | 50:BU:24:GLU:CD    | 2.51                     | 0.68              |
| 50:BU:88:TYR:HA    | 50:BU:91:ARG:NE    | 2.08                     | 0.68              |
| 52:BW:36:ARG:HA    | 52:BW:71:LEU:CD1   | 2.23                     | 0.68              |
| 53:BX:55:ILE:O     | 53:BX:56:MET:C     | 2.37                     | 0.68              |
| 57:BZ:114:LYS:HA   | 57:BZ:117:PHE:HD2  | 1.58                     | 0.68              |
| 57:BZ:427:LYS:HG3  | 57:BZ:442:VAL:CG2  | 2.23                     | 0.68              |
| 57:BZ:560:PRO:HB2  | 57:BZ:562:ARG:H    | 1.58                     | 0.68              |
| 1:AA:72:U:C2'      | 1:AA:73:A:OP1      | 2.42                     | 0.68              |
| 1:AA:199:A:C6      | 1:AA:2433:A:C2     | 2.82                     | 0.68              |
| 1:AA:270(B):A:HO2' | 1:AA:270(C):C:H6   | 1.40                     | 0.68              |
| 1:AA:270(Q):C:H2'  | 1:AA:270(R):G:H8   | 1.59                     | 0.68              |
| 1:AA:275:G:O5'     | 1:AA:275:G:H8      | 1.77                     | 0.68              |
| 1:AA:663:G:O2'     | 1:AA:940:G:C4'     | 2.40                     | 0.68              |
| 1:AA:667:U:H2'     | 1:AA:668:G:O4'     | 1.93                     | 0.68              |
| 1:AA:775:G:H2'     | 1:AA:794:G:C8      | 2.28                     | 0.68              |
| 1:AA:962:G:H2'     | 1:AA:963:U:H6      | 1.51                     | 0.68              |
| 1:AA:995:C:H42     | 9:AK:3:THR:CA      | 2.06                     | 0.68              |
| 1:AA:1012:U:O4     | 9:AK:25:ARG:CB     | 2.33                     | 0.68              |
| 1:AA:1332:G:C5     | 1:AA:1609:A:C6     | 2.82                     | 0.68              |
| 1:AA:1495:A:C2     | 1:AA:1496:A:N6     | 2.62                     | 0.68              |
| 1:AA:1832:C:C4     | 1:AA:1833:U:C5     | 2.82                     | 0.68              |
| 1:AA:1859:A:H61    | 1:AA:1883:G:H2'    | 1.58                     | 0.68              |
| 1:AA:2169:A:N6     | 55:BC:19:G:N2      | 2.41                     | 0.68              |
| 1:AA:2284:C:H3'    | 27:Ac:27:LYS:HZ2   | 1.58                     | 0.68              |
| 1:AA:2314:C:H5'    | 7:AG:38:VAL:HG21   | 1.76                     | 0.68              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2331:G:C2    | 1:AA:2385:C:N4    | 2.61                     | 0.68              |
| 1:AA:2411:A:H2'   | 1:AA:2412:A:C8    | 2.29                     | 0.68              |
| 1:AA:2436:G:C6    | 1:AA:2437:U:C4    | 2.82                     | 0.68              |
| 1:AA:2597:G:C4'   | 4:AD:242:ARG:NE   | 2.56                     | 0.68              |
| 1:AA:2787:C:H5'   | 5:AE:64:LYS:HB2   | 1.75                     | 0.68              |
| 2:AB:24:G:H5''    | 2:AB:25:A:H5'     | 1.75                     | 0.68              |
| 3:AC:51:PRO:HB3   | 3:AC:165:ASN:ND2  | 2.08                     | 0.68              |
| 3:AC:123:VAL:O    | 3:AC:127:LEU:HB2  | 1.94                     | 0.68              |
| 3:AC:193:ILE:O    | 3:AC:197:GLU:HG3  | 1.93                     | 0.68              |
| 4:AD:23:GLU:CD    | 4:AD:23:GLU:C     | 2.62                     | 0.68              |
| 4:AD:201:HIS:HD2  | 4:AD:202:LYS:HE2  | 1.57                     | 0.68              |
| 5:AE:11:MET:O     | 5:AE:22:PRO:CD    | 2.38                     | 0.68              |
| 5:AE:12:THR:HA    | 5:AE:22:PRO:HD2   | 1.76                     | 0.68              |
| 5:AE:105:THR:OG1  | 5:AE:106:GLY:N    | 2.25                     | 0.68              |
| 7:AG:4:ASP:HA     | 7:AG:7:LEU:HB2    | 1.75                     | 0.68              |
| 7:AG:96:ARG:HA    | 7:AG:100:TRP:HZ3  | 1.59                     | 0.68              |
| 7:AG:120:LEU:HA   | 7:AG:181:ARG:HB2  | 1.74                     | 0.68              |
| 7:AG:135:LEU:HD21 | 7:AG:137:GLU:O    | 1.93                     | 0.68              |
| 8:AH:7:LEU:H      | 8:AH:8:PRO:HD2    | 1.57                     | 0.68              |
| 8:AH:35:VAL:HG11  | 8:AH:72:ILE:CA    | 2.13                     | 0.68              |
| 8:AH:42:ARG:NE    | 8:AH:42:ARG:HA    | 2.09                     | 0.68              |
| 9:AK:3:THR:HG22   | 9:AK:4:TYR:N      | 2.07                     | 0.68              |
| 9:AK:37:LYS:CE    | 9:AK:43:THR:HA    | 2.24                     | 0.68              |
| 10:AL:24:VAL:HG21 | 10:AL:26:LYS:HG2  | 1.75                     | 0.68              |
| 10:AL:62:VAL:HB   | 10:AL:82:ASN:O    | 1.94                     | 0.68              |
| 10:AL:103:ALA:HB1 | 10:AL:107:ARG:CZ  | 2.24                     | 0.68              |
| 10:AL:107:ARG:O   | 10:AL:109:LYS:HG3 | 1.93                     | 0.68              |
| 10:AL:112:MET:O   | 10:AL:115:VAL:CB  | 2.42                     | 0.68              |
| 11:AM:99:LEU:HD13 | 11:AM:101:VAL:CG2 | 2.24                     | 0.68              |
| 12:AN:124:LYS:O   | 12:AN:125:LEU:O   | 2.11                     | 0.68              |
| 13:AO:99:LYS:HG2  | 26:Ab:43:HIS:CE1  | 2.29                     | 0.68              |
| 14:AP:64:GLU:O    | 14:AP:65:VAL:C    | 2.36                     | 0.68              |
| 15:AQ:28:VAL:N    | 15:AQ:93:ARG:O    | 2.27                     | 0.68              |
| 15:AQ:93:ARG:HE   | 15:AQ:93:ARG:N    | 1.91                     | 0.68              |
| 16:AR:70:ARG:HB2  | 16:AR:70:ARG:CZ   | 2.22                     | 0.68              |
| 19:AU:7:VAL:HG21  | 23:AY:31:ARG:HH22 | 1.59                     | 0.68              |
| 20:AV:29:GLU:OE1  | 20:AV:34:LYS:HD2  | 1.94                     | 0.68              |
| 22:AX:27:GLU:HB2  | 22:AX:69:PHE:CE1  | 2.29                     | 0.68              |
| 23:AY:33:GLN:N    | 23:AY:33:GLN:NE2  | 2.42                     | 0.68              |
| 25:Aa:31:ILE:O    | 25:Aa:32:TYR:HB3  | 1.93                     | 0.68              |
| 26:Ab:44:THR:C    | 26:Ab:52:TYR:HH   | 2.02                     | 0.68              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 29:Ae:6:THR:HG23  | 29:Ae:9:GLY:HA3    | 1.75                     | 0.68              |
| 32:AJ:103:GLN:HG2 | 32:AJ:107:ILE:HD11 | 1.76                     | 0.68              |
| 34:BA:403:C:O3'   | 37:BH:122:ARG:HD2  | 1.93                     | 0.68              |
| 34:BA:425:G:N2    | 34:BA:426:G:H1'    | 2.08                     | 0.68              |
| 34:BA:454:C:H3'   | 34:BA:455:C:C5     | 2.29                     | 0.68              |
| 34:BA:515:G:O6    | 34:BA:533:A:N7     | 2.27                     | 0.68              |
| 34:BA:792:A:N3    | 34:BA:794:A:C6     | 2.62                     | 0.68              |
| 34:BA:873:A:OP1   | 34:BA:873:A:H8     | 1.75                     | 0.68              |
| 34:BA:900:A:C8    | 34:BA:901:A:N7     | 2.62                     | 0.68              |
| 34:BA:985:C:H2'   | 52:BW:55:LYS:HE3   | 1.76                     | 0.68              |
| 34:BA:1047:G:H5'' | 47:BR:4:LYS:CD     | 2.24                     | 0.68              |
| 34:BA:1233:G:O2'  | 34:BA:1365:G:OP1   | 2.12                     | 0.68              |
| 36:BG:22:TRP:HB3  | 36:BG:59:ARG:CB    | 2.24                     | 0.68              |
| 37:BH:14:ARG:C    | 37:BH:14:ARG:HD3   | 2.18                     | 0.68              |
| 37:BH:102:ASP:HB2 | 37:BH:136:PRO:C    | 2.18                     | 0.68              |
| 38:BI:12:LEU:HD13 | 38:BI:30:ALA:HA    | 1.75                     | 0.68              |
| 40:BK:143:ARG:O   | 40:BK:146:GLU:OE1  | 2.11                     | 0.68              |
| 41:BL:29:SER:C    | 41:BL:32:LYS:NZ    | 2.52                     | 0.68              |
| 42:BM:82:ALA:O    | 42:BM:85:LEU:HB3   | 1.94                     | 0.68              |
| 50:BU:59:ILE:HD11 | 50:BU:72:ARG:N     | 2.09                     | 0.68              |
| 50:BU:75:ARG:NH1  | 50:BU:77:VAL:HG22  | 2.09                     | 0.68              |
| 53:BX:14:LYS:N    | 53:BX:17:ARG:NH2   | 2.41                     | 0.68              |
| 57:BZ:27:GLN:H    | 57:BZ:29:SER:N     | 1.92                     | 0.68              |
| 57:BZ:543:LEU:CB  | 57:BZ:544:THR:HG23 | 2.23                     | 0.68              |
| 1:AA:61:G:H5'     | 23:AY:45:ILE:CD1   | 2.24                     | 0.67              |
| 1:AA:194:G:H2'    | 1:AA:195:A:C8      | 2.27                     | 0.67              |
| 1:AA:295:G:H3'    | 1:AA:338:G:H1      | 1.59                     | 0.67              |
| 1:AA:404:C:H4'    | 1:AA:406:G:C8      | 2.29                     | 0.67              |
| 1:AA:464:U:H1'    | 1:AA:788:A:N6      | 2.10                     | 0.67              |
| 1:AA:552:G:O2'    | 1:AA:553:U:H5'     | 1.94                     | 0.67              |
| 1:AA:695:G:C6     | 1:AA:768:G:C6      | 2.81                     | 0.67              |
| 1:AA:728:G:O2'    | 1:AA:729:G:H8      | 1.76                     | 0.67              |
| 1:AA:792:G:N7     | 1:AA:2440:C:H1'    | 2.10                     | 0.67              |
| 1:AA:1205:U:H2'   | 1:AA:1206:G:N7     | 2.09                     | 0.67              |
| 1:AA:1670:C:P     | 1:AA:1671:U:OP2    | 2.51                     | 0.67              |
| 1:AA:1700:A:H8    | 1:AA:1701:A:C8     | 2.12                     | 0.67              |
| 1:AA:1743:G:OP1   | 1:AA:1743:G:O3'    | 2.11                     | 0.67              |
| 1:AA:1938:A:N3    | 1:AA:2590:A:H1'    | 2.09                     | 0.67              |
| 1:AA:2114:A:N3    | 1:AA:2167:U:O2'    | 2.24                     | 0.67              |
| 1:AA:2178:C:H5''  | 3:AC:211:SER:HB3   | 1.74                     | 0.67              |
| 1:AA:2533:A:H2'   | 1:AA:2534:A:H8     | 1.59                     | 0.67              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2550:G:C2     | 1:AA:2559:C:C2    | 2.83                     | 0.67              |
| 1:AA:2578:G:N2     | 1:AA:2579:C:C2    | 2.62                     | 0.67              |
| 1:AA:2776:A:C2     | 1:AA:2778:A:H2'   | 2.29                     | 0.67              |
| 1:AA:2794:C:C4     | 1:AA:2799:A:N3    | 2.62                     | 0.67              |
| 59:AA:3003:8AN:O2P | 22:AX:2:ALA:HB1   | 1.90                     | 0.67              |
| 2:AB:32:C:H5''     | 2:AB:33:G:OP2     | 1.95                     | 0.67              |
| 4:AD:59:LYS:HD2    | 4:AD:60:ARG:N     | 2.09                     | 0.67              |
| 4:AD:140:THR:C     | 4:AD:165:ILE:HD13 | 2.18                     | 0.67              |
| 5:AE:58:ARG:HH11   | 5:AE:75:VAL:CG1   | 2.07                     | 0.67              |
| 5:AE:101:ARG:HD2   | 5:AE:169:ASN:ND2  | 2.09                     | 0.67              |
| 6:AF:81:PRO:O      | 6:AF:83:PHE:N     | 2.26                     | 0.67              |
| 7:AG:82:LEU:HD21   | 56:BE:52:G:OP2    | 1.92                     | 0.67              |
| 7:AG:153:ARG:HD2   | 7:AG:154:GLY:N    | 2.09                     | 0.67              |
| 8:AH:126:PRO:HG2   | 8:AH:132:ARG:NH2  | 2.06                     | 0.67              |
| 11:AM:72:PRO:O     | 11:AM:111:ARG:NE  | 2.27                     | 0.67              |
| 13:AO:107:ASP:OD1  | 13:AO:109:ALA:HB2 | 1.94                     | 0.67              |
| 15:AQ:28:VAL:O     | 15:AQ:52:ILE:CG1  | 2.42                     | 0.67              |
| 16:AR:27:LEU:O     | 16:AR:31:SER:CB   | 2.39                     | 0.67              |
| 16:AR:70:ARG:HG2   | 16:AR:75:ASN:CA   | 2.18                     | 0.67              |
| 17:AS:62:LEU:HD22  | 17:AS:98:GLU:CA   | 2.21                     | 0.67              |
| 17:AS:68:LYS:O     | 17:AS:69:LYS:CB   | 2.42                     | 0.67              |
| 19:AU:7:VAL:HG22   | 23:AY:31:ARG:HH12 | 1.59                     | 0.67              |
| 19:AU:49:VAL:HG12  | 19:AU:88:LYS:CB   | 2.24                     | 0.67              |
| 21:AW:31:ARG:N     | 21:AW:89:PHE:CE2  | 2.59                     | 0.67              |
| 21:AW:116:VAL:HG21 | 21:AW:145:GLU:HG2 | 1.76                     | 0.67              |
| 21:AW:177:PRO:CG   | 21:AW:178:GLU:H   | 2.07                     | 0.67              |
| 22:AX:70:GLN:HB3   | 22:AX:78:TYR:O    | 1.94                     | 0.67              |
| 23:AY:36:ILE:HG23  | 23:AY:37:GLY:N    | 2.06                     | 0.67              |
| 23:AY:38:GLN:H     | 23:AY:41:GLN:CD   | 2.01                     | 0.67              |
| 24:AZ:52:HIS:O     | 24:AZ:54:VAL:N    | 2.27                     | 0.67              |
| 27:Ac:16:CYS:SG    | 27:Ac:19:ARG:O    | 2.51                     | 0.67              |
| 27:Ac:17:LYS:HE3   | 27:Ac:48:VAL:HG11 | 1.76                     | 0.67              |
| 32:AJ:64:SER:HB2   | 32:AJ:65:PHE:HD1  | 1.52                     | 0.67              |
| 34:BA:61:G:H2'     | 34:BA:62:U:H6     | 1.56                     | 0.67              |
| 34:BA:112:G:OP1    | 34:BA:389:A:O2'   | 2.12                     | 0.67              |
| 34:BA:592:G:H2'    | 34:BA:593:G:H5'   | 1.76                     | 0.67              |
| 34:BA:748:C:O5'    | 34:BA:748:C:H6    | 1.76                     | 0.67              |
| 34:BA:794:A:H4'    | 34:BA:1521:G:O2'  | 1.94                     | 0.67              |
| 34:BA:894:G:C5     | 34:BA:895:G:N7    | 2.63                     | 0.67              |
| 34:BA:963:G:O2'    | 34:BA:964:A:H5'   | 1.94                     | 0.67              |
| 34:BA:1008:C:H2'   | 34:BA:1009:G:O4'  | 1.93                     | 0.67              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1063:C:C5   | 34:BA:1064:G:N7    | 2.62                     | 0.67              |
| 34:BA:1152:A:C2'  | 34:BA:1153:C:H5'   | 2.24                     | 0.67              |
| 34:BA:1181:G:H2'  | 34:BA:1182:G:O4'   | 1.94                     | 0.67              |
| 34:BA:1240:U:H1'  | 40:BK:42:ILE:HD11  | 1.76                     | 0.67              |
| 34:BA:1285:A:H4'  | 34:BA:1286:A:C8    | 2.29                     | 0.67              |
| 34:BA:1390:U:H2'  | 34:BA:1391:U:C5    | 2.29                     | 0.67              |
| 36:BG:70:VAL:HG12 | 36:BG:71:ALA:H     | 1.59                     | 0.67              |
| 37:BH:118:ARG:HG3 | 37:BH:118:ARG:HH21 | 1.58                     | 0.67              |
| 39:BJ:23:LYS:O    | 39:BJ:26:ILE:CB    | 2.36                     | 0.67              |
| 40:BK:38:LEU:HD12 | 40:BK:41:ARG:HD3   | 1.75                     | 0.67              |
| 41:BL:115:SER:O   | 41:BL:116:LYS:HD2  | 1.94                     | 0.67              |
| 42:BM:78:LYS:HA   | 42:BM:81:ILE:HD12  | 1.74                     | 0.67              |
| 42:BM:127:LYS:CB  | 56:BE:31:A:H5''    | 2.13                     | 0.67              |
| 43:BN:10:GLY:HA3  | 43:BN:16:LEU:HD21  | 1.75                     | 0.67              |
| 43:BN:27:ALA:HB2  | 43:BN:85:LEU:HD11  | 1.76                     | 0.67              |
| 50:BU:29:HIS:CE1  | 50:BU:31:LEU:H     | 2.12                     | 0.67              |
| 55:BC:31:A:O2'    | 55:BC:32:U:H5'     | 1.94                     | 0.67              |
| 57:BZ:580:VAL:HB  | 57:BZ:585:ILE:HD13 | 1.77                     | 0.67              |
| 1:AA:64:A:H5'     | 19:AU:73:ARG:HA    | 1.75                     | 0.67              |
| 1:AA:320:A:H2'    | 6:AF:136:THR:HG21  | 1.77                     | 0.67              |
| 1:AA:499:U:H5     | 1:AA:500:G:N3      | 1.90                     | 0.67              |
| 1:AA:824:A:H3'    | 1:AA:825:C:H5      | 1.59                     | 0.67              |
| 1:AA:1055:G:O3'   | 31:AI:33:PRO:HA    | 1.94                     | 0.67              |
| 1:AA:1177:A:C2    | 1:AA:1178:C:N3     | 2.61                     | 0.67              |
| 1:AA:1366:A:H5'   | 25:Aa:1:MET:H1     | 1.60                     | 0.67              |
| 1:AA:1472:A:O2'   | 1:AA:1473:G:H8     | 1.76                     | 0.67              |
| 1:AA:1687:G:N1    | 1:AA:1688:U:C5     | 2.62                     | 0.67              |
| 1:AA:2019:A:N1    | 1:AA:2020:A:C4     | 2.62                     | 0.67              |
| 1:AA:2022:U:H2'   | 1:AA:2022:U:O2     | 1.92                     | 0.67              |
| 1:AA:2209:C:H4'   | 4:AD:150:LYS:CB    | 2.24                     | 0.67              |
| 1:AA:2320:A:OP1   | 1:AA:2320:A:C8     | 2.47                     | 0.67              |
| 1:AA:2416:C:C2'   | 1:AA:2417:C:C5'    | 2.66                     | 0.67              |
| 1:AA:2469:A:H5'   | 1:AA:2469:A:C8     | 2.23                     | 0.67              |
| 1:AA:2507:C:H5'   | 59:AA:3002:8AN:O5' | 1.94                     | 0.67              |
| 1:AA:2556:C:C2    | 57:BZ:546:MET:CE   | 2.60                     | 0.67              |
| 1:AA:2619:C:H2'   | 1:AA:2620:C:O5'    | 1.94                     | 0.67              |
| 2:AB:14:U:C2'     | 2:AB:107:U:H1'     | 2.24                     | 0.67              |
| 3:AC:62:VAL:CG2   | 3:AC:191:ALA:O     | 2.11                     | 0.67              |
| 5:AE:46:ALA:HB2   | 5:AE:85:ASN:HD21   | 1.57                     | 0.67              |
| 6:AF:9:ILE:HG13   | 6:AF:122:LYS:HG3   | 1.75                     | 0.67              |
| 6:AF:103:LYS:O    | 6:AF:106:ARG:HG2   | 1.94                     | 0.67              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 6:AF:156:LEU:O     | 6:AF:176:LEU:HB3   | 1.94                     | 0.67              |
| 7:AG:41:GLN:HG3    | 7:AG:42:GLY:H      | 1.60                     | 0.67              |
| 7:AG:44:GLY:CA     | 7:AG:72:ARG:HB3    | 2.24                     | 0.67              |
| 9:AK:18:ALA:HB2    | 9:AK:54:VAL:HG22   | 1.75                     | 0.67              |
| 9:AK:103:VAL:CG2   | 9:AK:104:LYS:HD3   | 2.24                     | 0.67              |
| 10:AL:31:LYS:O     | 10:AL:32:TYR:CD1   | 2.47                     | 0.67              |
| 11:AM:16:ARG:CG    | 11:AM:19:VAL:HG22  | 2.24                     | 0.67              |
| 12:AN:22:LYS:HD2   | 12:AN:23:GLY:H     | 1.59                     | 0.67              |
| 12:AN:127:ILE:HD12 | 12:AN:127:ILE:N    | 2.08                     | 0.67              |
| 13:AO:44:LEU:HD13  | 13:AO:48:VAL:CG2   | 2.23                     | 0.67              |
| 15:AQ:32:TYR:HB3   | 15:AQ:87:ASP:O     | 1.95                     | 0.67              |
| 15:AQ:87:ASP:OD2   | 15:AQ:89:VAL:HG23  | 1.94                     | 0.67              |
| 16:AR:54:LYS:N     | 16:AR:54:LYS:HE2   | 2.09                     | 0.67              |
| 16:AR:88:ILE:H     | 17:AS:52:VAL:HG22  | 1.58                     | 0.67              |
| 17:AS:33:VAL:HG12  | 17:AS:34:GLU:N     | 2.07                     | 0.67              |
| 20:AV:19:LYS:HG2   | 20:AV:39:VAL:HG12  | 1.75                     | 0.67              |
| 21:AW:4:ARG:NH2    | 21:AW:88:PHE:HE1   | 1.93                     | 0.67              |
| 22:AX:26:TYR:O     | 22:AX:67:VAL:HG21  | 1.94                     | 0.67              |
| 25:Aa:68:ARG:HH11  | 25:Aa:68:ARG:CB    | 2.07                     | 0.67              |
| 26:Ab:43:HIS:O     | 26:Ab:44:THR:HG23  | 1.93                     | 0.67              |
| 33:Ag:345:UNK:O    | 33:Ag:347:UNK:N    | 2.26                     | 0.67              |
| 34:BA:9:G:OP2      | 38:BI:121:LYS:HA   | 1.94                     | 0.67              |
| 34:BA:51:A:O2'     | 34:BA:52:G:OP2     | 2.12                     | 0.67              |
| 34:BA:529:G:N1     | 45:BP:49:ASN:HB3   | 2.10                     | 0.67              |
| 34:BA:579:G:O2'    | 34:BA:580:U:H5'    | 1.95                     | 0.67              |
| 34:BA:775:G:C2     | 34:BA:776:G:N7     | 2.62                     | 0.67              |
| 34:BA:789:U:H6     | 34:BA:789:U:H3'    | 1.57                     | 0.67              |
| 34:BA:819:A:N6     | 34:BA:1529:G:N7    | 2.42                     | 0.67              |
| 34:BA:900:A:H2'    | 34:BA:901:A:C8     | 2.29                     | 0.67              |
| 34:BA:915:A:H8     | 34:BA:915:A:O5'    | 1.77                     | 0.67              |
| 34:BA:1028:C:H2'   | 34:BA:1028(A):C:H6 | 1.58                     | 0.67              |
| 35:BF:144:ARG:HD3  | 35:BF:148:TYR:CZ   | 2.29                     | 0.67              |
| 36:BG:24:ALA:HB2   | 36:BG:32:LEU:HD12  | 1.76                     | 0.67              |
| 37:BH:10:ARG:NH1   | 37:BH:14:ARG:HB2   | 2.10                     | 0.67              |
| 38:BI:43:LEU:HB3   | 38:BI:136:MET:CE   | 2.23                     | 0.67              |
| 38:BI:51:VAL:HB    | 38:BI:52:PRO:CD    | 2.21                     | 0.67              |
| 38:BI:102:ALA:HB3  | 38:BI:106:PRO:HB2  | 1.75                     | 0.67              |
| 39:BJ:16:GLN:HG3   | 39:BJ:17:SER:N     | 2.09                     | 0.67              |
| 40:BK:38:LEU:HA    | 40:BK:41:ARG:HG3   | 1.76                     | 0.67              |
| 40:BK:64:GLN:HB3   | 40:BK:128:ALA:HB1  | 1.74                     | 0.67              |
| 40:BK:94:ARG:NH1   | 40:BK:94:ARG:HG3   | 2.09                     | 0.67              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 41:BL:36:LEU:O     | 41:BL:39:LEU:CB   | 2.42                     | 0.67              |
| 41:BL:112:LEU:HD21 | 41:BL:114:THR:CG2 | 2.22                     | 0.67              |
| 42:BM:10:ARG:HA    | 42:BM:104:ARG:HE  | 1.57                     | 0.67              |
| 42:BM:15:ALA:HB1   | 42:BM:77:ILE:CG1  | 2.24                     | 0.67              |
| 43:BN:42:THR:HG23  | 43:BN:68:HIS:HA   | 1.76                     | 0.67              |
| 46:BQ:36:LYS:HG2   | 46:BQ:56:LEU:CD2  | 2.24                     | 0.67              |
| 48:BS:42:HIS:ND1   | 48:BS:42:HIS:C    | 2.52                     | 0.67              |
| 49:BT:39:TYR:OH    | 49:BT:41:PRO:HG3  | 1.93                     | 0.67              |
| 51:BV:36:ASN:HB3   | 51:BV:40:LEU:HD21 | 1.75                     | 0.67              |
| 51:BV:74:ARG:CA    | 51:BV:79:LEU:HD11 | 2.23                     | 0.67              |
| 52:BW:40:ILE:HG13  | 52:BW:69:HIS:O    | 1.93                     | 0.67              |
| 52:BW:45:VAL:HG13  | 52:BW:64:GLU:HA   | 1.76                     | 0.67              |
| 53:BX:56:MET:HG2   | 53:BX:88:VAL:CG2  | 2.22                     | 0.67              |
| 55:BC:27:G:O2'     | 55:BC:28:G:H5'    | 1.94                     | 0.67              |
| 57:BZ:22:VAL:CG1   | 57:BZ:56:ILE:CG1  | 2.72                     | 0.67              |
| 57:BZ:81:PHE:HB2   | 57:BZ:344:ALA:CB  | 2.17                     | 0.67              |
| 57:BZ:325:PHE:HD2  | 57:BZ:330:GLN:CD  | 2.02                     | 0.67              |
| 1:AA:20:C:O2'      | 1:AA:21:A:C5'     | 2.42                     | 0.67              |
| 1:AA:126:A:C5'     | 28:Ad:47:ARG:HH12 | 2.07                     | 0.67              |
| 1:AA:573:G:O2'     | 1:AA:574:C:O5'    | 2.13                     | 0.67              |
| 1:AA:618:G:C8      | 1:AA:618(A):C:C5  | 2.81                     | 0.67              |
| 1:AA:669:G:N7      | 6:AF:54:ARG:NH1   | 2.40                     | 0.67              |
| 1:AA:752:A:H62     | 1:AA:1781:C:H1'   | 1.56                     | 0.67              |
| 1:AA:1252:G:N2     | 16:AR:37:GLU:HG3  | 2.04                     | 0.67              |
| 1:AA:1341:U:OP2    | 1:AA:1397:U:C4    | 2.47                     | 0.67              |
| 1:AA:1456:G:H1     | 1:AA:2703:C:N4    | 1.91                     | 0.67              |
| 1:AA:1518:C:N4     | 1:AA:1519:G:C8    | 2.62                     | 0.67              |
| 1:AA:1568:G:O2'    | 1:AA:1569:A:OP2   | 2.11                     | 0.67              |
| 1:AA:2046:G:OP1    | 26:Ab:18:ALA:C    | 2.38                     | 0.67              |
| 1:AA:2176:A:P      | 3:AC:222:VAL:HG23 | 2.33                     | 0.67              |
| 1:AA:2485:G:O2'    | 1:AA:2486:G:H5'   | 1.92                     | 0.67              |
| 1:AA:2575:C:H5''   | 1:AA:2576:G:OP2   | 1.94                     | 0.67              |
| 3:AC:89:ALA:HB1    | 3:AC:154:ARG:N    | 2.09                     | 0.67              |
| 3:AC:104:LEU:CD1   | 3:AC:130:ILE:HD11 | 2.23                     | 0.67              |
| 4:AD:51:VAL:HB     | 4:AD:52:ARG:NH2   | 2.09                     | 0.67              |
| 4:AD:107:ALA:N     | 4:AD:108:PRO:HD3  | 2.08                     | 0.67              |
| 5:AE:109:LYS:HG3   | 5:AE:191:PRO:CG   | 2.18                     | 0.67              |
| 6:AF:201:VAL:CG1   | 6:AF:205:ARG:HH21 | 2.07                     | 0.67              |
| 9:AK:29:LYS:O      | 9:AK:30:ILE:C     | 2.36                     | 0.67              |
| 12:AN:86:GLY:O     | 12:AN:87:LYS:HB3  | 1.94                     | 0.67              |
| 12:AN:132:VAL:HG12 | 12:AN:133:ARG:NH2 | 2.09                     | 0.67              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:AO:28:LEU:O    | 13:AO:29:LEU:C    | 2.37                     | 0.67              |
| 14:AP:33:LYS:HG2  | 14:AP:54:LEU:CD2  | 2.23                     | 0.67              |
| 14:AP:94:TYR:C    | 14:AP:99:LYS:HB2  | 2.18                     | 0.67              |
| 15:AQ:17:THR:C    | 15:AQ:19:LEU:H    | 2.00                     | 0.67              |
| 15:AQ:95:ARG:HB3  | 15:AQ:95:ARG:NH2  | 2.10                     | 0.67              |
| 15:AQ:115:ARG:NH1 | 34:BA:1463:C:OP2  | 2.27                     | 0.67              |
| 20:AV:39:VAL:O    | 20:AV:40:GLU:CB   | 2.42                     | 0.67              |
| 20:AV:40:GLU:C    | 20:AV:62:GLU:OE2  | 2.37                     | 0.67              |
| 21:AW:95:PRO:HG2  | 21:AW:131:ARG:H   | 1.59                     | 0.67              |
| 24:AZ:15:TYR:CD1  | 24:AZ:15:TYR:N    | 2.60                     | 0.67              |
| 28:Ad:47:ARG:HG2  | 28:Ad:48:LYS:N    | 2.08                     | 0.67              |
| 30:Af:25:VAL:HB   | 30:Af:34:GLN:CB   | 2.22                     | 0.67              |
| 32:AJ:90:LYS:CA   | 32:AJ:90:LYS:HE2  | 2.24                     | 0.67              |
| 32:AJ:90:LYS:HE2  | 32:AJ:90:LYS:HA   | 1.76                     | 0.67              |
| 34:BA:38:G:N2     | 34:BA:397:A:C5'   | 2.36                     | 0.67              |
| 34:BA:59:A:H4'    | 34:BA:388:G:C5'   | 2.24                     | 0.67              |
| 34:BA:366:C:H4'   | 34:BA:367:U:OP1   | 1.94                     | 0.67              |
| 34:BA:432:A:N7    | 34:BA:433:C:C5    | 2.61                     | 0.67              |
| 34:BA:832:C:H2'   | 34:BA:833:U:C6    | 2.29                     | 0.67              |
| 34:BA:958:A:C1'   | 52:BW:55:LYS:HZ3  | 1.99                     | 0.67              |
| 34:BA:1326:C:H5'' | 54:BY:12:LYS:HZ1  | 1.59                     | 0.67              |
| 34:BA:1428:A:H2'  | 34:BA:1429:C:H6   | 1.53                     | 0.67              |
| 34:BA:1476:G:H2'  | 34:BA:1477:C:C6   | 2.29                     | 0.67              |
| 35:BF:136:VAL:N   | 35:BF:139:LYS:HZ2 | 1.93                     | 0.67              |
| 38:BI:56:GLN:NE2  | 38:BI:56:GLN:H    | 1.92                     | 0.67              |
| 39:BJ:17:SER:O    | 39:BJ:20:ALA:HB3  | 1.95                     | 0.67              |
| 40:BK:70:LYS:HB3  | 40:BK:96:GLN:HG2  | 1.75                     | 0.67              |
| 44:BO:110:ASP:HB2 | 51:BV:88:LYS:HD2  | 1.75                     | 0.67              |
| 46:BQ:37:THR:HB   | 46:BQ:56:LEU:HG   | 0.75                     | 0.67              |
| 51:BV:38:GLU:O    | 51:BV:41:LYS:HB2  | 1.94                     | 0.67              |
| 56:BE:15:G:N1     | 56:BE:16:U:O4     | 2.27                     | 0.67              |
| 56:BE:15:G:H2'    | 56:BE:16:U:H5'    | 1.76                     | 0.67              |
| 57:BZ:5:LEU:CB    | 57:BZ:268:ALA:HB1 | 2.21                     | 0.67              |
| 57:BZ:81:PHE:O    | 57:BZ:344:ALA:HB1 | 1.94                     | 0.67              |
| 57:BZ:314:ASN:ND2 | 57:BZ:379:GLU:O   | 2.26                     | 0.67              |
| 1:AA:26:G:H22     | 1:AA:27:G:N2      | 1.91                     | 0.67              |
| 1:AA:128:C:C2     | 1:AA:129:C:C5     | 2.82                     | 0.67              |
| 1:AA:251:A:C4     | 1:AA:252:G:H1'    | 2.30                     | 0.67              |
| 1:AA:417:C:H2'    | 1:AA:418:G:O4'    | 1.95                     | 0.67              |
| 1:AA:703:U:H2'    | 1:AA:704:G:H1'    | 1.77                     | 0.67              |
| 1:AA:974:G:N3     | 1:AA:1186:G:N7    | 2.42                     | 0.67              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:976:C:O2      | 1:AA:977:G:C8      | 2.48                     | 0.67              |
| 1:AA:988:A:OP1     | 24:AZ:10:LYS:NZ    | 2.25                     | 0.67              |
| 1:AA:1023:U:C4     | 1:AA:1024:G:H1'    | 2.29                     | 0.67              |
| 1:AA:1092:C:H3'    | 1:AA:1092:C:H6     | 1.59                     | 0.67              |
| 1:AA:1321:A:N3     | 1:AA:1321:A:H2'    | 2.09                     | 0.67              |
| 1:AA:1532:C:N4     | 1:AA:1540:G:N1     | 2.42                     | 0.67              |
| 1:AA:2018:G:H2'    | 1:AA:2019:A:C8     | 2.30                     | 0.67              |
| 1:AA:2025:C:H2'    | 1:AA:2026:C:H6     | 1.58                     | 0.67              |
| 1:AA:2589:A:H2'    | 1:AA:2590:A:H8     | 1.58                     | 0.67              |
| 1:AA:2660:A:C8     | 1:AA:2661:G:N7     | 2.62                     | 0.67              |
| 1:AA:2747:G:N2     | 1:AA:2754:U:N3     | 2.43                     | 0.67              |
| 1:AA:2872:G:N2     | 1:AA:2873:A:N1     | 2.42                     | 0.67              |
| 4:AD:47:GLY:O      | 4:AD:49:ILE:HD12   | 1.93                     | 0.67              |
| 4:AD:50:THR:C      | 4:AD:51:VAL:HG22   | 2.19                     | 0.67              |
| 4:AD:251:GLY:CA    | 4:AD:255:LYS:HZ2   | 2.07                     | 0.67              |
| 6:AF:30:PRO:O      | 6:AF:33:LEU:CG     | 2.35                     | 0.67              |
| 6:AF:104:LYS:CG    | 6:AF:108:LYS:HZ1   | 2.03                     | 0.67              |
| 6:AF:184:TYR:HD2   | 6:AF:184:TYR:N     | 1.92                     | 0.67              |
| 7:AG:32:PRO:CB     | 7:AG:163:ALA:HA    | 2.24                     | 0.67              |
| 7:AG:59:GLU:CD     | 7:AG:152:LEU:HD13  | 2.20                     | 0.67              |
| 7:AG:151:ALA:O     | 7:AG:152:LEU:HD23  | 1.94                     | 0.67              |
| 8:AH:8:PRO:CA      | 8:AH:51:ARG:NH1    | 2.57                     | 0.67              |
| 8:AH:25:LYS:HD3    | 8:AH:27:LYS:HD2    | 1.77                     | 0.67              |
| 9:AK:104:LYS:HA    | 9:AK:117:PHE:HZ    | 1.59                     | 0.67              |
| 9:AK:127:ASP:N     | 9:AK:129:PRO:HD2   | 2.09                     | 0.67              |
| 12:AN:130:LYS:NZ   | 12:AN:132:VAL:HG13 | 2.10                     | 0.67              |
| 13:AO:3:HIS:ND1    | 13:AO:4:LEU:N      | 2.42                     | 0.67              |
| 13:AO:26:LYS:HE2   | 13:AO:70:LEU:HA    | 1.77                     | 0.67              |
| 14:AP:11:LYS:HB3   | 14:AP:15:ARG:HH22  | 1.58                     | 0.67              |
| 16:AR:81:HIS:HB3   | 16:AR:117:GLN:NE2  | 2.09                     | 0.67              |
| 16:AR:93:LYS:H     | 17:AS:10:LYS:NZ    | 1.83                     | 0.67              |
| 17:AS:14:VAL:HG11  | 17:AS:19:LYS:CG    | 2.15                     | 0.67              |
| 18:AT:63:ASP:O     | 18:AT:64:MET:O     | 2.13                     | 0.67              |
| 19:AU:7:VAL:HG22   | 23:AY:31:ARG:NH1   | 2.09                     | 0.67              |
| 20:AV:5:MET:SD     | 20:AV:33:LYS:HG2   | 2.34                     | 0.67              |
| 25:Aa:32:TYR:O     | 25:Aa:33:VAL:HG23  | 1.93                     | 0.67              |
| 25:Aa:50:VAL:O     | 25:Aa:51:ASP:CG    | 2.38                     | 0.67              |
| 27:Ac:14:THR:HG22  | 27:Ac:51:GLU:CG    | 2.21                     | 0.67              |
| 31:AI:56:ASN:HA    | 31:AI:83:TYR:HA    | 1.77                     | 0.67              |
| 32:AJ:104:VAL:HG11 | 32:AJ:127:ILE:CD1  | 1.35                     | 0.67              |
| 34:BA:427:U:C2     | 34:BA:428:G:N7     | 2.62                     | 0.67              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:435:C:H2'   | 34:BA:436:C:O4'    | 1.94                     | 0.67              |
| 34:BA:570:G:C5'   | 34:BA:820:U:H1'    | 2.19                     | 0.67              |
| 34:BA:644:G:O2'   | 34:BA:645:C:H5'    | 1.94                     | 0.67              |
| 34:BA:668:G:HO2'  | 48:BS:46:HIS:CE1   | 2.12                     | 0.67              |
| 34:BA:781:A:O2'   | 34:BA:782:A:H5'    | 1.95                     | 0.67              |
| 34:BA:829:G:O2'   | 35:BF:26:PRO:HG2   | 1.95                     | 0.67              |
| 34:BA:831:U:H2'   | 34:BA:832:C:C6     | 2.29                     | 0.67              |
| 34:BA:961:U:H2'   | 34:BA:962:C:O4'    | 1.95                     | 0.67              |
| 34:BA:1115:C:O2   | 34:BA:1186:G:C2    | 2.46                     | 0.67              |
| 34:BA:1156:G:H21  | 34:BA:1179:A:H2    | 1.42                     | 0.67              |
| 34:BA:1298:C:N4   | 40:BK:114:ARG:HB3  | 2.10                     | 0.67              |
| 35:BF:47:THR:HG23 | 35:BF:51:LEU:HD21  | 1.76                     | 0.67              |
| 35:BF:80:ILE:HD12 | 35:BF:208:ILE:HG23 | 1.74                     | 0.67              |
| 35:BF:82:ARG:CA   | 35:BF:92:TYR:HE1   | 2.07                     | 0.67              |
| 35:BF:187:LEU:CD2 | 35:BF:201:ILE:O    | 2.42                     | 0.67              |
| 36:BG:24:ALA:HB1  | 36:BG:28:GLN:CD    | 2.19                     | 0.67              |
| 37:BH:16:GLY:O    | 37:BH:18:LYS:N     | 2.28                     | 0.67              |
| 37:BH:147:ALA:CB  | 37:BH:181:MET:O    | 2.42                     | 0.67              |
| 38:BI:79:GLU:CB   | 38:BI:91:LEU:O     | 2.42                     | 0.67              |
| 38:BI:122:GLU:CG  | 38:BI:126:ARG:HG3  | 2.23                     | 0.67              |
| 39:BJ:60:PHE:CE2  | 51:BV:78:LEU:HD21  | 2.29                     | 0.67              |
| 40:BK:69:VAL:CB   | 40:BK:104:LEU:HD11 | 2.25                     | 0.67              |
| 42:BM:83:ARG:O    | 42:BM:86:VAL:HB    | 1.94                     | 0.67              |
| 44:BO:78:GLN:OE1  | 44:BO:79:SER:N     | 2.27                     | 0.67              |
| 45:BP:50:SER:O    | 45:BP:51:ALA:HB2   | 1.95                     | 0.67              |
| 53:BX:37:SER:O    | 53:BX:40:ALA:HB3   | 1.95                     | 0.67              |
| 54:BY:6:ARG:HB3   | 54:BY:15:ARG:NH2   | 2.09                     | 0.67              |
| 1:AA:10:G:H2'     | 1:AA:11:G:C8       | 2.29                     | 0.67              |
| 1:AA:84:A:H1'     | 1:AA:103:A:N6      | 2.10                     | 0.67              |
| 1:AA:107:C:H4'    | 1:AA:293:U:C1'     | 2.23                     | 0.67              |
| 1:AA:455:C:P      | 1:AA:472:A:N1      | 2.67                     | 0.67              |
| 1:AA:558:G:H5''   | 9:AK:109:LYS:HD3   | 1.76                     | 0.67              |
| 1:AA:563:G:N2     | 16:AR:34:LYS:NZ    | 2.42                     | 0.67              |
| 1:AA:566:U:C6     | 1:AA:567:A:N7      | 2.63                     | 0.67              |
| 1:AA:627:A:OP2    | 1:AA:627:A:C4'     | 2.43                     | 0.67              |
| 1:AA:740:U:P      | 1:AA:1784:A:N1     | 2.68                     | 0.67              |
| 1:AA:907:U:OP1    | 12:AN:26:TYR:CE1   | 2.47                     | 0.67              |
| 1:AA:1095:A:C5'   | 57:BZ:416:MET:HE3  | 2.25                     | 0.67              |
| 1:AA:1164:G:C6    | 1:AA:1165:U:C4     | 2.83                     | 0.67              |
| 1:AA:1213:A:O2'   | 1:AA:1239:G:O4'    | 2.12                     | 0.67              |
| 1:AA:1263:U:H5''  | 26:Ab:10:LYS:HZ3   | 1.59                     | 0.67              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 1:AA:1270:C:C1'   | 1:AA:1325:G:N7   | 2.48                     | 0.67              |
| 1:AA:1394:U:H4'   | 1:AA:1603:A:C4'  | 2.25                     | 0.67              |
| 1:AA:1439:A:C2'   | 1:AA:1440:G:H5'  | 2.24                     | 0.67              |
| 1:AA:1500:G:H2'   | 1:AA:1501:C:H6   | 1.60                     | 0.67              |
| 1:AA:1516:U:H2'   | 1:AA:1517:G:H8   | 1.58                     | 0.67              |
| 1:AA:1793:C:H42   | 1:AA:1825:A:N6   | 1.91                     | 0.67              |
| 1:AA:1832:C:C2'   | 1:AA:1833:U:H5'  | 2.25                     | 0.67              |
| 1:AA:1889:A:O4'   | 1:AA:2087:G:O4'  | 2.13                     | 0.67              |
| 1:AA:1901:A:O2'   | 4:AD:244:ARG:NH1 | 2.27                     | 0.67              |
| 1:AA:1948:G:O2'   | 1:AA:1949:G:H5'  | 1.93                     | 0.67              |
| 1:AA:1970:A:O2'   | 1:AA:1971:A:O5'  | 2.12                     | 0.67              |
| 1:AA:2178:C:H5'   | 3:AC:211:SER:CB  | 2.24                     | 0.67              |
| 1:AA:2197:U:H2'   | 1:AA:2224:G:N2   | 2.08                     | 0.67              |
| 1:AA:2218:G:H4'   | 4:AD:186:HIS:NE2 | 2.09                     | 0.67              |
| 1:AA:2246:G:C2    | 1:AA:2247:A:C6   | 2.82                     | 0.67              |
| 1:AA:2416:C:O2'   | 1:AA:2417:C:H5'' | 1.94                     | 0.67              |
| 1:AA:2440:C:C5'   | 1:AA:2587:A:H4'  | 2.23                     | 0.67              |
| 1:AA:2532:G:H2'   | 1:AA:2533:A:O4'  | 1.94                     | 0.67              |
| 1:AA:2655:G:H3'   | 1:AA:2655:G:N3   | 2.08                     | 0.67              |
| 1:AA:2731:G:N2    | 1:AA:2732:G:C2   | 2.62                     | 0.67              |
| 1:AA:2742:C:H5''  | 30:Af:35:ARG:NH1 | 2.09                     | 0.67              |
| 1:AA:2792:G:O2'   | 1:AA:2805:G:N2   | 2.27                     | 0.67              |
| 1:AA:2848:G:H22   | 1:AA:2867:G:C1'  | 2.00                     | 0.67              |
| 2:AB:78:A:O2'     | 2:AB:79:C:H5'    | 1.94                     | 0.67              |
| 2:AB:89:G:H2'     | 2:AB:89(A):A:N7  | 2.09                     | 0.67              |
| 4:AD:174:ILE:HD12 | 4:AD:174:ILE:N   | 2.09                     | 0.67              |
| 4:AD:180:GLY:O    | 4:AD:181:GLU:OE1 | 2.12                     | 0.67              |
| 6:AF:57:VAL:O     | 6:AF:58:ALA:O    | 2.13                     | 0.67              |
| 6:AF:78:ILE:HD13  | 6:AF:79:GLY:H    | 1.60                     | 0.67              |
| 6:AF:98:SER:O     | 6:AF:99:TYR:HB2  | 1.94                     | 0.67              |
| 7:AG:139:LEU:CD1  | 7:AG:142:PRO:HB3 | 2.25                     | 0.67              |
| 9:AK:7:LYS:HE3    | 9:AK:8:GLN:H     | 1.57                     | 0.67              |
| 9:AK:55:VAL:HG21  | 9:AK:127:ASP:HA  | 1.76                     | 0.67              |
| 10:AL:10:VAL:H    | 10:AL:17:ARG:CG  | 2.05                     | 0.67              |
| 10:AL:86:ILE:HG23 | 10:AL:90:GLN:O   | 1.95                     | 0.67              |
| 12:AN:6:ARG:HD3   | 12:AN:6:ARG:C    | 2.19                     | 0.67              |
| 13:AO:5:LYS:HE2   | 13:AO:5:LYS:CA   | 2.24                     | 0.67              |
| 14:AP:9:ARG:HD3   | 14:AP:12:PHE:CE2 | 2.24                     | 0.67              |
| 16:AR:84:LYS:HA   | 16:AR:84:LYS:HE2 | 1.77                     | 0.67              |
| 17:AS:60:GLU:HG3  | 17:AS:100:ARG:O  | 1.95                     | 0.67              |
| 17:AS:62:LEU:HD13 | 17:AS:98:GLU:HA  | 1.74                     | 0.67              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 19:AU:30:VAL:O     | 19:AU:77:LYS:HB3  | 1.94                     | 0.67              |
| 19:AU:49:VAL:C     | 19:AU:50:LYS:HD3  | 2.19                     | 0.67              |
| 20:AV:35:TYR:CE1   | 20:AV:65:ALA:O    | 2.47                     | 0.67              |
| 20:AV:74:PRO:HB2   | 20:AV:101:LYS:N   | 2.10                     | 0.67              |
| 21:AW:53:ILE:HG12  | 21:AW:58:VAL:CG2  | 2.22                     | 0.67              |
| 22:AX:62:LEU:O     | 22:AX:62:LEU:HD23 | 1.95                     | 0.67              |
| 22:AX:68:GLU:HB3   | 22:AX:80:HIS:C    | 2.20                     | 0.67              |
| 23:AY:2:ARG:CA     | 23:AY:5:LEU:HD13  | 2.23                     | 0.67              |
| 27:Ac:51:GLU:OE1   | 27:Ac:52:VAL:HA   | 1.95                     | 0.67              |
| 32:AJ:53:VAL:HG13  | 32:AJ:71:THR:N    | 2.09                     | 0.67              |
| 34:BA:609:A:C4     | 34:BA:610:G:C8    | 2.82                     | 0.67              |
| 34:BA:821:G:O2'    | 34:BA:822:C:H5'   | 1.94                     | 0.67              |
| 34:BA:834:C:O2'    | 34:BA:835:U:C5'   | 2.42                     | 0.67              |
| 34:BA:1002:G:O4'   | 34:BA:1002:G:OP2  | 2.12                     | 0.67              |
| 34:BA:1097:C:H2'   | 34:BA:1098:C:H6   | 1.60                     | 0.67              |
| 34:BA:1305:G:H2'   | 34:BA:1331:G:H22  | 1.58                     | 0.67              |
| 37:BH:19:LEU:C     | 37:BH:21:LEU:N    | 2.45                     | 0.67              |
| 39:BJ:6:VAL:O      | 39:BJ:6:VAL:CG1   | 2.42                     | 0.67              |
| 40:BK:143:ARG:HD3  | 40:BK:144:MET:N   | 2.10                     | 0.67              |
| 41:BL:6:ILE:HG13   | 41:BL:85:ARG:CZ   | 2.24                     | 0.67              |
| 41:BL:77:GLU:OE2   | 41:BL:78:GLN:N    | 2.28                     | 0.67              |
| 44:BO:63:LEU:HA    | 44:BO:66:LEU:HG   | 1.77                     | 0.67              |
| 44:BO:65:ALA:HB1   | 44:BO:98:LEU:CD2  | 2.22                     | 0.67              |
| 44:BO:126:ARG:C    | 44:BO:128:ALA:H   | 2.02                     | 0.67              |
| 45:BP:85:ILE:HD11  | 45:BP:98:TYR:C    | 2.19                     | 0.67              |
| 50:BU:35:VAL:CG1   | 50:BU:36:ILE:N    | 2.58                     | 0.67              |
| 52:BW:11:VAL:HG12  | 52:BW:15:LEU:CG   | 2.24                     | 0.67              |
| 52:BW:51:VAL:HG11  | 52:BW:75:ALA:HB3  | 1.75                     | 0.67              |
| 55:BC:38:A:C6      | 55:BC:39:U:C5     | 2.82                     | 0.67              |
| 56:BE:73:A:N3      | 56:BE:73:A:H3'    | 2.08                     | 0.67              |
| 57:BZ:127:ILE:H    | 57:BZ:163:VAL:C   | 2.02                     | 0.67              |
| 57:BZ:233:PRO:CG   | 57:BZ:248:ASN:HB3 | 2.24                     | 0.67              |
| 57:BZ:240:ILE:CA   | 57:BZ:286:ASP:CB  | 2.68                     | 0.67              |
| 57:BZ:250:LYS:O    | 57:BZ:274:VAL:N   | 2.20                     | 0.67              |
| 57:BZ:251:VAL:HG12 | 57:BZ:273:ILE:HA  | 0.77                     | 0.67              |
| 1:AA:1:G:N1        | 1:AA:2902:C:C6    | 2.02                     | 0.67              |
| 1:AA:38:A:H1'      | 6:AF:48:THR:HB    | 1.76                     | 0.67              |
| 1:AA:59:U:H2'      | 1:AA:60:G:O4'     | 1.95                     | 0.67              |
| 1:AA:126:A:C2'     | 1:AA:127:A:H5'    | 2.24                     | 0.67              |
| 1:AA:195:A:H2'     | 1:AA:198:C:H42    | 1.60                     | 0.67              |
| 1:AA:270:A:H2'     | 1:AA:270(A):A:C4' | 2.25                     | 0.67              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:301:G:OP1     | 1:AA:301:G:H4'    | 1.94                     | 0.67              |
| 1:AA:543:C:H2'     | 1:AA:544:C:C5     | 2.30                     | 0.67              |
| 1:AA:590:A:H2'     | 1:AA:591:C:O4'    | 1.93                     | 0.67              |
| 1:AA:722:A:H2'     | 1:AA:723:G:C8     | 2.27                     | 0.67              |
| 1:AA:814:C:OP1     | 17:AS:85:LYS:HB2  | 1.94                     | 0.67              |
| 1:AA:848:G:H21     | 1:AA:933:A:C1'    | 2.07                     | 0.67              |
| 1:AA:919:G:C4      | 1:AA:920:G:C8     | 2.82                     | 0.67              |
| 1:AA:945:A:H2'     | 1:AA:946:G:O5'    | 1.94                     | 0.67              |
| 1:AA:1037:G:O6     | 1:AA:1119:C:C4    | 2.48                     | 0.67              |
| 1:AA:1085:A:OP2    | 1:AA:1085:A:H2'   | 1.94                     | 0.67              |
| 1:AA:1102:C:H2'    | 1:AA:1102:C:O2    | 1.93                     | 0.67              |
| 1:AA:1137:G:H4'    | 9:AK:105:GLY:HA2  | 1.75                     | 0.67              |
| 1:AA:1341:U:O2'    | 19:AU:56:THR:N    | 2.28                     | 0.67              |
| 1:AA:1363:C:H2'    | 1:AA:1363:C:O2    | 1.95                     | 0.67              |
| 1:AA:1608:A:O2'    | 1:AA:1609:A:H5'   | 1.95                     | 0.67              |
| 1:AA:1675:C:H5     | 5:AE:129:HIS:CD2  | 2.13                     | 0.67              |
| 1:AA:1824:G:N3     | 1:AA:1825:A:H1'   | 2.09                     | 0.67              |
| 1:AA:1916:A:N6     | 34:BA:1409:C:O4'  | 2.28                     | 0.67              |
| 1:AA:1942:C:H3'    | 1:AA:1942:C:P     | 2.35                     | 0.67              |
| 1:AA:2187:G:H2'    | 1:AA:2188:C:C6    | 2.30                     | 0.67              |
| 1:AA:2503:A:O2'    | 1:AA:2504:U:OP1   | 2.09                     | 0.67              |
| 1:AA:2689:U:O2     | 1:AA:2713:A:OP2   | 2.12                     | 0.67              |
| 1:AA:2748:A:N7     | 1:AA:2749:A:C6    | 2.63                     | 0.67              |
| 1:AA:2876:G:H2'    | 1:AA:2877:G:H8    | 1.59                     | 0.67              |
| 2:AB:76:G:H1'      | 21:AW:75:ASN:HD21 | 1.59                     | 0.67              |
| 3:AC:60:GLY:O      | 3:AC:162:GLU:HG3  | 1.95                     | 0.67              |
| 4:AD:44:ASN:HB2    | 4:AD:217:ARG:NH2  | 2.00                     | 0.67              |
| 4:AD:177:LEU:O     | 4:AD:178:PRO:C    | 2.38                     | 0.67              |
| 4:AD:181:GLU:HG2   | 4:AD:268:ARG:NE   | 2.10                     | 0.67              |
| 5:AE:30:PRO:CA     | 5:AE:49:LEU:O     | 2.39                     | 0.67              |
| 5:AE:92:THR:HG23   | 5:AE:96:PHE:HB2   | 1.76                     | 0.67              |
| 5:AE:103:ASP:O     | 5:AE:104:VAL:CG2  | 2.43                     | 0.67              |
| 6:AF:81:PRO:HG2    | 6:AF:82:ILE:CD1   | 2.24                     | 0.67              |
| 8:AH:7:LEU:CG      | 8:AH:51:ARG:HH21  | 2.04                     | 0.67              |
| 8:AH:69:ARG:HG3    | 8:AH:69:ARG:HH21  | 1.59                     | 0.67              |
| 9:AK:4:TYR:HB2     | 16:AR:64:ARG:NH1  | 2.02                     | 0.67              |
| 9:AK:33:LEU:HD22   | 9:AK:33:LEU:C     | 2.19                     | 0.67              |
| 12:AN:101:ARG:HH11 | 12:AN:101:ARG:CG  | 2.08                     | 0.67              |
| 14:AP:92:TYR:OH    | 14:AP:93:LYS:HD3  | 1.94                     | 0.67              |
| 18:AT:42:ARG:HG3   | 18:AT:43:GLY:N    | 2.09                     | 0.67              |
| 19:AU:43:VAL:HG11  | 19:AU:51:VAL:HG22 | 1.75                     | 0.67              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 20:AV:37:VAL:HG22 | 20:AV:39:VAL:CG2   | 2.25                     | 0.67              |
| 27:Ac:25:LYS:O    | 27:Ac:26:ASN:ND2   | 2.27                     | 0.67              |
| 28:Ad:8:ASN:O     | 28:Ad:9:ARG:C      | 2.37                     | 0.67              |
| 29:Ae:16:ILE:HD11 | 29:Ae:60:LEU:HD22  | 1.76                     | 0.67              |
| 33:Ag:7:UNK:CB    | 33:Ag:144:UNK:N    | 2.56                     | 0.67              |
| 34:BA:97:U:O2'    | 34:BA:99:C:H5'     | 1.94                     | 0.67              |
| 34:BA:373:A:N7    | 34:BA:482:A:N7     | 2.42                     | 0.67              |
| 34:BA:483:C:OP2   | 34:BA:484:G:H3'    | 1.95                     | 0.67              |
| 34:BA:572:A:O5'   | 34:BA:573:A:OP2    | 2.11                     | 0.67              |
| 34:BA:1226:C:N4   | 46:BQ:104:ARG:HE   | 1.91                     | 0.67              |
| 34:BA:1396:A:O4'  | 34:BA:1398:A:H1'   | 1.94                     | 0.67              |
| 34:BA:1429:C:C2   | 34:BA:1430:C:C5    | 2.83                     | 0.67              |
| 34:BA:1454:G:H2'  | 34:BA:1455:G:H8    | 0.92                     | 0.67              |
| 34:BA:1518:A:O5'  | 34:BA:1518:A:H8    | 1.78                     | 0.67              |
| 35:BF:96:ARG:O    | 35:BF:98:LEU:HD22  | 1.94                     | 0.67              |
| 36:BG:146:ALA:C   | 36:BG:147:LYS:HD2  | 2.19                     | 0.67              |
| 38:BI:11:ILE:HD12 | 38:BI:104:ALA:HB1  | 1.75                     | 0.67              |
| 38:BI:135:THR:O   | 38:BI:139:LEU:HD12 | 1.94                     | 0.67              |
| 40:BK:79:ARG:CD   | 40:BK:84:ASN:HB3   | 2.25                     | 0.67              |
| 41:BL:82:HIS:O    | 41:BL:137:VAL:CA   | 2.41                     | 0.67              |
| 43:BN:7:LYS:O     | 43:BN:97:GLU:CB    | 2.40                     | 0.67              |
| 44:BO:21:ILE:HG22 | 44:BO:30:VAL:HG22  | 1.76                     | 0.67              |
| 44:BO:126:ARG:HB3 | 44:BO:126:ARG:HH11 | 1.60                     | 0.67              |
| 45:BP:114:LYS:O   | 45:BP:117:ARG:NH1  | 2.27                     | 0.67              |
| 52:BW:40:ILE:HG12 | 52:BW:71:LEU:HD23  | 1.77                     | 0.67              |
| 53:BX:73:HIS:O    | 53:BX:76:ALA:N     | 2.19                     | 0.67              |
| 56:BD:67:C:H3'    | 56:BD:68:C:H5'     | 1.76                     | 0.67              |
| 57:BZ:81:PHE:CB   | 57:BZ:365:HIS:NE2  | 2.40                     | 0.67              |
| 57:BZ:401:GLU:OE1 | 57:BZ:401:GLU:HA   | 1.94                     | 0.67              |
| 1:AA:331:A:H61    | 1:AA:1209:G:H2'    | 1.58                     | 0.67              |
| 1:AA:586:A:C4'    | 6:AF:89:VAL:HG21   | 2.25                     | 0.67              |
| 1:AA:778:G:C2     | 1:AA:787:U:C2      | 2.83                     | 0.67              |
| 1:AA:917:A:C8     | 1:AA:918:A:C5'     | 2.78                     | 0.67              |
| 1:AA:1007:C:H4'   | 9:AK:108:PRO:HD3   | 1.75                     | 0.67              |
| 1:AA:1279:G:H2'   | 1:AA:1280:G:C8     | 2.29                     | 0.67              |
| 1:AA:1398:C:O2'   | 1:AA:1399:C:H5'    | 1.94                     | 0.67              |
| 1:AA:1421:G:C2    | 1:AA:1422:G:N7     | 2.63                     | 0.67              |
| 1:AA:1559:G:C6    | 1:AA:1560:G:H4'    | 2.28                     | 0.67              |
| 1:AA:1608:A:H4'   | 1:AA:1609:A:OP1    | 1.93                     | 0.67              |
| 1:AA:1636:C:H1'   | 1:AA:1761:C:H1'    | 1.76                     | 0.67              |
| 1:AA:1851:U:N3    | 1:AA:1852:C:N4     | 2.43                     | 0.67              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1858:G:N7    | 1:AA:1883:G:N1    | 2.42                     | 0.67              |
| 1:AA:1951:U:H2'   | 1:AA:1953:A:O5'   | 1.95                     | 0.67              |
| 1:AA:2797:U:C4'   | 1:AA:2798:C:H4'   | 2.25                     | 0.67              |
| 1:AA:2797:U:C5'   | 1:AA:2798:C:H4'   | 2.25                     | 0.67              |
| 1:AA:2858:C:H5'   | 1:AA:2859:G:OP2   | 1.94                     | 0.67              |
| 2:AB:13:A:H61     | 2:AB:69:G:C2'     | 2.07                     | 0.67              |
| 3:AC:120:MET:HG3  | 3:AC:145:VAL:HG13 | 1.77                     | 0.67              |
| 4:AD:45:ASN:OD1   | 4:AD:50:THR:HG23  | 1.94                     | 0.67              |
| 4:AD:132:PRO:HD3  | 4:AD:190:TYR:OH   | 1.93                     | 0.67              |
| 5:AE:49:LEU:HD13  | 5:AE:76:ARG:HG2   | 1.75                     | 0.67              |
| 5:AE:50:GLY:C     | 5:AE:76:ARG:NE    | 2.46                     | 0.67              |
| 5:AE:198:VAL:CG1  | 5:AE:200:GLU:OE2  | 2.42                     | 0.67              |
| 7:AG:18:GLU:OE1   | 7:AG:19:LEU:HD12  | 1.95                     | 0.67              |
| 8:AH:87:LEU:HD21  | 8:AH:162:ILE:HG13 | 1.76                     | 0.67              |
| 11:AM:117:GLU:HG2 | 11:AM:118:GLY:H   | 1.60                     | 0.67              |
| 12:AN:66:ILE:C    | 12:AN:67:ARG:HG2  | 2.18                     | 0.67              |
| 14:AP:67:ARG:HG2  | 14:AP:67:ARG:NH2  | 2.09                     | 0.67              |
| 16:AR:8:VAL:CG2   | 16:AR:9:VAL:H     | 2.01                     | 0.67              |
| 16:AR:16:LYS:HG2  | 16:AR:20:LEU:HD21 | 1.75                     | 0.67              |
| 19:AU:43:VAL:HG12 | 19:AU:51:VAL:HG22 | 1.76                     | 0.67              |
| 20:AV:47:LYS:HD3  | 20:AV:49:VAL:CG2  | 2.19                     | 0.67              |
| 22:AX:13:GLY:C    | 22:AX:14:ARG:HD3  | 2.20                     | 0.67              |
| 27:Ac:22:ALA:HB1  | 27:Ac:39:TYR:HE2  | 1.59                     | 0.67              |
| 28:Ad:42:LEU:O    | 28:Ad:45:ALA:N    | 2.25                     | 0.67              |
| 29:Ae:55:ALA:O    | 29:Ae:58:ILE:HD12 | 1.93                     | 0.67              |
| 34:BA:80:G:C2'    | 34:BA:81:G:O4'    | 2.35                     | 0.67              |
| 34:BA:198:G:O2'   | 34:BA:199:G:H5'   | 1.95                     | 0.67              |
| 34:BA:262:A:C2'   | 34:BA:263:A:C8    | 2.74                     | 0.67              |
| 34:BA:295:C:N4    | 34:BA:303:A:N1    | 2.43                     | 0.67              |
| 34:BA:315:A:N1    | 34:BA:330:C:C6    | 2.62                     | 0.67              |
| 34:BA:829:G:O2'   | 35:BF:26:PRO:CG   | 2.43                     | 0.67              |
| 34:BA:872:A:H2'   | 34:BA:873:A:C5'   | 2.24                     | 0.67              |
| 34:BA:940:C:H2'   | 34:BA:941:G:H8    | 1.60                     | 0.67              |
| 34:BA:959:A:C3'   | 34:BA:960:U:H5''  | 2.18                     | 0.67              |
| 34:BA:1049:U:H1'  | 34:BA:1201:A:C8   | 2.30                     | 0.67              |
| 34:BA:1231:G:OP1  | 42:BM:126:SER:OG  | 2.13                     | 0.67              |
| 34:BA:1309:G:C5   | 34:BA:1330:U:C4   | 2.83                     | 0.67              |
| 34:BA:1389:C:O2'  | 34:BA:1390:U:H5'  | 1.95                     | 0.67              |
| 34:BA:1462:G:C2'  | 34:BA:1463:C:H5'  | 2.25                     | 0.67              |
| 35:BF:12:GLU:C    | 35:BF:14:GLY:H    | 2.01                     | 0.67              |
| 35:BF:80:ILE:HD13 | 35:BF:211:ILE:CG2 | 2.25                     | 0.67              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BF:219:VAL:CG1  | 35:BF:223:ILE:HD11 | 2.14                     | 0.67              |
| 36:BG:118:GLN:O    | 36:BG:121:ALA:HB3  | 1.94                     | 0.67              |
| 37:BH:58:LEU:CD1   | 37:BH:59:ARG:HH11  | 2.07                     | 0.67              |
| 41:BL:88:LYS:NZ    | 41:BL:88:LYS:N     | 2.42                     | 0.67              |
| 41:BL:109:ILE:HG13 | 41:BL:111:ILE:HD11 | 1.77                     | 0.67              |
| 44:BO:102:GLY:HA2  | 44:BO:105:VAL:CG2  | 2.24                     | 0.67              |
| 44:BO:106:LYS:HG2  | 44:BO:107:SER:H    | 1.59                     | 0.67              |
| 51:BV:87:ARG:O     | 51:BV:88:LYS:C     | 2.37                     | 0.67              |
| 52:BW:11:VAL:HG12  | 52:BW:15:LEU:HD12  | 1.76                     | 0.67              |
| 56:BD:5:G:C4       | 56:BD:69:G:C4      | 2.83                     | 0.67              |
| 56:BE:72:C:C2'     | 56:BE:73:A:H5''    | 2.25                     | 0.67              |
| 57:BZ:67:ASP:HB3   | 57:BZ:191:VAL:HG22 | 1.76                     | 0.67              |
| 57:BZ:82:GLY:CA    | 57:BZ:361:ARG:CD   | 2.33                     | 0.67              |
| 57:BZ:398:GLU:OE1  | 57:BZ:444:PRO:HB2  | 1.92                     | 0.67              |
| 1:AA:2:G:C2        | 1:AA:2902:C:C6     | 2.83                     | 0.67              |
| 1:AA:5:A:O2'       | 9:AK:134:ARG:NH1   | 2.26                     | 0.67              |
| 1:AA:375:C:H2'     | 1:AA:376:C:C6      | 2.29                     | 0.67              |
| 1:AA:388:G:N2      | 1:AA:390:A:C2      | 2.63                     | 0.67              |
| 1:AA:565:C:H2'     | 1:AA:565:C:O2      | 1.95                     | 0.67              |
| 1:AA:572:A:H2      | 1:AA:2033:A:C2     | 2.12                     | 0.67              |
| 1:AA:717:G:C2      | 1:AA:718:A:H1'     | 2.29                     | 0.67              |
| 1:AA:728:G:C6      | 1:AA:762:U:C2'     | 2.78                     | 0.67              |
| 1:AA:821:A:C8      | 1:AA:946:G:C5      | 2.83                     | 0.67              |
| 1:AA:824:A:H3'     | 1:AA:825:C:C5      | 2.29                     | 0.67              |
| 1:AA:832:G:OP1     | 11:AM:36:LYS:NZ    | 2.28                     | 0.67              |
| 1:AA:864:G:H2'     | 1:AA:865:C:O4'     | 1.94                     | 0.67              |
| 1:AA:878:A:H2'     | 1:AA:878:A:N3      | 2.09                     | 0.67              |
| 1:AA:988:A:H4'     | 1:AA:1155:A:C2     | 2.25                     | 0.67              |
| 1:AA:993:G:H1'     | 17:AS:91:TYR:HE2   | 1.54                     | 0.67              |
| 1:AA:1036:G:OP1    | 8:AH:59:ARG:CD     | 2.42                     | 0.67              |
| 1:AA:1183:G:OP2    | 1:AA:1183:G:O3'    | 2.13                     | 0.67              |
| 1:AA:1225:C:O5'    | 17:AS:87:HIS:HE1   | 1.77                     | 0.67              |
| 1:AA:1339:G:C5'    | 19:AU:16:LYS:HD3   | 2.23                     | 0.67              |
| 1:AA:1428:C:O2'    | 1:AA:1429:G:OP1    | 2.12                     | 0.67              |
| 1:AA:1538:G:H1     | 1:AA:1539:G:N2     | 1.92                     | 0.67              |
| 1:AA:1786:A:C4'    | 1:AA:1938:A:H61    | 2.05                     | 0.67              |
| 1:AA:1908:C:O2'    | 1:AA:1909:C:H5'    | 1.94                     | 0.67              |
| 1:AA:1917:U:O4     | 34:BA:1409:C:H5'   | 1.94                     | 0.67              |
| 1:AA:2017:U:O2'    | 26:Ab:8:LYS:O      | 2.03                     | 0.67              |
| 1:AA:2176:A:HO2'   | 3:AC:213:TYR:HB2   | 1.60                     | 0.67              |
| 1:AA:2405:G:O2'    | 1:AA:2406:U:H5''   | 1.95                     | 0.67              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:2542:A:C4'    | 1:AA:2543:G:OP1    | 2.41                     | 0.67              |
| 1:AA:2630:G:H5'    | 1:AA:2631:G:OP2    | 1.94                     | 0.67              |
| 1:AA:2849:U:H3'    | 1:AA:2849:U:H6     | 1.58                     | 0.67              |
| 3:AC:11:LEU:O      | 3:AC:14:VAL:HB     | 1.94                     | 0.67              |
| 3:AC:52:ARG:HD3    | 55:BC:62:C:O4'     | 1.95                     | 0.67              |
| 4:AD:7:LYS:HE2     | 4:AD:25:THR:CB     | 2.24                     | 0.67              |
| 5:AE:36:ARG:O      | 5:AE:44:TYR:CD2    | 2.48                     | 0.67              |
| 6:AF:64:ILE:CG2    | 6:AF:78:ILE:HB     | 2.24                     | 0.67              |
| 6:AF:158:THR:HG23  | 6:AF:159:GLY:N     | 2.09                     | 0.67              |
| 7:AG:9:ARG:HG2     | 7:AG:13:GLU:OE1    | 1.95                     | 0.67              |
| 7:AG:16:ARG:HB3    | 7:AG:17:PRO:CD     | 2.25                     | 0.67              |
| 8:AH:29:PRO:CD     | 8:AH:79:VAL:O      | 2.42                     | 0.67              |
| 10:AL:10:VAL:HG12  | 10:AL:17:ARG:C     | 2.20                     | 0.67              |
| 10:AL:98:VAL:O     | 10:AL:98:VAL:HG23  | 1.93                     | 0.67              |
| 13:AO:113:LEU:HD13 | 13:AO:114:VAL:H    | 1.58                     | 0.67              |
| 15:AQ:20:PRO:HB3   | 15:AQ:22:PHE:CE1   | 2.30                     | 0.67              |
| 17:AS:62:LEU:CD2   | 17:AS:99:ILE:H     | 2.04                     | 0.67              |
| 20:AV:44:ILE:O     | 20:AV:44:ILE:HG22  | 1.93                     | 0.67              |
| 20:AV:72:VAL:C     | 20:AV:73:ARG:HG3   | 2.20                     | 0.67              |
| 22:AX:31:VAL:HG11  | 22:AX:67:VAL:HG22  | 1.75                     | 0.67              |
| 26:Ab:6:VAL:O      | 26:Ab:6:VAL:HG13   | 1.94                     | 0.67              |
| 27:Ac:20:ASN:HD22  | 27:Ac:41:PRO:CB    | 1.98                     | 0.67              |
| 31:AI:51:LEU:CB    | 31:AI:90:ALA:HB2   | 2.25                     | 0.67              |
| 32:AJ:17:ALA:CB    | 32:AJ:42:ASN:CG    | 2.68                     | 0.67              |
| 32:AJ:104:VAL:HG13 | 32:AJ:127:ILE:CG1  | 1.99                     | 0.67              |
| 34:BA:255:G:O4'    | 50:BU:16:GLN:HB2   | 1.95                     | 0.67              |
| 34:BA:390:C:H2'    | 34:BA:391:G:H8     | 1.60                     | 0.67              |
| 34:BA:516:U:C4     | 34:BA:517:G:N1     | 2.62                     | 0.67              |
| 34:BA:592:G:C2'    | 34:BA:593:G:H5'    | 2.25                     | 0.67              |
| 34:BA:742:G:H2'    | 34:BA:743:U:O4'    | 1.94                     | 0.67              |
| 34:BA:1116:C:H6    | 34:BA:1116:C:O5'   | 1.78                     | 0.67              |
| 34:BA:1163:C:C4    | 34:BA:1174:G:N1    | 2.63                     | 0.67              |
| 34:BA:1283:G:C2'   | 34:BA:1284:C:H5'   | 2.25                     | 0.67              |
| 34:BA:1367:C:OP1   | 42:BM:115:GLY:N    | 2.27                     | 0.67              |
| 36:BG:124:ILE:HG12 | 36:BG:130:VAL:HG22 | 1.75                     | 0.67              |
| 37:BH:12:CYS:HB3   | 37:BH:31:CYS:O     | 1.95                     | 0.67              |
| 37:BH:129:ASN:ND2  | 37:BH:144:ASP:CG   | 2.53                     | 0.67              |
| 37:BH:195:ALA:O    | 37:BH:196:LEU:HD12 | 1.95                     | 0.67              |
| 38:BI:76:ILE:HG21  | 38:BI:142:LEU:CB   | 2.23                     | 0.67              |
| 38:BI:79:GLU:CB    | 38:BI:92:LYS:HA    | 2.22                     | 0.67              |
| 39:BJ:84:ASN:O     | 39:BJ:86:ARG:N     | 2.28                     | 0.67              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 41:BL:107:LEU:HD23 | 41:BL:107:LEU:N   | 2.08                     | 0.67              |
| 42:BM:6:GLY:CA     | 42:BM:83:ARG:HB3  | 2.23                     | 0.67              |
| 42:BM:77:ILE:O     | 42:BM:81:ILE:HG13 | 1.95                     | 0.67              |
| 45:BP:56:ALA:CB    | 45:BP:68:ALA:O    | 2.36                     | 0.67              |
| 47:BR:13:THR:O     | 47:BR:14:PRO:C    | 2.37                     | 0.67              |
| 47:BR:22:THR:O     | 47:BR:23:ARG:HG2  | 1.94                     | 0.67              |
| 50:BU:21:VAL:HG22  | 50:BU:43:LEU:HA   | 1.76                     | 0.67              |
| 51:BV:66:LEU:CD1   | 51:BV:67:ALA:N    | 2.52                     | 0.67              |
| 52:BW:30:LEU:CD2   | 52:BW:50:ALA:HB2  | 2.25                     | 0.67              |
| 53:BX:90:GLN:O     | 53:BX:93:GLU:HB2  | 1.94                     | 0.67              |
| 56:BD:55:U:C5      | 56:BD:57:G:H5'    | 2.30                     | 0.67              |
| 57:BZ:520:GLU:CD   | 57:BZ:593:THR:CA  | 2.59                     | 0.67              |
| 1:AA:172:C:N1      | 1:AA:173:G:C8     | 2.62                     | 0.67              |
| 1:AA:270(B):A:H1'  | 1:AA:270(C):C:C6  | 2.30                     | 0.67              |
| 1:AA:336:C:H2'     | 1:AA:337:C:C5'    | 2.25                     | 0.67              |
| 1:AA:408:G:H8      | 1:AA:408:G:O5'    | 1.76                     | 0.67              |
| 1:AA:551:G:O5'     | 1:AA:1220:A:H2    | 1.77                     | 0.67              |
| 1:AA:638:G:H2'     | 1:AA:639:U:C5'    | 2.24                     | 0.67              |
| 1:AA:654:A:H2'     | 1:AA:654:A:N3     | 2.10                     | 0.67              |
| 1:AA:811:U:OP2     | 11:AM:28:GLY:HA3  | 1.95                     | 0.67              |
| 1:AA:1036:G:C6     | 1:AA:1120:G:C6    | 2.68                     | 0.67              |
| 1:AA:1059:G:C1'    | 32:AJ:75:SER:N    | 2.58                     | 0.67              |
| 1:AA:1224:G:H2'    | 17:AS:87:HIS:CD2  | 2.29                     | 0.67              |
| 1:AA:1357:U:H2'    | 1:AA:1358:G:O4'   | 1.95                     | 0.67              |
| 1:AA:1688:U:N3     | 1:AA:1700:A:H5''  | 2.10                     | 0.67              |
| 1:AA:1838:C:H2'    | 1:AA:1838:C:O2    | 1.95                     | 0.67              |
| 1:AA:1943:U:H1'    | 1:AA:1945:G:H5''  | 1.75                     | 0.67              |
| 1:AA:1949:G:H2'    | 1:AA:1950:G:O4'   | 1.94                     | 0.67              |
| 1:AA:2031:A:H62    | 1:AA:2498:C:C1'   | 2.08                     | 0.67              |
| 1:AA:2049:G:N2     | 1:AA:2620:C:C2    | 2.63                     | 0.67              |
| 1:AA:2592:G:C6     | 1:AA:2593:U:C4    | 2.83                     | 0.67              |
| 1:AA:2863:C:O2'    | 1:AA:2864:G:H5'   | 1.95                     | 0.67              |
| 3:AC:49:ILE:HG13   | 3:AC:51:PRO:HD3   | 1.77                     | 0.67              |
| 3:AC:211:SER:HB2   | 3:AC:213:TYR:CZ   | 2.29                     | 0.67              |
| 4:AD:243:GLY:O     | 4:AD:244:ARG:CB   | 2.42                     | 0.67              |
| 5:AE:33:VAL:CG1    | 5:AE:48:GLN:HA    | 2.24                     | 0.67              |
| 5:AE:151:TYR:CZ    | 5:AE:152:LYS:HG3  | 2.30                     | 0.67              |
| 5:AE:171:GLU:O     | 5:AE:184:VAL:HG12 | 1.95                     | 0.67              |
| 6:AF:137:LYS:O     | 6:AF:140:LEU:HB3  | 1.95                     | 0.67              |
| 7:AG:11:TYR:O      | 7:AG:15:VAL:HG22  | 1.95                     | 0.67              |
| 7:AG:94:LEU:HB2    | 7:AG:99:MET:CE    | 2.25                     | 0.67              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:AG:131:TYR:HE1  | 7:AG:133:LEU:O    | 1.77                     | 0.67              |
| 7:AG:135:LEU:CD1  | 7:AG:137:GLU:H    | 2.08                     | 0.67              |
| 11:AM:122:PRO:HB2 | 11:AM:138:LEU:CB  | 2.25                     | 0.67              |
| 11:AM:126:VAL:HA  | 11:AM:146:VAL:H   | 1.59                     | 0.67              |
| 12:AN:85:LYS:HD2  | 12:AN:86:GLY:H    | 1.60                     | 0.67              |
| 13:AO:33:ARG:HA   | 13:AO:115:GLU:CB  | 2.25                     | 0.67              |
| 13:AO:37:THR:O    | 13:AO:40:LYS:HB2  | 1.95                     | 0.67              |
| 13:AO:39:PRO:O    | 13:AO:40:LYS:C    | 2.36                     | 0.67              |
| 14:AP:65:VAL:CG2  | 14:AP:66:ALA:N    | 2.58                     | 0.67              |
| 15:AQ:50:ILE:HB   | 15:AQ:66:VAL:HB   | 0.84                     | 0.67              |
| 15:AQ:70:VAL:HB   | 15:AQ:74:ARG:HD3  | 1.77                     | 0.67              |
| 16:AR:19:LYS:O    | 16:AR:20:LEU:C    | 2.38                     | 0.67              |
| 16:AR:40:PHE:HD2  | 17:AS:78:LYS:HE2  | 1.60                     | 0.67              |
| 16:AR:65:ILE:HD12 | 16:AR:96:ALA:CB   | 2.21                     | 0.67              |
| 16:AR:84:LYS:HE2  | 16:AR:84:LYS:CA   | 2.25                     | 0.67              |
| 18:AT:59:VAL:HG21 | 18:AT:66:GLU:HB2  | 1.77                     | 0.67              |
| 20:AV:41:GLY:O    | 20:AV:42:VAL:HG13 | 1.95                     | 0.67              |
| 21:AW:179:ASP:OD2 | 56:BD:56:C:H5''   | 1.95                     | 0.67              |
| 22:AX:4:LYS:HZ1   | 56:BE:75:C:H2'    | 0.84                     | 0.67              |
| 22:AX:40:GLN:HB3  | 22:AX:45:PHE:CD1  | 2.30                     | 0.67              |
| 28:Ad:31:LEU:O    | 28:Ad:35:ARG:HG3  | 1.95                     | 0.67              |
| 29:Ae:60:LEU:HD23 | 29:Ae:61:LEU:N    | 2.09                     | 0.67              |
| 34:BA:13:U:H5'    | 34:BA:14:U:OP2    | 1.95                     | 0.67              |
| 34:BA:55:A:H2'    | 34:BA:56:U:C5'    | 2.23                     | 0.67              |
| 34:BA:129(A):G:N2 | 34:BA:191(A):G:C8 | 2.63                     | 0.67              |
| 34:BA:189:U:C4    | 50:BU:72:ARG:NH2  | 2.63                     | 0.67              |
| 34:BA:292:G:C5    | 34:BA:293:G:H1'   | 2.29                     | 0.67              |
| 34:BA:1100:C:OP2  | 35:BF:98:LEU:HD21 | 1.95                     | 0.67              |
| 34:BA:1152:A:H2'  | 34:BA:1153:C:H5'  | 1.77                     | 0.67              |
| 34:BA:1228:C:OP1  | 46:BQ:115:LYS:CB  | 2.41                     | 0.67              |
| 34:BA:1230:C:H5'  | 56:BE:30:G:C5'    | 2.25                     | 0.67              |
| 34:BA:1309:G:C2   | 34:BA:1328:C:C5   | 2.81                     | 0.67              |
| 34:BA:1407:C:H2'  | 34:BA:1408:A:C5'  | 2.24                     | 0.67              |
| 34:BA:1452:C:O4'  | 34:BA:1453:G:N2   | 2.27                     | 0.67              |
| 35:BF:55:PHE:HE2  | 35:BF:218:ALA:HA  | 1.60                     | 0.67              |
| 35:BF:101:MET:HA  | 35:BF:108:ILE:CG1 | 2.25                     | 0.67              |
| 37:BH:47:ARG:HB2  | 37:BH:47:ARG:HH11 | 1.60                     | 0.67              |
| 38:BI:52:PRO:O    | 38:BI:55:VAL:CB   | 2.37                     | 0.67              |
| 39:BJ:50:TYR:OH   | 51:BV:77:GLY:CA   | 2.43                     | 0.67              |
| 41:BL:48:TYR:CD1  | 41:BL:48:TYR:C    | 2.73                     | 0.67              |
| 43:BN:52:GLY:H    | 43:BN:59:SER:HB2  | 1.59                     | 0.67              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 46:BQ:108:ARG:HH11 | 46:BQ:108:ARG:CA  | 2.03                     | 0.67              |
| 51:BV:66:LEU:HD12  | 51:BV:67:ALA:CA   | 2.25                     | 0.67              |
| 57:BZ:136:ARG:HG3  | 57:BZ:139:TRP:CB  | 2.16                     | 0.67              |
| 57:BZ:313:VAL:O    | 57:BZ:315:THR:N   | 2.25                     | 0.67              |
| 57:BZ:580:VAL:HG12 | 57:BZ:585:ILE:CD1 | 2.24                     | 0.67              |
| 1:AA:76:C:H4'      | 23:AY:54:ARG:HH21 | 1.60                     | 0.67              |
| 1:AA:80:G:O4'      | 1:AA:347:A:N6     | 2.28                     | 0.67              |
| 1:AA:91:A:C2       | 1:AA:92:G:H5'     | 2.30                     | 0.67              |
| 1:AA:370:G:N3      | 1:AA:424:G:N7     | 2.43                     | 0.67              |
| 1:AA:457:A:H1'     | 1:AA:459:U:H3     | 1.56                     | 0.67              |
| 1:AA:491:G:C2      | 1:AA:492:A:C4     | 2.83                     | 0.67              |
| 1:AA:609:A:N1      | 1:AA:619:G:N3     | 2.42                     | 0.67              |
| 1:AA:692:C:O2'     | 1:AA:693:C:H5'    | 1.95                     | 0.67              |
| 1:AA:721:C:C2      | 1:AA:722:A:C8     | 2.82                     | 0.67              |
| 1:AA:740:U:H1'     | 1:AA:1784:A:C8    | 2.29                     | 0.67              |
| 1:AA:846:C:H1'     | 1:AA:847:U:C5     | 2.30                     | 0.67              |
| 1:AA:1059:G:C3'    | 32:AJ:74:ALA:H    | 2.08                     | 0.67              |
| 1:AA:1064:C:C2     | 1:AA:1065:U:C6    | 2.83                     | 0.67              |
| 1:AA:1080:C:H2'    | 1:AA:1081:U:C6    | 2.30                     | 0.67              |
| 1:AA:1225:C:O5'    | 17:AS:87:HIS:CE1  | 2.47                     | 0.67              |
| 1:AA:1491:G:N1     | 1:AA:1493:C:N4    | 2.43                     | 0.67              |
| 1:AA:1531:C:O2     | 1:AA:1532:C:H5    | 1.76                     | 0.67              |
| 1:AA:2152:G:H5'    | 3:AC:2:LYS:C      | 2.19                     | 0.67              |
| 1:AA:2280:G:C2     | 1:AA:2281:C:C5    | 2.83                     | 0.67              |
| 1:AA:2394:C:OP1    | 11:AM:57:THR:HG23 | 1.94                     | 0.67              |
| 1:AA:2507:C:C2     | 1:AA:2583:G:N3    | 2.63                     | 0.67              |
| 1:AA:2516:G:H2'    | 1:AA:2517:C:C6    | 2.30                     | 0.67              |
| 1:AA:2660:A:N7     | 1:AA:2661:G:C6    | 2.63                     | 0.67              |
| 1:AA:2678:C:C2     | 1:AA:2679:A:C8    | 2.83                     | 0.67              |
| 1:AA:2875:C:H2'    | 1:AA:2876:G:O4'   | 1.95                     | 0.67              |
| 1:AA:2876:G:P      | 15:AQ:2:ASN:HB3   | 2.35                     | 0.67              |
| 4:AD:23:GLU:HB3    | 4:AD:204:ILE:HG13 | 1.76                     | 0.67              |
| 4:AD:32:SER:O      | 4:AD:33:LEU:O     | 2.13                     | 0.67              |
| 4:AD:210:GLY:N     | 4:AD:213:ARG:HE   | 1.92                     | 0.67              |
| 5:AE:85:ASN:C      | 5:AE:87:GLU:H     | 2.03                     | 0.67              |
| 7:AG:40:ASN:ND2    | 7:AG:41:GLN:N     | 2.42                     | 0.67              |
| 8:AH:87:LEU:H      | 8:AH:132:ARG:CB   | 2.08                     | 0.67              |
| 9:AK:16:ILE:O      | 9:AK:54:VAL:HG23  | 1.94                     | 0.67              |
| 9:AK:95:PRO:O      | 9:AK:98:VAL:HG23  | 1.94                     | 0.67              |
| 10:AL:106:LEU:HD22 | 15:AQ:39:ARG:CZ   | 2.25                     | 0.67              |
| 11:AM:56:SER:HB3   | 29:Ae:13:ARG:NE   | 2.10                     | 0.67              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 11:AM:73:GLY:HA2   | 11:AM:111:ARG:CZ  | 2.24                     | 0.67              |
| 11:AM:74:GLU:CB    | 11:AM:107:LYS:HZ2 | 2.07                     | 0.67              |
| 14:AP:24:LEU:HG    | 14:AP:40:ILE:O    | 1.94                     | 0.67              |
| 14:AP:28:VAL:HA    | 14:AP:37:ALA:HB2  | 1.77                     | 0.67              |
| 15:AQ:15:VAL:CG1   | 15:AQ:81:PRO:HB3  | 2.24                     | 0.67              |
| 17:AS:30:GLY:O     | 17:AS:31:ALA:O    | 2.13                     | 0.67              |
| 17:AS:34:GLU:O     | 17:AS:35:LEU:HD12 | 1.94                     | 0.67              |
| 17:AS:61:VAL:CG1   | 17:AS:62:LEU:N    | 2.56                     | 0.67              |
| 18:AT:16:LYS:N     | 18:AT:16:LYS:HD3  | 2.05                     | 0.67              |
| 19:AU:16:LYS:H     | 19:AU:16:LYS:CE   | 2.08                     | 0.67              |
| 20:AV:36:ALA:HA    | 20:AV:64:GLU:HB2  | 1.77                     | 0.67              |
| 21:AW:116:VAL:CG2  | 21:AW:145:GLU:HG2 | 2.25                     | 0.67              |
| 25:Aa:58:ARG:HD3   | 25:Aa:59:PHE:CE2  | 2.30                     | 0.67              |
| 27:Ac:48:VAL:CG1   | 27:Ac:49:HIS:H    | 2.03                     | 0.67              |
| 29:Ae:26:LYS:CA    | 29:Ae:47:LYS:HG2  | 2.24                     | 0.67              |
| 34:BA:194:C:H5''   | 53:BX:65:LYS:NZ   | 2.09                     | 0.67              |
| 34:BA:286:G:C5     | 34:BA:287:U:C5    | 2.83                     | 0.67              |
| 34:BA:300:A:H2'    | 34:BA:301:G:H5'   | 1.77                     | 0.67              |
| 34:BA:380:G:N2     | 34:BA:382:A:H3'   | 2.10                     | 0.67              |
| 34:BA:451:A:H61    | 34:BA:480:U:H2'   | 1.60                     | 0.67              |
| 34:BA:558:G:H2'    | 34:BA:559:A:C2    | 2.28                     | 0.67              |
| 34:BA:617:G:H4'    | 49:BT:44:THR:OG1  | 1.94                     | 0.67              |
| 34:BA:791:G:H2'    | 34:BA:792:A:C8    | 2.29                     | 0.67              |
| 34:BA:795:C:O5'    | 34:BA:795:C:H6    | 1.77                     | 0.67              |
| 34:BA:824:C:O4'    | 41:BL:1:MET:N     | 2.26                     | 0.67              |
| 34:BA:990:C:H2'    | 34:BA:991:U:C6    | 2.30                     | 0.67              |
| 35:BF:91:PRO:HB3   | 35:BF:152:PHE:CE1 | 2.30                     | 0.67              |
| 36:BG:38:ARG:HB2   | 36:BG:94:LEU:CD2  | 2.24                     | 0.67              |
| 37:BH:93:PHE:CA    | 37:BH:96:LEU:HD12 | 2.21                     | 0.67              |
| 38:BI:140:ARG:HB3  | 38:BI:140:ARG:NH1 | 2.10                     | 0.67              |
| 38:BI:152:ARG:HH21 | 41:BL:44:PHE:H    | 1.41                     | 0.67              |
| 39:BJ:81:ILE:O     | 39:BJ:83:ASP:N    | 2.27                     | 0.67              |
| 40:BK:5:ARG:HD2    | 40:BK:5:ARG:C     | 2.20                     | 0.67              |
| 43:BN:24:VAL:CG2   | 43:BN:72:VAL:HG13 | 2.25                     | 0.67              |
| 44:BO:45:GLY:HA3   | 44:BO:55:LYS:HB3  | 1.76                     | 0.67              |
| 45:BP:117:ARG:HH21 | 45:BP:124:LYS:CA  | 1.97                     | 0.67              |
| 46:BQ:16:ASP:OD2   | 46:BQ:17:VAL:HG23 | 1.94                     | 0.67              |
| 46:BQ:64:TRP:CZ2   | 46:BQ:66:LEU:HD22 | 2.28                     | 0.67              |
| 48:BS:62:GLN:HA    | 48:BS:65:ARG:NH1  | 2.09                     | 0.67              |
| 49:BT:32:TYR:N     | 49:BT:32:TYR:CD1  | 2.62                     | 0.67              |
| 52:BW:10:PHE:O     | 52:BW:41:VAL:HG22 | 1.95                     | 0.67              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 56:BE:2:C:C5      | 56:BE:70:G:C5     | 2.82                     | 0.67              |
| 57:BZ:211:GLN:HB2 | 57:BZ:223:ILE:CG2 | 2.25                     | 0.67              |
| 1:AA:204:A:OP1    | 1:AA:206:U:O2     | 2.13                     | 0.66              |
| 1:AA:450:G:H5'    | 6:AF:52:LYS:CD    | 2.23                     | 0.66              |
| 1:AA:469:G:H1     | 28:Ad:40:TRP:NE1  | 1.93                     | 0.66              |
| 1:AA:659:C:O2'    | 1:AA:660:G:H5'    | 1.93                     | 0.66              |
| 1:AA:728:G:H1'    | 1:AA:729:G:C8     | 2.29                     | 0.66              |
| 1:AA:764:A:OP1    | 4:AD:211:ARG:HA   | 1.94                     | 0.66              |
| 1:AA:774:A:O2'    | 1:AA:775:G:H8     | 1.77                     | 0.66              |
| 1:AA:1069:A:N7    | 1:AA:1073:A:N7    | 2.43                     | 0.66              |
| 1:AA:1263:U:H5    | 1:AA:1265:A:H61   | 1.40                     | 0.66              |
| 1:AA:1373:A:H2'   | 1:AA:1374:G:C8    | 2.30                     | 0.66              |
| 1:AA:1386:C:H2'   | 1:AA:1387:C:C6    | 2.30                     | 0.66              |
| 1:AA:1886:C:C2    | 1:AA:1887:C:C5    | 2.82                     | 0.66              |
| 1:AA:1944:U:O4    | 57:BZ:543:LEU:CD2 | 2.43                     | 0.66              |
| 1:AA:2020:A:OP2   | 16:AR:27:LEU:CD1  | 2.42                     | 0.66              |
| 1:AA:2041:U:C2    | 1:AA:2042:A:C8    | 2.82                     | 0.66              |
| 1:AA:2152:G:OP1   | 3:AC:3:HIS:O      | 2.13                     | 0.66              |
| 1:AA:2227:A:H5''  | 4:AD:260:ARG:CD   | 2.25                     | 0.66              |
| 1:AA:2394:C:N4    | 1:AA:2422:A:N6    | 2.43                     | 0.66              |
| 1:AA:2437:U:H2'   | 1:AA:2438:U:C6    | 2.30                     | 0.66              |
| 1:AA:2568:C:H2'   | 1:AA:2569:G:C5'   | 2.24                     | 0.66              |
| 1:AA:2619:C:C2'   | 1:AA:2620:C:O5'   | 2.43                     | 0.66              |
| 1:AA:2809:A:O4'   | 1:AA:2811:G:N7    | 2.28                     | 0.66              |
| 1:AA:2844:G:H2'   | 1:AA:2844:G:N3    | 2.09                     | 0.66              |
| 2:AB:82:G:N3      | 2:AB:83:G:C8      | 2.64                     | 0.66              |
| 4:AD:260:ARG:CG   | 4:AD:260:ARG:HH11 | 2.08                     | 0.66              |
| 5:AE:156:MET:SD   | 5:AE:157:ALA:N    | 2.67                     | 0.66              |
| 6:AF:7:TYR:H      | 6:AF:20:LEU:HD22  | 1.59                     | 0.66              |
| 6:AF:117:ARG:NE   | 6:AF:190:GLU:O    | 2.29                     | 0.66              |
| 7:AG:56:ALA:O     | 7:AG:59:GLU:HG3   | 1.95                     | 0.66              |
| 7:AG:118:ARG:HG3  | 7:AG:119:GLY:N    | 2.10                     | 0.66              |
| 8:AH:65:HIS:O     | 8:AH:69:ARG:HG2   | 1.95                     | 0.66              |
| 8:AH:97:ARG:HB3   | 8:AH:97:ARG:NH2   | 2.11                     | 0.66              |
| 9:AK:85:ILE:HB    | 9:AK:90:MET:SD    | 2.34                     | 0.66              |
| 9:AK:104:LYS:HD3  | 9:AK:117:PHE:CE2  | 2.29                     | 0.66              |
| 10:AL:6:THR:HA    | 10:AL:7:TYR:HD1   | 1.55                     | 0.66              |
| 11:AM:117:GLU:HG2 | 11:AM:118:GLY:N   | 2.10                     | 0.66              |
| 12:AN:45:GLN:O    | 12:AN:46:GLN:C    | 2.38                     | 0.66              |
| 13:AO:79:LEU:HD23 | 13:AO:80:PHE:HA   | 1.77                     | 0.66              |
| 15:AQ:71:GLY:N    | 15:AQ:74:ARG:NH1  | 2.43                     | 0.66              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 16:AR:80:ILE:O    | 16:AR:84:LYS:HG2   | 1.95                     | 0.66              |
| 17:AS:11:GLN:HE22 | 17:AS:24:LYS:CE    | 2.07                     | 0.66              |
| 18:AT:1:MET:H2    | 18:AT:4:LYS:HD3    | 1.61                     | 0.66              |
| 18:AT:8:ARG:CZ    | 18:AT:102:HIS:CE1  | 2.78                     | 0.66              |
| 18:AT:36:LEU:HD11 | 18:AT:47:VAL:CB    | 2.25                     | 0.66              |
| 19:AU:15:GLU:HB3  | 19:AU:16:LYS:NZ    | 2.09                     | 0.66              |
| 20:AV:46:LYS:HG3  | 20:AV:58:GLY:N     | 2.10                     | 0.66              |
| 20:AV:50:ARG:HB2  | 20:AV:54:LYS:HD3   | 1.75                     | 0.66              |
| 21:AW:10:ARG:CD   | 21:AW:36:LYS:HB2   | 2.25                     | 0.66              |
| 25:Aa:44:THR:HG22 | 25:Aa:45:GLY:N     | 2.09                     | 0.66              |
| 25:Aa:58:ARG:O    | 25:Aa:61:ARG:CB    | 2.25                     | 0.66              |
| 29:Ae:26:LYS:HZ3  | 29:Ae:43:GLN:HA    | 1.60                     | 0.66              |
| 29:Ae:26:LYS:NZ   | 29:Ae:43:GLN:HA    | 2.10                     | 0.66              |
| 32:AJ:29:GLN:HG2  | 57:BZ:431:PRO:CB   | 2.24                     | 0.66              |
| 34:BA:67:C:O4'    | 34:BA:172:A:H1'    | 1.95                     | 0.66              |
| 34:BA:160:A:C1'   | 34:BA:344:A:N7     | 2.59                     | 0.66              |
| 34:BA:236:G:H3'   | 34:BA:237:C:C6     | 2.30                     | 0.66              |
| 34:BA:266:G:H2'   | 50:BU:67:LYS:HZ3   | 1.57                     | 0.66              |
| 34:BA:291:C:C3'   | 34:BA:305:G:H22    | 1.99                     | 0.66              |
| 34:BA:442:C:H2'   | 34:BA:442:C:O2     | 1.93                     | 0.66              |
| 34:BA:760:G:H2'   | 50:BU:103:GLY:O    | 1.95                     | 0.66              |
| 34:BA:795:C:O4'   | 34:BA:1506:U:C2    | 2.49                     | 0.66              |
| 34:BA:1003:G:C6   | 34:BA:1004:A:H1'   | 2.30                     | 0.66              |
| 34:BA:1128:C:C3'  | 42:BM:16:ARG:HH22  | 2.08                     | 0.66              |
| 34:BA:1189:C:O2'  | 36:BG:176:HIS:NE2  | 2.27                     | 0.66              |
| 34:BA:1360:A:N7   | 47:BR:17:LYS:HD3   | 2.09                     | 0.66              |
| 35:BF:49:GLU:OE2  | 35:BF:49:GLU:N     | 2.28                     | 0.66              |
| 35:BF:217:ARG:HG3 | 35:BF:217:ARG:HH11 | 1.60                     | 0.66              |
| 36:BG:94:LEU:O    | 36:BG:94:LEU:HD23  | 1.95                     | 0.66              |
| 37:BH:20:TYR:O    | 37:BH:26:CYS:SG    | 2.53                     | 0.66              |
| 40:BK:42:ILE:HG22 | 40:BK:120:ILE:CD1  | 2.25                     | 0.66              |
| 40:BK:46:ALA:HB2  | 40:BK:120:ILE:HD12 | 1.76                     | 0.66              |
| 41:BL:33:GLU:HG2  | 41:BL:59:LEU:CD1   | 2.24                     | 0.66              |
| 41:BL:87:SER:CB   | 41:BL:93:VAL:H     | 2.08                     | 0.66              |
| 43:BN:8:LEU:HD22  | 43:BN:94:VAL:CG1   | 2.25                     | 0.66              |
| 43:BN:90:LEU:H    | 43:BN:91:PRO:HD2   | 1.58                     | 0.66              |
| 45:BP:27:LEU:HB2  | 45:BP:64:TYR:CZ    | 2.30                     | 0.66              |
| 47:BR:10:ALA:C    | 47:BR:12:ARG:H     | 2.02                     | 0.66              |
| 48:BS:62:GLN:CA   | 48:BS:65:ARG:HH22  | 2.07                     | 0.66              |
| 49:BT:20:VAL:CG2  | 49:BT:35:LYS:HA    | 2.21                     | 0.66              |
| 52:BW:11:VAL:HG11 | 52:BW:15:LEU:HB2   | 1.76                     | 0.66              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 53:BX:61:SER:OG    | 53:BX:62:LEU:N    | 2.28                     | 0.66              |
| 56:BD:66:U:O5'     | 56:BD:66:U:H6     | 1.78                     | 0.66              |
| 56:BE:27:G:H2'     | 56:BE:28:G:C8     | 2.29                     | 0.66              |
| 57:BZ:18:LYS:CG    | 57:BZ:76:PRO:HG3  | 1.89                     | 0.66              |
| 57:BZ:89:MET:HE2   | 57:BZ:119:TYR:CE2 | 2.28                     | 0.66              |
| 57:BZ:234:ASN:HB3  | 57:BZ:248:ASN:O   | 1.94                     | 0.66              |
| 57:BZ:446:ARG:HH11 | 57:BZ:480:VAL:H   | 1.42                     | 0.66              |
| 57:BZ:564:THR:CB   | 57:BZ:567:GLN:HB3 | 2.25                     | 0.66              |
| 1:AA:35:G:N2       | 1:AA:450:G:H21    | 1.92                     | 0.66              |
| 1:AA:374:A:C3'     | 1:AA:375:C:H6     | 2.07                     | 0.66              |
| 1:AA:627:A:N6      | 1:AA:638:G:H1'    | 2.08                     | 0.66              |
| 1:AA:997:G:C5'     | 16:AR:92:ARG:NH1  | 2.54                     | 0.66              |
| 1:AA:1027:A:H61    | 1:AA:1126:A:H1'   | 1.60                     | 0.66              |
| 1:AA:1042:G:N1     | 1:AA:1113:U:C4    | 2.56                     | 0.66              |
| 1:AA:1069:A:H4'    | 1:AA:1070:A:O5'   | 1.95                     | 0.66              |
| 1:AA:1080:C:O2     | 32:AJ:129:GLY:HA3 | 1.88                     | 0.66              |
| 1:AA:1203:G:C4     | 1:AA:1241:A:C8    | 2.81                     | 0.66              |
| 1:AA:1257:C:O2'    | 6:AF:83:PHE:HB2   | 1.95                     | 0.66              |
| 1:AA:1567:A:H5''   | 4:AD:59:LYS:HG2   | 1.75                     | 0.66              |
| 1:AA:1703:G:O2'    | 1:AA:1704:G:H5'   | 1.96                     | 0.66              |
| 1:AA:1905:C:O2'    | 1:AA:1929:G:C2'   | 2.43                     | 0.66              |
| 1:AA:2459:A:C4     | 1:AA:2460:U:H1'   | 2.27                     | 0.66              |
| 1:AA:2581:G:C2     | 1:AA:2610:C:C6    | 2.82                     | 0.66              |
| 1:AA:2672:G:H2'    | 1:AA:2673:G:C8    | 2.28                     | 0.66              |
| 1:AA:2742:C:OP1    | 30:Af:35:ARG:HD3  | 1.95                     | 0.66              |
| 1:AA:2748:A:N7     | 1:AA:2749:A:N6    | 2.43                     | 0.66              |
| 1:AA:2780:G:H22    | 9:AK:97:ARG:HH12  | 0.75                     | 0.66              |
| 2:AB:105:G:H4'     | 21:AW:32:HIS:CE1  | 2.31                     | 0.66              |
| 4:AD:132:PRO:HB3   | 4:AD:190:TYR:CE1  | 2.29                     | 0.66              |
| 5:AE:31:CYS:HB3    | 5:AE:32:PRO:HD2   | 1.78                     | 0.66              |
| 7:AG:74:LYS:HB3    | 7:AG:87:PRO:HG2   | 1.76                     | 0.66              |
| 7:AG:81:LYS:O      | 56:BE:52:G:C5'    | 2.43                     | 0.66              |
| 7:AG:181:ARG:N     | 7:AG:181:ARG:CD   | 2.58                     | 0.66              |
| 8:AH:26:VAL:HG12   | 8:AH:79:VAL:CG1   | 2.24                     | 0.66              |
| 9:AK:33:LEU:HD11   | 9:AK:52:VAL:HG21  | 1.77                     | 0.66              |
| 9:AK:93:THR:C      | 9:AK:94:HIS:HD2   | 2.03                     | 0.66              |
| 10:AL:10:VAL:O     | 10:AL:11:ALA:CB   | 2.42                     | 0.66              |
| 10:AL:26:LYS:HG3   | 10:AL:27:GLY:N    | 2.08                     | 0.66              |
| 11:AM:114:ILE:HG21 | 11:AM:122:PRO:HA  | 1.75                     | 0.66              |
| 14:AP:23:ARG:C     | 14:AP:24:LEU:HD12 | 2.20                     | 0.66              |
| 15:AQ:70:VAL:CB    | 15:AQ:74:ARG:HD3  | 2.24                     | 0.66              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 16:AR:79:PHE:O    | 16:AR:83:LEU:HD12 | 1.94                     | 0.66              |
| 17:AS:15:GLU:HA   | 17:AS:100:ARG:NH1 | 2.07                     | 0.66              |
| 17:AS:31:ALA:O    | 17:AS:33:VAL:HG23 | 1.95                     | 0.66              |
| 17:AS:31:ALA:O    | 17:AS:33:VAL:N    | 2.28                     | 0.66              |
| 18:AT:35:ILE:HG13 | 26:Ab:28:PRO:CG   | 2.24                     | 0.66              |
| 18:AT:51:LEU:O    | 18:AT:54:ALA:HB3  | 1.95                     | 0.66              |
| 19:AU:7:VAL:CG2   | 23:AY:28:MET:HG2  | 2.25                     | 0.66              |
| 22:AX:68:GLU:HB2  | 22:AX:80:HIS:O    | 1.94                     | 0.66              |
| 25:Aa:1:MET:HE1   | 25:Aa:9:LEU:CD2   | 2.24                     | 0.66              |
| 25:Aa:59:PHE:HD1  | 25:Aa:60:GLN:HG2  | 1.59                     | 0.66              |
| 29:Ae:55:ALA:N    | 29:Ae:56:GLU:OE2  | 2.28                     | 0.66              |
| 32:AJ:112:MET:HE1 | 32:AJ:119:ASP:CB  | 2.16                     | 0.66              |
| 34:BA:331:G:OP1   | 34:BA:332:G:C8    | 2.48                     | 0.66              |
| 34:BA:428:G:C2    | 34:BA:430:A:N6    | 2.64                     | 0.66              |
| 34:BA:582:U:OP1   | 48:BS:68:ARG:NH1  | 2.28                     | 0.66              |
| 34:BA:833:U:HO2'  | 34:BA:834:C:H6    | 1.43                     | 0.66              |
| 34:BA:937:A:H1'   | 34:BA:1379:G:N2   | 2.10                     | 0.66              |
| 34:BA:1040:U:H2'  | 34:BA:1041:A:C8   | 2.31                     | 0.66              |
| 34:BA:1234:C:C5'  | 34:BA:1364:U:O2'  | 2.41                     | 0.66              |
| 34:BA:1333:A:O5'  | 34:BA:1333:A:H8   | 1.79                     | 0.66              |
| 34:BA:1349:A:H2'  | 34:BA:1350:A:C8   | 2.29                     | 0.66              |
| 34:BA:1466:C:H3'  | 34:BA:1467:G:H8   | 1.59                     | 0.66              |
| 34:BA:1470:G:O2'  | 34:BA:1471:G:H5'  | 1.95                     | 0.66              |
| 34:BA:1520:G:H2'  | 34:BA:1521:G:C8   | 2.29                     | 0.66              |
| 35:BF:95:GLN:O    | 35:BF:97:TRP:N    | 2.27                     | 0.66              |
| 36:BG:52:LEU:HA   | 36:BG:70:VAL:CG2  | 2.23                     | 0.66              |
| 37:BH:39:PRO:O    | 37:BH:44:GLY:HA3  | 1.95                     | 0.66              |
| 37:BH:118:ARG:HG3 | 37:BH:136:PRO:CB  | 2.26                     | 0.66              |
| 38:BI:84:PHE:CZ   | 38:BI:133:TYR:CB  | 2.76                     | 0.66              |
| 38:BI:102:ALA:HB1 | 38:BI:106:PRO:CB  | 2.25                     | 0.66              |
| 39:BJ:53:ALA:HB2  | 39:BJ:86:ARG:HD2  | 1.77                     | 0.66              |
| 39:BJ:76:ALA:O    | 39:BJ:79:LEU:HG   | 1.95                     | 0.66              |
| 41:BL:103:VAL:CB  | 41:BL:108:GLY:HA3 | 2.24                     | 0.66              |
| 47:BR:12:ARG:O    | 47:BR:14:PRO:N    | 2.27                     | 0.66              |
| 47:BR:52:GLN:O    | 47:BR:53:LEU:HD23 | 1.96                     | 0.66              |
| 48:BS:35:ARG:CZ   | 48:BS:59:MET:HE2  | 2.25                     | 0.66              |
| 50:BU:91:ARG:O    | 50:BU:94:ASN:HB2  | 1.94                     | 0.66              |
| 52:BW:39:THR:O    | 52:BW:40:ILE:O    | 2.14                     | 0.66              |
| 53:BX:63:ILE:HD11 | 53:BX:80:ARG:HB3  | 1.78                     | 0.66              |
| 57:BZ:64:ILE:H    | 57:BZ:65:LYS:HG2  | 1.59                     | 0.66              |
| 57:BZ:173:GLY:HA3 | 57:BZ:174:LEU:CB  | 2.24                     | 0.66              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:BZ:226:ILE:CB  | 57:BZ:267:LEU:HA   | 2.25                     | 0.66              |
| 57:BZ:287:THR:O   | 57:BZ:297:LEU:HD22 | 1.95                     | 0.66              |
| 1:AA:14:A:N7      | 1:AA:15:G:C4       | 2.63                     | 0.66              |
| 1:AA:469:G:H1     | 28:Ad:40:TRP:HE1   | 1.43                     | 0.66              |
| 1:AA:479:A:O2'    | 1:AA:480:A:H3'     | 1.96                     | 0.66              |
| 1:AA:482:A:N7     | 1:AA:506:G:N1      | 2.42                     | 0.66              |
| 1:AA:526:A:H4'    | 1:AA:527:C:OP1     | 1.94                     | 0.66              |
| 1:AA:764:A:N6     | 1:AA:1789:A:H2     | 1.90                     | 0.66              |
| 1:AA:848:G:H2'    | 1:AA:849:A:H8      | 1.57                     | 0.66              |
| 1:AA:959:A:C6     | 1:AA:960:A:N6      | 2.63                     | 0.66              |
| 1:AA:961:C:C5     | 1:AA:2031:A:C2     | 2.84                     | 0.66              |
| 1:AA:972:G:C8     | 1:AA:973:A:H3'     | 2.29                     | 0.66              |
| 1:AA:1131:G:C1'   | 9:AK:82:LEU:HD11   | 2.24                     | 0.66              |
| 1:AA:1222:C:C2'   | 1:AA:1223:C:H5'    | 2.25                     | 0.66              |
| 1:AA:1347:G:O2'   | 1:AA:1348:G:H5'    | 1.95                     | 0.66              |
| 1:AA:1485:G:H2'   | 1:AA:1486:A:C8     | 2.31                     | 0.66              |
| 1:AA:1491:G:O4'   | 4:AD:99:ASP:HB2    | 1.96                     | 0.66              |
| 1:AA:1647:G:H3'   | 1:AA:1647:G:OP2    | 1.94                     | 0.66              |
| 1:AA:1669:A:C2    | 1:AA:1994:C:H1'    | 2.29                     | 0.66              |
| 1:AA:1674:G:O2'   | 1:AA:1676:A:N6     | 2.28                     | 0.66              |
| 1:AA:1735:C:N3    | 1:AA:1741:C:N4     | 2.40                     | 0.66              |
| 1:AA:1793:C:N4    | 1:AA:1825:A:N6     | 2.42                     | 0.66              |
| 1:AA:1906:G:C2    | 1:AA:1907:G:C5     | 2.83                     | 0.66              |
| 1:AA:1922:G:O6    | 58:AA:3001:NMY:N6  | 2.28                     | 0.66              |
| 1:AA:1944:U:C1'   | 1:AA:1955:U:C6     | 2.78                     | 0.66              |
| 1:AA:2314:C:H2'   | 1:AA:2315:G:C8     | 2.26                     | 0.66              |
| 1:AA:2602:A:C8    | 22:AX:2:ALA:HB2    | 2.31                     | 0.66              |
| 2:AB:16:G:H2'     | 2:AB:17:C:C6       | 2.31                     | 0.66              |
| 2:AB:24:G:H8      | 2:AB:24:G:O5'      | 1.77                     | 0.66              |
| 2:AB:63:G:H2'     | 2:AB:64:C:C6       | 2.31                     | 0.66              |
| 5:AE:49:LEU:HD22  | 5:AE:76:ARG:O      | 1.95                     | 0.66              |
| 6:AF:176:LEU:C    | 6:AF:178:PRO:HD2   | 2.19                     | 0.66              |
| 6:AF:184:TYR:O    | 6:AF:185:ASP:C     | 2.38                     | 0.66              |
| 7:AG:16:ARG:O     | 7:AG:17:PRO:C      | 2.34                     | 0.66              |
| 7:AG:55:LYS:HG3   | 7:AG:148:MET:SD    | 2.35                     | 0.66              |
| 7:AG:177:GLY:O    | 7:AG:178:PHE:HB3   | 1.96                     | 0.66              |
| 10:AL:28:SER:O    | 10:AL:29:ASN:HB2   | 1.96                     | 0.66              |
| 11:AM:88:LEU:HD11 | 11:AM:124:LYS:NZ   | 2.11                     | 0.66              |
| 12:AN:6:ARG:HG2   | 12:AN:70:PRO:CB    | 2.25                     | 0.66              |
| 15:AQ:53:ARG:HH21 | 15:AQ:102:ILE:CD1  | 2.08                     | 0.66              |
| 15:AQ:113:LYS:O   | 15:AQ:116:ALA:HB3  | 1.95                     | 0.66              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AS:4:ILE:HG13   | 17:AS:13:ARG:HG2   | 1.76                     | 0.66              |
| 18:AT:20:VAL:HG22  | 18:AT:24:ILE:CD1   | 2.21                     | 0.66              |
| 21:AW:96:VAL:HG13  | 21:AW:128:VAL:CG2  | 2.25                     | 0.66              |
| 22:AX:25:ARG:HG3   | 22:AX:37:LEU:HA    | 1.76                     | 0.66              |
| 23:AY:7:GLU:CA     | 23:AY:10:LYS:HG2   | 2.25                     | 0.66              |
| 27:Ac:19:ARG:HG2   | 27:Ac:43:CYS:SG    | 2.34                     | 0.66              |
| 32:AJ:51:ALA:C     | 32:AJ:72:PRO:HB2   | 2.20                     | 0.66              |
| 32:AJ:58:THR:O     | 32:AJ:59:ILE:HG23  | 1.96                     | 0.66              |
| 32:AJ:68:VAL:O     | 32:AJ:69:THR:HG23  | 1.96                     | 0.66              |
| 34:BA:715:A:O2'    | 34:BA:716:A:H5'    | 1.95                     | 0.66              |
| 34:BA:943:U:H2'    | 34:BA:944:G:C8     | 2.31                     | 0.66              |
| 34:BA:973:G:H22    | 34:BA:974:A:N6     | 1.89                     | 0.66              |
| 34:BA:1054:C:C2'   | 34:BA:1055:A:H5''  | 2.25                     | 0.66              |
| 34:BA:1062:U:C2'   | 34:BA:1063:C:C5    | 2.67                     | 0.66              |
| 34:BA:1231:G:P     | 42:BM:127:LYS:HE2  | 2.34                     | 0.66              |
| 34:BA:1449:C:N4    | 34:BA:1454:G:N1    | 2.42                     | 0.66              |
| 34:BA:1485:U:HO2'  | 34:BA:1486:G:H8    | 1.42                     | 0.66              |
| 34:BA:1528:U:H1'   | 34:BA:1529:G:H21   | 1.59                     | 0.66              |
| 35:BF:60:ASP:CG    | 35:BF:64:ARG:NH2   | 2.53                     | 0.66              |
| 35:BF:78:GLN:NE2   | 35:BF:96:ARG:NH2   | 2.43                     | 0.66              |
| 35:BF:92:TYR:O     | 35:BF:152:PHE:HB2  | 1.94                     | 0.66              |
| 35:BF:102:LEU:H    | 35:BF:102:LEU:HD13 | 1.58                     | 0.66              |
| 38:BI:12:LEU:HG    | 38:BI:129:ILE:HG12 | 1.77                     | 0.66              |
| 39:BJ:12:PRO:HB2   | 39:BJ:57:GLN:HE21  | 1.61                     | 0.66              |
| 40:BK:15:ASP:H     | 40:BK:20:ASP:N     | 1.92                     | 0.66              |
| 40:BK:70:LYS:O     | 40:BK:138:LYS:HE3  | 1.95                     | 0.66              |
| 40:BK:94:ARG:HG3   | 40:BK:94:ARG:HH11  | 1.58                     | 0.66              |
| 40:BK:155:ARG:NH1  | 40:BK:156:TRP:N    | 2.40                     | 0.66              |
| 41:BL:40:ALA:HB2   | 41:BL:45:ILE:CG1   | 2.24                     | 0.66              |
| 43:BN:18:ALA:CB    | 43:BN:91:PRO:HB3   | 2.23                     | 0.66              |
| 44:BO:19:ALA:CB    | 44:BO:80:VAL:HG21  | 2.24                     | 0.66              |
| 45:BP:22:SER:C     | 45:BP:24:VAL:H     | 2.04                     | 0.66              |
| 45:BP:101:VAL:HG23 | 45:BP:104:VAL:CG2  | 2.25                     | 0.66              |
| 46:BQ:56:LEU:CD1   | 46:BQ:60:VAL:CG2   | 2.72                     | 0.66              |
| 46:BQ:81:LEU:HD13  | 46:BQ:81:LEU:H     | 1.61                     | 0.66              |
| 50:BU:76:LEU:HD23  | 50:BU:76:LEU:C     | 2.19                     | 0.66              |
| 53:BX:43:LEU:CD1   | 53:BX:55:ILE:HD11  | 2.19                     | 0.66              |
| 56:BE:2:C:C4       | 56:BE:70:G:C5      | 2.83                     | 0.66              |
| 57:BZ:54:ILE:HD13  | 57:BZ:54:ILE:N     | 2.10                     | 0.66              |
| 57:BZ:495:LYS:CB   | 57:BZ:515:GLY:O    | 2.43                     | 0.66              |
| 1:AA:46:C:N4       | 1:AA:214:G:H8      | 1.94                     | 0.66              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:124:G:OP1     | 1:AA:1376:C:H1'    | 1.95                     | 0.66              |
| 1:AA:195:A:N6      | 1:AA:198:C:OP2     | 2.28                     | 0.66              |
| 1:AA:476:G:N2      | 1:AA:478:A:H3'     | 2.10                     | 0.66              |
| 1:AA:653:A:H3'     | 1:AA:654:A:O3'     | 1.95                     | 0.66              |
| 1:AA:733:G:C8      | 1:AA:761:A:N6      | 2.64                     | 0.66              |
| 1:AA:800:A:O2'     | 1:AA:801:G:C5'     | 2.44                     | 0.66              |
| 1:AA:826:U:C5'     | 1:AA:2428:G:O3'    | 2.43                     | 0.66              |
| 1:AA:892:G:N3      | 1:AA:893:C:N3      | 2.43                     | 0.66              |
| 1:AA:901:A:C8      | 1:AA:902:C:C5      | 2.83                     | 0.66              |
| 1:AA:1399:C:H2'    | 1:AA:1400:G:C8     | 2.29                     | 0.66              |
| 1:AA:1431:U:O2'    | 1:AA:1432:C:H5'    | 1.94                     | 0.66              |
| 1:AA:1472:A:C1'    | 1:AA:1473:G:N7     | 2.58                     | 0.66              |
| 1:AA:1627:G:N2     | 1:AA:1628:G:H1'    | 2.11                     | 0.66              |
| 1:AA:1709:U:H6     | 1:AA:1709:U:H5'    | 1.61                     | 0.66              |
| 1:AA:1794:U:C2     | 1:AA:1795:C:C5     | 2.83                     | 0.66              |
| 1:AA:1803:A:OP2    | 1:AA:1803:A:H8     | 1.79                     | 0.66              |
| 1:AA:1914:C:C4     | 1:AA:1915:U:C5     | 2.83                     | 0.66              |
| 1:AA:1925:C:H2'    | 1:AA:1926:U:C6     | 2.31                     | 0.66              |
| 1:AA:2114:A:H8     | 1:AA:2114:A:O5'    | 1.78                     | 0.66              |
| 1:AA:2507:C:C4'    | 1:AA:2573:C:H41    | 2.09                     | 0.66              |
| 2:AB:69:G:H5''     | 2:AB:70:C:OP2      | 1.95                     | 0.66              |
| 2:AB:77:U:H2'      | 2:AB:78:A:H8       | 1.57                     | 0.66              |
| 3:AC:171:ILE:HG12  | 3:AC:172:HIS:N     | 2.09                     | 0.66              |
| 4:AD:242:ARG:O     | 4:AD:243:GLY:C     | 2.38                     | 0.66              |
| 6:AF:38:ARG:NH1    | 11:AM:10:PRO:CA    | 2.58                     | 0.66              |
| 6:AF:110:LEU:HD23  | 6:AF:186:ILE:HD11  | 1.76                     | 0.66              |
| 7:AG:8:LYS:HZ1     | 7:AG:176:LEU:CD1   | 2.09                     | 0.66              |
| 7:AG:60:LEU:CB     | 7:AG:66:GLN:O      | 2.41                     | 0.66              |
| 7:AG:120:LEU:HD22  | 7:AG:181:ARG:CG    | 2.24                     | 0.66              |
| 8:AH:11:VAL:HB     | 8:AH:50:VAL:HG21   | 1.75                     | 0.66              |
| 9:AK:55:VAL:HG22   | 9:AK:56:ASN:H      | 1.59                     | 0.66              |
| 11:AM:76:LYS:HD2   | 11:AM:101:VAL:HG21 | 1.77                     | 0.66              |
| 11:AM:113:LYS:CB   | 11:AM:129:ALA:HB1  | 2.25                     | 0.66              |
| 11:AM:114:ILE:HG13 | 11:AM:123:LEU:HB2  | 1.78                     | 0.66              |
| 12:AN:20:ALA:O     | 12:AN:21:THR:HB    | 1.94                     | 0.66              |
| 12:AN:87:LYS:HG2   | 12:AN:87:LYS:O     | 1.95                     | 0.66              |
| 15:AQ:93:ARG:N     | 15:AQ:93:ARG:NE    | 2.43                     | 0.66              |
| 16:AR:97:ASP:HB3   | 16:AR:101:ARG:NH2  | 2.10                     | 0.66              |
| 17:AS:43:GLU:O     | 17:AS:43:GLU:OE1   | 2.13                     | 0.66              |
| 17:AS:61:VAL:O     | 17:AS:99:ILE:CB    | 2.39                     | 0.66              |
| 18:AT:34:ASN:HD22  | 18:AT:34:ASN:N     | 1.94                     | 0.66              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 20:AV:6:HIS:HD2    | 20:AV:67:LEU:HD11  | 1.60                     | 0.66              |
| 22:AX:51:VAL:HG21  | 22:AX:79:VAL:C     | 2.20                     | 0.66              |
| 27:Ac:49:HIS:O     | 27:Ac:50:ARG:HB2   | 1.94                     | 0.66              |
| 28:Ad:26:GLY:O     | 28:Ad:30:VAL:HG23  | 1.94                     | 0.66              |
| 28:Ad:30:VAL:HG13  | 28:Ad:33:ARG:NH2   | 2.10                     | 0.66              |
| 31:AI:53:VAL:O     | 31:AI:85:ASP:HA    | 1.89                     | 0.66              |
| 34:BA:259:G:C2     | 34:BA:260:G:C4     | 2.83                     | 0.66              |
| 34:BA:647:C:C2     | 34:BA:648:A:C8     | 2.83                     | 0.66              |
| 34:BA:665:A:C8     | 34:BA:733:A:C2     | 2.83                     | 0.66              |
| 34:BA:959:A:C2'    | 34:BA:960:U:H4'    | 2.25                     | 0.66              |
| 34:BA:967:C:H6     | 34:BA:967:C:O5'    | 1.79                     | 0.66              |
| 34:BA:1053:G:C5'   | 34:BA:1054:C:H5'   | 2.20                     | 0.66              |
| 34:BA:1117:G:N3    | 34:BA:1184:G:N3    | 2.43                     | 0.66              |
| 34:BA:1138:G:C6    | 34:BA:1140:C:C6    | 2.83                     | 0.66              |
| 34:BA:1165:C:H2'   | 34:BA:1166:G:H8    | 1.60                     | 0.66              |
| 34:BA:1326:C:H2'   | 34:BA:1327:C:H6    | 1.60                     | 0.66              |
| 34:BA:1455:G:C4'   | 53:BX:31:SER:HG    | 1.99                     | 0.66              |
| 35:BF:80:ILE:CD1   | 35:BF:212:GLN:HG2  | 2.25                     | 0.66              |
| 35:BF:118:LEU:CD1  | 35:BF:142:LEU:HD12 | 2.25                     | 0.66              |
| 37:BH:112:VAL:HG23 | 37:BH:161:ASN:HD21 | 1.59                     | 0.66              |
| 38:BI:149:GLU:HA   | 38:BI:152:ARG:HB3  | 1.77                     | 0.66              |
| 41:BL:89:PRO:HB3   | 41:BL:92:ARG:NH2   | 2.10                     | 0.66              |
| 47:BR:35:ARG:O     | 47:BR:37:PHE:N     | 2.28                     | 0.66              |
| 49:BT:82:GLN:O     | 49:BT:82:GLN:HG3   | 1.94                     | 0.66              |
| 50:BU:16:GLN:O     | 50:BU:17:LYS:HB2   | 1.95                     | 0.66              |
| 50:BU:40:LYS:HZ3   | 50:BU:40:LYS:CB    | 2.09                     | 0.66              |
| 53:BX:88:VAL:HG12  | 53:BX:92:LEU:HD11  | 1.77                     | 0.66              |
| 57:BZ:87:ARG:NH2   | 57:BZ:210:SER:HB3  | 2.09                     | 0.66              |
| 57:BZ:153:ALA:N    | 57:BZ:154:THR:HA   | 1.93                     | 0.66              |
| 57:BZ:397:GLN:C    | 57:BZ:472:TYR:CD1  | 2.73                     | 0.66              |
| 57:BZ:493:GLN:HG2  | 57:BZ:519:TYR:HB2  | 1.78                     | 0.66              |
| 57:BZ:541:LYS:HB3  | 57:BZ:542:LYS:HB3  | 1.77                     | 0.66              |
| 57:BZ:565:LEU:CB   | 57:BZ:566:GLU:OE2  | 2.31                     | 0.66              |
| 1:AA:181:A:H5'     | 1:AA:181:A:C8      | 2.30                     | 0.66              |
| 1:AA:292:C:C6      | 1:AA:293:U:O4      | 2.49                     | 0.66              |
| 1:AA:439:G:H2'     | 1:AA:440:G:C8      | 2.30                     | 0.66              |
| 1:AA:1105:U:C2     | 1:AA:1107:G:C5     | 2.84                     | 0.66              |
| 1:AA:1289:C:H4'    | 1:AA:1330:C:H4'    | 1.77                     | 0.66              |
| 1:AA:1308:A:N3     | 1:AA:1309:G:H1'    | 2.11                     | 0.66              |
| 1:AA:1500:G:H2'    | 1:AA:1501:C:C6     | 2.31                     | 0.66              |
| 1:AA:1670:C:OP1    | 1:AA:1671:U:OP2    | 2.13                     | 0.66              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1675:C:N4    | 5:AE:128:SER:OG    | 2.28                     | 0.66              |
| 1:AA:1679:U:H3    | 1:AA:1764:G:H5''   | 1.60                     | 0.66              |
| 1:AA:1806:C:C4    | 1:AA:1807:G:N7     | 2.64                     | 0.66              |
| 1:AA:2362:G:O2'   | 1:AA:2363:C:H5'    | 1.94                     | 0.66              |
| 1:AA:2493:U:C6    | 1:AA:2493:U:C3'    | 2.75                     | 0.66              |
| 1:AA:2506:U:C2    | 59:AA:3002:8AN:H3' | 2.29                     | 0.66              |
| 3:AC:122:ALA:O    | 3:AC:126:LYS:HB2   | 1.94                     | 0.66              |
| 3:AC:200:LYS:NZ   | 3:AC:204:ALA:HB3   | 2.10                     | 0.66              |
| 4:AD:133:LEU:O    | 4:AD:136:ILE:N     | 2.28                     | 0.66              |
| 4:AD:154:LYS:O    | 4:AD:155:LEU:CB    | 2.42                     | 0.66              |
| 4:AD:222:ARG:O    | 4:AD:225:ALA:HB2   | 1.96                     | 0.66              |
| 5:AE:48:GLN:N     | 5:AE:48:GLN:NE2    | 2.44                     | 0.66              |
| 5:AE:169:ASN:ND2  | 5:AE:170:LEU:N     | 2.44                     | 0.66              |
| 6:AF:132:VAL:H    | 6:AF:138:GLU:CD    | 2.03                     | 0.66              |
| 7:AG:144:ILE:HD12 | 7:AG:147:ASP:CG    | 2.21                     | 0.66              |
| 7:AG:181:ARG:H    | 7:AG:181:ARG:CD    | 2.08                     | 0.66              |
| 9:AK:89:LYS:O     | 9:AK:90:MET:C      | 2.38                     | 0.66              |
| 12:AN:56:ARG:CD   | 12:AN:57:HIS:N     | 2.58                     | 0.66              |
| 13:AO:49:ASP:O    | 13:AO:52:ILE:HG22  | 1.96                     | 0.66              |
| 13:AO:70:LEU:N    | 13:AO:70:LEU:HD23  | 2.11                     | 0.66              |
| 14:AP:9:ARG:CD    | 14:AP:12:PHE:HE2   | 2.07                     | 0.66              |
| 14:AP:24:LEU:O    | 14:AP:86:ALA:HB1   | 1.96                     | 0.66              |
| 16:AR:45:TYR:C    | 16:AR:49:HIS:ND1   | 2.53                     | 0.66              |
| 16:AR:47:TYR:OH   | 17:AS:76:LYS:C     | 2.38                     | 0.66              |
| 17:AS:65:GLY:N    | 17:AS:97:LYS:HZ1   | 1.93                     | 0.66              |
| 17:AS:78:LYS:HA   | 17:AS:83:ARG:O     | 1.96                     | 0.66              |
| 18:AT:25:ARG:CD   | 18:AT:74:ALA:HB3   | 2.24                     | 0.66              |
| 18:AT:75:TYR:O    | 18:AT:104:THR:O    | 2.14                     | 0.66              |
| 24:AZ:23:LEU:CA   | 24:AZ:28:LEU:HD12  | 2.25                     | 0.66              |
| 28:Ad:9:ARG:O     | 28:Ad:13:ALA:CB    | 2.43                     | 0.66              |
| 34:BA:236:G:H2'   | 34:BA:237:C:C6     | 2.31                     | 0.66              |
| 34:BA:597:G:N2    | 41:BL:94:TYR:CE2   | 2.57                     | 0.66              |
| 34:BA:611:A:N6    | 34:BA:629:G:N1     | 2.25                     | 0.66              |
| 34:BA:1113:C:O5'  | 34:BA:1113:C:H6    | 1.78                     | 0.66              |
| 34:BA:1185:G:O2'  | 34:BA:1186:G:H5'   | 1.95                     | 0.66              |
| 34:BA:1200:C:H5'' | 34:BA:1201:A:H3'   | 1.77                     | 0.66              |
| 34:BA:1269:A:C1'  | 34:BA:1312:G:H21   | 2.08                     | 0.66              |
| 34:BA:1339:A:H2'  | 34:BA:1340:A:C5'   | 2.22                     | 0.66              |
| 34:BA:1514:C:H2'  | 34:BA:1515:C:H6    | 1.58                     | 0.66              |
| 35:BF:91:PRO:HG2  | 35:BF:155:LEU:HD23 | 1.78                     | 0.66              |
| 35:BF:126:GLU:O   | 35:BF:129:GLU:HB2  | 1.96                     | 0.66              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BF:163:PHE:CD2 | 35:BF:164:VAL:N    | 2.64                     | 0.66              |
| 36:BG:52:LEU:O    | 36:BG:53:ALA:HB2   | 1.93                     | 0.66              |
| 36:BG:67:THR:HG22 | 36:BG:104:GLN:CG   | 2.24                     | 0.66              |
| 36:BG:143:GLU:O   | 36:BG:145:GLY:N    | 2.27                     | 0.66              |
| 39:BJ:12:PRO:CB   | 39:BJ:58:GLY:HA2   | 2.20                     | 0.66              |
| 40:BK:95:ARG:O    | 40:BK:96:GLN:C     | 2.39                     | 0.66              |
| 40:BK:140:ASP:O   | 40:BK:144:MET:CB   | 2.43                     | 0.66              |
| 41:BL:54:ASP:HB2  | 41:BL:56:LYS:HD3   | 1.77                     | 0.66              |
| 42:BM:53:VAL:HG11 | 42:BM:92:TYR:OH    | 1.96                     | 0.66              |
| 42:BM:121:ARG:HG2 | 42:BM:121:ARG:HH11 | 1.60                     | 0.66              |
| 44:BO:62:GLN:OE1  | 44:BO:63:LEU:HB2   | 1.95                     | 0.66              |
| 44:BO:100:ALA:C   | 44:BO:102:GLY:H    | 2.02                     | 0.66              |
| 45:BP:84:LEU:N    | 45:BP:104:VAL:HG11 | 2.10                     | 0.66              |
| 46:BQ:81:LEU:HD13 | 46:BQ:81:LEU:N     | 2.09                     | 0.66              |
| 46:BQ:86:CYS:HA   | 52:BW:74:PHE:CD2   | 2.31                     | 0.66              |
| 55:BC:38:A:C6     | 55:BC:39:U:C6      | 2.83                     | 0.66              |
| 57:BZ:179:MET:HB2 | 57:BZ:181:GLU:O    | 1.94                     | 0.66              |
| 57:BZ:239:ILE:CG1 | 57:BZ:244:GLY:HA3  | 2.25                     | 0.66              |
| 57:BZ:556:VAL:O   | 57:BZ:557:LEU:CG   | 2.43                     | 0.66              |
| 1:AA:38:A:N3      | 6:AF:48:THR:HG21   | 2.10                     | 0.66              |
| 1:AA:150:C:O2'    | 1:AA:151:C:H5'     | 1.95                     | 0.66              |
| 1:AA:199:A:C5     | 1:AA:2433:A:C2     | 2.84                     | 0.66              |
| 1:AA:216:A:H2'    | 1:AA:217:G:H8      | 1.58                     | 0.66              |
| 1:AA:401:A:N6     | 1:AA:423:A:C2      | 2.63                     | 0.66              |
| 1:AA:411:G:N3     | 1:AA:2408:U:O4     | 2.28                     | 0.66              |
| 1:AA:470:A:C6     | 1:AA:471:A:N3      | 2.63                     | 0.66              |
| 1:AA:663:G:H4'    | 11:AM:18:ARG:CZ    | 2.26                     | 0.66              |
| 1:AA:1033:U:H5'   | 30:Af:16:VAL:HG11  | 1.78                     | 0.66              |
| 1:AA:1033:U:C5'   | 30:Af:16:VAL:HG11  | 2.26                     | 0.66              |
| 1:AA:1044:G:C2    | 1:AA:1046:A:N7     | 2.64                     | 0.66              |
| 1:AA:1378:A:H2'   | 1:AA:1380:G:N7     | 2.11                     | 0.66              |
| 1:AA:1477:A:C3'   | 1:AA:1478:G:O4'    | 2.43                     | 0.66              |
| 1:AA:1520:U:C3'   | 1:AA:1521:G:H5''   | 2.26                     | 0.66              |
| 1:AA:1591:G:C4    | 1:AA:1592:C:C5     | 2.83                     | 0.66              |
| 1:AA:1779:U:H6    | 1:AA:1779:U:H3'    | 1.61                     | 0.66              |
| 1:AA:1800:C:O2'   | 1:AA:1802:A:O4'    | 2.12                     | 0.66              |
| 1:AA:2004:G:N7    | 1:AA:2005:A:N7     | 2.43                     | 0.66              |
| 1:AA:2051:A:C1'   | 5:AE:141:ILE:HD11  | 2.25                     | 0.66              |
| 1:AA:2075:U:O4'   | 1:AA:2597:G:N2     | 2.29                     | 0.66              |
| 1:AA:2123:G:H2'   | 3:AC:215:THR:HG23  | 1.78                     | 0.66              |
| 1:AA:2178:C:C5'   | 3:AC:46:LYS:HZ3    | 2.09                     | 0.66              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:2213:U:O2     | 1:AA:2213:U:C3'    | 2.43                     | 0.66              |
| 1:AA:2225:A:C5'    | 1:AA:2226:C:H6     | 2.08                     | 0.66              |
| 1:AA:2286:A:H3'    | 1:AA:2286:A:C8     | 2.31                     | 0.66              |
| 1:AA:2296:U:C6     | 1:AA:2296:U:C3'    | 2.79                     | 0.66              |
| 1:AA:2312:U:P      | 7:AG:86:MET:HG2    | 2.36                     | 0.66              |
| 1:AA:2392:A:H2'    | 1:AA:2393:A:O5'    | 1.95                     | 0.66              |
| 1:AA:2472:G:H5''   | 57:BZ:529:ARG:HG3  | 1.77                     | 0.66              |
| 1:AA:2635:C:O3'    | 5:AE:78:LEU:HD12   | 1.96                     | 0.66              |
| 1:AA:2780:G:N2     | 9:AK:97:ARG:HH22   | 1.94                     | 0.66              |
| 2:AB:110:G:H2'     | 2:AB:111:U:O4'     | 1.95                     | 0.66              |
| 4:AD:134:ARG:C     | 4:AD:136:ILE:H     | 2.01                     | 0.66              |
| 4:AD:159:ALA:C     | 4:AD:196:VAL:HG11  | 2.20                     | 0.66              |
| 4:AD:159:ALA:O     | 4:AD:196:VAL:HG21  | 1.95                     | 0.66              |
| 5:AE:98:PRO:HD3    | 5:AE:175:VAL:CG1   | 2.25                     | 0.66              |
| 6:AF:178:PRO:C     | 6:AF:180:GLY:N     | 2.50                     | 0.66              |
| 7:AG:19:LEU:O      | 7:AG:22:ARG:HG2    | 1.96                     | 0.66              |
| 7:AG:103:LEU:HD21  | 7:AG:176:LEU:HD11  | 1.78                     | 0.66              |
| 8:AH:9:ILE:HD11    | 8:AH:69:ARG:HH22   | 1.60                     | 0.66              |
| 8:AH:43:VAL:HG12   | 8:AH:44:VAL:N      | 2.08                     | 0.66              |
| 8:AH:171:LEU:HA    | 8:AH:172:LYS:HZ2   | 1.61                     | 0.66              |
| 9:AK:17:ASP:HB3    | 9:AK:21:LYS:HE3    | 1.76                     | 0.66              |
| 9:AK:23:LEU:HD23   | 9:AK:60:ILE:CG2    | 2.25                     | 0.66              |
| 9:AK:103:VAL:HG22  | 9:AK:104:LYS:CD    | 2.26                     | 0.66              |
| 10:AL:84:ALA:CB    | 10:AL:114:ILE:HD11 | 2.26                     | 0.66              |
| 10:AL:97:ARG:NH1   | 10:AL:98:VAL:N     | 2.42                     | 0.66              |
| 20:AV:31:LEU:HB3   | 20:AV:32:PRO:HD2   | 1.76                     | 0.66              |
| 22:AX:68:GLU:CD    | 22:AX:82:ARG:HB2   | 2.21                     | 0.66              |
| 25:Aa:58:ARG:H     | 25:Aa:61:ARG:NH1   | 1.94                     | 0.66              |
| 32:AJ:76:TYR:HD2   | 32:AJ:80:LYS:HD2   | 1.61                     | 0.66              |
| 32:AJ:105:LEU:HD23 | 32:AJ:123:ALA:CB   | 2.24                     | 0.66              |
| 34:BA:168:G:C6     | 34:BA:169:C:N4     | 2.63                     | 0.66              |
| 34:BA:185:A:H2'    | 34:BA:186:C:C6     | 2.30                     | 0.66              |
| 34:BA:581:G:H4'    | 48:BS:64:ARG:HH12  | 1.60                     | 0.66              |
| 34:BA:834:C:N4     | 34:BA:853:G:C6     | 2.63                     | 0.66              |
| 34:BA:945:G:H1'    | 34:BA:1337:G:O2'   | 1.96                     | 0.66              |
| 34:BA:1060:C:H4'   | 43:BN:52:GLY:CA    | 2.26                     | 0.66              |
| 34:BA:1206:G:H5'   | 36:BG:194:GLY:CA   | 2.23                     | 0.66              |
| 34:BA:1405:G:H2'   | 34:BA:1406:U:H6    | 1.61                     | 0.66              |
| 34:BA:1454:G:H5''  | 53:BX:36:LEU:CA    | 1.93                     | 0.66              |
| 35:BF:185:ILE:CG2  | 35:BF:199:TYR:HB2  | 2.26                     | 0.66              |
| 36:BG:35:GLU:HA    | 36:BG:38:ARG:HG3   | 1.76                     | 0.66              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 37:BH:2:GLY:O      | 37:BH:4:TYR:N     | 2.25                     | 0.66              |
| 37:BH:146:ILE:HD12 | 37:BH:146:ILE:N   | 2.10                     | 0.66              |
| 38:BI:81:GLU:CA    | 38:BI:90:VAL:HG22 | 2.25                     | 0.66              |
| 38:BI:127:ASN:O    | 38:BI:128:PRO:C   | 2.39                     | 0.66              |
| 41:BL:100:ILE:HD13 | 41:BL:125:ARG:HE  | 1.60                     | 0.66              |
| 41:BL:101:PRO:O    | 41:BL:102:ARG:CB  | 2.43                     | 0.66              |
| 42:BM:9:ARG:CD     | 42:BM:14:VAL:HG22 | 2.22                     | 0.66              |
| 46:BQ:36:LYS:HZ2   | 46:BQ:59:TYR:HB3  | 1.58                     | 0.66              |
| 47:BR:24:CYS:SG    | 47:BR:27:CYS:N    | 2.68                     | 0.66              |
| 51:BV:55:ARG:HH11  | 51:BV:55:ARG:CB   | 2.06                     | 0.66              |
| 52:BW:6:LYS:HD2    | 52:BW:7:LYS:H     | 1.59                     | 0.66              |
| 56:BE:2:C:C5       | 56:BE:70:G:O6     | 2.47                     | 0.66              |
| 57:BZ:20:THR:O     | 57:BZ:24:LYS:HG2  | 1.96                     | 0.66              |
| 57:BZ:220:VAL:O    | 57:BZ:274:VAL:CG1 | 2.42                     | 0.66              |
| 57:BZ:234:ASN:CG   | 57:BZ:247:ARG:CB  | 2.66                     | 0.66              |
| 57:BZ:396:LYS:CA   | 57:BZ:474:ASP:CA  | 2.54                     | 0.66              |
| 57:BZ:493:GLN:HA   | 57:BZ:519:TYR:HA  | 1.76                     | 0.66              |
| 1:AA:115:C:O2'     | 1:AA:116:C:H5'    | 1.95                     | 0.66              |
| 1:AA:195:A:N7      | 1:AA:197:A:OP1    | 2.29                     | 0.66              |
| 1:AA:270(J):G:C6   | 1:AA:270(K):C:N3  | 2.64                     | 0.66              |
| 1:AA:280:C:N4      | 1:AA:283:A:N6     | 2.44                     | 0.66              |
| 1:AA:296:C:C6      | 1:AA:338:G:N2     | 2.64                     | 0.66              |
| 1:AA:531:C:H5'     | 1:AA:532:A:N3     | 2.10                     | 0.66              |
| 1:AA:558:G:H2'     | 1:AA:559:G:H5'    | 1.78                     | 0.66              |
| 1:AA:779:U:H2'     | 1:AA:780:G:O4'    | 1.95                     | 0.66              |
| 1:AA:894:C:O2'     | 1:AA:895:U:H5'    | 1.95                     | 0.66              |
| 1:AA:977:G:H2'     | 1:AA:978:G:C4'    | 2.26                     | 0.66              |
| 1:AA:1244:G:H5'    | 11:AM:9:ASN:HB2   | 1.78                     | 0.66              |
| 1:AA:1332:G:N7     | 1:AA:1609:A:N6    | 2.42                     | 0.66              |
| 1:AA:2023:G:O2'    | 1:AA:2024:G:H5'   | 1.95                     | 0.66              |
| 1:AA:2123:G:C4'    | 3:AC:172:HIS:HB3  | 2.10                     | 0.66              |
| 1:AA:2129:C:C4'    | 3:AC:6:ARG:CD     | 2.72                     | 0.66              |
| 1:AA:2181:G:H5'    | 55:BC:17:C:C5     | 2.30                     | 0.66              |
| 1:AA:2252:G:N1     | 59:AA:3003:8AN:N3 | 2.25                     | 0.66              |
| 1:AA:2587:A:O2'    | 1:AA:2588:G:H5'   | 1.96                     | 0.66              |
| 1:AA:2660:A:C2     | 57:BZ:456:MET:CA  | 2.78                     | 0.66              |
| 1:AA:2687:U:C2     | 1:AA:2688:U:C6    | 2.82                     | 0.66              |
| 1:AA:2692:C:C2'    | 1:AA:2847:U:HO2'  | 2.08                     | 0.66              |
| 2:AB:57:A:H8       | 2:AB:57:A:H3'     | 1.60                     | 0.66              |
| 4:AD:80:ALA:HB2    | 4:AD:96:HIS:ND1   | 2.11                     | 0.66              |
| 4:AD:181:GLU:HA    | 4:AD:270:ILE:CD1  | 2.25                     | 0.66              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 6:AF:192:LEU:HD22  | 6:AF:193:VAL:N     | 2.10                     | 0.66              |
| 8:AH:28:GLY:HA3    | 8:AH:79:VAL:O      | 1.95                     | 0.66              |
| 9:AK:23:LEU:HD21   | 9:AK:61:ARG:O      | 1.94                     | 0.66              |
| 9:AK:104:LYS:HA    | 9:AK:117:PHE:CE2   | 2.31                     | 0.66              |
| 10:AL:106:LEU:HD12 | 10:AL:106:LEU:C    | 2.19                     | 0.66              |
| 11:AM:45:LEU:HD22  | 29:Ae:59:LYS:CG    | 2.26                     | 0.66              |
| 11:AM:76:LYS:HZ2   | 11:AM:99:LEU:CD1   | 2.09                     | 0.66              |
| 15:AQ:61:PHE:O     | 15:AQ:62:THR:HG23  | 1.96                     | 0.66              |
| 15:AQ:64:ARG:NE    | 15:AQ:77:PRO:CB    | 2.59                     | 0.66              |
| 15:AQ:82:LEU:O     | 15:AQ:85:LYS:NZ    | 2.28                     | 0.66              |
| 18:AT:28:SER:CA    | 18:AT:70:TYR:HA    | 2.23                     | 0.66              |
| 18:AT:47:VAL:C     | 18:AT:51:LEU:HD13  | 2.21                     | 0.66              |
| 20:AV:95:LYS:HE3   | 20:AV:103:GLY:N    | 2.11                     | 0.66              |
| 21:AW:57:ILE:HD11  | 21:AW:70:LEU:HG    | 1.78                     | 0.66              |
| 21:AW:118:GLN:NE2  | 21:AW:120:ILE:HG23 | 2.09                     | 0.66              |
| 23:AY:23:LYS:HE3   | 23:AY:55:LEU:HD21  | 1.78                     | 0.66              |
| 24:AZ:40:THR:CG2   | 24:AZ:42:ALA:HB3   | 2.26                     | 0.66              |
| 25:Aa:59:PHE:O     | 25:Aa:60:GLN:C     | 2.38                     | 0.66              |
| 29:Ae:15:LYS:NZ    | 29:Ae:64:TYR:HB3   | 2.10                     | 0.66              |
| 30:Af:32:HIS:O     | 30:Af:34:GLN:N     | 2.29                     | 0.66              |
| 32:AJ:21:PRO:HD2   | 32:AJ:22:PRO:CD    | 2.23                     | 0.66              |
| 34:BA:47:C:O2'     | 34:BA:48:C:P       | 2.52                     | 0.66              |
| 34:BA:129(A):G:H3' | 34:BA:129(A):G:H8  | 1.61                     | 0.66              |
| 34:BA:191(D):U:H2' | 34:BA:191(E):G:H8  | 1.59                     | 0.66              |
| 34:BA:255:G:C4'    | 50:BU:16:GLN:O     | 2.44                     | 0.66              |
| 34:BA:380:G:H21    | 34:BA:382:A:H3'    | 1.60                     | 0.66              |
| 34:BA:486:U:C2'    | 34:BA:487:A:O5'    | 2.44                     | 0.66              |
| 34:BA:877:C:O2'    | 41:BL:3:THR:HG21   | 1.96                     | 0.66              |
| 34:BA:963:G:H2'    | 34:BA:964:A:H8     | 1.61                     | 0.66              |
| 34:BA:1014:A:O2'   | 52:BW:34:TRP:CZ3   | 2.48                     | 0.66              |
| 34:BA:1190:G:OP2   | 36:BG:5:ILE:HG13   | 1.96                     | 0.66              |
| 35:BF:69:LEU:HB2   | 35:BF:159:PRO:HB2  | 1.76                     | 0.66              |
| 35:BF:72:GLY:HA2   | 35:BF:165:VAL:CG2  | 2.25                     | 0.66              |
| 36:BG:136:GLN:O    | 36:BG:139:GLN:HB2  | 1.96                     | 0.66              |
| 37:BH:61:LYS:CB    | 37:BH:203:VAL:HG13 | 2.24                     | 0.66              |
| 37:BH:101:LEU:HD23 | 37:BH:135:LEU:O    | 1.96                     | 0.66              |
| 37:BH:141:ARG:HH11 | 37:BH:142:PRO:HD2  | 1.60                     | 0.66              |
| 38:BI:17:ALA:HA    | 38:BI:26:PHE:HD2   | 1.61                     | 0.66              |
| 40:BK:43:PHE:HD2   | 40:BK:44:TYR:CE2   | 2.13                     | 0.66              |
| 41:BL:29:SER:CB    | 41:BL:32:LYS:HZ3   | 2.08                     | 0.66              |
| 41:BL:31:PHE:O     | 41:BL:35:ILE:HG12  | 1.96                     | 0.66              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 41:BL:70:GLN:HB2   | 41:BL:73:ASP:O    | 1.95                     | 0.66              |
| 42:BM:38:GLN:C     | 42:BM:40:LEU:N    | 2.53                     | 0.66              |
| 45:BP:53:ARG:NE    | 45:BP:92:ASP:OD2  | 2.29                     | 0.66              |
| 53:BX:25:ARG:HG3   | 53:BX:25:ARG:HH11 | 1.61                     | 0.66              |
| 53:BX:28:ALA:O     | 53:BX:31:SER:OG   | 2.13                     | 0.66              |
| 53:BX:53:LEU:HD21  | 53:BX:92:LEU:HD13 | 1.78                     | 0.66              |
| 57:BZ:57:LEU:O     | 57:BZ:58:ALA:O    | 2.13                     | 0.66              |
| 57:BZ:79:ALA:HA    | 57:BZ:80:ASP:CB   | 2.24                     | 0.66              |
| 57:BZ:132:ARG:HB3  | 57:BZ:133:PRO:CD  | 2.25                     | 0.66              |
| 57:BZ:564:THR:CA   | 57:BZ:566:GLU:HG3 | 2.26                     | 0.66              |
| 57:BZ:586:ARG:HH21 | 57:BZ:586:ARG:HB3 | 1.61                     | 0.66              |
| 1:AA:76:C:O2'      | 23:AY:54:ARG:HA   | 1.96                     | 0.66              |
| 1:AA:241:A:O2'     | 1:AA:242:G:H4'    | 1.95                     | 0.66              |
| 1:AA:378:C:O2'     | 1:AA:379:G:H5'    | 1.95                     | 0.66              |
| 1:AA:530:G:H1      | 1:AA:2022:U:P     | 2.17                     | 0.66              |
| 1:AA:629:G:H1'     | 1:AA:639:U:O2'    | 1.95                     | 0.66              |
| 1:AA:751:A:O4'     | 18:AT:90:ARG:HD3  | 1.95                     | 0.66              |
| 1:AA:784:A:OP1     | 1:AA:2588:G:C5'   | 2.44                     | 0.66              |
| 1:AA:875:G:C6      | 1:AA:902:C:N3     | 2.64                     | 0.66              |
| 1:AA:1048:A:N1     | 1:AA:1113:U:C5'   | 2.57                     | 0.66              |
| 1:AA:1081:U:C4     | 1:AA:1086:A:H2    | 2.14                     | 0.66              |
| 1:AA:1391:U:H2'    | 1:AA:1391:U:O2    | 1.95                     | 0.66              |
| 1:AA:1665:A:H4'    | 10:AL:66:LYS:HB2  | 1.77                     | 0.66              |
| 1:AA:1668:A:N7     | 1:AA:1674:G:C4    | 2.63                     | 0.66              |
| 1:AA:1907:G:H2'    | 1:AA:1908:C:C6    | 2.31                     | 0.66              |
| 1:AA:1935:G:C2'    | 1:AA:1962:C:N4    | 2.57                     | 0.66              |
| 1:AA:2009:G:O2'    | 1:AA:2010:G:H5'   | 1.95                     | 0.66              |
| 1:AA:2303:G:O2'    | 7:AG:132:ASN:CG   | 2.39                     | 0.66              |
| 1:AA:2564:A:H5'    | 1:AA:2649:U:OP1   | 1.95                     | 0.66              |
| 1:AA:2832:U:H1'    | 1:AA:2834:G:N3    | 2.10                     | 0.66              |
| 4:AD:7:LYS:HZ2     | 4:AD:91:ARG:HD2   | 1.60                     | 0.66              |
| 4:AD:8:PRO:CD      | 4:AD:26:LYS:O     | 2.44                     | 0.66              |
| 4:AD:131:LEU:CG    | 4:AD:132:PRO:HD2  | 2.22                     | 0.66              |
| 5:AE:44:TYR:CD2    | 5:AE:45:THR:N     | 2.61                     | 0.66              |
| 6:AF:11:VAL:CG1    | 6:AF:127:GLU:HB2  | 2.24                     | 0.66              |
| 6:AF:45:ARG:HG3    | 6:AF:46:ARG:H     | 1.60                     | 0.66              |
| 6:AF:74:ARG:NH1    | 6:AF:76:GLY:H     | 1.94                     | 0.66              |
| 7:AG:93:THR:HG22   | 7:AG:93:THR:O     | 1.95                     | 0.66              |
| 8:AH:119:GLU:N     | 8:AH:121:ILE:HG22 | 2.10                     | 0.66              |
| 8:AH:149:ARG:HA    | 8:AH:162:ILE:HG21 | 1.77                     | 0.66              |
| 9:AK:15:LEU:HD21   | 9:AK:137:LYS:CB   | 2.26                     | 0.66              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AL:4:PRO:O      | 10:AL:6:THR:HG22   | 1.96                     | 0.66              |
| 10:AL:103:ALA:HB1  | 10:AL:107:ARG:CD   | 2.26                     | 0.66              |
| 11:AM:96:THR:OG1   | 11:AM:102:ARG:HD3  | 1.96                     | 0.66              |
| 13:AO:6:SER:OG     | 13:AO:9:LYS:NZ     | 2.27                     | 0.66              |
| 14:AP:10:ARG:HH11  | 14:AP:89:ARG:HH12  | 1.44                     | 0.66              |
| 14:AP:42:ASP:O     | 14:AP:44:LYS:N     | 2.27                     | 0.66              |
| 15:AQ:20:PRO:HA    | 15:AQ:22:PHE:CZ    | 2.31                     | 0.66              |
| 15:AQ:53:ARG:HH21  | 15:AQ:102:ILE:HD13 | 1.61                     | 0.66              |
| 15:AQ:63:VAL:O     | 15:AQ:63:VAL:CG1   | 2.44                     | 0.66              |
| 17:AS:72:VAL:HG12  | 17:AS:73:SER:H     | 1.61                     | 0.66              |
| 23:AY:35:SER:HA    | 23:AY:38:GLN:OE1   | 1.95                     | 0.66              |
| 24:AZ:10:LYS:NZ    | 24:AZ:12:PRO:CG    | 2.58                     | 0.66              |
| 27:Ac:46:HIS:CG    | 27:Ac:47:THR:N     | 2.63                     | 0.66              |
| 29:Ae:15:LYS:HZ3   | 29:Ae:64:TYR:HB3   | 1.60                     | 0.66              |
| 32:AJ:12:LEU:HB3   | 32:AJ:13:PRO:HD3   | 1.76                     | 0.66              |
| 32:AJ:51:ALA:C     | 32:AJ:72:PRO:CB    | 2.69                     | 0.66              |
| 32:AJ:90:LYS:HE2   | 32:AJ:90:LYS:N     | 2.11                     | 0.66              |
| 32:AJ:104:VAL:HG13 | 32:AJ:127:ILE:HD13 | 0.68                     | 0.66              |
| 32:AJ:115:LEU:HG   | 32:AJ:126:MET:HE1  | 1.76                     | 0.66              |
| 34:BA:178:C:C2     | 34:BA:179:A:C8     | 2.84                     | 0.66              |
| 34:BA:671:G:H2'    | 34:BA:672:U:C1'    | 2.25                     | 0.66              |
| 34:BA:858:G:N2     | 34:BA:869:G:C3'    | 2.56                     | 0.66              |
| 34:BA:948:C:OP1    | 46:BQ:109:THR:CB   | 2.44                     | 0.66              |
| 34:BA:1114:C:O2'   | 47:BR:60:SER:HB3   | 1.96                     | 0.66              |
| 34:BA:1117:G:C5    | 34:BA:1184:G:C5    | 2.81                     | 0.66              |
| 34:BA:1151:A:N6    | 34:BA:1152:A:N6    | 2.43                     | 0.66              |
| 34:BA:1239:A:C2    | 34:BA:1298:C:C5    | 2.83                     | 0.66              |
| 35:BF:84:GLU:N     | 35:BF:234:PRO:HG3  | 2.10                     | 0.66              |
| 37:BH:54:TYR:O     | 37:BH:55:ALA:C     | 2.39                     | 0.66              |
| 38:BI:105:VAL:HG12 | 38:BI:106:PRO:N    | 2.09                     | 0.66              |
| 40:BK:70:LYS:HA    | 40:BK:100:ALA:CB   | 2.25                     | 0.66              |
| 42:BM:37:PHE:N     | 42:BM:37:PHE:CD2   | 2.62                     | 0.66              |
| 42:BM:51:ARG:HH11  | 42:BM:51:ARG:CA    | 2.07                     | 0.66              |
| 42:BM:117:HIS:C    | 42:BM:119:ALA:H    | 2.04                     | 0.66              |
| 43:BN:11:PHE:CZ    | 43:BN:65:LEU:HG    | 2.31                     | 0.66              |
| 46:BQ:81:LEU:HD22  | 46:BQ:81:LEU:C     | 2.19                     | 0.66              |
| 48:BS:6:GLU:O      | 48:BS:7:GLU:C      | 2.39                     | 0.66              |
| 48:BS:34:LEU:CG    | 48:BS:35:ARG:H     | 2.09                     | 0.66              |
| 48:BS:34:LEU:HD12  | 48:BS:38:ARG:HE    | 1.61                     | 0.66              |
| 50:BU:57:VAL:HG23  | 50:BU:58:GLU:N     | 2.10                     | 0.66              |
| 57:BZ:89:MET:HE2   | 57:BZ:119:TYR:CD2  | 2.31                     | 0.66              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:BZ:157:GLN:HG2 | 57:BZ:158:LEU:HD13 | 1.78                     | 0.66              |
| 1:AA:13:A:N6      | 1:AA:525:U:N1      | 2.44                     | 0.66              |
| 1:AA:66:C:H2'     | 1:AA:67:U:C5'      | 2.26                     | 0.66              |
| 1:AA:71:A:H5''    | 1:AA:73:A:C8       | 2.30                     | 0.66              |
| 1:AA:83:G:H1      | 1:AA:102:G:HO2'    | 1.44                     | 0.66              |
| 1:AA:176:G:C2'    | 1:AA:177:G:O4'     | 2.42                     | 0.66              |
| 1:AA:206:U:C6     | 1:AA:206:U:OP2     | 2.49                     | 0.66              |
| 1:AA:330:A:C2     | 1:AA:1210:A:H2'    | 2.30                     | 0.66              |
| 1:AA:397:G:OP2    | 25:Aa:59:PHE:HZ    | 1.79                     | 0.66              |
| 1:AA:460:A:H3'    | 1:AA:461:C:C6      | 2.31                     | 0.66              |
| 1:AA:501:A:C6     | 1:AA:502:A:N1      | 2.63                     | 0.66              |
| 1:AA:583:G:O2'    | 1:AA:584:C:H5'     | 1.96                     | 0.66              |
| 1:AA:605:C:OP1    | 6:AF:104:LYS:HB2   | 1.96                     | 0.66              |
| 1:AA:623:G:C8     | 11:AM:105:LEU:CD1  | 2.79                     | 0.66              |
| 1:AA:703:U:H2'    | 1:AA:704:G:C1'     | 2.26                     | 0.66              |
| 1:AA:777:A:O2'    | 1:AA:778:G:H5'     | 1.95                     | 0.66              |
| 1:AA:974:G:O2'    | 1:AA:1186:G:C4     | 2.45                     | 0.66              |
| 1:AA:1023:U:P     | 1:AA:1025:G:H1     | 2.19                     | 0.66              |
| 1:AA:1024:G:H3'   | 1:AA:1025:G:C5'    | 2.26                     | 0.66              |
| 1:AA:1025:G:H1'   | 1:AA:1134:G:O4'    | 1.95                     | 0.66              |
| 1:AA:1070:A:H5''  | 1:AA:1071:G:OP1    | 1.96                     | 0.66              |
| 1:AA:1174:A:N6    | 1:AA:1177:A:C6     | 2.59                     | 0.66              |
| 1:AA:1208:C:N4    | 1:AA:1209:G:O6     | 2.28                     | 0.66              |
| 1:AA:1249:U:O4    | 11:AM:21:ARG:CZ    | 2.44                     | 0.66              |
| 1:AA:1604:C:O2'   | 1:AA:1605:C:H5'    | 1.95                     | 0.66              |
| 1:AA:1759:A:O2'   | 1:AA:1760:A:H5'    | 1.96                     | 0.66              |
| 1:AA:1814:G:H5''  | 1:AA:1815:A:OP2    | 1.96                     | 0.66              |
| 1:AA:2210:G:N7    | 4:AD:150:LYS:HA    | 2.09                     | 0.66              |
| 1:AA:2564:A:C2'   | 1:AA:2565:A:C8     | 2.72                     | 0.66              |
| 1:AA:2681:C:H5    | 1:AA:2727:G:C2     | 2.14                     | 0.66              |
| 1:AA:2777:G:H3'   | 1:AA:2777:G:H8     | 1.59                     | 0.66              |
| 2:AB:3:C:H2'      | 2:AB:4:C:H6        | 1.60                     | 0.66              |
| 4:AD:71:ASP:O     | 4:AD:72:LYS:HB2    | 1.95                     | 0.66              |
| 4:AD:84:TYR:CG    | 4:AD:91:ARG:HG3    | 2.31                     | 0.66              |
| 5:AE:59:VAL:CB    | 5:AE:62:PRO:HD2    | 2.26                     | 0.66              |
| 5:AE:154:LYS:HZ1  | 5:AE:156:MET:HB2   | 1.59                     | 0.66              |
| 7:AG:37:VAL:HG13  | 7:AG:159:VAL:HA    | 1.76                     | 0.66              |
| 8:AH:52:VAL:HG11  | 8:AH:69:ARG:HB3    | 1.77                     | 0.66              |
| 8:AH:76:VAL:HG23  | 8:AH:77:LYS:H      | 1.57                     | 0.66              |
| 9:AK:88:GLU:HB2   | 9:AK:89:LYS:HE2    | 1.78                     | 0.66              |
| 9:AK:123:TYR:C    | 9:AK:125:GLY:H     | 2.02                     | 0.66              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 9:AK:128:HIS:O     | 9:AK:131:GLN:HB2  | 1.95                     | 0.66              |
| 10:AL:13:ASN:OD1   | 10:AL:52:VAL:HG12 | 1.96                     | 0.66              |
| 12:AN:6:ARG:CB     | 12:AN:44:ALA:HB1  | 2.21                     | 0.66              |
| 12:AN:16:ARG:NH1   | 12:AN:72:LYS:HA   | 2.11                     | 0.66              |
| 12:AN:93:TYR:C     | 12:AN:94:VAL:CG1  | 2.69                     | 0.66              |
| 12:AN:109:VAL:HG11 | 12:AN:114:ALA:H   | 1.61                     | 0.66              |
| 13:AO:63:ARG:O     | 13:AO:64:ARG:C    | 2.39                     | 0.66              |
| 16:AR:94:ASN:HD22  | 17:AS:6:LYS:HZ1   | 1.42                     | 0.66              |
| 16:AR:99:ALA:HA    | 16:AR:106:PHE:CB  | 2.26                     | 0.66              |
| 20:AV:49:VAL:HB    | 20:AV:51:VAL:H    | 1.61                     | 0.66              |
| 20:AV:74:PRO:CB    | 20:AV:101:LYS:N   | 2.59                     | 0.66              |
| 21:AW:4:ARG:CG     | 21:AW:38:TYR:O    | 2.44                     | 0.66              |
| 21:AW:11:GLU:HG3   | 21:AW:36:LYS:NZ   | 2.11                     | 0.66              |
| 22:AX:46:LYS:HE2   | 22:AX:77:ARG:N    | 2.11                     | 0.66              |
| 23:AY:7:GLU:HA     | 23:AY:10:LYS:HG2  | 1.77                     | 0.66              |
| 24:AZ:3:ARG:HB3    | 24:AZ:3:ARG:CZ    | 2.25                     | 0.66              |
| 24:AZ:4:LEU:HD23   | 24:AZ:5:LYS:N     | 2.10                     | 0.66              |
| 25:Aa:5:ILE:HD11   | 25:Aa:10:VAL:N    | 2.11                     | 0.66              |
| 25:Aa:23:GLU:C     | 25:Aa:25:TYR:N    | 2.54                     | 0.66              |
| 26:Ab:20:ARG:HA    | 26:Ab:23:HIS:CD2  | 2.31                     | 0.66              |
| 26:Ab:37:LYS:HD2   | 26:Ab:37:LYS:H    | 1.61                     | 0.66              |
| 26:Ab:48:GLU:N     | 26:Ab:58:LEU:HG   | 2.10                     | 0.66              |
| 27:Ac:20:ASN:ND2   | 27:Ac:43:CYS:H    | 1.91                     | 0.66              |
| 27:Ac:46:HIS:ND1   | 27:Ac:47:THR:N    | 2.44                     | 0.66              |
| 29:Ae:30:ARG:NH2   | 29:Ae:43:GLN:C    | 2.51                     | 0.66              |
| 34:BA:192:U:C2     | 34:BA:193:C:C5    | 2.83                     | 0.66              |
| 34:BA:397:A:O2'    | 34:BA:399:G:OP2   | 2.14                     | 0.66              |
| 34:BA:686:U:O2'    | 34:BA:687:A:OP1   | 2.14                     | 0.66              |
| 34:BA:981:U:H6     | 34:BA:981:U:O5'   | 1.79                     | 0.66              |
| 34:BA:1148:U:O2'   | 34:BA:1149:C:H5'  | 1.96                     | 0.66              |
| 34:BA:1181:G:C2'   | 34:BA:1182:G:H5'  | 2.26                     | 0.66              |
| 34:BA:1219:U:P     | 47:BR:19:ARG:HH22 | 2.19                     | 0.66              |
| 34:BA:1378:C:O2    | 34:BA:1378:C:C2'  | 2.44                     | 0.66              |
| 35:BF:17:PHE:CA    | 35:BF:42:ILE:HG22 | 2.25                     | 0.66              |
| 35:BF:61:LEU:HA    | 35:BF:64:ARG:CD   | 2.25                     | 0.66              |
| 35:BF:103:THR:O    | 35:BF:104:ASN:HB3 | 1.95                     | 0.66              |
| 36:BG:59:ARG:HB2   | 36:BG:59:ARG:CZ   | 2.26                     | 0.66              |
| 37:BH:149:ALA:O    | 37:BH:152:SER:HB3 | 1.95                     | 0.66              |
| 38:BI:61:TYR:HA    | 38:BI:64:ARG:CG   | 2.25                     | 0.66              |
| 40:BK:12:LEU:HD12  | 40:BK:12:LEU:O    | 1.94                     | 0.66              |
| 41:BL:84:ARG:HH11  | 41:BL:84:ARG:CB   | 1.99                     | 0.66              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 43:BN:89:ASP:O    | 43:BN:90:LEU:HG  | 1.95                     | 0.66              |
| 45:BP:58:VAL:HG12 | 45:BP:59:ARG:N   | 2.10                     | 0.66              |
| 45:BP:85:ILE:HD11 | 45:BP:98:TYR:HB3 | 1.75                     | 0.66              |
| 46:BQ:65:LYS:HB2  | 46:BQ:69:GLU:CB  | 2.19                     | 0.66              |
| 52:BW:22:LEU:HD23 | 52:BW:22:LEU:C   | 2.21                     | 0.66              |
| 56:BD:47:U:O2'    | 56:BD:48:C:H5''  | 1.95                     | 0.66              |
| 56:BD:48:C:OP1    | 56:BD:49:C:H5''  | 1.96                     | 0.66              |
| 56:BE:21:A:C2     | 56:BE:46:G:N2    | 2.64                     | 0.66              |
| 57:BZ:8:ILE:HG23  | 57:BZ:72:ILE:CD1 | 2.23                     | 0.66              |
| 57:BZ:13:HIS:HA   | 57:BZ:77:GLY:C   | 2.20                     | 0.66              |
| 57:BZ:122:LYS:CE  | 57:BZ:155:ASP:C  | 2.66                     | 0.66              |
| 57:BZ:267:LEU:CG  | 57:BZ:268:ALA:H  | 2.08                     | 0.66              |
| 1:AA:226:G:O2'    | 1:AA:228:A:N1    | 2.29                     | 0.66              |
| 1:AA:407:G:H2'    | 1:AA:408:G:C8    | 2.31                     | 0.66              |
| 1:AA:503:A:N1     | 1:AA:505:A:N6    | 2.44                     | 0.66              |
| 1:AA:523:C:O2'    | 1:AA:524:U:H5'   | 1.95                     | 0.66              |
| 1:AA:586:A:N1     | 1:AA:810:U:H5'   | 2.10                     | 0.66              |
| 1:AA:871:U:H2'    | 1:AA:872:A:C8    | 2.31                     | 0.66              |
| 1:AA:1046:A:H61   | 31:AI:9:LEU:N    | 1.78                     | 0.66              |
| 1:AA:1166:C:O2    | 1:AA:1184:G:N2   | 2.29                     | 0.66              |
| 1:AA:1181:C:H2'   | 1:AA:1182:A:C1'  | 2.25                     | 0.66              |
| 1:AA:1203:G:C5    | 1:AA:1240:U:N3   | 2.63                     | 0.66              |
| 1:AA:1212:G:C6    | 1:AA:1236:G:O6   | 2.49                     | 0.66              |
| 1:AA:1226:G:H3'   | 1:AA:1226:G:H8   | 1.61                     | 0.66              |
| 1:AA:1363:C:O3'   | 1:AA:1809:A:C6   | 2.48                     | 0.66              |
| 1:AA:1567:A:N1    | 4:AD:85:ASP:CA   | 2.60                     | 0.66              |
| 1:AA:1916:A:C6    | 34:BA:1409:C:C5' | 2.79                     | 0.66              |
| 1:AA:1920:C:H1'   | 1:AA:1921:G:O5'  | 1.96                     | 0.66              |
| 1:AA:1993:U:H6    | 1:AA:1993:U:H3'  | 1.61                     | 0.66              |
| 1:AA:2063:C:H3'   | 1:AA:2064:C:C5'  | 2.21                     | 0.66              |
| 1:AA:2075:U:O4    | 1:AA:2077:A:N7   | 2.29                     | 0.66              |
| 1:AA:2597:G:H5'   | 4:AD:242:ARG:HE  | 1.59                     | 0.66              |
| 1:AA:2631:G:H4'   | 1:AA:2892:A:O5'  | 1.95                     | 0.66              |
| 1:AA:2661:G:O2'   | 1:AA:2662:A:H5'  | 1.96                     | 0.66              |
| 1:AA:2876:G:C5'   | 15:AQ:1:MET:H2   | 2.08                     | 0.66              |
| 2:AB:47:C:H2'     | 2:AB:48:A:H5'    | 1.78                     | 0.66              |
| 2:AB:110:G:C2     | 2:AB:111:U:H1'   | 2.31                     | 0.66              |
| 3:AC:66:HIS:C     | 3:AC:158:ALA:O   | 2.39                     | 0.66              |
| 3:AC:68:LEU:HB3   | 3:AC:157:LYS:O   | 1.94                     | 0.66              |
| 4:AD:29:PRO:CB    | 4:AD:31:LYS:HZ2  | 2.09                     | 0.66              |
| 4:AD:91:ARG:HH11  | 4:AD:91:ARG:N    | 1.94                     | 0.66              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 4:AD:233:HIS:ND1  | 4:AD:233:HIS:N     | 2.45                     | 0.66              |
| 5:AE:92:THR:HG22  | 5:AE:92:THR:O      | 1.94                     | 0.66              |
| 5:AE:102:VAL:CG2  | 5:AE:103:ASP:N     | 2.59                     | 0.66              |
| 5:AE:149:ARG:C    | 5:AE:149:ARG:HD3   | 2.19                     | 0.66              |
| 6:AF:44:ARG:HG3   | 6:AF:45:ARG:N      | 2.10                     | 0.66              |
| 8:AH:87:LEU:O     | 8:AH:131:VAL:O     | 2.13                     | 0.66              |
| 9:AK:89:LYS:HA    | 9:AK:92:ALA:CB     | 2.26                     | 0.66              |
| 10:AL:41:ALA:O    | 10:AL:56:ASP:HA    | 1.95                     | 0.66              |
| 10:AL:103:ALA:O   | 10:AL:104:ARG:C    | 2.39                     | 0.66              |
| 11:AM:7:ARG:HD2   | 11:AM:7:ARG:N      | 2.10                     | 0.66              |
| 11:AM:121:LYS:H   | 11:AM:137:LYS:HB2  | 1.59                     | 0.66              |
| 13:AO:17:ARG:CG   | 13:AO:18:LEU:H     | 2.09                     | 0.66              |
| 14:AP:29:PHE:CD1  | 14:AP:29:PHE:O     | 2.48                     | 0.66              |
| 14:AP:49:VAL:CB   | 14:AP:80:LEU:HG    | 2.25                     | 0.66              |
| 16:AR:89:GLU:CD   | 17:AS:52:VAL:HB    | 2.21                     | 0.66              |
| 17:AS:6:LYS:NZ    | 17:AS:10:LYS:HD2   | 2.10                     | 0.66              |
| 17:AS:62:LEU:CD2  | 17:AS:98:GLU:HA    | 2.21                     | 0.66              |
| 17:AS:69:LYS:CG   | 17:AS:70:ILE:H     | 2.07                     | 0.66              |
| 18:AT:13:SER:OG   | 18:AT:14:PRO:CD    | 2.36                     | 0.66              |
| 20:AV:37:VAL:HG22 | 20:AV:39:VAL:HG23  | 1.77                     | 0.66              |
| 21:AW:24:LEU:HD13 | 21:AW:83:PRO:HG2   | 1.78                     | 0.66              |
| 22:AX:22:GLY:O    | 22:AX:38:VAL:HG13  | 1.95                     | 0.66              |
| 29:Ae:54:GLU:C    | 29:Ae:56:GLU:OE2   | 2.39                     | 0.66              |
| 33:Ag:8:UNK:CB    | 33:Ag:147:UNK:CA   | 2.70                     | 0.66              |
| 34:BA:192:U:H2'   | 34:BA:193:C:H6     | 1.59                     | 0.66              |
| 34:BA:434:U:H2'   | 34:BA:435:C:H6     | 1.60                     | 0.66              |
| 34:BA:528:C:H42   | 45:BP:49:ASN:HD21  | 1.43                     | 0.66              |
| 34:BA:767:A:N6    | 34:BA:768:A:C6     | 2.64                     | 0.66              |
| 34:BA:931:C:H2'   | 34:BA:932:C:C5     | 2.31                     | 0.66              |
| 34:BA:1227:A:H4'  | 46:BQ:115:LYS:NZ   | 2.11                     | 0.66              |
| 34:BA:1263:C:C2   | 34:BA:1264:C:C5    | 2.84                     | 0.66              |
| 34:BA:1317:C:C2   | 34:BA:1318:A:N9    | 2.64                     | 0.66              |
| 34:BA:1366:C:O2'  | 34:BA:1367:C:H5'   | 1.96                     | 0.66              |
| 34:BA:1373:G:H5'' | 40:BK:36:LYS:HD2   | 1.76                     | 0.66              |
| 34:BA:1409:C:O2   | 34:BA:1410:G:C8    | 2.49                     | 0.66              |
| 35:BF:68:ILE:O    | 35:BF:90:MET:HB3   | 1.96                     | 0.66              |
| 35:BF:80:ILE:HG21 | 35:BF:211:ILE:HG21 | 1.78                     | 0.66              |
| 36:BG:5:ILE:HG23  | 43:BN:51:ARG:HH12  | 1.61                     | 0.66              |
| 36:BG:24:ALA:HB1  | 36:BG:28:GLN:NE2   | 2.11                     | 0.66              |
| 36:BG:28:GLN:N    | 36:BG:30:ARG:NE    | 2.44                     | 0.66              |
| 36:BG:55:VAL:HG13 | 36:BG:68:VAL:HG22  | 1.77                     | 0.66              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 36:BG:94:LEU:O     | 36:BG:95:THR:HG23  | 1.96                     | 0.66              |
| 36:BG:151:VAL:HG12 | 36:BG:152:ILE:N    | 2.09                     | 0.66              |
| 37:BH:57:ARG:HH22  | 38:BI:107:ARG:HD3  | 1.60                     | 0.66              |
| 37:BH:117:ALA:O    | 37:BH:121:VAL:HG23 | 1.95                     | 0.66              |
| 38:BI:141:GLN:C    | 38:BI:142:LEU:HG   | 2.19                     | 0.66              |
| 39:BJ:78:GLU:O     | 39:BJ:81:ILE:HD12  | 1.96                     | 0.66              |
| 44:BO:92:GLU:O     | 44:BO:93:GLN:C     | 2.39                     | 0.66              |
| 44:BO:110:ASP:CB   | 51:BV:88:LYS:HD2   | 2.26                     | 0.66              |
| 45:BP:60:LEU:CD1   | 45:BP:64:TYR:HB3   | 2.26                     | 0.66              |
| 52:BW:9:VAL:HG22   | 52:BW:42:PRO:CD    | 2.26                     | 0.66              |
| 57:BZ:18:LYS:HD2   | 60:BZ:701:GCP:O3G  | 1.96                     | 0.66              |
| 57:BZ:230:LYS:C    | 57:BZ:265:THR:C    | 2.64                     | 0.66              |
| 57:BZ:446:ARG:HG3  | 57:BZ:480:VAL:CG1  | 2.19                     | 0.66              |
| 1:AA:221:A:H3'     | 1:AA:221:A:H8      | 1.61                     | 0.65              |
| 1:AA:226:G:C2      | 1:AA:227:A:C2      | 2.84                     | 0.65              |
| 1:AA:347:A:H2'     | 1:AA:347:A:N3      | 2.11                     | 0.65              |
| 1:AA:445:C:H5''    | 16:AR:3:ARG:HG3    | 1.78                     | 0.65              |
| 1:AA:528:A:N1      | 1:AA:2043:C:OP2    | 2.29                     | 0.65              |
| 1:AA:729:G:N9      | 1:AA:730:C:H1'     | 2.10                     | 0.65              |
| 1:AA:838:C:H2'     | 1:AA:839:U:C6      | 2.31                     | 0.65              |
| 1:AA:865:C:O2      | 1:AA:865:C:H2'     | 1.95                     | 0.65              |
| 1:AA:931:G:H21     | 24:AZ:25:ALA:N     | 1.94                     | 0.65              |
| 1:AA:976:C:O2      | 1:AA:977:G:H8      | 1.79                     | 0.65              |
| 1:AA:997:G:OP1     | 16:AR:92:ARG:CD    | 2.44                     | 0.65              |
| 1:AA:1059:G:C4'    | 32:AJ:74:ALA:N     | 2.57                     | 0.65              |
| 1:AA:1124:C:H3'    | 1:AA:1125:G:H8     | 1.60                     | 0.65              |
| 1:AA:1287:A:H5'    | 13:AO:104:ARG:HG3  | 1.77                     | 0.65              |
| 1:AA:1359:A:N6     | 1:AA:1360:A:N7     | 2.44                     | 0.65              |
| 1:AA:1386:C:H2'    | 1:AA:1387:C:H6     | 1.60                     | 0.65              |
| 1:AA:1406:U:C2     | 1:AA:1407:C:C5     | 2.84                     | 0.65              |
| 1:AA:1630:G:H2'    | 1:AA:1630(A):C:H6  | 1.61                     | 0.65              |
| 1:AA:1797:C:H2'    | 1:AA:1798:U:C5     | 2.31                     | 0.65              |
| 1:AA:1952:A:C5     | 1:AA:1953:A:C2     | 2.84                     | 0.65              |
| 1:AA:1992:G:C1'    | 1:AA:1993:U:C5     | 2.80                     | 0.65              |
| 1:AA:2098:U:H2'    | 1:AA:2099:U:H6     | 1.61                     | 0.65              |
| 1:AA:2115:G:N3     | 1:AA:2117:A:N7     | 2.43                     | 0.65              |
| 1:AA:2369:A:H61    | 1:AA:2382:G:N2     | 1.93                     | 0.65              |
| 1:AA:2408:U:O5'    | 1:AA:2408:U:C6     | 2.43                     | 0.65              |
| 1:AA:2439:A:H4'    | 1:AA:2440:C:C5'    | 2.26                     | 0.65              |
| 1:AA:2491:U:N1     | 1:AA:2492:U:H5'    | 2.10                     | 0.65              |
| 1:AA:2507:C:H4'    | 56:BD:75:C:C2      | 2.31                     | 0.65              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2529:G:H5''  | 1:AA:2530:A:H5''   | 1.77                     | 0.65              |
| 1:AA:2690:C:H6    | 1:AA:2690:C:C3'    | 2.09                     | 0.65              |
| 1:AA:2690:C:C6    | 1:AA:2690:C:C3'    | 2.78                     | 0.65              |
| 1:AA:2746:U:C5'   | 8:AH:139:GLN:HA    | 2.25                     | 0.65              |
| 1:AA:2747:G:C4    | 1:AA:2756:U:O4     | 2.49                     | 0.65              |
| 1:AA:2820:A:C2'   | 1:AA:2821:A:OP1    | 2.44                     | 0.65              |
| 2:AB:14:U:H6      | 2:AB:14:U:H3'      | 1.60                     | 0.65              |
| 2:AB:75:G:H4'     | 21:AW:36:LYS:NZ    | 2.10                     | 0.65              |
| 3:AC:82:LYS:HE3   | 3:AC:147:PHE:CD1   | 2.23                     | 0.65              |
| 4:AD:54:ARG:HB3   | 4:AD:218:ARG:HD2   | 1.78                     | 0.65              |
| 4:AD:55:GLY:H     | 4:AD:218:ARG:CD    | 2.09                     | 0.65              |
| 4:AD:134:ARG:HA   | 4:AD:168:ARG:CZ    | 2.26                     | 0.65              |
| 5:AE:59:VAL:HB    | 5:AE:62:PRO:HD2    | 1.78                     | 0.65              |
| 6:AF:125:LEU:O    | 6:AF:126:VAL:HG12  | 1.96                     | 0.65              |
| 6:AF:131:GLY:CA   | 6:AF:138:GLU:HB2   | 2.26                     | 0.65              |
| 6:AF:131:GLY:O    | 6:AF:133:ASN:N     | 2.29                     | 0.65              |
| 7:AG:3:LEU:HD22   | 7:AG:4:ASP:CG      | 2.21                     | 0.65              |
| 7:AG:16:ARG:HD2   | 7:AG:20:ILE:CG1    | 2.25                     | 0.65              |
| 7:AG:68:PRO:HG3   | 7:AG:90:LEU:HD21   | 1.77                     | 0.65              |
| 8:AH:40:GLU:HG3   | 8:AH:61:HIS:NE2    | 2.11                     | 0.65              |
| 8:AH:148:ILE:HG23 | 8:AH:162:ILE:CD1   | 2.25                     | 0.65              |
| 8:AH:167:GLU:O    | 8:AH:169:VAL:N     | 2.29                     | 0.65              |
| 9:AK:16:ILE:HD12  | 9:AK:53:VAL:O      | 1.96                     | 0.65              |
| 9:AK:37:LYS:HD2   | 9:AK:42:TRP:O      | 1.95                     | 0.65              |
| 9:AK:76:SER:C     | 9:AK:78:TYR:N      | 2.53                     | 0.65              |
| 10:AL:18:LYS:NZ   | 10:AL:44:LYS:NZ    | 2.44                     | 0.65              |
| 10:AL:63:VAL:HB   | 10:AL:78:ARG:CG    | 2.26                     | 0.65              |
| 11:AM:126:VAL:HA  | 11:AM:145:PRO:HA   | 1.78                     | 0.65              |
| 12:AN:137:TYR:CE2 | 21:AW:124:ILE:HD12 | 2.30                     | 0.65              |
| 13:AO:5:LYS:NZ    | 13:AO:6:SER:N      | 2.43                     | 0.65              |
| 13:AO:22:ARG:HG2  | 13:AO:70:LEU:HD22  | 1.78                     | 0.65              |
| 13:AO:75:LEU:O    | 13:AO:76:VAL:C     | 2.39                     | 0.65              |
| 14:AP:62:LYS:HB2  | 14:AP:65:VAL:CG1   | 2.26                     | 0.65              |
| 16:AR:47:TYR:CZ   | 17:AS:76:LYS:C     | 2.74                     | 0.65              |
| 16:AR:108:GLU:C   | 16:AR:110:VAL:N    | 2.42                     | 0.65              |
| 18:AT:6:ILE:HG12  | 18:AT:103:ILE:O    | 1.96                     | 0.65              |
| 18:AT:36:LEU:HD11 | 18:AT:47:VAL:HB    | 1.77                     | 0.65              |
| 21:AW:123:ASP:H   | 21:AW:171:ILE:CD1  | 2.09                     | 0.65              |
| 22:AX:72:ARG:O    | 22:AX:73:GLY:C     | 2.40                     | 0.65              |
| 25:Aa:57:GLU:HA   | 25:Aa:61:ARG:NH1   | 2.10                     | 0.65              |
| 29:Ae:60:LEU:HD23 | 29:Ae:60:LEU:C     | 2.20                     | 0.65              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 32:AJ:64:SER:HB2   | 32:AJ:65:PHE:CG    | 2.31                     | 0.65              |
| 32:AJ:84:LEU:HD12  | 32:AJ:86:LYS:CE    | 2.17                     | 0.65              |
| 34:BA:109:A:H4'    | 34:BA:110:C:OP2    | 1.95                     | 0.65              |
| 34:BA:329:A:O2'    | 34:BA:330:C:H5'    | 1.95                     | 0.65              |
| 34:BA:714:G:H2'    | 34:BA:715:A:C8     | 2.31                     | 0.65              |
| 34:BA:900:A:H2'    | 34:BA:901:A:H8     | 1.59                     | 0.65              |
| 34:BA:989:C:H2'    | 34:BA:990:C:H5'    | 1.77                     | 0.65              |
| 34:BA:1266:G:H2'   | 34:BA:1268:A:OP2   | 1.96                     | 0.65              |
| 34:BA:1315:U:C2    | 34:BA:1361:G:H1'   | 2.26                     | 0.65              |
| 34:BA:1399:C:N3    | 34:BA:1502:A:N6    | 2.44                     | 0.65              |
| 34:BA:1405:G:H1'   | 34:BA:1519:A:O4'   | 1.96                     | 0.65              |
| 34:BA:1430:C:O2'   | 34:BA:1431:C:O5'   | 2.14                     | 0.65              |
| 35:BF:102:LEU:HB3  | 35:BF:180:LEU:HD13 | 1.78                     | 0.65              |
| 35:BF:164:VAL:HG22 | 35:BF:165:VAL:N    | 2.11                     | 0.65              |
| 37:BH:18:LYS:HE3   | 37:BH:33:MET:CB    | 2.27                     | 0.65              |
| 38:BI:109:ILE:HG23 | 38:BI:110:LEU:N    | 2.10                     | 0.65              |
| 39:BJ:98:LEU:HG    | 51:BV:28:GLU:HG2   | 1.78                     | 0.65              |
| 41:BL:40:ALA:N     | 41:BL:45:ILE:HG23  | 2.11                     | 0.65              |
| 41:BL:104:ARG:HG2  | 41:BL:104:ARG:NH1  | 2.04                     | 0.65              |
| 45:BP:33:ARG:O     | 45:BP:85:ILE:HG22  | 1.97                     | 0.65              |
| 46:BQ:4:ILE:HD13   | 46:BQ:57:ARG:CG    | 2.00                     | 0.65              |
| 46:BQ:87:TYR:CZ    | 52:BW:75:ALA:C     | 2.73                     | 0.65              |
| 51:BV:61:LYS:HD2   | 51:BV:64:ARG:NH2   | 2.06                     | 0.65              |
| 52:BW:38:SER:HB3   | 52:BW:71:LEU:HG    | 1.78                     | 0.65              |
| 52:BW:69:HIS:CB    | 52:BW:74:PHE:HZ    | 2.04                     | 0.65              |
| 57:BZ:22:VAL:HG12  | 57:BZ:56:ILE:CG1   | 2.22                     | 0.65              |
| 57:BZ:39:GLN:HA    | 57:BZ:40:GLU:CG    | 2.26                     | 0.65              |
| 57:BZ:64:ILE:HG23  | 57:BZ:188:GLN:OE1  | 1.93                     | 0.65              |
| 57:BZ:205:PHE:HA   | 57:BZ:229:GLY:CA   | 2.25                     | 0.65              |
| 57:BZ:208:GLN:O    | 57:BZ:210:SER:N    | 2.29                     | 0.65              |
| 1:AA:49:A:H2       | 1:AA:120:U:H3      | 1.43                     | 0.65              |
| 1:AA:286:C:H2'     | 1:AA:287:C:C6      | 2.32                     | 0.65              |
| 1:AA:412:A:H62     | 1:AA:2411:A:H1'    | 1.61                     | 0.65              |
| 1:AA:475:U:C6      | 1:AA:509:C:N4      | 2.65                     | 0.65              |
| 1:AA:515:A:O5'     | 1:AA:515:A:H8      | 1.78                     | 0.65              |
| 1:AA:613:U:H5'     | 1:AA:614:U:C6      | 2.30                     | 0.65              |
| 1:AA:835:A:C4'     | 1:AA:2358:G:H1'    | 2.25                     | 0.65              |
| 1:AA:964:C:O2'     | 1:AA:2273:A:C8     | 2.49                     | 0.65              |
| 1:AA:1036:G:N2     | 1:AA:1120:G:C4     | 2.64                     | 0.65              |
| 1:AA:1116:C:OP2    | 1:AA:1116:C:H6     | 1.78                     | 0.65              |
| 1:AA:1229:G:C6     | 1:AA:1230:C:C2     | 2.84                     | 0.65              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1277:G:O2'   | 1:AA:1278:A:H5'   | 1.95                     | 0.65              |
| 1:AA:1307:A:O3'   | 1:AA:1379:A:N6    | 2.29                     | 0.65              |
| 1:AA:1407:C:O2'   | 1:AA:1408:C:H5'   | 1.96                     | 0.65              |
| 1:AA:1789:A:H2'   | 4:AD:213:ARG:HH22 | 1.61                     | 0.65              |
| 1:AA:1799:G:N2    | 4:AD:157:ARG:HH22 | 1.93                     | 0.65              |
| 1:AA:1820:U:C5    | 4:AD:159:ALA:HB3  | 2.32                     | 0.65              |
| 1:AA:1882:C:H2'   | 1:AA:1883:G:H5'   | 1.78                     | 0.65              |
| 1:AA:2072:G:H2'   | 1:AA:2073:C:H6    | 1.61                     | 0.65              |
| 1:AA:2209:C:O2'   | 1:AA:2210:G:H3'   | 1.95                     | 0.65              |
| 1:AA:2251:G:C4    | 59:AA:3003:8AN:H2 | 1.66                     | 0.65              |
| 1:AA:2371:G:N2    | 1:AA:2372:G:C6    | 2.64                     | 0.65              |
| 1:AA:2521:C:H2'   | 1:AA:2522:U:O4'   | 1.97                     | 0.65              |
| 1:AA:2661:G:H2'   | 1:AA:2662:A:H8    | 1.61                     | 0.65              |
| 2:AB:55:U:H2'     | 2:AB:56:G:O4'     | 1.96                     | 0.65              |
| 3:AC:180:PHE:CE2  | 3:AC:184:LYS:CG   | 2.79                     | 0.65              |
| 4:AD:208:LYS:HZ1  | 4:AD:211:ARG:HH21 | 1.44                     | 0.65              |
| 4:AD:229:VAL:HG13 | 4:AD:230:ASP:CG   | 2.21                     | 0.65              |
| 5:AE:94:GLU:O     | 5:AE:95:ILE:C     | 2.40                     | 0.65              |
| 6:AF:4:VAL:C      | 6:AF:20:LEU:HD12  | 2.14                     | 0.65              |
| 7:AG:39:ILE:HG13  | 7:AG:157:ILE:HG13 | 1.77                     | 0.65              |
| 8:AH:13:LYS:HE3   | 8:AH:80:SER:HA    | 1.78                     | 0.65              |
| 9:AK:6:PRO:CA     | 9:AK:41:ASP:HB3   | 2.27                     | 0.65              |
| 10:AL:10:VAL:O    | 10:AL:11:ALA:HB3  | 1.95                     | 0.65              |
| 10:AL:70:LYS:HB3  | 10:AL:72:PRO:HD2  | 1.78                     | 0.65              |
| 11:AM:52:GLU:HG3  | 29:Ae:52:LYS:HD3  | 1.76                     | 0.65              |
| 12:AN:8:LYS:HZ3   | 12:AN:11:LYS:CE   | 2.09                     | 0.65              |
| 14:AP:56:LEU:HD12 | 14:AP:59:LYS:HD2  | 1.77                     | 0.65              |
| 15:AQ:45:PHE:CE1  | 15:AQ:87:ASP:HB2  | 2.31                     | 0.65              |
| 15:AQ:53:ARG:NH2  | 15:AQ:101:PHE:N   | 2.43                     | 0.65              |
| 15:AQ:57:PHE:N    | 15:AQ:57:PHE:CD2  | 2.63                     | 0.65              |
| 17:AS:20:LEU:O    | 17:AS:21:ARG:HG2  | 1.96                     | 0.65              |
| 17:AS:68:LYS:CG   | 17:AS:95:LEU:HD21 | 2.26                     | 0.65              |
| 19:AU:29:TRP:CG   | 19:AU:76:ARG:HH21 | 2.14                     | 0.65              |
| 19:AU:50:LYS:HG3  | 19:AU:85:PRO:CD   | 2.26                     | 0.65              |
| 20:AV:16:ALA:CB   | 20:AV:68:HIS:ND1  | 2.59                     | 0.65              |
| 21:AW:53:ILE:O    | 21:AW:54:HIS:CG   | 2.50                     | 0.65              |
| 21:AW:110:GLY:HA2 | 21:AW:144:LEU:HB2 | 1.77                     | 0.65              |
| 23:AY:27:LEU:HD21 | 23:AY:48:LEU:C    | 2.21                     | 0.65              |
| 23:AY:36:ILE:HG12 | 23:AY:37:GLY:H    | 1.59                     | 0.65              |
| 25:Aa:41:PRO:CB   | 25:Aa:58:ARG:HD2  | 2.26                     | 0.65              |
| 28:Ad:42:LEU:O    | 28:Ad:45:ALA:CB   | 2.44                     | 0.65              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 29:Ae:38:GLY:O     | 29:Ae:41:ILE:N     | 2.25                     | 0.65              |
| 29:Ae:56:GLU:CD    | 29:Ae:56:GLU:N     | 2.39                     | 0.65              |
| 30:Af:2:LYS:HE2    | 30:Af:35:ARG:HD3   | 1.78                     | 0.65              |
| 31:Al:87:VAL:CB    | 31:Al:92:THR:CB    | 2.74                     | 0.65              |
| 32:Aj:42:ASN:O     | 32:Aj:46:ALA:HB2   | 1.96                     | 0.65              |
| 32:Aj:77:LEU:HD13  | 32:Aj:77:LEU:O     | 1.97                     | 0.65              |
| 32:Aj:104:VAL:HG13 | 32:Aj:127:ILE:CD1  | 1.28                     | 0.65              |
| 33:Ag:7:UNK:CA     | 33:Ag:144:UNK:CA   | 2.70                     | 0.65              |
| 34:BA:87:A:H2'     | 34:BA:88:C:O4'     | 1.96                     | 0.65              |
| 34:BA:173:U:H5''   | 34:BA:197:A:O2'    | 1.96                     | 0.65              |
| 34:BA:250:A:O2'    | 34:BA:251:G:OP2    | 2.14                     | 0.65              |
| 34:BA:405:U:H3'    | 34:BA:406:G:H5'    | 1.77                     | 0.65              |
| 34:BA:701:C:H5''   | 34:BA:702:A:H3'    | 1.78                     | 0.65              |
| 34:BA:758:G:O5'    | 34:BA:758:G:H8     | 1.79                     | 0.65              |
| 34:BA:878:G:H2'    | 34:BA:879:C:C6     | 2.31                     | 0.65              |
| 34:BA:978:A:O2'    | 34:BA:979:C:H5'    | 1.96                     | 0.65              |
| 34:BA:981:U:H6     | 34:BA:981:U:H3'    | 1.61                     | 0.65              |
| 34:BA:1162:C:H2'   | 34:BA:1163:C:C5    | 2.31                     | 0.65              |
| 34:BA:1225:A:C5'   | 52:BW:78:ARG:HD3   | 2.10                     | 0.65              |
| 34:BA:1285:A:O2'   | 34:BA:1286:A:OP2   | 2.14                     | 0.65              |
| 34:BA:1317:C:C5    | 34:BA:1318:A:C6    | 2.85                     | 0.65              |
| 34:BA:1455:G:C4'   | 53:BX:28:ALA:O     | 2.44                     | 0.65              |
| 35:BF:212:GLN:OE1  | 35:BF:212:GLN:HA   | 1.92                     | 0.65              |
| 36:BG:187:ALA:HB3  | 36:BG:198:VAL:HG22 | 1.76                     | 0.65              |
| 37:BH:59:ARG:C     | 37:BH:63:LYS:NZ    | 2.53                     | 0.65              |
| 38:BI:135:THR:C    | 38:BI:139:LEU:HD12 | 2.22                     | 0.65              |
| 40:BK:115:ARG:HG3  | 40:BK:118:VAL:HG21 | 1.78                     | 0.65              |
| 42:BM:23:ASN:ND2   | 42:BM:57:GLY:O     | 2.29                     | 0.65              |
| 45:BP:35:GLY:O     | 45:BP:82:VAL:HA    | 1.96                     | 0.65              |
| 45:BP:54:LYS:CB    | 45:BP:70:ILE:HB    | 2.26                     | 0.65              |
| 50:BU:29:HIS:CE1   | 50:BU:31:LEU:N     | 2.64                     | 0.65              |
| 50:BU:60:ILE:HD13  | 50:BU:62:SER:OG    | 1.95                     | 0.65              |
| 53:BX:26:ASN:ND2   | 53:BX:27:LYS:N     | 2.44                     | 0.65              |
| 56:BE:21:A:C2'     | 56:BE:22:G:C5'     | 2.66                     | 0.65              |
| 57:BZ:564:THR:CA   | 57:BZ:567:GLN:HB3  | 2.25                     | 0.65              |
| 1:AA:266:G:N2      | 1:AA:427:U:H3      | 1.94                     | 0.65              |
| 1:AA:297:C:H3'     | 1:AA:298:G:C8      | 2.31                     | 0.65              |
| 1:AA:465:G:O6      | 1:AA:466:A:N6      | 2.29                     | 0.65              |
| 1:AA:574:C:H1'     | 1:AA:2055:C:H5     | 1.59                     | 0.65              |
| 1:AA:650:C:N3      | 1:AA:651:G:C2      | 2.65                     | 0.65              |
| 1:AA:728:G:C6      | 1:AA:762:U:H3'     | 2.30                     | 0.65              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:783:A:N1     | 1:AA:785:G:O4'    | 2.30                     | 0.65              |
| 1:AA:784:A:P      | 1:AA:2588:G:H5''  | 2.37                     | 0.65              |
| 1:AA:988:A:C4'    | 1:AA:1155:A:H2    | 2.07                     | 0.65              |
| 1:AA:1032:A:OP2   | 30:Af:8:LYS:HG3   | 1.96                     | 0.65              |
| 1:AA:1341:U:H2'   | 19:AU:55:ASN:HB3  | 1.79                     | 0.65              |
| 1:AA:1414:G:C6    | 1:AA:1415:U:C4    | 2.85                     | 0.65              |
| 1:AA:1475:G:N3    | 1:AA:1475:G:H2'   | 2.11                     | 0.65              |
| 1:AA:1492:G:N3    | 1:AA:1493:C:N4    | 2.44                     | 0.65              |
| 1:AA:1528:A:N1    | 1:AA:1545:A:N1    | 2.43                     | 0.65              |
| 1:AA:1608:A:C5    | 1:AA:1611:C:C4    | 2.85                     | 0.65              |
| 1:AA:1710:C:H1'   | 1:AA:2858:C:H42   | 1.60                     | 0.65              |
| 1:AA:1750:G:O2'   | 1:AA:2860:A:N1    | 2.27                     | 0.65              |
| 1:AA:1813:G:H21   | 4:AD:52:ARG:NH1   | 1.94                     | 0.65              |
| 1:AA:2010:G:H2'   | 1:AA:2011:U:C5'   | 2.26                     | 0.65              |
| 1:AA:2016:U:H2'   | 1:AA:2017:U:O4'   | 1.96                     | 0.65              |
| 1:AA:2160:G:H2'   | 1:AA:2161:C:H6    | 1.60                     | 0.65              |
| 1:AA:2227:A:O4'   | 4:AD:262:ARG:HD2  | 1.95                     | 0.65              |
| 1:AA:2305:A:O3'   | 7:AG:136:ARG:HG2  | 1.95                     | 0.65              |
| 1:AA:2599:G:O2'   | 1:AA:2600:A:H5'   | 1.96                     | 0.65              |
| 1:AA:2791:C:N4    | 1:AA:2893:G:O4'   | 2.29                     | 0.65              |
| 2:AB:84:C:C2      | 2:AB:85:G:C8      | 2.84                     | 0.65              |
| 3:AC:214:VAL:HG23 | 3:AC:224:ILE:HD13 | 1.68                     | 0.65              |
| 4:AD:7:LYS:HG3    | 4:AD:27:THR:N     | 2.10                     | 0.65              |
| 4:AD:208:LYS:NZ   | 4:AD:211:ARG:NH2  | 2.43                     | 0.65              |
| 7:AG:17:PRO:CA    | 7:AG:20:ILE:HB    | 2.27                     | 0.65              |
| 7:AG:49:ASP:C     | 7:AG:53:LEU:HD22  | 2.22                     | 0.65              |
| 8:AH:103:LEU:HB3  | 8:AH:105:LEU:CD1  | 2.26                     | 0.65              |
| 9:AK:48:MET:C     | 9:AK:50:ASP:H     | 2.02                     | 0.65              |
| 10:AL:108:GLU:HB3 | 10:AL:111:PHE:HE2 | 1.61                     | 0.65              |
| 11:AM:134:ALA:O   | 11:AM:135:LEU:C   | 2.39                     | 0.65              |
| 12:AN:42:ILE:CD1  | 12:AN:46:GLN:HE21 | 2.08                     | 0.65              |
| 12:AN:54:MET:HB3  | 12:AN:58:PHE:HE2  | 1.60                     | 0.65              |
| 13:AO:86:ARG:HH12 | 13:AO:87:TYR:HE2  | 1.43                     | 0.65              |
| 15:AQ:76:PHE:CZ   | 15:AQ:78:LEU:HD12 | 2.31                     | 0.65              |
| 20:AV:14:LEU:O    | 20:AV:20:TYR:HA   | 1.94                     | 0.65              |
| 21:AW:8:TYR:N     | 21:AW:8:TYR:CD1   | 2.64                     | 0.65              |
| 21:AW:71:VAL:HG22 | 21:AW:88:PHE:CE2  | 2.31                     | 0.65              |
| 23:AY:38:GLN:O    | 23:AY:41:GLN:HB2  | 1.97                     | 0.65              |
| 25:Aa:28:LYS:HB3  | 25:Aa:29:PRO:HD2  | 1.77                     | 0.65              |
| 29:Ae:60:LEU:HD11 | 29:Ae:64:TYR:HB2  | 1.78                     | 0.65              |
| 32:AJ:103:GLN:HG3 | 32:AJ:106:GLU:OE2 | 1.96                     | 0.65              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:267:C:N4     | 34:BA:268:C:N4     | 2.44                     | 0.65              |
| 34:BA:533:A:C5     | 34:BA:536:C:N4     | 2.65                     | 0.65              |
| 34:BA:597:G:C6     | 34:BA:644:G:C6     | 2.84                     | 0.65              |
| 34:BA:827:U:H5'    | 41:BL:16:ALA:HA    | 1.78                     | 0.65              |
| 34:BA:888:G:C2     | 34:BA:889:A:N6     | 2.63                     | 0.65              |
| 34:BA:1225:A:H5'   | 52:BW:78:ARG:HD2   | 0.67                     | 0.65              |
| 34:BA:1226:C:N4    | 46:BQ:104:ARG:NE   | 2.44                     | 0.65              |
| 34:BA:1394:A:N7    | 34:BA:1501:C:H1'   | 2.11                     | 0.65              |
| 34:BA:1448:C:O5'   | 34:BA:1448:C:H6    | 1.79                     | 0.65              |
| 35:BF:40:HIS:C     | 35:BF:41:ILE:HD12  | 2.21                     | 0.65              |
| 36:BG:57:ILE:HG22  | 36:BG:59:ARG:NH2   | 2.10                     | 0.65              |
| 37:BH:52:SER:O     | 37:BH:54:TYR:N     | 2.29                     | 0.65              |
| 37:BH:116:GLN:O    | 37:BH:119:GLN:HB3  | 1.97                     | 0.65              |
| 37:BH:124:GLY:O    | 37:BH:126:ILE:HG12 | 1.96                     | 0.65              |
| 38:BI:24:ARG:C     | 38:BI:25:ARG:HD3   | 2.20                     | 0.65              |
| 39:BJ:46:ARG:NH2   | 51:BV:37:VAL:CG1   | 2.59                     | 0.65              |
| 40:BK:155:ARG:HH11 | 40:BK:156:TRP:H    | 1.44                     | 0.65              |
| 41:BL:6:ILE:CG2    | 41:BL:7:ALA:H      | 1.91                     | 0.65              |
| 41:BL:109:ILE:O    | 41:BL:136:GLU:HB2  | 1.95                     | 0.65              |
| 42:BM:93:ARG:NH2   | 42:BM:97:LYS:HG2   | 2.10                     | 0.65              |
| 44:BO:48:ILE:CG2   | 44:BO:63:LEU:HD13  | 2.25                     | 0.65              |
| 45:BP:34:ARG:HB2   | 45:BP:105:TYR:OH   | 1.95                     | 0.65              |
| 45:BP:42:THR:OG1   | 45:BP:52:LEU:HD12  | 1.96                     | 0.65              |
| 46:BQ:12:ASN:C     | 46:BQ:44:ARG:CG    | 2.68                     | 0.65              |
| 47:BR:23:ARG:N     | 47:BR:33:VAL:HG21  | 2.10                     | 0.65              |
| 47:BR:42:ILE:HA    | 47:BR:45:ARG:HG2   | 1.79                     | 0.65              |
| 50:BU:41:LYS:O     | 50:BU:42:TYR:CD1   | 2.49                     | 0.65              |
| 53:BX:57:ARG:O     | 53:BX:59:ALA:N     | 2.29                     | 0.65              |
| 56:BD:2:C:N4       | 56:BD:71:G:C6      | 2.46                     | 0.65              |
| 56:BE:15:G:H2'     | 56:BE:16:U:C5'     | 2.26                     | 0.65              |
| 57:BZ:67:ASP:N     | 57:BZ:68:TYR:HA    | 2.10                     | 0.65              |
| 57:BZ:69:ARG:HH11  | 57:BZ:253:LYS:HZ2  | 0.69                     | 0.65              |
| 57:BZ:213:ASP:OD2  | 57:BZ:221:ILE:HD13 | 1.95                     | 0.65              |
| 57:BZ:488:LEU:CD2  | 57:BZ:526:ILE:C    | 2.70                     | 0.65              |
| 57:BZ:509:LYS:CD   | 57:BZ:561:ILE:HD13 | 2.25                     | 0.65              |
| 57:BZ:556:VAL:O    | 57:BZ:557:LEU:HB3  | 1.95                     | 0.65              |
| 1:AA:176:G:C2'     | 1:AA:177:G:H8      | 2.09                     | 0.65              |
| 1:AA:189:G:H2'     | 1:AA:205:G:N2      | 2.11                     | 0.65              |
| 1:AA:391:G:H2'     | 1:AA:392:C:C5      | 2.32                     | 0.65              |
| 1:AA:459:U:H5      | 1:AA:469:G:N2      | 1.94                     | 0.65              |
| 1:AA:537:C:H2'     | 1:AA:539:G:C8      | 2.31                     | 0.65              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:558:G:C5'    | 9:AK:109:LYS:HD3  | 2.27                     | 0.65              |
| 1:AA:603:A:N6     | 11:AM:104:GLY:HA2 | 2.11                     | 0.65              |
| 1:AA:671:C:OP1    | 11:AM:38:GLN:O    | 2.14                     | 0.65              |
| 1:AA:735:A:H2'    | 1:AA:736:C:H5'    | 1.78                     | 0.65              |
| 1:AA:852:G:C5'    | 24:AZ:45:GLY:HA3  | 2.27                     | 0.65              |
| 1:AA:1023:U:OP2   | 1:AA:1025:G:C6    | 2.49                     | 0.65              |
| 1:AA:1422:G:H2'   | 1:AA:1423:G:H8    | 1.62                     | 0.65              |
| 1:AA:1470:G:H3'   | 1:AA:1470:G:C8    | 2.32                     | 0.65              |
| 1:AA:1535:U:C2'   | 1:AA:1536:A:O4'   | 2.36                     | 0.65              |
| 1:AA:1657:C:H2'   | 1:AA:1658:C:C6    | 2.27                     | 0.65              |
| 1:AA:1692:U:C1'   | 1:AA:1696:G:N2    | 2.60                     | 0.65              |
| 1:AA:1805:U:H2'   | 1:AA:1806:C:H6    | 1.60                     | 0.65              |
| 1:AA:1904:G:H2'   | 1:AA:1905:C:C5'   | 2.26                     | 0.65              |
| 1:AA:2208:U:H1'   | 1:AA:2217:G:C2    | 2.32                     | 0.65              |
| 1:AA:2238:G:H1'   | 1:AA:2240:C:C5    | 2.31                     | 0.65              |
| 1:AA:2285:C:H5    | 27:Ac:27:LYS:NZ   | 1.94                     | 0.65              |
| 1:AA:2396:G:C6    | 1:AA:2421:G:O6    | 2.50                     | 0.65              |
| 1:AA:2536:G:C6    | 1:AA:2537:U:C4    | 2.84                     | 0.65              |
| 1:AA:2564:A:C2    | 1:AA:2647:U:H4'   | 2.31                     | 0.65              |
| 1:AA:2670:A:H2'   | 1:AA:2671:A:C8    | 2.31                     | 0.65              |
| 1:AA:2781:A:O3'   | 1:AA:2782:G:H4'   | 1.96                     | 0.65              |
| 1:AA:2839:G:H2'   | 1:AA:2840:C:C6    | 2.31                     | 0.65              |
| 2:AB:39:A:H2      | 2:AB:44:G:OP2     | 1.79                     | 0.65              |
| 2:AB:50:G:H2'     | 2:AB:50:G:N3      | 2.11                     | 0.65              |
| 2:AB:78:A:H2'     | 2:AB:79:C:H5'     | 1.76                     | 0.65              |
| 2:AB:80:U:H2'     | 2:AB:81:G:C8      | 2.32                     | 0.65              |
| 3:AC:60:GLY:O     | 3:AC:61:THR:HB    | 1.95                     | 0.65              |
| 4:AD:118:VAL:H    | 4:AD:129:ASN:CG   | 2.05                     | 0.65              |
| 4:AD:121:PRO:O    | 4:AD:122:ASP:HB3  | 1.97                     | 0.65              |
| 5:AE:13:ARG:HG3   | 5:AE:22:PRO:CG    | 2.25                     | 0.65              |
| 5:AE:173:VAL:HG11 | 5:AE:184:VAL:HA   | 1.77                     | 0.65              |
| 7:AG:72:ARG:C     | 7:AG:88:ILE:HD11  | 2.21                     | 0.65              |
| 8:AH:105:LEU:HD12 | 8:AH:113:VAL:HG11 | 1.79                     | 0.65              |
| 8:AH:137:ASP:HB3  | 8:AH:140:LYS:HG2  | 1.76                     | 0.65              |
| 9:AK:100:GLU:CA   | 9:AK:103:VAL:HG13 | 2.26                     | 0.65              |
| 10:AL:59:LYS:CA   | 10:AL:86:ILE:HD12 | 2.20                     | 0.65              |
| 11:AM:81:GLN:CA   | 11:AM:86:LYS:HE3  | 2.26                     | 0.65              |
| 12:AN:75:THR:HG22 | 12:AN:77:LYS:CD   | 2.25                     | 0.65              |
| 12:AN:76:LYS:C    | 12:AN:76:LYS:HD2  | 2.21                     | 0.65              |
| 15:AQ:39:ARG:O    | 15:AQ:42:ILE:HG13 | 1.96                     | 0.65              |
| 16:AR:84:LYS:O    | 16:AR:85:LYS:C    | 2.38                     | 0.65              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AS:15:GLU:CA    | 17:AS:100:ARG:HH12 | 2.09                     | 0.65              |
| 17:AS:78:LYS:HE2   | 17:AS:84:LYS:HG2   | 1.79                     | 0.65              |
| 21:AW:30:ASN:O     | 21:AW:31:ARG:C     | 2.40                     | 0.65              |
| 21:AW:78:LYS:HB3   | 21:AW:78:LYS:HZ2   | 1.60                     | 0.65              |
| 25:Aa:5:ILE:HD11   | 25:Aa:10:VAL:CG2   | 2.21                     | 0.65              |
| 25:Aa:24:THR:C     | 25:Aa:25:TYR:CD2   | 2.74                     | 0.65              |
| 27:Ac:25:LYS:O     | 27:Ac:26:ASN:CB    | 2.44                     | 0.65              |
| 29:Ae:26:LYS:HD2   | 29:Ae:43:GLN:C     | 2.21                     | 0.65              |
| 34:BA:22:G:C2'     | 34:BA:23:C:H6      | 2.05                     | 0.65              |
| 34:BA:50:A:C2      | 34:BA:360:A:N3     | 2.65                     | 0.65              |
| 34:BA:112:G:H21    | 34:BA:354:G:H5'    | 1.60                     | 0.65              |
| 34:BA:323:U:H5'    | 53:BX:23:ARG:HB2   | 1.76                     | 0.65              |
| 34:BA:339:C:H2'    | 34:BA:340:U:C6     | 2.28                     | 0.65              |
| 34:BA:520:A:OP2    | 45:BP:51:ALA:HB1   | 1.96                     | 0.65              |
| 34:BA:705:U:C5     | 34:BA:706:A:N7     | 2.64                     | 0.65              |
| 34:BA:958:A:N3     | 52:BW:56:GLN:NE2   | 2.42                     | 0.65              |
| 34:BA:976:G:C6     | 34:BA:1362:C:C4    | 2.84                     | 0.65              |
| 34:BA:1299:A:N7    | 34:BA:1301:U:C6    | 2.64                     | 0.65              |
| 34:BA:1319:A:OP2   | 52:BW:12:ASP:OD1   | 2.12                     | 0.65              |
| 34:BA:1376:U:O2    | 34:BA:1377:A:N7    | 2.29                     | 0.65              |
| 34:BA:1454:G:P     | 53:BX:39:LYS:HD2   | 2.33                     | 0.65              |
| 35:BF:69:LEU:HB2   | 35:BF:159:PRO:CB   | 2.27                     | 0.65              |
| 36:BG:11:ARG:HD3   | 36:BG:15:THR:CG2   | 2.25                     | 0.65              |
| 36:BG:15:THR:HB    | 36:BG:181:ASN:OD1  | 1.97                     | 0.65              |
| 36:BG:112:SER:O    | 36:BG:116:VAL:HG23 | 1.96                     | 0.65              |
| 37:BH:26:CYS:O     | 37:BH:33:MET:CG    | 2.43                     | 0.65              |
| 37:BH:119:GLN:HG3  | 37:BH:123:HIS:CE1  | 2.31                     | 0.65              |
| 38:BI:31:LEU:HD12  | 38:BI:129:ILE:HA   | 1.77                     | 0.65              |
| 39:BJ:64:GLN:C     | 39:BJ:65:VAL:CG1   | 2.70                     | 0.65              |
| 47:BR:45:ARG:HH11  | 47:BR:45:ARG:CG    | 2.08                     | 0.65              |
| 50:BU:4:LYS:CE     | 50:BU:5:VAL:O      | 2.44                     | 0.65              |
| 57:BZ:6:ARG:HB3    | 57:BZ:194:VAL:HG11 | 1.79                     | 0.65              |
| 57:BZ:15:ASP:CG    | 57:BZ:16:HIS:NE2   | 2.53                     | 0.65              |
| 57:BZ:258:LEU:CD2  | 57:BZ:260:LEU:HD13 | 2.26                     | 0.65              |
| 57:BZ:346:ARG:HG2  | 57:BZ:346:ARG:NH1  | 2.03                     | 0.65              |
| 57:BZ:419:LEU:O    | 57:BZ:424:GLY:N    | 2.29                     | 0.65              |
| 57:BZ:487:VAL:HG12 | 57:BZ:571:PHE:CE1  | 2.31                     | 0.65              |
| 57:BZ:491:ASN:OD1  | 57:BZ:536:ASN:CG   | 2.39                     | 0.65              |
| 1:AA:200:U:H3'     | 1:AA:201:C:C5'     | 2.27                     | 0.65              |
| 1:AA:558:G:H5''    | 9:AK:109:LYS:HG2   | 1.79                     | 0.65              |
| 1:AA:559:G:H2'     | 1:AA:560:C:O4'     | 1.95                     | 0.65              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:611:C:H2'    | 1:AA:612:G:O4'    | 1.97                     | 0.65              |
| 1:AA:638:G:H3'    | 1:AA:638:G:H8     | 1.61                     | 0.65              |
| 1:AA:750:A:H2'    | 18:AT:90:ARG:HH12 | 1.61                     | 0.65              |
| 1:AA:756:C:H2'    | 1:AA:757:U:C5'    | 2.27                     | 0.65              |
| 1:AA:885:C:N4     | 1:AA:890:A:P      | 2.69                     | 0.65              |
| 1:AA:885:C:H42    | 1:AA:890:A:P      | 2.19                     | 0.65              |
| 1:AA:970:C:C2     | 1:AA:971:C:C5     | 2.85                     | 0.65              |
| 1:AA:1019:U:H6    | 1:AA:1019:U:H5''  | 1.60                     | 0.65              |
| 1:AA:1068:G:N3    | 1:AA:1096:A:OP1   | 2.30                     | 0.65              |
| 1:AA:1248:G:O2'   | 1:AA:1249:U:OP1   | 2.14                     | 0.65              |
| 1:AA:1257:C:HO2'  | 6:AF:83:PHE:HD1   | 1.45                     | 0.65              |
| 1:AA:1358:G:N2    | 1:AA:1374:G:O6    | 2.29                     | 0.65              |
| 1:AA:1398:C:H2'   | 1:AA:1399:C:C6    | 2.32                     | 0.65              |
| 1:AA:1518:C:H2'   | 1:AA:1519:G:H4'   | 1.79                     | 0.65              |
| 1:AA:1654:A:C2    | 1:AA:1655:A:C8    | 2.84                     | 0.65              |
| 1:AA:1834:U:H4'   | 1:AA:1834:U:OP1   | 1.96                     | 0.65              |
| 1:AA:2124:G:C5'   | 3:AC:42:GLU:OE1   | 2.45                     | 0.65              |
| 1:AA:2246:G:N3    | 1:AA:2247:A:N7    | 2.44                     | 0.65              |
| 1:AA:2356:C:H3'   | 1:AA:2357:U:H5    | 1.61                     | 0.65              |
| 1:AA:2569:G:N3    | 1:AA:2570:G:C8    | 2.65                     | 0.65              |
| 1:AA:2652:C:O2    | 1:AA:2670:A:H1'   | 1.95                     | 0.65              |
| 1:AA:2716:U:O2'   | 1:AA:2717:G:O5'   | 2.15                     | 0.65              |
| 1:AA:2850:A:N3    | 1:AA:2869:G:H4'   | 2.12                     | 0.65              |
| 3:AC:49:ILE:HD11  | 3:AC:165:ASN:HD22 | 1.62                     | 0.65              |
| 3:AC:66:HIS:CB    | 3:AC:67:GLY:N     | 2.56                     | 0.65              |
| 4:AD:159:ALA:HB3  | 4:AD:202:LYS:NZ   | 2.12                     | 0.65              |
| 5:AE:15:PHE:CE2   | 5:AE:16:ARG:HG3   | 2.31                     | 0.65              |
| 5:AE:172:VAL:O    | 5:AE:182:LEU:HD21 | 1.95                     | 0.65              |
| 6:AF:74:ARG:NH1   | 6:AF:75:HIS:CA    | 2.57                     | 0.65              |
| 7:AG:75:LYS:HB3   | 7:AG:84:LYS:CB    | 2.27                     | 0.65              |
| 7:AG:75:LYS:CG    | 7:AG:85:GLY:H     | 2.10                     | 0.65              |
| 7:AG:77:ILE:HG13  | 7:AG:78:SER:N     | 2.10                     | 0.65              |
| 9:AK:103:VAL:O    | 9:AK:104:LYS:C    | 2.38                     | 0.65              |
| 13:AO:103:ARG:HD2 | 18:AT:40:ASN:HB2  | 1.78                     | 0.65              |
| 14:AP:23:ARG:NH1  | 14:AP:42:ASP:CB   | 2.54                     | 0.65              |
| 14:AP:49:VAL:CG1  | 14:AP:76:LYS:HE3  | 2.25                     | 0.65              |
| 15:AQ:21:GLU:O    | 15:AQ:23:ARG:N    | 2.30                     | 0.65              |
| 20:AV:14:LEU:CB   | 20:AV:20:TYR:HA   | 2.20                     | 0.65              |
| 21:AW:74:VAL:HG22 | 21:AW:86:VAL:HA   | 1.78                     | 0.65              |
| 28:Ad:32:LYS:N    | 28:Ad:35:ARG:HD3  | 2.11                     | 0.65              |
| 29:Ae:10:ALA:HB1  | 29:Ae:64:TYR:CD2  | 2.32                     | 0.65              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 34:BA:51:A:H4'    | 34:BA:52:G:C5'    | 2.27                     | 0.65              |
| 34:BA:127:G:H2'   | 34:BA:128:G:H5'   | 1.79                     | 0.65              |
| 34:BA:181:G:O2'   | 34:BA:182:U:H5'   | 1.96                     | 0.65              |
| 34:BA:266:G:C3'   | 50:BU:67:LYS:HD2  | 2.13                     | 0.65              |
| 34:BA:344:A:O2'   | 34:BA:345:C:P     | 2.54                     | 0.65              |
| 34:BA:437:U:H2'   | 34:BA:438:G:O4'   | 1.96                     | 0.65              |
| 34:BA:454:C:H3'   | 34:BA:455:C:C6    | 2.32                     | 0.65              |
| 34:BA:568:G:N2    | 34:BA:574:A:H2    | 1.95                     | 0.65              |
| 34:BA:687:A:H61   | 34:BA:703:G:C1'   | 2.09                     | 0.65              |
| 34:BA:867:G:H2'   | 34:BA:868:C:C5    | 2.31                     | 0.65              |
| 34:BA:953:G:C6    | 34:BA:1229:A:N6   | 2.64                     | 0.65              |
| 34:BA:983:A:H1'   | 34:BA:1201:A:C8   | 2.31                     | 0.65              |
| 34:BA:1182:G:H4'  | 34:BA:1183:A:O5'  | 1.96                     | 0.65              |
| 34:BA:1191:A:P    | 36:BG:4:LYS:HZ3   | 2.19                     | 0.65              |
| 34:BA:1329:A:OP1  | 46:BQ:29:ARG:CD   | 2.45                     | 0.65              |
| 34:BA:1358:U:OP2  | 34:BA:1359:C:C5   | 2.49                     | 0.65              |
| 34:BA:1373:G:C5'  | 40:BK:36:LYS:HB2  | 2.27                     | 0.65              |
| 34:BA:1376:U:H3   | 34:BA:1377:A:H62  | 1.45                     | 0.65              |
| 34:BA:1446:A:H2'  | 34:BA:1447:G:C5'  | 2.26                     | 0.65              |
| 34:BA:1483:A:O5'  | 34:BA:1483:A:C8   | 2.49                     | 0.65              |
| 35:BF:96:ARG:HD2  | 35:BF:96:ARG:N    | 2.11                     | 0.65              |
| 35:BF:194:PRO:O   | 35:BF:196:LEU:N   | 2.29                     | 0.65              |
| 36:BG:187:ALA:HB3 | 36:BG:198:VAL:CG2 | 2.26                     | 0.65              |
| 37:BH:30:LYS:HG2  | 37:BH:35:ARG:HD2  | 1.78                     | 0.65              |
| 37:BH:123:HIS:HB2 | 37:BH:125:HIS:CE1 | 2.31                     | 0.65              |
| 38:BI:12:LEU:O    | 38:BI:30:ALA:HA   | 1.96                     | 0.65              |
| 38:BI:17:ALA:HA   | 38:BI:26:PHE:CB   | 2.27                     | 0.65              |
| 38:BI:18:ARG:N    | 38:BI:26:PHE:HB3  | 2.11                     | 0.65              |
| 38:BI:41:VAL:HG11 | 38:BI:112:LEU:HB3 | 1.77                     | 0.65              |
| 40:BK:6:ARG:CZ    | 40:BK:6:ARG:N     | 2.60                     | 0.65              |
| 45:BP:34:ARG:HD3  | 45:BP:105:TYR:OH  | 1.95                     | 0.65              |
| 46:BQ:16:ASP:CG   | 46:BQ:34:LEU:HD13 | 2.17                     | 0.65              |
| 47:BR:22:THR:CG2  | 47:BR:33:VAL:HG23 | 2.26                     | 0.65              |
| 50:BU:43:LEU:C    | 50:BU:43:LEU:CD1  | 2.66                     | 0.65              |
| 55:BC:14:A:H3'    | 55:BC:15:G:H8     | 1.60                     | 0.65              |
| 55:BC:36:A:H2'    | 55:BC:37:A:C4'    | 2.26                     | 0.65              |
| 57:BZ:11:ILE:HG23 | 57:BZ:112:VAL:CG2 | 2.24                     | 0.65              |
| 57:BZ:129:LYS:NZ  | 60:BZ:701:GCP:C4  | 2.59                     | 0.65              |
| 57:BZ:342:ASN:CG  | 57:BZ:345:LEU:HB2 | 2.22                     | 0.65              |
| 1:AA:25:U:C2      | 1:AA:26:G:C8      | 2.85                     | 0.65              |
| 1:AA:150:C:O2     | 1:AA:151:C:C6     | 2.50                     | 0.65              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:330:A:O2'    | 1:AA:1210:A:N6    | 2.30                     | 0.65              |
| 1:AA:412:A:N6     | 1:AA:2411:A:H1'   | 2.12                     | 0.65              |
| 1:AA:544:C:H2'    | 1:AA:545:G:O4'    | 1.97                     | 0.65              |
| 1:AA:1062:G:H1'   | 1:AA:1063:G:O5'   | 1.97                     | 0.65              |
| 1:AA:1081:U:H4'   | 32:AJ:125:ARG:HB2 | 1.76                     | 0.65              |
| 1:AA:1095:A:O4'   | 57:BZ:416:MET:CE  | 2.45                     | 0.65              |
| 1:AA:1687:G:C5    | 1:AA:1688:U:H5    | 2.15                     | 0.65              |
| 1:AA:1703:G:N2    | 1:AA:1704:G:H1'   | 2.11                     | 0.65              |
| 1:AA:1803:A:O3'   | 4:AD:257:LEU:HD22 | 1.96                     | 0.65              |
| 1:AA:1934:C:N3    | 1:AA:1967:C:N4    | 2.44                     | 0.65              |
| 1:AA:1953:A:H62   | 1:AA:2550:G:C4'   | 2.10                     | 0.65              |
| 1:AA:1975:G:O2'   | 1:AA:1976:U:H5'   | 1.97                     | 0.65              |
| 1:AA:2056:G:H21   | 26:Ab:4:HIS:HD2   | 1.42                     | 0.65              |
| 1:AA:2124:G:C5'   | 3:AC:71:GLN:HE22  | 2.08                     | 0.65              |
| 1:AA:2132:U:H2'   | 1:AA:2134:A:C8    | 2.31                     | 0.65              |
| 1:AA:2305:A:N7    | 1:AA:2306:C:C6    | 2.64                     | 0.65              |
| 1:AA:2716:U:C2'   | 1:AA:2717:G:O5'   | 2.45                     | 0.65              |
| 1:AA:2720:U:C2'   | 1:AA:2721:A:H8    | 2.10                     | 0.65              |
| 2:AB:30:C:C2'     | 2:AB:31:C:H5'     | 2.25                     | 0.65              |
| 2:AB:61:G:N2      | 2:AB:62:C:C2      | 2.64                     | 0.65              |
| 3:AC:48:GLY:HA2   | 3:AC:210:ARG:HD3  | 1.76                     | 0.65              |
| 3:AC:52:ARG:HG3   | 3:AC:53:ARG:HG3   | 1.78                     | 0.65              |
| 3:AC:77:ILE:CD1   | 3:AC:123:VAL:HG13 | 2.27                     | 0.65              |
| 4:AD:52:ARG:O     | 4:AD:53:PHE:O     | 2.15                     | 0.65              |
| 4:AD:214:TRP:CH2  | 4:AD:219:PRO:HB3  | 2.32                     | 0.65              |
| 4:AD:247:ALA:O    | 4:AD:248:SER:C    | 2.40                     | 0.65              |
| 6:AF:39:TRP:CB    | 6:AF:101:LEU:HG   | 2.26                     | 0.65              |
| 6:AF:132:VAL:CG2  | 6:AF:135:LYS:HB2  | 2.27                     | 0.65              |
| 8:AH:4:ILE:HD12   | 8:AH:4:ILE:N      | 2.12                     | 0.65              |
| 9:AK:34:LEU:CD2   | 9:AK:116:LEU:HD21 | 2.27                     | 0.65              |
| 10:AL:52:VAL:O    | 10:AL:53:LYS:HG2  | 1.97                     | 0.65              |
| 11:AM:113:LYS:HA  | 11:AM:129:ALA:HB1 | 1.78                     | 0.65              |
| 12:AN:22:LYS:HD2  | 12:AN:99:PRO:CB   | 2.26                     | 0.65              |
| 16:AR:105:VAL:CG1 | 16:AR:106:PHE:N   | 2.60                     | 0.65              |
| 18:AT:6:ILE:CD1   | 18:AT:104:THR:HA  | 2.27                     | 0.65              |
| 18:AT:13:SER:C    | 18:AT:16:LYS:NZ   | 2.55                     | 0.65              |
| 18:AT:25:ARG:HD3  | 18:AT:74:ALA:CB   | 2.26                     | 0.65              |
| 18:AT:68:ARG:HG3  | 18:AT:109:GLU:OE2 | 1.97                     | 0.65              |
| 20:AV:72:VAL:HG21 | 20:AV:81:LYS:HE2  | 1.79                     | 0.65              |
| 21:AW:9:TYR:HB2   | 21:AW:14:LYS:CG   | 2.26                     | 0.65              |
| 21:AW:39:VAL:HA   | 21:AW:44:PHE:CZ   | 2.30                     | 0.65              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 23:AY:27:LEU:HD13  | 23:AY:52:ILE:CD1   | 2.26                     | 0.65              |
| 28:Ad:8:ASN:HD21   | 28:Ad:10:ARG:HB2   | 1.62                     | 0.65              |
| 32:AJ:35:MET:HG3   | 32:AJ:36:GLU:H     | 1.61                     | 0.65              |
| 34:BA:59:A:H1'     | 34:BA:354:G:N2     | 2.11                     | 0.65              |
| 34:BA:251:G:H22    | 34:BA:272:C:H42    | 1.42                     | 0.65              |
| 34:BA:286:G:C4     | 34:BA:287:U:C6     | 2.84                     | 0.65              |
| 34:BA:449:C:C2'    | 34:BA:450:G:O4'    | 2.44                     | 0.65              |
| 34:BA:522:C:H41    | 34:BA:523:A:N6     | 1.94                     | 0.65              |
| 34:BA:556:C:O2'    | 34:BA:557:G:H5'    | 1.96                     | 0.65              |
| 34:BA:564:C:OP1    | 45:BP:15:ARG:NH2   | 2.29                     | 0.65              |
| 34:BA:656:C:C2'    | 34:BA:657:G:H5'    | 2.27                     | 0.65              |
| 34:BA:1085:U:OP2   | 34:BA:1086:U:O4    | 2.15                     | 0.65              |
| 34:BA:1167:A:N3    | 34:BA:1167:A:H2'   | 2.11                     | 0.65              |
| 34:BA:1278:U:H5'   | 34:BA:1279:A:H5'   | 1.78                     | 0.65              |
| 34:BA:1437:C:O5'   | 34:BA:1437:C:H6    | 1.79                     | 0.65              |
| 36:BG:44:GLU:HA    | 36:BG:52:LEU:HD11  | 1.78                     | 0.65              |
| 36:BG:193:TYR:HB2  | 36:BG:196:LEU:HD22 | 1.78                     | 0.65              |
| 37:BH:141:ARG:HH11 | 37:BH:142:PRO:CD   | 2.10                     | 0.65              |
| 42:BM:28:VAL:O     | 42:BM:30:GLY:N     | 2.30                     | 0.65              |
| 42:BM:49:PRO:HD3   | 42:BM:78:LYS:HZ3   | 1.61                     | 0.65              |
| 42:BM:101:PHE:N    | 42:BM:101:PHE:CD1  | 2.64                     | 0.65              |
| 43:BN:34:VAL:CG1   | 43:BN:35:SER:H     | 2.06                     | 0.65              |
| 44:BO:58:PRO:CB    | 44:BO:93:GLN:HB2   | 2.19                     | 0.65              |
| 45:BP:85:ILE:CD1   | 45:BP:98:TYR:CB    | 2.74                     | 0.65              |
| 46:BQ:10:PRO:CB    | 46:BQ:18:ALA:HB2   | 2.22                     | 0.65              |
| 46:BQ:29:ARG:HD3   | 46:BQ:64:TRP:CZ3   | 2.31                     | 0.65              |
| 46:BQ:37:THR:CA    | 46:BQ:56:LEU:HB2   | 2.25                     | 0.65              |
| 47:BR:40:CYS:O     | 47:BR:44:LEU:CB    | 2.45                     | 0.65              |
| 48:BS:39:LEU:HD23  | 48:BS:39:LEU:C     | 2.22                     | 0.65              |
| 48:BS:42:HIS:CE1   | 48:BS:43:LEU:HA    | 2.32                     | 0.65              |
| 50:BU:44:ALA:HA    | 50:BU:71:PHE:O     | 1.95                     | 0.65              |
| 50:BU:62:SER:CB    | 50:BU:72:ARG:HG2   | 2.26                     | 0.65              |
| 57:BZ:26:LEU:HD12  | 57:BZ:29:SER:CB    | 2.27                     | 0.65              |
| 57:BZ:251:VAL:HB   | 57:BZ:273:ILE:HA   | 1.72                     | 0.65              |
| 57:BZ:313:VAL:HG13 | 57:BZ:326:VAL:O    | 1.96                     | 0.65              |
| 57:BZ:377:GLY:CA   | 57:BZ:582:PRO:HG3  | 2.23                     | 0.65              |
| 1:AA:30:G:P        | 16:AR:11:ARG:HH22  | 2.20                     | 0.65              |
| 1:AA:71:A:H62      | 1:AA:114:U:H1'     | 1.60                     | 0.65              |
| 1:AA:74:A:N1       | 23:AY:46:ARG:HD2   | 2.12                     | 0.65              |
| 1:AA:118:A:O2'     | 1:AA:178:G:H5'     | 1.94                     | 0.65              |
| 1:AA:241:A:H2'     | 1:AA:242:G:H4'     | 1.79                     | 0.65              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:371:A:N7     | 1:AA:424:G:O5'    | 2.30                     | 0.65              |
| 1:AA:389:G:N1     | 11:AM:64:LYS:HG2  | 2.11                     | 0.65              |
| 1:AA:641:C:H2'    | 1:AA:642:G:O4'    | 1.97                     | 0.65              |
| 1:AA:780:G:H2'    | 1:AA:782:A:C8     | 2.31                     | 0.65              |
| 1:AA:843:G:N2     | 1:AA:936:C:C2     | 2.65                     | 0.65              |
| 1:AA:1077:A:H61   | 1:AA:1088:A:H4'   | 1.59                     | 0.65              |
| 1:AA:1519:G:H4'   | 1:AA:1519:G:OP1   | 1.95                     | 0.65              |
| 1:AA:1579:A:C8    | 1:AA:1580:A:N3    | 2.64                     | 0.65              |
| 1:AA:1579:A:H2'   | 1:AA:1580:A:C4'   | 2.27                     | 0.65              |
| 1:AA:1633:G:C8    | 1:AA:1635:G:O6    | 2.49                     | 0.65              |
| 1:AA:1775:U:N1    | 4:AD:208:LYS:HD2  | 2.12                     | 0.65              |
| 1:AA:1818:U:H2'   | 1:AA:1818:U:O2    | 1.94                     | 0.65              |
| 1:AA:1949:G:N2    | 1:AA:1958:C:C2    | 2.65                     | 0.65              |
| 1:AA:2024:G:HO2'  | 9:AK:78:TYR:HH    | 1.45                     | 0.65              |
| 1:AA:2075:U:C5    | 1:AA:2435:A:C2    | 2.84                     | 0.65              |
| 1:AA:2113:U:H3    | 1:AA:2169:A:N6    | 1.93                     | 0.65              |
| 1:AA:2323:G:H2'   | 1:AA:2324:C:C5    | 2.31                     | 0.65              |
| 1:AA:2777:G:H3'   | 1:AA:2777:G:C8    | 2.32                     | 0.65              |
| 1:AA:2805:G:H2'   | 1:AA:2807:G:C4'   | 2.27                     | 0.65              |
| 2:AB:0:A:H5''     | 2:AB:0:A:N3       | 2.11                     | 0.65              |
| 2:AB:9:G:H4'      | 14:AP:43:GLU:CD   | 2.21                     | 0.65              |
| 4:AD:17:THR:HG23  | 4:AD:18:VAL:HG23  | 1.78                     | 0.65              |
| 4:AD:260:ARG:O    | 4:AD:261:LYS:C    | 2.38                     | 0.65              |
| 5:AE:164:ARG:O    | 5:AE:165:VAL:CG2  | 2.44                     | 0.65              |
| 6:AF:184:TYR:N    | 6:AF:184:TYR:CD2  | 2.64                     | 0.65              |
| 7:AG:75:LYS:HZ3   | 7:AG:87:PRO:HD3   | 1.61                     | 0.65              |
| 8:AH:66:GLY:O     | 8:AH:70:THR:HG23  | 1.96                     | 0.65              |
| 9:AK:91:LEU:O     | 9:AK:92:ALA:C     | 2.39                     | 0.65              |
| 9:AK:124:ALA:C    | 9:AK:125:GLY:O    | 2.37                     | 0.65              |
| 11:AM:91:PHE:CE2  | 11:AM:96:THR:HG22 | 2.32                     | 0.65              |
| 11:AM:114:ILE:CD1 | 11:AM:114:ILE:N   | 2.59                     | 0.65              |
| 12:AN:67:ARG:NH2  | 12:AN:103:MET:HB3 | 2.10                     | 0.65              |
| 12:AN:122:GLY:C   | 12:AN:124:LYS:N   | 2.47                     | 0.65              |
| 13:AO:67:LEU:HD13 | 13:AO:67:LEU:C    | 2.21                     | 0.65              |
| 14:AP:11:LYS:HB3  | 14:AP:15:ARG:NH2  | 2.12                     | 0.65              |
| 18:AT:13:SER:O    | 18:AT:17:VAL:HG22 | 1.97                     | 0.65              |
| 18:AT:30:GLU:O    | 18:AT:33:ARG:HB3  | 1.96                     | 0.65              |
| 18:AT:33:ARG:NH1  | 18:AT:36:LEU:HB3  | 2.10                     | 0.65              |
| 19:AU:39:ILE:HB   | 19:AU:54:VAL:HG11 | 1.78                     | 0.65              |
| 19:AU:65:ARG:HA   | 19:AU:70:LEU:HD12 | 1.78                     | 0.65              |
| 21:AW:59:LEU:HD23 | 21:AW:59:LEU:C    | 2.22                     | 0.65              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 24:AZ:23:LEU:HA   | 24:AZ:28:LEU:CD1  | 2.27                     | 0.65              |
| 29:Ae:30:ARG:NH2  | 29:Ae:43:GLN:N    | 2.44                     | 0.65              |
| 30:Af:23:VAL:O    | 30:Af:36:GLN:HG2  | 1.96                     | 0.65              |
| 32:AJ:29:GLN:OE1  | 32:AJ:29:GLN:HA   | 1.94                     | 0.65              |
| 34:BA:263:A:C8    | 34:BA:263:A:O5'   | 2.49                     | 0.65              |
| 34:BA:363:A:C2'   | 34:BA:364:A:H5'   | 2.26                     | 0.65              |
| 34:BA:522:C:N4    | 34:BA:523:A:C6    | 2.65                     | 0.65              |
| 34:BA:994:A:C8    | 34:BA:1216:G:H4'  | 2.31                     | 0.65              |
| 34:BA:1079:G:C2   | 34:BA:1080:A:N1   | 2.65                     | 0.65              |
| 34:BA:1321:C:C4   | 34:BA:1322:C:H2'  | 2.32                     | 0.65              |
| 34:BA:1367:C:OP1  | 42:BM:115:GLY:HA2 | 1.97                     | 0.65              |
| 34:BA:1439:C:O2   | 34:BA:1463:C:O2   | 2.15                     | 0.65              |
| 34:BA:1448:C:N3   | 34:BA:1459:C:O2   | 2.28                     | 0.65              |
| 35:BF:15:VAL:HG21 | 35:BF:210:SER:N   | 2.11                     | 0.65              |
| 35:BF:39:ILE:O    | 35:BF:41:ILE:CD1  | 2.45                     | 0.65              |
| 36:BG:39:ILE:HG22 | 36:BG:40:ARG:N    | 2.11                     | 0.65              |
| 36:BG:82:GLU:O    | 36:BG:85:ARG:HB3  | 1.97                     | 0.65              |
| 37:BH:11:LEU:CA   | 37:BH:14:ARG:HB3  | 2.26                     | 0.65              |
| 38:BI:133:TYR:CD2 | 38:BI:136:MET:HG3 | 2.32                     | 0.65              |
| 42:BM:26:VAL:HG13 | 42:BM:63:ILE:HD11 | 1.78                     | 0.65              |
| 42:BM:50:LEU:HD22 | 42:BM:51:ARG:NH1  | 2.10                     | 0.65              |
| 43:BN:7:LYS:HG3   | 43:BN:71:LEU:HD11 | 1.78                     | 0.65              |
| 45:BP:85:ILE:HA   | 45:BP:99:HIS:O    | 1.97                     | 0.65              |
| 46:BQ:56:LEU:HD13 | 46:BQ:60:VAL:HG22 | 1.78                     | 0.65              |
| 46:BQ:65:LYS:HA   | 46:BQ:66:LEU:HB3  | 1.78                     | 0.65              |
| 48:BS:3:ILE:HD12  | 48:BS:3:ILE:H     | 1.62                     | 0.65              |
| 50:BU:31:LEU:C    | 50:BU:32:TYR:HD2  | 2.05                     | 0.65              |
| 52:BW:22:LEU:O    | 52:BW:25:LYS:NZ   | 2.29                     | 0.65              |
| 53:BX:26:ASN:HD22 | 53:BX:27:LYS:N    | 1.95                     | 0.65              |
| 53:BX:27:LYS:O    | 53:BX:28:ALA:C    | 2.39                     | 0.65              |
| 53:BX:73:HIS:O    | 53:BX:74:LYS:C    | 2.39                     | 0.65              |
| 53:BX:73:HIS:N    | 53:BX:76:ALA:HB3  | 2.09                     | 0.65              |
| 57:BZ:70:ILE:O    | 57:BZ:71:ASN:HB2  | 1.97                     | 0.65              |
| 57:BZ:101:ALA:O   | 57:BZ:135:ALA:C   | 2.40                     | 0.65              |
| 57:BZ:496:ALA:H   | 57:BZ:516:ALA:C   | 2.05                     | 0.65              |
| 1:AA:227:A:N6     | 1:AA:2407:G:C8    | 2.65                     | 0.65              |
| 1:AA:270(A):A:H3' | 1:AA:366:C:O2'    | 1.97                     | 0.65              |
| 1:AA:350:U:O2     | 1:AA:350:U:C2'    | 2.44                     | 0.65              |
| 1:AA:445:C:H5''   | 16:AR:3:ARG:CG    | 2.27                     | 0.65              |
| 1:AA:502:A:H3'    | 1:AA:502:A:C8     | 2.32                     | 0.65              |
| 1:AA:532:A:H4'    | 16:AR:28:ARG:NH1  | 2.12                     | 0.65              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:673:C:H5''   | 6:AF:81:PRO:CG    | 2.27                     | 0.65              |
| 1:AA:878:A:C4     | 1:AA:879:G:C8     | 2.85                     | 0.65              |
| 1:AA:1238:G:C2    | 1:AA:1239:G:C4    | 2.85                     | 0.65              |
| 1:AA:1275:A:H2'   | 1:AA:1276:A:O4'   | 1.96                     | 0.65              |
| 1:AA:1307:A:O2'   | 1:AA:1308:A:H5'   | 1.97                     | 0.65              |
| 1:AA:1400:G:H2'   | 1:AA:1401:G:C8    | 2.32                     | 0.65              |
| 1:AA:1433:U:O2    | 1:AA:1561:G:C2    | 2.50                     | 0.65              |
| 1:AA:1519:G:H3'   | 1:AA:1520:U:C2    | 2.31                     | 0.65              |
| 1:AA:1710:C:H4'   | 1:AA:2858:C:N3    | 2.12                     | 0.65              |
| 1:AA:1955:U:P     | 1:AA:1956:U:O4    | 2.55                     | 0.65              |
| 1:AA:2049:G:C2    | 1:AA:2620:C:C2    | 2.84                     | 0.65              |
| 1:AA:2051:A:C2    | 1:AA:2052:G:N7    | 2.65                     | 0.65              |
| 1:AA:2142:C:H2'   | 1:AA:2143:C:H6    | 1.56                     | 0.65              |
| 1:AA:2531:A:H2'   | 1:AA:2532:G:O5'   | 1.97                     | 0.65              |
| 1:AA:2546:U:C4'   | 1:AA:2565:A:C2    | 2.80                     | 0.65              |
| 1:AA:2651:C:O2    | 1:AA:2670:A:C6    | 2.42                     | 0.65              |
| 1:AA:2652:C:C4    | 1:AA:2670:A:N9    | 2.38                     | 0.65              |
| 1:AA:2681:C:O2'   | 1:AA:2682:U:C5'   | 2.38                     | 0.65              |
| 3:AC:108:MET:HE1  | 3:AC:131:LEU:HA   | 1.77                     | 0.65              |
| 3:AC:183:GLU:CD   | 3:AC:183:GLU:N    | 2.53                     | 0.65              |
| 4:AD:57:GLY:H     | 4:AD:217:ARG:CD   | 2.08                     | 0.65              |
| 5:AE:104:VAL:CG2  | 5:AE:198:VAL:HG22 | 2.26                     | 0.65              |
| 7:AG:18:GLU:OE1   | 7:AG:22:ARG:NH1   | 2.30                     | 0.65              |
| 7:AG:39:ILE:HD12  | 7:AG:92:VAL:O     | 1.97                     | 0.65              |
| 8:AH:40:GLU:CB    | 8:AH:55:PRO:HG3   | 2.27                     | 0.65              |
| 8:AH:60:ARG:HG2   | 8:AH:64:LEU:CD1   | 2.27                     | 0.65              |
| 9:AK:14:VAL:HG22  | 9:AK:138:LEU:HD13 | 1.78                     | 0.65              |
| 10:AL:15:GLY:CA   | 10:AL:47:ILE:HB   | 2.26                     | 0.65              |
| 10:AL:25:LEU:HD13 | 10:AL:38:VAL:HB   | 1.79                     | 0.65              |
| 10:AL:97:ARG:NE   | 10:AL:98:VAL:N    | 2.45                     | 0.65              |
| 13:AO:14:SER:C    | 13:AO:17:ARG:HG2  | 2.22                     | 0.65              |
| 13:AO:20:LEU:C    | 13:AO:20:LEU:CD1  | 2.67                     | 0.65              |
| 14:AP:49:VAL:CG2  | 14:AP:76:LYS:HZ1  | 2.09                     | 0.65              |
| 14:AP:54:LEU:HG   | 14:AP:56:LEU:CD2  | 2.27                     | 0.65              |
| 14:AP:94:TYR:N    | 14:AP:94:TYR:CD1  | 2.64                     | 0.65              |
| 15:AQ:30:VAL:HG22 | 15:AQ:32:TYR:HE2  | 1.58                     | 0.65              |
| 16:AR:44:ASN:O    | 16:AR:47:TYR:CB   | 2.27                     | 0.65              |
| 17:AS:12:TYR:CE1  | 17:AS:14:VAL:N    | 2.65                     | 0.65              |
| 17:AS:43:GLU:N    | 17:AS:44:LYS:NZ   | 2.37                     | 0.65              |
| 18:AT:19:LEU:O    | 18:AT:22:ASP:HB2  | 1.97                     | 0.65              |
| 19:AU:43:VAL:HG12 | 19:AU:44:GLU:N    | 2.11                     | 0.65              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 20:AV:98:VAL:N     | 20:AV:101:LYS:HE3  | 2.12                     | 0.65              |
| 22:AX:12:ASN:HA    | 22:AX:14:ARG:NE    | 2.12                     | 0.65              |
| 25:Aa:53:GLU:HG2   | 25:Aa:54:GLY:N     | 2.12                     | 0.65              |
| 26:Ab:19:ARG:O     | 26:Ab:21:SER:N     | 2.30                     | 0.65              |
| 28:Ad:33:ARG:O     | 28:Ad:37:LYS:CB    | 2.43                     | 0.65              |
| 29:Ae:14:VAL:O     | 29:Ae:14:VAL:HG12  | 1.96                     | 0.65              |
| 32:AJ:66:THR:O     | 32:AJ:67:PHE:HB2   | 1.96                     | 0.65              |
| 32:AJ:104:VAL:HG11 | 32:AJ:127:ILE:HD13 | 1.05                     | 0.65              |
| 34:BA:130:A:H4'    | 34:BA:190:G:N3     | 2.12                     | 0.65              |
| 34:BA:479:C:H2'    | 34:BA:480:U:C2     | 2.31                     | 0.65              |
| 34:BA:520:A:H8     | 34:BA:521:G:H5''   | 1.62                     | 0.65              |
| 34:BA:529:G:C6     | 45:BP:49:ASN:CG    | 2.74                     | 0.65              |
| 34:BA:543:C:P      | 37:BH:10:ARG:HH22  | 2.19                     | 0.65              |
| 34:BA:562:C:O2'    | 45:BP:15:ARG:HB3   | 1.96                     | 0.65              |
| 34:BA:566:G:H4'    | 34:BA:567:G:OP1    | 1.96                     | 0.65              |
| 34:BA:696:A:N3     | 34:BA:697:U:O4'    | 2.29                     | 0.65              |
| 34:BA:735:C:H2'    | 34:BA:736:C:C6     | 2.26                     | 0.65              |
| 34:BA:908:A:C2     | 34:BA:909:A:N7     | 2.64                     | 0.65              |
| 34:BA:1049:U:H6    | 34:BA:1049:U:O5'   | 1.78                     | 0.65              |
| 34:BA:1069:C:H1'   | 34:BA:1191:A:H2    | 1.60                     | 0.65              |
| 34:BA:1151:A:C4    | 34:BA:1152:A:C8    | 2.85                     | 0.65              |
| 34:BA:1152:A:C2    | 34:BA:1153:C:C4    | 2.84                     | 0.65              |
| 34:BA:1171:G:H2'   | 34:BA:1172:C:C6    | 2.32                     | 0.65              |
| 34:BA:1186:G:N2    | 47:BR:61:TRP:O     | 2.25                     | 0.65              |
| 34:BA:1305:G:H5''  | 54:BY:4:GLY:C      | 2.22                     | 0.65              |
| 34:BA:1345:U:H5'   | 34:BA:1346:A:OP1   | 1.95                     | 0.65              |
| 34:BA:1405:G:H2'   | 34:BA:1406:U:C6    | 2.31                     | 0.65              |
| 34:BA:1443:G:O3'   | 34:BA:1446:A:H4'   | 1.95                     | 0.65              |
| 34:BA:1526:G:H2'   | 34:BA:1527:C:C5    | 2.31                     | 0.65              |
| 35:BF:87:ARG:C     | 35:BF:89:GLY:H     | 2.05                     | 0.65              |
| 36:BG:76:VAL:HG12  | 36:BG:77:ILE:N     | 2.11                     | 0.65              |
| 38:BI:17:ALA:HA    | 38:BI:26:PHE:CD2   | 2.31                     | 0.65              |
| 42:BM:23:ASN:HD22  | 42:BM:23:ASN:C     | 2.05                     | 0.65              |
| 42:BM:113:LYS:HZ2  | 42:BM:119:ALA:HB1  | 1.61                     | 0.65              |
| 43:BN:5:ARG:HB2    | 43:BN:5:ARG:NH1    | 2.11                     | 0.65              |
| 44:BO:44:SER:H     | 44:BO:47:VAL:HB    | 1.62                     | 0.65              |
| 44:BO:63:LEU:O     | 44:BO:66:LEU:HB2   | 1.97                     | 0.65              |
| 45:BP:25:PRO:O     | 45:BP:27:LEU:N     | 2.30                     | 0.65              |
| 49:BT:26:ARG:O     | 49:BT:27:LYS:O     | 2.14                     | 0.65              |
| 49:BT:35:LYS:HZ2   | 49:BT:37:GLY:N     | 1.94                     | 0.65              |
| 57:BZ:2:ILE:HG21   | 57:BZ:267:LEU:HD22 | 1.76                     | 0.65              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:BZ:8:ILE:HA    | 57:BZ:72:ILE:HG21 | 1.77                     | 0.65              |
| 57:BZ:62:ALA:HB2  | 57:BZ:187:TYR:CG  | 2.32                     | 0.65              |
| 57:BZ:205:PHE:HA  | 57:BZ:228:ARG:C   | 2.22                     | 0.65              |
| 57:BZ:234:ASN:ND2 | 57:BZ:247:ARG:HB2 | 2.05                     | 0.65              |
| 57:BZ:303:ASP:CB  | 57:BZ:343:VAL:O   | 2.43                     | 0.65              |
| 1:AA:229:A:H5'    | 1:AA:230:U:OP1    | 1.95                     | 0.65              |
| 1:AA:308:G:N2     | 1:AA:329:G:H2'    | 2.12                     | 0.65              |
| 1:AA:400:G:H3'    | 1:AA:400:G:C8     | 2.32                     | 0.65              |
| 1:AA:446:G:C8     | 1:AA:446:G:OP2    | 2.50                     | 0.65              |
| 1:AA:464:U:C2     | 1:AA:788:A:N7     | 2.65                     | 0.65              |
| 1:AA:772:C:O2'    | 1:AA:773:U:H5'    | 1.96                     | 0.65              |
| 1:AA:917:A:N6     | 1:AA:918:A:C6     | 2.64                     | 0.65              |
| 1:AA:1025:G:H1'   | 1:AA:1134:G:H4'   | 1.79                     | 0.65              |
| 1:AA:1296:G:H2'   | 1:AA:1297:C:H6    | 1.62                     | 0.65              |
| 1:AA:1312:U:H3    | 1:AA:1604:C:H41   | 1.44                     | 0.65              |
| 1:AA:1497:U:O4    | 1:AA:1577:C:O5'   | 2.14                     | 0.65              |
| 1:AA:1798:U:H5''  | 4:AD:257:LEU:HB2  | 1.78                     | 0.65              |
| 1:AA:2661:G:H8    | 1:AA:2661:G:O5'   | 1.80                     | 0.65              |
| 1:AA:2770:G:O5'   | 1:AA:2770:G:H8    | 1.79                     | 0.65              |
| 1:AA:2779:U:C5'   | 1:AA:2780:G:H3'   | 2.27                     | 0.65              |
| 3:AC:128:GLY:HA2  | 3:AC:137:LEU:CD1  | 2.27                     | 0.65              |
| 3:AC:209:LEU:HD21 | 3:AC:212:VAL:HB   | 1.77                     | 0.65              |
| 4:AD:53:PHE:O     | 4:AD:54:ARG:C     | 2.40                     | 0.65              |
| 4:AD:63:ARG:HD2   | 4:AD:85:ASP:HB3   | 1.79                     | 0.65              |
| 5:AE:41:LYS:HE3   | 5:AE:41:LYS:N     | 2.12                     | 0.65              |
| 5:AE:132:HIS:O    | 5:AE:133:LYS:HB2  | 1.96                     | 0.65              |
| 5:AE:182:LEU:HD22 | 5:AE:184:VAL:HG13 | 1.77                     | 0.65              |
| 8:AH:84:SER:CA    | 8:AH:134:SER:HA   | 2.25                     | 0.65              |
| 9:AK:6:PRO:HA     | 9:AK:41:ASP:CG    | 2.21                     | 0.65              |
| 11:AM:46:LYS:HB3  | 11:AM:49:ARG:NH1  | 2.11                     | 0.65              |
| 11:AM:74:GLU:CB   | 11:AM:111:ARG:O   | 2.31                     | 0.65              |
| 11:AM:81:GLN:HG2  | 11:AM:86:LYS:CE   | 2.26                     | 0.65              |
| 12:AN:45:GLN:HA   | 12:AN:48:GLU:HG2  | 1.79                     | 0.65              |
| 13:AO:33:ARG:HH22 | 26:Ab:56:LYS:HB2  | 1.62                     | 0.65              |
| 13:AO:51:LEU:CD2  | 13:AO:70:LEU:HD11 | 2.26                     | 0.65              |
| 14:AP:75:GLU:CA   | 14:AP:78:LEU:HB3  | 2.27                     | 0.65              |
| 14:AP:87:PHE:CG   | 14:AP:88:ASP:N    | 2.62                     | 0.65              |
| 15:AQ:56:GLY:O    | 15:AQ:61:PHE:HA   | 1.97                     | 0.65              |
| 16:AR:83:LEU:C    | 16:AR:86:ALA:HB3  | 2.22                     | 0.65              |
| 16:AR:89:GLU:HB3  | 17:AS:52:VAL:H    | 1.55                     | 0.65              |
| 18:AT:34:ASN:ND2  | 18:AT:37:ARG:HH11 | 1.95                     | 0.65              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 19:AU:7:VAL:HG11  | 23:AY:31:ARG:NH2  | 2.11                     | 0.65              |
| 19:AU:27:THR:HG22 | 19:AU:80:ILE:CG2  | 2.26                     | 0.65              |
| 20:AV:24:VAL:HG23 | 20:AV:24:VAL:O    | 1.97                     | 0.65              |
| 24:AZ:6:VAL:CG2   | 24:AZ:35:ARG:HG3  | 2.13                     | 0.65              |
| 27:Ac:35:GLU:CD   | 27:Ac:52:VAL:HG13 | 2.22                     | 0.65              |
| 34:BA:187:C:O2    | 34:BA:191(A):G:C6 | 2.50                     | 0.65              |
| 34:BA:236:G:H2'   | 34:BA:236:G:N3    | 2.12                     | 0.65              |
| 34:BA:313:A:H2'   | 34:BA:314:C:H6    | 1.58                     | 0.65              |
| 34:BA:481:G:H5'   | 34:BA:482:A:OP1   | 1.97                     | 0.65              |
| 34:BA:524:G:H2'   | 34:BA:525:C:H6    | 1.62                     | 0.65              |
| 34:BA:772:U:O2'   | 34:BA:773:G:H5'   | 1.97                     | 0.65              |
| 34:BA:809:G:C2'   | 34:BA:810:C:H5'   | 2.27                     | 0.65              |
| 34:BA:982:U:H1'   | 34:BA:983:A:N6    | 2.12                     | 0.65              |
| 34:BA:986:A:H5'   | 52:BW:55:LYS:HZ1  | 0.82                     | 0.65              |
| 34:BA:1003:G:C4   | 34:BA:1004:A:H1'  | 2.32                     | 0.65              |
| 34:BA:1115:C:O2   | 34:BA:1186:G:C4   | 2.50                     | 0.65              |
| 34:BA:1158:C:H1'  | 35:BF:133:LYS:HZ1 | 1.60                     | 0.65              |
| 34:BA:1202:G:N2   | 34:BA:1203:C:H1'  | 2.11                     | 0.65              |
| 34:BA:1370:G:H5'' | 42:BM:12:GLU:CD   | 2.22                     | 0.65              |
| 34:BA:1378:C:OP1  | 40:BK:6:ARG:HD3   | 1.97                     | 0.65              |
| 34:BA:1508:G:O2'  | 34:BA:1509:C:H5'  | 1.96                     | 0.65              |
| 35:BF:61:LEU:HD11 | 35:BF:68:ILE:HD13 | 1.78                     | 0.65              |
| 35:BF:163:PHE:CE1 | 35:BF:186:ALA:HA  | 2.32                     | 0.65              |
| 36:BG:83:ARG:C    | 36:BG:85:ARG:H    | 2.05                     | 0.65              |
| 41:BL:29:SER:O    | 41:BL:32:LYS:HG2  | 1.96                     | 0.65              |
| 41:BL:38:ILE:C    | 41:BL:41:ARG:HB2  | 2.21                     | 0.65              |
| 42:BM:26:VAL:HG13 | 42:BM:63:ILE:CD1  | 2.26                     | 0.65              |
| 51:BV:74:ARG:HA   | 51:BV:79:LEU:HD13 | 1.76                     | 0.65              |
| 53:BX:14:LYS:O    | 53:BX:15:ARG:C    | 2.39                     | 0.65              |
| 53:BX:49:ALA:HA   | 53:BX:92:LEU:CD2  | 2.26                     | 0.65              |
| 54:BY:23:PRO:C    | 54:BY:25:LYS:H    | 2.04                     | 0.65              |
| 57:BZ:64:ILE:HB   | 57:BZ:65:LYS:HA   | 1.79                     | 0.65              |
| 57:BZ:79:ALA:C    | 57:BZ:82:GLY:H    | 2.04                     | 0.65              |
| 57:BZ:188:GLN:OE1 | 57:BZ:188:GLN:HA  | 1.95                     | 0.65              |
| 57:BZ:207:MET:HE1 | 57:BZ:224:GLY:CA  | 2.21                     | 0.65              |
| 57:BZ:216:SER:O   | 57:BZ:217:TYR:HB2 | 1.96                     | 0.65              |
| 1:AA:9:U:H2'      | 1:AA:9:U:O2       | 1.97                     | 0.65              |
| 1:AA:77:C:H2'     | 1:AA:78:A:C8      | 2.32                     | 0.65              |
| 1:AA:197:A:O4'    | 1:AA:2068:U:C2    | 2.51                     | 0.65              |
| 1:AA:261:G:C4'    | 1:AA:608:A:H2     | 1.99                     | 0.65              |
| 1:AA:270(S):G:C2  | 1:AA:270(T):G:N7  | 2.66                     | 0.65              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:331:A:C5     | 1:AA:1209:G:C2     | 2.85                     | 0.65              |
| 1:AA:411:G:N2     | 1:AA:2408:U:H3     | 1.92                     | 0.65              |
| 1:AA:801:G:O2'    | 1:AA:802:A:OP1     | 2.13                     | 0.65              |
| 1:AA:973:A:O2'    | 1:AA:974:G:O5'     | 2.14                     | 0.65              |
| 1:AA:975:G:C6     | 1:AA:976:C:C5      | 2.85                     | 0.65              |
| 1:AA:1064:C:N3    | 1:AA:1065:U:C2     | 2.65                     | 0.65              |
| 1:AA:1158:C:H5'   | 24:AZ:31:LEU:HB3   | 1.78                     | 0.65              |
| 1:AA:1184:G:OP1   | 24:AZ:30:ARG:NH1   | 2.30                     | 0.65              |
| 1:AA:1394:U:O3'   | 1:AA:1603:A:H5''   | 1.97                     | 0.65              |
| 1:AA:1429:G:H3'   | 1:AA:1430:C:C6     | 2.32                     | 0.65              |
| 1:AA:1634:A:O2'   | 1:AA:1635:G:P      | 2.55                     | 0.65              |
| 1:AA:1803:A:H2'   | 1:AA:1804:C:H6     | 1.61                     | 0.65              |
| 1:AA:1858:G:N2    | 1:AA:1884:A:H1'    | 2.11                     | 0.65              |
| 1:AA:2176:A:C4    | 3:AC:44:HIS:CD2    | 2.84                     | 0.65              |
| 1:AA:2324:C:O2    | 1:AA:2385:C:H5     | 1.79                     | 0.65              |
| 1:AA:2636:U:H4'   | 5:AE:79:ARG:CD     | 2.27                     | 0.65              |
| 2:AB:14:U:H1'     | 2:AB:107:U:H1'     | 1.78                     | 0.65              |
| 2:AB:110:G:H2'    | 2:AB:111:U:O5'     | 1.97                     | 0.65              |
| 3:AC:89:ALA:HB1   | 3:AC:154:ARG:CB    | 2.26                     | 0.65              |
| 4:AD:172:TYR:HB3  | 4:AD:184:LYS:CG    | 2.26                     | 0.65              |
| 5:AE:36:ARG:CG    | 5:AE:79:ARG:HH11   | 1.97                     | 0.65              |
| 5:AE:112:GLY:O    | 5:AE:159:HIS:HA    | 1.96                     | 0.65              |
| 5:AE:186:GLY:C    | 5:AE:188:VAL:H     | 2.04                     | 0.65              |
| 7:AG:19:LEU:HG    | 7:AG:22:ARG:NH2    | 2.12                     | 0.65              |
| 7:AG:68:PRO:HG3   | 7:AG:72:ARG:NH1    | 2.11                     | 0.65              |
| 7:AG:75:LYS:HB3   | 7:AG:84:LYS:CA     | 2.27                     | 0.65              |
| 7:AG:113:ARG:O    | 7:AG:114:ILE:HG22  | 1.97                     | 0.65              |
| 8:AH:8:PRO:HD2    | 8:AH:69:ARG:HH11   | 1.62                     | 0.65              |
| 8:AH:85:LYS:HE2   | 8:AH:142:GLY:HA2   | 1.78                     | 0.65              |
| 9:AK:37:LYS:HE2   | 9:AK:43:THR:CG2    | 2.26                     | 0.65              |
| 9:AK:39:ARG:HD3   | 9:AK:48:MET:HG2    | 1.78                     | 0.65              |
| 9:AK:87:LEU:O     | 9:AK:91:LEU:HD21   | 1.97                     | 0.65              |
| 9:AK:89:LYS:HA    | 9:AK:92:ALA:HB3    | 1.79                     | 0.65              |
| 9:AK:108:PRO:O    | 9:AK:113:GLY:HA3   | 1.97                     | 0.65              |
| 10:AL:89:ASN:HD22 | 10:AL:91:LEU:HB2   | 1.58                     | 0.65              |
| 12:AN:58:PHE:C    | 12:AN:60:ARG:N     | 2.55                     | 0.65              |
| 13:AO:93:GLY:C    | 13:AO:95:THR:H     | 2.03                     | 0.65              |
| 13:AO:108:GLY:O   | 13:AO:110:PRO:HD3  | 1.97                     | 0.65              |
| 14:AP:30:ARG:CG   | 14:AP:91:PRO:HG3   | 2.26                     | 0.65              |
| 15:AQ:109:GLU:HB2 | 15:AQ:114:LEU:HD21 | 1.79                     | 0.65              |
| 15:AQ:113:LYS:O   | 15:AQ:114:LEU:C    | 2.40                     | 0.65              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 16:AR:102:GLU:O    | 16:AR:105:VAL:N   | 2.30                     | 0.65              |
| 17:AS:43:GLU:H     | 17:AS:44:LYS:CE   | 2.10                     | 0.65              |
| 18:AT:13:SER:C     | 18:AT:16:LYS:HZ3  | 2.04                     | 0.65              |
| 20:AV:108:THR:HG22 | 20:AV:109:GLU:OE1 | 1.97                     | 0.65              |
| 21:AW:1:MET:HE3    | 21:AW:3:TYR:CD2   | 2.32                     | 0.65              |
| 21:AW:128:VAL:HB   | 21:AW:162:GLU:HB3 | 1.79                     | 0.65              |
| 21:AW:141:VAL:CG1  | 21:AW:142:SER:H   | 2.10                     | 0.65              |
| 21:AW:152:ALA:O    | 21:AW:155:LEU:HB2 | 1.97                     | 0.65              |
| 22:AX:23:VAL:CA    | 22:AX:38:VAL:HG13 | 2.27                     | 0.65              |
| 24:AZ:50:VAL:O     | 24:AZ:52:HIS:ND1  | 2.29                     | 0.65              |
| 25:Aa:29:PRO:CG    | 25:Aa:31:ILE:HG23 | 2.27                     | 0.65              |
| 30:Af:29:ASN:HB3   | 30:Af:32:HIS:CE1  | 2.32                     | 0.65              |
| 34:BA:314:C:H2'    | 34:BA:315:A:H1'   | 1.78                     | 0.65              |
| 34:BA:328:C:O2'    | 34:BA:329:A:P     | 2.55                     | 0.65              |
| 34:BA:759:A:N6     | 34:BA:760:G:N3    | 2.44                     | 0.65              |
| 34:BA:765:G:H21    | 34:BA:816:A:H2    | 1.45                     | 0.65              |
| 34:BA:865:A:H2'    | 34:BA:866:C:O4'   | 1.97                     | 0.65              |
| 34:BA:1005:A:H1'   | 34:BA:1036:G:N2   | 2.12                     | 0.65              |
| 34:BA:1240:U:OP2   | 40:BK:116:ALA:N   | 2.29                     | 0.65              |
| 34:BA:1251:A:H61   | 34:BA:1285:A:H2   | 1.43                     | 0.65              |
| 34:BA:1252:A:C6    | 34:BA:1253:G:N7   | 2.65                     | 0.65              |
| 34:BA:1419:G:O2'   | 34:BA:1420:C:H6   | 1.80                     | 0.65              |
| 35:BF:170:GLU:O    | 35:BF:171:ALA:C   | 2.40                     | 0.65              |
| 35:BF:179:LYS:C    | 35:BF:181:PHE:N   | 2.53                     | 0.65              |
| 35:BF:224:GLN:HG2  | 35:BF:229:VAL:CG2 | 2.27                     | 0.65              |
| 37:BH:143:GLY:HA2  | 37:BH:185:PHE:CG  | 2.32                     | 0.65              |
| 38:BI:142:LEU:N    | 38:BI:143:ARG:HE  | 1.94                     | 0.65              |
| 43:BN:11:PHE:HZ    | 43:BN:65:LEU:HG   | 1.62                     | 0.65              |
| 43:BN:27:ALA:HB2   | 43:BN:85:LEU:CD1  | 2.26                     | 0.65              |
| 45:BP:85:ILE:CD1   | 45:BP:98:TYR:HB2  | 2.26                     | 0.65              |
| 46:BQ:56:LEU:HD12  | 46:BQ:60:VAL:HG21 | 1.79                     | 0.65              |
| 46:BQ:66:LEU:H     | 46:BQ:70:LEU:HB2  | 1.62                     | 0.65              |
| 49:BT:20:VAL:C     | 49:BT:36:ILE:HD11 | 2.21                     | 0.65              |
| 49:BT:49:LEU:HD11  | 49:BT:51:VAL:CG2  | 2.20                     | 0.65              |
| 51:BV:29:PHE:CD2   | 51:BV:39:VAL:HG11 | 2.32                     | 0.65              |
| 52:BW:36:ARG:HA    | 52:BW:71:LEU:HD12 | 1.79                     | 0.65              |
| 52:BW:53:ASN:ND2   | 52:BW:56:GLN:HB2  | 2.07                     | 0.65              |
| 52:BW:62:ILE:CD1   | 52:BW:67:VAL:HA   | 2.26                     | 0.65              |
| 53:BX:88:VAL:HG12  | 53:BX:92:LEU:CD1  | 2.26                     | 0.65              |
| 56:BD:59:U:H6      | 56:BD:59:U:O5'    | 1.80                     | 0.65              |
| 56:BE:18:G:C2      | 56:BE:58:A:O4'    | 2.50                     | 0.65              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 56:BE:18:G:C4     | 56:BE:58:A:N3     | 2.65                     | 0.65              |
| 57:BZ:38:THR:HA   | 57:BZ:39:GLN:CB   | 2.06                     | 0.65              |
| 57:BZ:172:ALA:HB2 | 57:BZ:179:MET:SD  | 2.35                     | 0.65              |
| 1:AA:18:C:O5'     | 1:AA:18:C:H6      | 1.80                     | 0.64              |
| 1:AA:60:G:O6      | 1:AA:88:G:O6      | 2.15                     | 0.64              |
| 1:AA:89:G:OP2     | 1:AA:91:A:OP1     | 2.15                     | 0.64              |
| 1:AA:231:C:C4     | 1:AA:232:G:N2     | 2.66                     | 0.64              |
| 1:AA:565:C:O3'    | 1:AA:1253:A:H2    | 1.80                     | 0.64              |
| 1:AA:566:U:C5'    | 17:AS:82:ARG:CZ   | 2.75                     | 0.64              |
| 1:AA:931:G:N3     | 24:AZ:24:LYS:HE3  | 2.12                     | 0.64              |
| 1:AA:941:A:C2     | 1:AA:942:G:C4     | 2.85                     | 0.64              |
| 1:AA:979:G:N7     | 1:AA:981:A:P      | 2.71                     | 0.64              |
| 1:AA:987:G:OP2    | 24:AZ:13:ILE:HD13 | 1.97                     | 0.64              |
| 1:AA:1024:G:C5    | 1:AA:1025:G:H8    | 2.12                     | 0.64              |
| 1:AA:1084:A:N7    | 1:AA:1085:A:N1    | 2.45                     | 0.64              |
| 1:AA:1105:U:C4    | 1:AA:1107:G:N1    | 2.63                     | 0.64              |
| 1:AA:1482:U:O2'   | 1:AA:1512:G:N2    | 2.30                     | 0.64              |
| 1:AA:1519:G:C3'   | 1:AA:1520:U:O4'   | 2.45                     | 0.64              |
| 1:AA:1543:A:O5'   | 1:AA:1544:C:H5''  | 1.97                     | 0.64              |
| 1:AA:1681:G:C2'   | 1:AA:1682:G:OP1   | 2.44                     | 0.64              |
| 1:AA:1681:G:N1    | 1:AA:1762:A:N7    | 2.45                     | 0.64              |
| 1:AA:1703:G:C2    | 1:AA:1704:G:C4    | 2.85                     | 0.64              |
| 1:AA:1789:A:O4'   | 4:AD:222:ARG:NH2  | 2.29                     | 0.64              |
| 1:AA:1834:U:C1'   | 1:AA:1969:A:C2    | 2.80                     | 0.64              |
| 1:AA:2025:C:C2'   | 1:AA:2026:C:C6    | 2.76                     | 0.64              |
| 1:AA:2178:C:OP1   | 3:AC:211:SER:HB3  | 1.97                     | 0.64              |
| 1:AA:2346:A:C1'   | 1:AA:2383:G:C8    | 2.74                     | 0.64              |
| 1:AA:2356:C:O2'   | 22:AX:20:ARG:NE   | 2.27                     | 0.64              |
| 1:AA:2447:G:H8    | 1:AA:2500:U:H3'   | 0.87                     | 0.64              |
| 1:AA:2471:C:C4'   | 57:BZ:529:ARG:NH2 | 1.73                     | 0.64              |
| 1:AA:2567:G:C6    | 1:AA:2568:C:N4    | 2.64                     | 0.64              |
| 1:AA:2674:G:HO2'  | 1:AA:2675:A:H5'   | 1.60                     | 0.64              |
| 1:AA:2797:U:H4'   | 1:AA:2798:C:O4'   | 1.98                     | 0.64              |
| 2:AB:24:G:N2      | 2:AB:27:C:H42     | 1.96                     | 0.64              |
| 4:AD:55:GLY:HA2   | 4:AD:217:ARG:CZ   | 2.27                     | 0.64              |
| 4:AD:136:ILE:CD1  | 4:AD:173:VAL:HG21 | 2.26                     | 0.64              |
| 5:AE:128:SER:O    | 5:AE:130:GLY:N    | 2.31                     | 0.64              |
| 7:AG:49:ASP:N     | 7:AG:53:LEU:HD13  | 2.13                     | 0.64              |
| 8:AH:18:GLU:OE1   | 8:AH:25:LYS:HG2   | 1.97                     | 0.64              |
| 8:AH:52:VAL:HG22  | 8:AH:65:HIS:CE1   | 2.32                     | 0.64              |
| 8:AH:72:ILE:O     | 8:AH:75:ALA:HB3   | 1.96                     | 0.64              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AH:157:TYR:CD1  | 8:AH:158:HIS:N     | 2.65                     | 0.64              |
| 10:AL:60:ALA:C    | 10:AL:83:ALA:HB1   | 2.20                     | 0.64              |
| 11:AM:35:HIS:O    | 11:AM:36:LYS:HD3   | 1.97                     | 0.64              |
| 14:AP:11:LYS:CD   | 14:AP:11:LYS:N     | 2.59                     | 0.64              |
| 16:AR:5:LYS:C     | 16:AR:7:GLY:H      | 2.04                     | 0.64              |
| 16:AR:35:ALA:O    | 16:AR:38:THR:OG1   | 2.15                     | 0.64              |
| 17:AS:69:LYS:HE2  | 17:AS:70:ILE:HD11  | 1.79                     | 0.64              |
| 20:AV:32:PRO:HB2  | 20:AV:34:LYS:HE3   | 1.80                     | 0.64              |
| 20:AV:47:LYS:HZ3  | 20:AV:51:VAL:HG21  | 1.60                     | 0.64              |
| 21:AW:159:PRO:O   | 21:AW:161:VAL:HG23 | 1.97                     | 0.64              |
| 22:AX:37:LEU:HD21 | 22:AX:60:PHE:HA    | 1.77                     | 0.64              |
| 24:AZ:35:ARG:HH22 | 24:AZ:47:VAL:CG1   | 2.10                     | 0.64              |
| 27:Ac:54:ILE:HD13 | 27:Ac:54:ILE:C     | 2.21                     | 0.64              |
| 31:AI:97:ALA:HB2  | 31:AI:132:ASP:C    | 2.23                     | 0.64              |
| 34:BA:189:U:N3    | 50:BU:72:ARG:NH2   | 2.44                     | 0.64              |
| 34:BA:391:G:OP1   | 49:BT:28:ARG:NH2   | 2.30                     | 0.64              |
| 34:BA:576:G:C8    | 34:BA:881:G:H1'    | 2.30                     | 0.64              |
| 34:BA:647:C:N3    | 34:BA:648:A:N7     | 2.44                     | 0.64              |
| 34:BA:701:C:O2'   | 34:BA:702:A:OP2    | 2.12                     | 0.64              |
| 34:BA:772:U:H2'   | 34:BA:773:G:H8     | 1.62                     | 0.64              |
| 34:BA:1054:C:H6   | 34:BA:1054:C:H3'   | 1.62                     | 0.64              |
| 34:BA:1295:G:N2   | 34:BA:1302:U:H3    | 1.95                     | 0.64              |
| 34:BA:1329:A:O2'  | 46:BQ:70:LEU:CG    | 2.45                     | 0.64              |
| 41:BL:97:VAL:HG13 | 41:BL:98:LYS:NZ    | 2.11                     | 0.64              |
| 44:BO:39:PRO:C    | 44:BO:40:ILE:HD13  | 2.21                     | 0.64              |
| 46:BQ:16:ASP:HA   | 46:BQ:30:ALA:HB1   | 1.79                     | 0.64              |
| 50:BU:51:TYR:CD1  | 50:BU:51:TYR:N     | 2.61                     | 0.64              |
| 50:BU:65:ILE:HG23 | 50:BU:69:LYS:O     | 1.96                     | 0.64              |
| 50:BU:88:TYR:CA   | 50:BU:91:ARG:NH2   | 2.60                     | 0.64              |
| 52:BW:20:LEU:HG   | 52:BW:21:GLU:H     | 1.62                     | 0.64              |
| 52:BW:62:ILE:CD1  | 52:BW:67:VAL:HG13  | 2.26                     | 0.64              |
| 56:BD:67:C:C6     | 56:BD:68:C:C6      | 2.85                     | 0.64              |
| 56:BD:74:C:C1'    | 56:BD:75:C:P       | 2.84                     | 0.64              |
| 56:BE:21:A:N1     | 56:BE:46:G:N2      | 2.45                     | 0.64              |
| 57:BZ:55:THR:O    | 57:BZ:56:ILE:HB    | 1.97                     | 0.64              |
| 57:BZ:89:MET:CG   | 57:BZ:119:TYR:CE2  | 2.79                     | 0.64              |
| 57:BZ:204:PRO:HB3 | 57:BZ:290:ASP:CG   | 2.15                     | 0.64              |
| 1:AA:13:A:N6      | 1:AA:525:U:C2      | 2.65                     | 0.64              |
| 1:AA:465:G:C5     | 1:AA:466:A:N7      | 2.65                     | 0.64              |
| 1:AA:516:C:O5'    | 1:AA:516:C:H6      | 1.80                     | 0.64              |
| 1:AA:563:G:N2     | 1:AA:578:A:N1      | 2.45                     | 0.64              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 1:AA:637:A:N7    | 11:AM:115:LEU:HG   | 2.11                     | 0.64              |
| 1:AA:641:C:N4    | 1:AA:646:A:H61     | 1.94                     | 0.64              |
| 1:AA:714:U:O2    | 1:AA:717:G:C8      | 2.50                     | 0.64              |
| 1:AA:746:A:C8    | 1:AA:2612:C:O5'    | 2.50                     | 0.64              |
| 1:AA:800:A:O2'   | 1:AA:801:G:P       | 2.55                     | 0.64              |
| 1:AA:826:U:H5''  | 1:AA:2429:G:P      | 2.37                     | 0.64              |
| 1:AA:930:U:O2'   | 1:AA:931:G:P       | 2.55                     | 0.64              |
| 1:AA:930:U:O2    | 1:AA:932:G:C2      | 2.50                     | 0.64              |
| 1:AA:942:G:O2'   | 1:AA:1189:A:N3     | 2.29                     | 0.64              |
| 1:AA:950:G:C6    | 1:AA:951:C:C4      | 2.85                     | 0.64              |
| 1:AA:1142(A):A:P | 1:AA:1143:A:H5'    | 2.37                     | 0.64              |
| 1:AA:1202:C:C6   | 1:AA:1203:G:C1'    | 2.71                     | 0.64              |
| 1:AA:1221:C:C2   | 1:AA:1229:G:N2     | 2.65                     | 0.64              |
| 1:AA:1418:G:OP1  | 1:AA:1588:C:C4'    | 2.45                     | 0.64              |
| 1:AA:1420:U:O2'  | 1:AA:1421:G:H5''   | 1.97                     | 0.64              |
| 1:AA:1464:C:C4'  | 1:AA:1528:A:H1'    | 2.27                     | 0.64              |
| 1:AA:1471:A:OP2  | 1:AA:1472:A:H2     | 1.79                     | 0.64              |
| 1:AA:1534:G:H21  | 1:AA:1537:C:H41    | 1.46                     | 0.64              |
| 1:AA:1980:G:C5   | 1:AA:1982:C:C5     | 2.85                     | 0.64              |
| 1:AA:2018:G:C1'  | 16:AR:34:LYS:NZ    | 2.59                     | 0.64              |
| 1:AA:2021:C:H5'  | 1:AA:2022:U:C5     | 2.31                     | 0.64              |
| 1:AA:2331:G:H2'  | 1:AA:2332:U:C1'    | 2.25                     | 0.64              |
| 1:AA:2471:C:H4'  | 57:BZ:529:ARG:HH22 | 0.48                     | 0.64              |
| 1:AA:2538:C:C2   | 1:AA:2539:C:C5     | 2.86                     | 0.64              |
| 1:AA:2670:A:C4   | 1:AA:2671:A:C8     | 2.85                     | 0.64              |
| 1:AA:2758:A:N6   | 1:AA:2759:G:O6     | 2.30                     | 0.64              |
| 1:AA:2882:A:C5'  | 13:AO:98:LEU:HD21  | 2.27                     | 0.64              |
| 2:AB:75:G:H21    | 21:AW:27:VAL:CG2   | 2.10                     | 0.64              |
| 2:AB:115:G:H4'   | 14:AP:50:SER:CB    | 2.27                     | 0.64              |
| 3:AC:62:VAL:HG23 | 3:AC:191:ALA:O     | 1.95                     | 0.64              |
| 3:AC:120:MET:SD  | 3:AC:145:VAL:HG22  | 2.36                     | 0.64              |
| 3:AC:180:PHE:HB3 | 3:AC:182:PRO:CA    | 2.14                     | 0.64              |
| 4:AD:69:ARG:NH2  | 4:AD:130:ALA:CB    | 2.59                     | 0.64              |
| 4:AD:181:GLU:CB  | 4:AD:268:ARG:NH2   | 2.58                     | 0.64              |
| 4:AD:246:PRO:HG3 | 4:AD:252:TRP:HA    | 1.79                     | 0.64              |
| 6:AF:118:ALA:HB1 | 6:AF:122:LYS:HB2   | 1.79                     | 0.64              |
| 8:AH:126:PRO:CG  | 8:AH:132:ARG:NH2   | 2.61                     | 0.64              |
| 9:AK:60:ILE:HG22 | 9:AK:61:ARG:N      | 2.13                     | 0.64              |
| 10:AL:97:ARG:HD3 | 10:AL:118:ALA:HB2  | 1.78                     | 0.64              |
| 11:AM:64:LYS:HD2 | 11:AM:64:LYS:O     | 1.96                     | 0.64              |
| 11:AM:76:LYS:HZ2 | 11:AM:99:LEU:HD12  | 1.61                     | 0.64              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 13:AO:17:ARG:CG    | 13:AO:18:LEU:N     | 2.60                     | 0.64              |
| 14:AP:69:VAL:HG12  | 14:AP:73:LEU:HD21  | 1.78                     | 0.64              |
| 15:AQ:34:VAL:HG23  | 15:AQ:36:GLU:HB2   | 1.78                     | 0.64              |
| 18:AT:12:ILE:O     | 18:AT:13:SER:HB2   | 1.98                     | 0.64              |
| 18:AT:66:GLU:O     | 18:AT:69:LEU:HD13  | 1.97                     | 0.64              |
| 19:AU:31:HIS:O     | 19:AU:33:LYS:N     | 2.29                     | 0.64              |
| 20:AV:14:LEU:HD12  | 20:AV:14:LEU:N     | 2.12                     | 0.64              |
| 21:AW:49:ARG:C     | 21:AW:51:ALA:N     | 2.52                     | 0.64              |
| 32:AJ:17:ALA:C     | 32:AJ:41:PHE:HB2   | 2.22                     | 0.64              |
| 32:AJ:76:TYR:HD2   | 32:AJ:80:LYS:CD    | 2.10                     | 0.64              |
| 34:BA:103:C:H1'    | 34:BA:151:A:C2     | 2.32                     | 0.64              |
| 34:BA:579:G:H8     | 34:BA:579:G:O5'    | 1.80                     | 0.64              |
| 34:BA:1415:G:C6    | 34:BA:1486:G:O6    | 2.49                     | 0.64              |
| 34:BA:1436:U:O5'   | 34:BA:1436:U:H6    | 1.79                     | 0.64              |
| 35:BF:69:LEU:HD13  | 35:BF:70:PHE:N     | 2.12                     | 0.64              |
| 36:BG:38:ARG:CG    | 36:BG:94:LEU:HD21  | 2.27                     | 0.64              |
| 36:BG:157:ILE:HG13 | 36:BG:164:ARG:HG2  | 1.80                     | 0.64              |
| 39:BJ:76:ALA:O     | 39:BJ:80:ARG:HG3   | 1.98                     | 0.64              |
| 41:BL:126:LYS:HE3  | 41:BL:127:LEU:HB2  | 1.80                     | 0.64              |
| 45:BP:9:GLN:HA     | 45:BP:12:ARG:NH1   | 2.13                     | 0.64              |
| 46:BQ:84:ILE:HG13  | 46:BQ:86:CYS:HB3   | 1.80                     | 0.64              |
| 47:BR:34:TYR:OH    | 47:BR:44:LEU:HD22  | 1.97                     | 0.64              |
| 49:BT:4:ILE:CG2    | 49:BT:21:VAL:CG1   | 2.72                     | 0.64              |
| 49:BT:42:ARG:O     | 49:BT:43:LYS:HB2   | 1.96                     | 0.64              |
| 50:BU:3:LYS:HD3    | 50:BU:61:GLU:O     | 1.97                     | 0.64              |
| 52:BW:3:ARG:HE     | 52:BW:45:VAL:HG11  | 1.61                     | 0.64              |
| 52:BW:30:LEU:HA    | 52:BW:49:ILE:CA    | 2.26                     | 0.64              |
| 57:BZ:552:ASP:O    | 57:BZ:553:GLU:HB2  | 1.96                     | 0.64              |
| 1:AA:388:G:H1'     | 1:AA:390:A:H62     | 1.62                     | 0.64              |
| 1:AA:469:G:N2      | 28:Ad:40:TRP:CZ2   | 2.52                     | 0.64              |
| 1:AA:527:C:O4'     | 1:AA:2779:U:O4     | 2.15                     | 0.64              |
| 1:AA:604:G:H21     | 1:AA:658:C:H5'     | 1.62                     | 0.64              |
| 1:AA:830:G:O2'     | 1:AA:831:G:OP1     | 2.11                     | 0.64              |
| 1:AA:975:G:C8      | 1:AA:990:A:N6      | 2.65                     | 0.64              |
| 1:AA:996:A:C4'     | 16:AR:93:LYS:HG3   | 2.26                     | 0.64              |
| 1:AA:1001:A:N7     | 1:AA:1002:G:C4     | 2.66                     | 0.64              |
| 1:AA:1058:G:H1'    | 32:AJ:116:ASN:HD22 | 1.57                     | 0.64              |
| 1:AA:1058:G:H2'    | 1:AA:1059:G:H5'    | 1.80                     | 0.64              |
| 1:AA:1198:U:H2'    | 1:AA:1199:U:H5     | 1.60                     | 0.64              |
| 1:AA:1242:A:O4'    | 1:AA:1242:A:OP1    | 2.15                     | 0.64              |
| 1:AA:1252:G:O2'    | 16:AR:33:ARG:NE    | 2.25                     | 0.64              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1570:A:N6    | 1:AA:1571:A:N6     | 2.41                     | 0.64              |
| 1:AA:1791:A:O3'   | 4:AD:206:LEU:HD21  | 1.97                     | 0.64              |
| 1:AA:1824:G:C2    | 1:AA:1825:A:H1'    | 2.32                     | 0.64              |
| 1:AA:1926:U:O5'   | 1:AA:1926:U:H6     | 1.80                     | 0.64              |
| 1:AA:1954:G:N3    | 1:AA:2551:C:H5''   | 2.11                     | 0.64              |
| 1:AA:2460:U:H2'   | 1:AA:2461:C:C6     | 2.32                     | 0.64              |
| 1:AA:2585:U:OP1   | 1:AA:2585:U:H6     | 1.80                     | 0.64              |
| 1:AA:2660:A:C8    | 1:AA:2661:G:C5     | 2.84                     | 0.64              |
| 1:AA:2720:U:H3'   | 1:AA:2721:A:C8     | 2.33                     | 0.64              |
| 2:AB:95:U:H2'     | 2:AB:96:G:C8       | 2.32                     | 0.64              |
| 3:AC:64:LEU:CD1   | 3:AC:188:ASN:HD22  | 1.92                     | 0.64              |
| 3:AC:171:ILE:HD11 | 3:AC:192:PHE:HZ    | 1.00                     | 0.64              |
| 4:AD:143:HIS:O    | 4:AD:145:VAL:N     | 2.26                     | 0.64              |
| 5:AE:27:LEU:CD1   | 5:AE:76:ARG:NH1    | 2.61                     | 0.64              |
| 5:AE:178:GLU:OE1  | 5:AE:178:GLU:N     | 2.22                     | 0.64              |
| 6:AF:34:TRP:C     | 6:AF:38:ARG:HD2    | 2.22                     | 0.64              |
| 6:AF:36:VAL:CG2   | 6:AF:183:VAL:HG21  | 2.21                     | 0.64              |
| 7:AG:38:VAL:HG12  | 7:AG:93:THR:HA     | 1.79                     | 0.64              |
| 7:AG:78:SER:HB2   | 7:AG:82:LEU:HB3    | 1.78                     | 0.64              |
| 7:AG:131:TYR:CD1  | 7:AG:158:ALA:HA    | 2.32                     | 0.64              |
| 8:AH:51:ARG:HD3   | 8:AH:52:VAL:N      | 2.13                     | 0.64              |
| 9:AK:16:ILE:C     | 9:AK:54:VAL:HG23   | 2.22                     | 0.64              |
| 10:AL:7:TYR:HA    | 10:AL:18:LYS:CE    | 2.28                     | 0.64              |
| 10:AL:11:ALA:CB   | 10:AL:97:ARG:NH1   | 2.55                     | 0.64              |
| 10:AL:94:ARG:HG2  | 10:AL:96:THR:O     | 1.97                     | 0.64              |
| 11:AM:29:LYS:N    | 11:AM:29:LYS:HD2   | 2.11                     | 0.64              |
| 11:AM:97:PRO:HB3  | 11:AM:102:ARG:NH1  | 2.12                     | 0.64              |
| 12:AN:25:ASP:CB   | 12:AN:101:ARG:HD2  | 2.23                     | 0.64              |
| 12:AN:59:ARG:HA   | 12:AN:60:ARG:CZ    | 2.27                     | 0.64              |
| 13:AO:83:ILE:CG2  | 13:AO:86:ARG:CZ    | 2.74                     | 0.64              |
| 15:AQ:6:LEU:HA    | 15:AQ:9:LEU:HD12   | 1.79                     | 0.64              |
| 15:AQ:53:ARG:NH2  | 15:AQ:102:ILE:HD13 | 2.12                     | 0.64              |
| 17:AS:66:ARG:NE   | 17:AS:95:LEU:HD12  | 2.11                     | 0.64              |
| 17:AS:83:ARG:HD3  | 17:AS:84:LYS:N     | 2.12                     | 0.64              |
| 18:AT:74:ALA:O    | 18:AT:75:TYR:CG    | 2.50                     | 0.64              |
| 20:AV:12:THR:HG21 | 20:AV:70:SER:O     | 1.97                     | 0.64              |
| 21:AW:94:GLU:HG2  | 21:AW:94:GLU:O     | 1.96                     | 0.64              |
| 21:AW:127:LYS:HZ2 | 21:AW:165:VAL:HB   | 1.62                     | 0.64              |
| 21:AW:137:ILE:C   | 21:AW:138:GLU:HG3  | 2.21                     | 0.64              |
| 22:AX:31:VAL:CG2  | 22:AX:65:GLY:O     | 2.45                     | 0.64              |
| 23:AY:32:PHE:HD1  | 23:AY:32:PHE:H     | 1.46                     | 0.64              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 24:AZ:6:VAL:HG13   | 24:AZ:56:VAL:HA    | 1.77                     | 0.64              |
| 25:Aa:42:PHE:N     | 25:Aa:58:ARG:HH11  | 1.96                     | 0.64              |
| 26:Ab:35:GLU:CD    | 26:Ab:51:TYR:CE2   | 2.75                     | 0.64              |
| 32:AJ:12:LEU:HD13  | 32:AJ:23:VAL:HG21  | 1.80                     | 0.64              |
| 34:BA:138:G:N2     | 34:BA:226:G:H1'    | 2.12                     | 0.64              |
| 34:BA:350:G:N2     | 34:BA:351:G:C2     | 2.66                     | 0.64              |
| 34:BA:372:C:N4     | 34:BA:389:A:H62    | 1.95                     | 0.64              |
| 34:BA:688:G:O2'    | 34:BA:689:C:H5'    | 1.96                     | 0.64              |
| 34:BA:722:A:O3'    | 34:BA:723:U:N3     | 2.31                     | 0.64              |
| 34:BA:748:C:C6     | 34:BA:748:C:C3'    | 2.80                     | 0.64              |
| 34:BA:1311:G:O6    | 34:BA:1327:C:C4    | 2.40                     | 0.64              |
| 34:BA:1413:A:C2    | 34:BA:1488:G:C4    | 2.85                     | 0.64              |
| 34:BA:1433:A:H62   | 34:BA:1467:G:H21   | 0.79                     | 0.64              |
| 35:BF:78:GLN:HE22  | 35:BF:96:ARG:HH22  | 1.43                     | 0.64              |
| 35:BF:97:TRP:HH2   | 35:BF:176:GLU:CG   | 2.09                     | 0.64              |
| 35:BF:169:LYS:C    | 35:BF:171:ALA:H    | 2.05                     | 0.64              |
| 35:BF:208:ILE:CD1  | 35:BF:239:VAL:HG11 | 2.27                     | 0.64              |
| 37:BH:101:LEU:CB   | 37:BH:138:TYR:O    | 2.45                     | 0.64              |
| 37:BH:108:LEU:O    | 37:BH:110:PHE:N    | 2.30                     | 0.64              |
| 37:BH:110:PHE:O    | 37:BH:161:ASN:ND2  | 2.31                     | 0.64              |
| 41:BL:13:ILE:HG22  | 41:BL:14:ARG:H     | 1.58                     | 0.64              |
| 44:BO:18:ARG:HB2   | 44:BO:20:TYR:HE1   | 1.62                     | 0.64              |
| 44:BO:122:LYS:O    | 44:BO:126:ARG:HG3  | 1.96                     | 0.64              |
| 45:BP:76:ASN:ND2   | 45:BP:77:LEU:HD23  | 2.13                     | 0.64              |
| 46:BQ:37:THR:HG23  | 46:BQ:39:ILE:CG1   | 2.25                     | 0.64              |
| 48:BS:6:GLU:HG2    | 48:BS:7:GLU:HG3    | 1.78                     | 0.64              |
| 50:BU:59:ILE:CG1   | 50:BU:71:PHE:HB3   | 2.27                     | 0.64              |
| 51:BV:52:PRO:HG2   | 51:BV:54:ARG:HB3   | 1.78                     | 0.64              |
| 51:BV:74:ARG:HD2   | 51:BV:74:ARG:H     | 1.62                     | 0.64              |
| 52:BW:24:ALA:C     | 52:BW:26:GLY:H     | 2.04                     | 0.64              |
| 52:BW:45:VAL:HA    | 52:BW:67:VAL:CG2   | 2.27                     | 0.64              |
| 54:BY:5:ASP:O      | 54:BY:7:ARG:HG2    | 1.97                     | 0.64              |
| 55:BC:13:C:O2      | 55:BC:23:A:N1      | 2.30                     | 0.64              |
| 56:BE:20:U:C3'     | 56:BE:21:A:H5''    | 2.09                     | 0.64              |
| 57:BZ:10:ILE:HG12  | 57:BZ:96:LEU:CB    | 2.28                     | 0.64              |
| 57:BZ:24:LYS:HG3   | 57:BZ:25:LEU:N     | 2.11                     | 0.64              |
| 57:BZ:73:VAL:CB    | 57:BZ:75:THR:OG1   | 2.35                     | 0.64              |
| 57:BZ:89:MET:HE3   | 57:BZ:116:ALA:HA   | 1.78                     | 0.64              |
| 57:BZ:129:LYS:NZ   | 60:BZ:701:GCP:C1'  | 2.60                     | 0.64              |
| 57:BZ:240:ILE:HD13 | 57:BZ:297:LEU:HG   | 1.73                     | 0.64              |
| 57:BZ:284:ILE:HD12 | 57:BZ:284:ILE:H    | 1.60                     | 0.64              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 1:AA:257:A:C2    | 1:AA:258:G:H1'     | 2.31                     | 0.64              |
| 1:AA:274:G:C2'   | 1:AA:275:G:H5'     | 2.27                     | 0.64              |
| 1:AA:566:U:H6    | 1:AA:567:A:N7      | 1.94                     | 0.64              |
| 1:AA:586:A:C6    | 1:AA:1254:A:H2     | 2.15                     | 0.64              |
| 1:AA:827:U:C6    | 1:AA:2430:A:C2     | 2.85                     | 0.64              |
| 1:AA:1092:C:H3'  | 1:AA:1092:C:C6     | 2.31                     | 0.64              |
| 1:AA:1195:G:C2'  | 1:AA:1226:G:H22    | 2.10                     | 0.64              |
| 1:AA:1204:A:OP2  | 1:AA:1204:A:C1'    | 2.46                     | 0.64              |
| 1:AA:1257:C:H4'  | 6:AF:83:PHE:HD1    | 1.58                     | 0.64              |
| 1:AA:1446:C:H2'  | 1:AA:1447:G:C8     | 2.31                     | 0.64              |
| 1:AA:1492:G:N3   | 1:AA:1493:C:N3     | 2.45                     | 0.64              |
| 1:AA:1549:C:H2'  | 1:AA:1550:C:H6     | 1.63                     | 0.64              |
| 1:AA:1592:C:O2'  | 1:AA:1593:G:H5'    | 1.98                     | 0.64              |
| 1:AA:1784:A:H4'  | 1:AA:1785:A:N9     | 2.13                     | 0.64              |
| 1:AA:1943:U:O2'  | 1:AA:1944:U:OP2    | 2.16                     | 0.64              |
| 1:AA:1947:C:C2   | 1:AA:1948:G:C8     | 2.85                     | 0.64              |
| 1:AA:2039:C:H2'  | 1:AA:2040:C:C5     | 2.33                     | 0.64              |
| 1:AA:2114:A:N3   | 1:AA:2168:G:H5'    | 2.12                     | 0.64              |
| 1:AA:2286:A:OP2  | 27:Ac:27:LYS:HE2   | 1.97                     | 0.64              |
| 1:AA:2507:C:H6   | 59:AA:3002:8AN:C1' | 2.03                     | 0.64              |
| 1:AA:2526:G:H2'  | 1:AA:2527:C:O5'    | 1.97                     | 0.64              |
| 1:AA:2550:G:H2'  | 1:AA:2551:C:H6     | 1.62                     | 0.64              |
| 1:AA:2602:A:N1   | 56:BD:74:C:C3'     | 2.61                     | 0.64              |
| 1:AA:2612:C:O2   | 26:Ab:4:HIS:CG     | 2.50                     | 0.64              |
| 1:AA:2809:A:H3'  | 1:AA:2809:A:P      | 2.37                     | 0.64              |
| 3:AC:83:ILE:HG23 | 3:AC:87:GLU:OE2    | 1.98                     | 0.64              |
| 4:AD:77:ALA:HB1  | 4:AD:95:LEU:HD11   | 1.79                     | 0.64              |
| 4:AD:97:TYR:HB2  | 4:AD:101:GLU:O     | 1.97                     | 0.64              |
| 5:AE:17:ASP:OD2  | 5:AE:17:ASP:N      | 2.23                     | 0.64              |
| 5:AE:36:ARG:HD2  | 5:AE:41:LYS:HZ1    | 1.59                     | 0.64              |
| 6:AF:140:LEU:O   | 6:AF:143:ALA:HB3   | 1.96                     | 0.64              |
| 7:AG:94:LEU:HG   | 7:AG:98:ARG:CZ     | 2.27                     | 0.64              |
| 7:AG:104:GLU:HA  | 7:AG:108:ASN:HD22  | 1.61                     | 0.64              |
| 8:AH:85:LYS:HZ1  | 8:AH:141:VAL:HG12  | 1.60                     | 0.64              |
| 9:AK:87:LEU:O    | 9:AK:91:LEU:CD2    | 2.45                     | 0.64              |
| 9:AK:127:ASP:C   | 9:AK:129:PRO:CD    | 2.70                     | 0.64              |
| 9:AK:139:GLU:O   | 9:AK:140:VAL:HG23  | 1.97                     | 0.64              |
| 12:AN:85:LYS:NZ  | 22:AX:10:THR:HG21  | 2.12                     | 0.64              |
| 14:AP:103:GLU:HA | 14:AP:106:ARG:CB   | 2.28                     | 0.64              |
| 17:AS:21:ARG:O   | 17:AS:22:VAL:O     | 2.15                     | 0.64              |
| 18:AT:10:VAL:HB  | 18:AT:12:ILE:HD11  | 1.78                     | 0.64              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 24:AZ:52:HIS:CE1  | 24:AZ:53:LEU:HG   | 2.33                     | 0.64              |
| 25:Aa:48:ARG:N    | 25:Aa:52:THR:OG1  | 2.31                     | 0.64              |
| 26:Ab:55:ARG:H    | 26:Ab:55:ARG:CD   | 2.10                     | 0.64              |
| 28:Ad:43:THR:C    | 28:Ad:46:VAL:H    | 2.05                     | 0.64              |
| 29:Ae:23:VAL:HG23 | 29:Ae:48:PHE:HB2  | 1.78                     | 0.64              |
| 33:Ag:288:UNK:CA  | 33:Ag:344:UNK:CB  | 2.70                     | 0.64              |
| 34:BA:376:G:H5''  | 49:BT:5:ARG:HD2   | 1.80                     | 0.64              |
| 34:BA:560:U:O2'   | 34:BA:561:U:OP2   | 2.13                     | 0.64              |
| 34:BA:603:U:H2'   | 34:BA:604:G:H8    | 1.62                     | 0.64              |
| 34:BA:672:U:O2    | 34:BA:672:U:H2'   | 1.97                     | 0.64              |
| 34:BA:1097:C:O2'  | 34:BA:1098:C:H5'  | 1.97                     | 0.64              |
| 34:BA:1229:A:H5'' | 56:BE:29:G:H4'    | 1.79                     | 0.64              |
| 34:BA:1371:G:P    | 42:BM:11:LYS:HE3  | 2.37                     | 0.64              |
| 36:BG:51:GLY:O    | 36:BG:52:LEU:O    | 2.16                     | 0.64              |
| 37:BH:4:TYR:O     | 37:BH:5:ILE:HG23  | 1.96                     | 0.64              |
| 38:BI:79:GLU:HB3  | 38:BI:92:LYS:CA   | 2.23                     | 0.64              |
| 39:BJ:75:LEU:O    | 39:BJ:79:LEU:HG   | 1.97                     | 0.64              |
| 39:BJ:79:LEU:O    | 39:BJ:80:ARG:C    | 2.40                     | 0.64              |
| 40:BK:69:VAL:HG11 | 40:BK:104:LEU:CD2 | 2.27                     | 0.64              |
| 41:BL:37:ARG:HD3  | 41:BL:41:ARG:CG   | 2.16                     | 0.64              |
| 44:BO:31:THR:HG23 | 44:BO:41:THR:O    | 1.97                     | 0.64              |
| 44:BO:106:LYS:CG  | 44:BO:107:SER:H   | 2.09                     | 0.64              |
| 46:BQ:5:ALA:CB    | 46:BQ:67:GLU:CG   | 2.31                     | 0.64              |
| 49:BT:27:LYS:O    | 49:BT:28:ARG:C    | 2.41                     | 0.64              |
| 49:BT:43:LYS:HG3  | 49:BT:48:TRP:CE3  | 2.33                     | 0.64              |
| 50:BU:41:LYS:HG2  | 50:BU:42:TYR:N    | 2.11                     | 0.64              |
| 52:BW:30:LEU:HD12 | 52:BW:59:PRO:HB3  | 1.79                     | 0.64              |
| 53:BX:13:LEU:C    | 53:BX:17:ARG:HH21 | 2.06                     | 0.64              |
| 54:BY:9:ARG:HD2   | 54:BY:9:ARG:H     | 1.61                     | 0.64              |
| 55:BC:30:G:H2'    | 55:BC:31:A:C8     | 2.32                     | 0.64              |
| 55:BC:34:G:C3'    | 55:BC:35:A:H5'    | 2.28                     | 0.64              |
| 57:BZ:205:PHE:CE2 | 57:BZ:207:MET:HB2 | 2.32                     | 0.64              |
| 57:BZ:351:GLU:HG2 | 57:BZ:352:ASP:H   | 1.61                     | 0.64              |
| 57:BZ:539:THR:N   | 57:BZ:540:GLY:HA3 | 2.12                     | 0.64              |
| 1:AA:105:C:C2     | 1:AA:106:C:H5     | 2.16                     | 0.64              |
| 1:AA:126:A:P      | 28:Ad:17:GLY:HA3  | 2.37                     | 0.64              |
| 1:AA:270(C):C:OP2 | 1:AA:365:C:O2'    | 2.16                     | 0.64              |
| 1:AA:283:A:O2'    | 1:AA:284:U:H5'    | 1.98                     | 0.64              |
| 1:AA:472:A:H2'    | 1:AA:473:G:H5'    | 1.78                     | 0.64              |
| 1:AA:574:C:H41    | 1:AA:2054:A:H5''  | 1.62                     | 0.64              |
| 1:AA:596:G:C2     | 1:AA:597:U:C2     | 2.85                     | 0.64              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:686:G:OP1    | 28:Ad:11:LYS:HE2  | 1.98                     | 0.64              |
| 1:AA:1051:G:C3'   | 1:AA:1052:C:H5''  | 2.27                     | 0.64              |
| 1:AA:1059:G:H1'   | 32:AJ:75:SER:H    | 1.58                     | 0.64              |
| 1:AA:1083:U:C2'   | 1:AA:1084:A:H5''  | 2.28                     | 0.64              |
| 1:AA:1197:G:C5    | 1:AA:1198:U:C6    | 2.85                     | 0.64              |
| 1:AA:1341:U:O2    | 1:AA:1341:U:C2'   | 2.46                     | 0.64              |
| 1:AA:1392:A:C6    | 1:AA:1393:A:N6    | 2.66                     | 0.64              |
| 1:AA:1472:A:C1'   | 1:AA:1473:G:C8    | 2.81                     | 0.64              |
| 1:AA:1558:A:H2    | 1:AA:1560:G:N9    | 1.96                     | 0.64              |
| 1:AA:1667:G:O3'   | 10:AL:7:TYR:OH    | 2.13                     | 0.64              |
| 1:AA:1941:C:C2'   | 1:AA:1942:C:O5'   | 2.43                     | 0.64              |
| 1:AA:2052:G:N3    | 5:AE:150:VAL:HB   | 2.12                     | 0.64              |
| 1:AA:2059:A:C2    | 1:AA:2503:A:N7    | 2.65                     | 0.64              |
| 1:AA:2094:G:C2    | 1:AA:2196:C:C2    | 2.85                     | 0.64              |
| 1:AA:2231:C:C2    | 1:AA:2232:U:C5    | 2.86                     | 0.64              |
| 1:AA:2261:C:OP1   | 22:AX:17:GLN:HB2  | 1.98                     | 0.64              |
| 1:AA:2376:A:N3    | 1:AA:2377:A:H1'   | 2.13                     | 0.64              |
| 1:AA:2387:U:H1'   | 22:AX:41:ARG:HH21 | 1.56                     | 0.64              |
| 1:AA:2404:C:C2    | 1:AA:2414:G:N2    | 2.66                     | 0.64              |
| 1:AA:2478:A:N7    | 1:AA:2479:G:N7    | 2.45                     | 0.64              |
| 1:AA:2558:C:H4'   | 57:BZ:543:LEU:CD2 | 2.16                     | 0.64              |
| 1:AA:2569:G:N1    | 1:AA:2570:G:N7    | 2.45                     | 0.64              |
| 1:AA:2571:C:H1'   | 5:AE:146:THR:CG2  | 2.27                     | 0.64              |
| 2:AB:74:U:H2'     | 2:AB:75:G:H1'     | 1.80                     | 0.64              |
| 3:AC:7:TYR:CD1    | 3:AC:10:LEU:HB3   | 2.33                     | 0.64              |
| 4:AD:134:ARG:O    | 4:AD:168:ARG:NH2  | 2.31                     | 0.64              |
| 5:AE:5:LEU:HG     | 5:AE:25:VAL:HG13  | 1.80                     | 0.64              |
| 5:AE:102:VAL:HG22 | 5:AE:103:ASP:N    | 2.12                     | 0.64              |
| 7:AG:16:ARG:HH21  | 7:AG:16:ARG:CG    | 2.08                     | 0.64              |
| 7:AG:131:TYR:CG   | 7:AG:158:ALA:HA   | 2.32                     | 0.64              |
| 8:AH:26:VAL:CG2   | 8:AH:75:ALA:HB1   | 2.27                     | 0.64              |
| 8:AH:164:TYR:CE2  | 8:AH:167:GLU:N    | 2.58                     | 0.64              |
| 10:AL:21:CYS:HA   | 10:AL:41:ALA:CB   | 2.28                     | 0.64              |
| 10:AL:24:VAL:CA   | 10:AL:39:ILE:HG22 | 2.24                     | 0.64              |
| 10:AL:103:ALA:HB1 | 10:AL:107:ARG:HD2 | 1.79                     | 0.64              |
| 11:AM:113:LYS:HA  | 11:AM:129:ALA:HB3 | 1.79                     | 0.64              |
| 14:AP:78:LEU:HG   | 14:AP:111:GLU:OE2 | 1.97                     | 0.64              |
| 15:AQ:50:ILE:HD12 | 15:AQ:66:VAL:CG2  | 2.27                     | 0.64              |
| 15:AQ:82:LEU:C    | 15:AQ:84:GLN:N    | 2.55                     | 0.64              |
| 16:AR:79:PHE:CE1  | 16:AR:83:LEU:HD11 | 2.32                     | 0.64              |
| 17:AS:3:ALA:HB2   | 17:AS:44:LYS:CD   | 2.28                     | 0.64              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AS:57:VAL:CG1   | 17:AS:58:VAL:H     | 2.02                     | 0.64              |
| 20:AV:39:VAL:O     | 20:AV:40:GLU:HB2   | 1.98                     | 0.64              |
| 21:AW:48:PHE:HD2   | 21:AW:54:HIS:NE2   | 1.92                     | 0.64              |
| 22:AX:46:LYS:HD3   | 22:AX:46:LYS:N     | 2.12                     | 0.64              |
| 23:AY:41:GLN:O     | 23:AY:42:ASN:C     | 2.40                     | 0.64              |
| 32:AJ:72:PRO:CD    | 32:AJ:77:LEU:HD21  | 1.88                     | 0.64              |
| 34:BA:59:A:H4'     | 34:BA:388:G:H5''   | 1.80                     | 0.64              |
| 34:BA:132:C:N3     | 34:BA:231:G:C2     | 2.66                     | 0.64              |
| 34:BA:378:G:H2'    | 34:BA:379:C:C6     | 2.33                     | 0.64              |
| 34:BA:394:G:C6     | 34:BA:395:C:N4     | 2.66                     | 0.64              |
| 34:BA:570:G:H5'    | 34:BA:820:U:C1'    | 2.20                     | 0.64              |
| 34:BA:731:G:O2'    | 34:BA:732:C:H5'    | 1.97                     | 0.64              |
| 34:BA:817:C:O2'    | 34:BA:818:G:O5'    | 2.15                     | 0.64              |
| 34:BA:959:A:H1'    | 34:BA:985:C:C1'    | 2.27                     | 0.64              |
| 34:BA:1007:C:H2'   | 34:BA:1008:C:C6    | 2.33                     | 0.64              |
| 34:BA:1125:U:H4'   | 34:BA:1126:U:C5    | 2.32                     | 0.64              |
| 34:BA:1165:C:H2'   | 34:BA:1166:G:C8    | 2.32                     | 0.64              |
| 36:BG:35:GLU:O     | 36:BG:38:ARG:HG2   | 1.97                     | 0.64              |
| 36:BG:84:ILE:O     | 36:BG:101:LEU:HD13 | 1.97                     | 0.64              |
| 37:BH:56:VAL:HG12  | 37:BH:57:ARG:N     | 2.10                     | 0.64              |
| 39:BJ:4:TYR:CZ     | 39:BJ:72:VAL:HG11  | 2.33                     | 0.64              |
| 39:BJ:85:VAL:CG1   | 39:BJ:88:VAL:HG13  | 2.28                     | 0.64              |
| 40:BK:17:VAL:HG11  | 40:BK:44:TYR:CE2   | 2.32                     | 0.64              |
| 40:BK:65:ALA:N     | 40:BK:128:ALA:HA   | 2.12                     | 0.64              |
| 43:BN:9:ARG:C      | 43:BN:94:VAL:HG13  | 2.21                     | 0.64              |
| 44:BO:21:ILE:HG22  | 44:BO:30:VAL:CG2   | 2.27                     | 0.64              |
| 51:BV:27:GLY:O     | 51:BV:28:GLU:C     | 2.40                     | 0.64              |
| 53:BX:44:ALA:HB3   | 53:BX:91:LEU:CD1   | 2.13                     | 0.64              |
| 56:BD:63:G:C4      | 56:BD:64:A:N7      | 2.65                     | 0.64              |
| 57:BZ:35:ARG:HA    | 57:BZ:36:ALA:HB3   | 1.79                     | 0.64              |
| 57:BZ:190:ILE:O    | 57:BZ:194:VAL:N    | 2.29                     | 0.64              |
| 57:BZ:405:LEU:CG   | 57:BZ:463:GLY:HA2  | 2.28                     | 0.64              |
| 57:BZ:405:LEU:HD11 | 57:BZ:464:LEU:CD2  | 2.24                     | 0.64              |
| 1:AA:60:G:C8       | 1:AA:63:U:C4       | 2.86                     | 0.64              |
| 1:AA:108:U:H2'     | 1:AA:109:G:C8      | 2.33                     | 0.64              |
| 1:AA:270(W):G:C5   | 1:AA:270(X):G:C8   | 2.85                     | 0.64              |
| 1:AA:354:G:O2'     | 1:AA:355:G:H5'     | 1.98                     | 0.64              |
| 1:AA:594:U:H2'     | 1:AA:595:C:H6      | 1.61                     | 0.64              |
| 1:AA:612:G:C4'     | 1:AA:616:A:H61     | 2.03                     | 0.64              |
| 1:AA:623:G:C3'     | 11:AM:105:LEU:HD22 | 2.23                     | 0.64              |
| 1:AA:702:G:N2      | 1:AA:731:C:C2      | 2.66                     | 0.64              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:807:U:O4'    | 1:AA:2445:G:H4'   | 1.97                     | 0.64              |
| 1:AA:815:C:C2'    | 1:AA:816:C:H5'    | 2.27                     | 0.64              |
| 1:AA:888:C:H4'    | 1:AA:889:C:OP1    | 1.98                     | 0.64              |
| 1:AA:1058:G:C2    | 1:AA:1059:G:H8    | 2.15                     | 0.64              |
| 1:AA:1061:U:O2    | 32:AJ:11:GLN:NE2  | 2.31                     | 0.64              |
| 1:AA:1434:A:H61   | 1:AA:1558:A:H61   | 1.45                     | 0.64              |
| 1:AA:1905:C:O2'   | 1:AA:1929:G:H2'   | 1.98                     | 0.64              |
| 1:AA:2052:G:H2'   | 1:AA:2053:G:C8    | 2.29                     | 0.64              |
| 1:AA:2385:C:C2    | 1:AA:2386:C:C6    | 2.85                     | 0.64              |
| 1:AA:2467:C:OP1   | 30:Af:8:LYS:NZ    | 2.25                     | 0.64              |
| 1:AA:2572:A:H5''  | 1:AA:2574:G:H5''  | 1.79                     | 0.64              |
| 1:AA:2623:G:H21   | 26:Ab:22:HIS:HE1  | 1.46                     | 0.64              |
| 1:AA:2645:G:C8    | 1:AA:2645:G:OP2   | 2.50                     | 0.64              |
| 3:AC:43:VAL:CG2   | 3:AC:189:ILE:CD1  | 2.76                     | 0.64              |
| 3:AC:43:VAL:CB    | 3:AC:224:ILE:HD13 | 2.24                     | 0.64              |
| 3:AC:64:LEU:HD12  | 3:AC:161:ILE:HG12 | 1.79                     | 0.64              |
| 4:AD:74:GLY:O     | 4:AD:118:VAL:HG11 | 1.98                     | 0.64              |
| 5:AE:51:PHE:CZ    | 5:AE:53:PRO:HD3   | 2.32                     | 0.64              |
| 5:AE:199:ARG:C    | 5:AE:200:GLU:CD   | 2.66                     | 0.64              |
| 6:AF:65:TRP:CD2   | 6:AF:66:PRO:HD2   | 2.33                     | 0.64              |
| 6:AF:153:SER:H    | 6:AF:190:GLU:HG3  | 1.62                     | 0.64              |
| 6:AF:162:LEU:HD22 | 6:AF:165:ARG:HH21 | 1.63                     | 0.64              |
| 6:AF:196:LEU:HB3  | 6:AF:199:TRP:CD1  | 2.33                     | 0.64              |
| 8:AH:17:VAL:CG2   | 8:AH:45:VAL:HG11  | 2.25                     | 0.64              |
| 8:AH:107:VAL:HG13 | 8:AH:152:ARG:NE   | 2.12                     | 0.64              |
| 9:AK:12:ARG:HB3   | 9:AK:12:ARG:CZ    | 2.26                     | 0.64              |
| 9:AK:67:LEU:N     | 9:AK:87:LEU:HD21  | 2.09                     | 0.64              |
| 10:AL:77:ILE:HA   | 10:AL:78:ARG:NH1  | 2.12                     | 0.64              |
| 14:AP:33:LYS:CE   | 14:AP:54:LEU:HD21 | 2.27                     | 0.64              |
| 15:AQ:54:ARG:C    | 15:AQ:55:ASN:OD1  | 2.41                     | 0.64              |
| 16:AR:92:ARG:O    | 16:AR:95:LEU:HG   | 1.97                     | 0.64              |
| 17:AS:38:LEU:H    | 17:AS:38:LEU:HD23 | 1.63                     | 0.64              |
| 19:AU:11:PRO:HA   | 19:AU:28:PHE:HB3  | 1.79                     | 0.64              |
| 20:AV:14:LEU:HD22 | 20:AV:20:TYR:N    | 2.11                     | 0.64              |
| 20:AV:26:LYS:O    | 20:AV:27:VAL:HG23 | 1.97                     | 0.64              |
| 21:AW:152:ALA:CB  | 21:AW:168:GLU:HA  | 2.22                     | 0.64              |
| 21:AW:153:SER:CB  | 21:AW:168:GLU:HB2 | 2.27                     | 0.64              |
| 22:AX:50:ASN:HA   | 22:AX:62:LEU:HD13 | 1.78                     | 0.64              |
| 22:AX:65:GLY:HA2  | 22:AX:82:ARG:O    | 1.97                     | 0.64              |
| 25:Aa:41:PRO:HD2  | 25:Aa:57:GLU:OE1  | 1.96                     | 0.64              |
| 25:Aa:42:PHE:CG   | 25:Aa:43:TYR:N    | 2.65                     | 0.64              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 29:Ae:58:ILE:HG22 | 29:Ae:61:LEU:HD12  | 1.80                     | 0.64              |
| 30:Af:4:ARG:O     | 30:Af:5:ALA:CB     | 2.46                     | 0.64              |
| 31:AI:141:VAL:HA  | 33:Ag:134:UNK:CA   | 2.22                     | 0.64              |
| 34:BA:277:C:H5''  | 50:BU:68:ARG:NH1   | 2.11                     | 0.64              |
| 34:BA:581:G:H4'   | 48:BS:64:ARG:NH1   | 2.13                     | 0.64              |
| 34:BA:588:G:H1'   | 34:BA:753:A:N1     | 2.12                     | 0.64              |
| 34:BA:667:G:H4'   | 48:BS:51:HIS:ND1   | 2.12                     | 0.64              |
| 34:BA:707:C:H4'   | 44:BO:20:TYR:CD2   | 2.32                     | 0.64              |
| 34:BA:719:C:OP2   | 34:BA:720:C:N4     | 2.30                     | 0.64              |
| 34:BA:817:C:C2'   | 34:BA:817:C:O2     | 2.45                     | 0.64              |
| 34:BA:1227:A:O2'  | 46:BQ:115:LYS:HG2  | 1.98                     | 0.64              |
| 34:BA:1260:C:H4'  | 34:BA:1284:C:C5'   | 2.28                     | 0.64              |
| 34:BA:1269:A:H1'  | 34:BA:1313:U:C6    | 2.28                     | 0.64              |
| 34:BA:1269:A:H1'  | 34:BA:1312:G:N3    | 2.11                     | 0.64              |
| 34:BA:1435:G:N1   | 34:BA:1436:U:O4    | 2.30                     | 0.64              |
| 34:BA:1443:G:C4'  | 34:BA:1446:A:H5'   | 2.19                     | 0.64              |
| 36:BG:29:TYR:HB3  | 47:BR:36:PHE:HE1   | 1.63                     | 0.64              |
| 38:BI:81:GLU:HB3  | 38:BI:90:VAL:CG2   | 2.28                     | 0.64              |
| 39:BJ:30:LEU:HD23 | 39:BJ:75:LEU:HD13  | 1.78                     | 0.64              |
| 40:BK:69:VAL:HB   | 40:BK:104:LEU:HD11 | 1.80                     | 0.64              |
| 42:BM:15:ALA:CB   | 42:BM:77:ILE:HG13  | 2.27                     | 0.64              |
| 43:BN:48:THR:HG23 | 43:BN:61:GLU:O     | 1.98                     | 0.64              |
| 44:BO:14:VAL:O    | 44:BO:16:SER:N     | 2.30                     | 0.64              |
| 45:BP:69:TYR:O    | 45:BP:71:PRO:HD3   | 1.96                     | 0.64              |
| 45:BP:83:VAL:HA   | 45:BP:104:VAL:O    | 1.98                     | 0.64              |
| 46:BQ:36:LYS:CG   | 46:BQ:56:LEU:HD21  | 2.18                     | 0.64              |
| 48:BS:35:ARG:HH12 | 48:BS:59:MET:HE2   | 1.62                     | 0.64              |
| 48:BS:53:HIS:CD2  | 48:BS:57:LEU:HD11  | 2.32                     | 0.64              |
| 52:BW:40:ILE:HG12 | 52:BW:71:LEU:CD2   | 2.28                     | 0.64              |
| 52:BW:51:VAL:CG1  | 52:BW:75:ALA:HB3   | 2.27                     | 0.64              |
| 52:BW:74:PHE:N    | 52:BW:74:PHE:CD1   | 2.64                     | 0.64              |
| 53:BX:51:GLU:O    | 53:BX:55:ILE:HG13  | 1.98                     | 0.64              |
| 53:BX:64:ASP:O    | 53:BX:65:LYS:C     | 2.41                     | 0.64              |
| 57:BZ:35:ARG:CA   | 57:BZ:36:ALA:HB3   | 2.27                     | 0.64              |
| 57:BZ:69:ARG:HH11 | 57:BZ:253:LYS:HZ3  | 1.40                     | 0.64              |
| 57:BZ:309:MET:HE3 | 57:BZ:366:LEU:HD13 | 1.77                     | 0.64              |
| 57:BZ:541:LYS:HG3 | 57:BZ:542:LYS:HB2  | 1.80                     | 0.64              |
| 1:AA:85:G:N3      | 1:AA:103:A:C2      | 2.65                     | 0.64              |
| 1:AA:138:G:N2     | 1:AA:139:G:N7      | 2.46                     | 0.64              |
| 1:AA:172:C:C5     | 1:AA:173:G:C5      | 2.84                     | 0.64              |
| 1:AA:421:U:OP2    | 1:AA:421:U:H6      | 1.80                     | 0.64              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:624:C:OP2    | 11:AM:105:LEU:HB3 | 1.98                     | 0.64              |
| 1:AA:641:C:H2'    | 1:AA:642:G:H5'    | 1.79                     | 0.64              |
| 1:AA:763:G:C2     | 1:AA:765:G:C4     | 2.85                     | 0.64              |
| 1:AA:855:G:H21    | 22:AX:27:GLU:HB3  | 1.61                     | 0.64              |
| 1:AA:1036:G:P     | 8:AH:59:ARG:HD3   | 2.38                     | 0.64              |
| 1:AA:1048:A:H8    | 1:AA:1110:G:O2'   | 1.79                     | 0.64              |
| 1:AA:1058:G:N1    | 1:AA:1059:G:N7    | 2.46                     | 0.64              |
| 1:AA:1161:C:H1'   | 17:AS:22:VAL:CG1  | 2.28                     | 0.64              |
| 1:AA:1227:A:H2'   | 1:AA:1228:G:H5''  | 1.80                     | 0.64              |
| 1:AA:1298:C:H4'   | 1:AA:1302:A:N6    | 2.12                     | 0.64              |
| 1:AA:1306:C:C2    | 1:AA:1307:A:C8    | 2.86                     | 0.64              |
| 1:AA:1407:C:C6    | 1:AA:1407:C:OP2   | 2.50                     | 0.64              |
| 1:AA:1407:C:H2'   | 1:AA:1408:C:C6    | 2.33                     | 0.64              |
| 1:AA:1416:G:H1'   | 1:AA:1583:A:N1    | 2.12                     | 0.64              |
| 1:AA:1669:A:H2'   | 1:AA:1669:A:N3    | 2.11                     | 0.64              |
| 1:AA:1759:A:H2'   | 1:AA:1760:A:O5'   | 1.98                     | 0.64              |
| 1:AA:1916:A:N1    | 34:BA:1409:C:H5'  | 2.13                     | 0.64              |
| 1:AA:1935:G:H22   | 1:AA:1962:C:C2'   | 2.10                     | 0.64              |
| 1:AA:2157:G:OP2   | 1:AA:2157:G:N2    | 2.30                     | 0.64              |
| 1:AA:2282:G:N2    | 1:AA:2427:C:N3    | 2.40                     | 0.64              |
| 1:AA:2335:A:C6    | 1:AA:2337:G:C2    | 2.85                     | 0.64              |
| 1:AA:2543:G:N2    | 1:AA:2765:A:C4    | 2.65                     | 0.64              |
| 1:AA:2592:G:O6    | 1:AA:2593:U:C4    | 2.50                     | 0.64              |
| 1:AA:2754:U:C2'   | 1:AA:2756:U:OP1   | 2.46                     | 0.64              |
| 1:AA:2788:C:C2    | 1:AA:2789:C:C4    | 2.84                     | 0.64              |
| 1:AA:2882:A:OP1   | 13:AO:96:ARG:NE   | 2.31                     | 0.64              |
| 2:AB:30:C:O4'     | 2:AB:58:A:H2      | 1.81                     | 0.64              |
| 3:AC:10:LEU:HD12  | 3:AC:13:LYS:HD2   | 1.79                     | 0.64              |
| 4:AD:14:ARG:HB3   | 4:AD:15:PHE:CD1   | 2.33                     | 0.64              |
| 4:AD:14:ARG:HB3   | 4:AD:15:PHE:CE1   | 2.33                     | 0.64              |
| 4:AD:18:VAL:C     | 4:AD:20:ASP:N     | 2.56                     | 0.64              |
| 4:AD:63:ARG:HD2   | 4:AD:85:ASP:CB    | 2.28                     | 0.64              |
| 4:AD:90:ALA:HB2   | 4:AD:159:ALA:CB   | 2.27                     | 0.64              |
| 4:AD:119:ALA:HB2  | 4:AD:130:ALA:N    | 2.09                     | 0.64              |
| 4:AD:146:GLU:CB   | 4:AD:154:LYS:H    | 2.03                     | 0.64              |
| 4:AD:181:GLU:HB3  | 4:AD:268:ARG:NE   | 2.12                     | 0.64              |
| 5:AE:102:VAL:O    | 5:AE:169:ASN:ND2  | 2.27                     | 0.64              |
| 5:AE:119:ARG:HH11 | 5:AE:120:TRP:HA   | 1.62                     | 0.64              |
| 6:AF:12:LEU:O     | 6:AF:14:PRO:CD    | 2.46                     | 0.64              |
| 9:AK:87:LEU:HD23  | 9:AK:88:GLU:H     | 1.60                     | 0.64              |
| 10:AL:96:THR:O    | 10:AL:97:ARG:CB   | 2.45                     | 0.64              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 11:AM:73:GLY:CA    | 11:AM:111:ARG:NH1  | 2.48                     | 0.64              |
| 11:AM:114:ILE:CG1  | 11:AM:130:PHE:HA   | 2.26                     | 0.64              |
| 12:AN:27:VAL:CG1   | 12:AN:104:PHE:HE2  | 2.11                     | 0.64              |
| 12:AN:43:THR:CG2   | 12:AN:46:GLN:HB2   | 2.27                     | 0.64              |
| 12:AN:75:THR:OG1   | 12:AN:91:GLU:OE2   | 2.13                     | 0.64              |
| 12:AN:85:LYS:HG3   | 12:AN:87:LYS:H     | 1.60                     | 0.64              |
| 13:AO:17:ARG:HB2   | 13:AO:17:ARG:HH11  | 1.63                     | 0.64              |
| 15:AQ:6:LEU:HD21   | 15:AQ:7:ILE:HG23   | 1.78                     | 0.64              |
| 15:AQ:28:VAL:CG2   | 15:AQ:93:ARG:C     | 2.71                     | 0.64              |
| 15:AQ:81:PRO:O     | 15:AQ:82:LEU:C     | 2.40                     | 0.64              |
| 20:AV:82:PRO:HD3   | 20:AV:97:ARG:H     | 1.63                     | 0.64              |
| 21:AW:10:ARG:NE    | 21:AW:36:LYS:HB2   | 2.12                     | 0.64              |
| 21:AW:46:LYS:O     | 21:AW:49:ARG:HB3   | 1.97                     | 0.64              |
| 22:AX:28:GLY:O     | 22:AX:29:GLN:O     | 2.15                     | 0.64              |
| 22:AX:65:GLY:CA    | 22:AX:81:VAL:HG12  | 2.25                     | 0.64              |
| 24:AZ:11:SER:H     | 24:AZ:12:PRO:CD    | 2.09                     | 0.64              |
| 28:Ad:22:MET:HA    | 28:Ad:28:ARG:HG2   | 1.80                     | 0.64              |
| 34:BA:80:G:N3      | 34:BA:81:G:H1'     | 2.13                     | 0.64              |
| 34:BA:361:G:N7     | 34:BA:362:G:C6     | 2.65                     | 0.64              |
| 34:BA:754:C:O2     | 34:BA:754:C:C3'    | 2.46                     | 0.64              |
| 34:BA:967:C:O5'    | 34:BA:967:C:C6     | 2.50                     | 0.64              |
| 34:BA:1196:U:H4'   | 34:BA:1197:G:O5'   | 1.98                     | 0.64              |
| 34:BA:1202:G:H21   | 34:BA:1203:C:C1'   | 2.11                     | 0.64              |
| 34:BA:1276:G:O2'   | 34:BA:1282:C:H4'   | 1.97                     | 0.64              |
| 34:BA:1308:U:H3'   | 46:BQ:92:HIS:HE2   | 1.60                     | 0.64              |
| 34:BA:1346:A:H62   | 34:BA:1374:A:H3'   | 1.61                     | 0.64              |
| 34:BA:1378:C:N3    | 34:BA:1379:G:C1'   | 2.60                     | 0.64              |
| 34:BA:1409:C:C2    | 34:BA:1410:G:C8    | 2.85                     | 0.64              |
| 34:BA:1431:C:H42   | 34:BA:1469:G:H1    | 1.45                     | 0.64              |
| 34:BA:1459:C:P     | 53:BX:31:SER:HB3   | 2.35                     | 0.64              |
| 36:BG:23:TYR:CD2   | 36:BG:24:ALA:N     | 2.64                     | 0.64              |
| 36:BG:124:ILE:CD1  | 36:BG:130:VAL:HG13 | 2.27                     | 0.64              |
| 37:BH:74:GLN:HA    | 37:BH:77:ASN:ND2   | 1.99                     | 0.64              |
| 37:BH:154:ASN:HD22 | 37:BH:155:LEU:HD22 | 1.62                     | 0.64              |
| 38:BI:103:GLY:C    | 38:BI:107:ARG:HH12 | 2.05                     | 0.64              |
| 39:BJ:1:MET:HG2    | 39:BJ:68:PRO:HA    | 1.78                     | 0.64              |
| 40:BK:72:ARG:HH11  | 40:BK:72:ARG:CB    | 2.07                     | 0.64              |
| 41:BL:67:PRO:HD2   | 41:BL:77:GLU:H     | 1.62                     | 0.64              |
| 42:BM:38:GLN:O     | 42:BM:40:LEU:N     | 2.30                     | 0.64              |
| 44:BO:79:SER:HA    | 44:BO:104:GLN:CG   | 2.28                     | 0.64              |
| 45:BP:39:VAL:HB    | 45:BP:57:LYS:CB    | 2.26                     | 0.64              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 46:BQ:37:THR:O    | 46:BQ:55:ARG:NH2   | 2.30                     | 0.64              |
| 47:BR:26:ARG:HB2  | 47:BR:43:CYS:CB    | 2.27                     | 0.64              |
| 49:BT:14:ASN:HA   | 49:BT:42:ARG:NH1   | 2.12                     | 0.64              |
| 49:BT:14:ASN:HB2  | 49:BT:42:ARG:HH12  | 1.62                     | 0.64              |
| 52:BW:9:VAL:CA    | 52:BW:41:VAL:CG2   | 2.75                     | 0.64              |
| 57:BZ:89:MET:SD   | 57:BZ:119:TYR:CZ   | 2.90                     | 0.64              |
| 57:BZ:120:GLY:O   | 57:BZ:121:LEU:HD23 | 1.98                     | 0.64              |
| 57:BZ:128:ASN:HA  | 57:BZ:164:TYR:O    | 1.96                     | 0.64              |
| 57:BZ:148:PHE:O   | 57:BZ:152:ASP:N    | 2.17                     | 0.64              |
| 57:BZ:441:TYR:O   | 57:BZ:443:ILE:N    | 2.30                     | 0.64              |
| 57:BZ:546:MET:HB3 | 57:BZ:547:ARG:CG   | 2.16                     | 0.64              |
| 1:AA:97:C:H2'     | 1:AA:98:G:O4'      | 1.97                     | 0.64              |
| 1:AA:99:U:H5'     | 1:AA:101:G:C5'     | 2.27                     | 0.64              |
| 1:AA:216:A:H61    | 1:AA:431:U:H3      | 1.46                     | 0.64              |
| 1:AA:230:U:H2'    | 1:AA:231:C:C6      | 2.32                     | 0.64              |
| 1:AA:242:G:C2'    | 1:AA:254:G:C6      | 2.81                     | 0.64              |
| 1:AA:245:G:H1     | 1:AA:253:C:H42     | 1.44                     | 0.64              |
| 1:AA:460:A:H2'    | 1:AA:461:C:C6      | 2.33                     | 0.64              |
| 1:AA:566:U:H2'    | 1:AA:567:A:C8      | 2.33                     | 0.64              |
| 1:AA:1022:G:H3'   | 1:AA:1025:G:O6     | 1.97                     | 0.64              |
| 1:AA:1075:C:C1'   | 32:AJ:90:LYS:HD2   | 2.19                     | 0.64              |
| 1:AA:1153:C:C4    | 1:AA:1154:G:O6     | 2.51                     | 0.64              |
| 1:AA:1271:G:P     | 1:AA:1272:A:OP1    | 2.56                     | 0.64              |
| 1:AA:1554:A:HO2'  | 1:AA:1555:G:P      | 2.21                     | 0.64              |
| 1:AA:1572:A:O2'   | 1:AA:1573:G:OP1    | 2.16                     | 0.64              |
| 1:AA:1695:G:H1'   | 4:AD:15:PHE:HB3    | 1.80                     | 0.64              |
| 1:AA:1717:G:C2    | 1:AA:1718:G:N3     | 2.66                     | 0.64              |
| 1:AA:1771:C:H2'   | 1:AA:1772:G:H8     | 1.61                     | 0.64              |
| 1:AA:1782:C:H42   | 1:AA:2587:A:H61    | 1.44                     | 0.64              |
| 1:AA:1859:A:C8    | 1:AA:1860:G:C8     | 2.85                     | 0.64              |
| 1:AA:1966:A:O2'   | 1:AA:1967:C:P      | 2.56                     | 0.64              |
| 1:AA:1977:A:C2    | 1:AA:1978:A:C4     | 2.86                     | 0.64              |
| 1:AA:2150:U:H2'   | 1:AA:2151:G:H8     | 1.63                     | 0.64              |
| 1:AA:2230:G:H1'   | 25:Aa:58:ARG:NH2   | 2.12                     | 0.64              |
| 1:AA:2244:U:O2'   | 1:AA:2434:A:N7     | 2.26                     | 0.64              |
| 1:AA:2471:C:C5'   | 57:BZ:529:ARG:HH12 | 2.04                     | 0.64              |
| 1:AA:2815:C:C2    | 1:AA:2816:C:C6     | 2.86                     | 0.64              |
| 1:AA:2851:A:H1'   | 13:AO:61:HIS:CD2   | 2.33                     | 0.64              |
| 3:AC:62:VAL:HG22  | 3:AC:63:SER:N      | 2.11                     | 0.64              |
| 4:AD:5:LYS:CD     | 4:AD:81:ALA:HB1    | 2.28                     | 0.64              |
| 4:AD:200:ASP:O    | 4:AD:203:ASN:N     | 2.29                     | 0.64              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 5:AE:8:LYS:HZ2     | 15:AQ:3:ARG:HG2   | 1.62                     | 0.64              |
| 5:AE:103:ASP:C     | 5:AE:104:VAL:HG23 | 2.23                     | 0.64              |
| 6:AF:7:TYR:CD2     | 6:AF:119:ARG:HB3  | 2.33                     | 0.64              |
| 6:AF:152:GLU:O     | 6:AF:172:TRP:HA   | 1.98                     | 0.64              |
| 7:AG:130:ASN:O     | 7:AG:159:VAL:O    | 2.16                     | 0.64              |
| 7:AG:181:ARG:H     | 7:AG:181:ARG:HH21 | 1.44                     | 0.64              |
| 8:AH:29:PRO:HD3    | 8:AH:79:VAL:CA    | 2.27                     | 0.64              |
| 8:AH:122:THR:O     | 8:AH:133:VAL:HG23 | 1.97                     | 0.64              |
| 8:AH:156:ALA:HB1   | 8:AH:172:LYS:HZ1  | 1.61                     | 0.64              |
| 9:AK:27:ALA:O      | 9:AK:28:THR:C     | 2.40                     | 0.64              |
| 9:AK:46:VAL:CG1    | 9:AK:47:ALA:N     | 2.40                     | 0.64              |
| 9:AK:85:ILE:CB     | 9:AK:90:MET:HE1   | 2.25                     | 0.64              |
| 9:AK:128:HIS:N     | 9:AK:129:PRO:CD   | 2.60                     | 0.64              |
| 10:AL:65:THR:O     | 10:AL:66:LYS:HB2  | 1.96                     | 0.64              |
| 11:AM:78:PRO:HG2   | 11:AM:117:GLU:CD  | 2.23                     | 0.64              |
| 11:AM:114:ILE:HD13 | 11:AM:114:ILE:N   | 2.13                     | 0.64              |
| 12:AN:42:ILE:HG12  | 12:AN:126:PRO:HG3 | 1.80                     | 0.64              |
| 12:AN:93:TYR:C     | 12:AN:94:VAL:HG12 | 2.23                     | 0.64              |
| 13:AO:46:GLY:O     | 13:AO:49:ASP:CB   | 2.40                     | 0.64              |
| 13:AO:75:LEU:O     | 13:AO:78:LYS:N    | 2.30                     | 0.64              |
| 16:AR:40:PHE:CD2   | 17:AS:84:LYS:HG2  | 2.33                     | 0.64              |
| 16:AR:88:ILE:CA    | 17:AS:52:VAL:HG22 | 2.27                     | 0.64              |
| 16:AR:97:ASP:HB3   | 16:AR:101:ARG:CZ  | 2.28                     | 0.64              |
| 16:AR:108:GLU:CD   | 16:AR:109:LEU:N   | 2.55                     | 0.64              |
| 18:AT:27:LYS:HB3   | 18:AT:31:GLU:OE2  | 1.97                     | 0.64              |
| 20:AV:6:HIS:HB3    | 20:AV:71:LYS:HG2  | 1.79                     | 0.64              |
| 24:AZ:6:VAL:HG21   | 24:AZ:35:ARG:NH2  | 2.11                     | 0.64              |
| 25:Aa:8:LYS:CG     | 25:Aa:9:LEU:H     | 2.09                     | 0.64              |
| 28:Ad:28:ARG:O     | 28:Ad:31:LEU:CB   | 2.41                     | 0.64              |
| 28:Ad:34:ARG:HH22  | 28:Ad:42:LEU:CG   | 2.11                     | 0.64              |
| 28:Ad:43:THR:HG23  | 28:Ad:46:VAL:CB   | 2.28                     | 0.64              |
| 32:AJ:98:ARG:NH1   | 32:AJ:101:TRP:H   | 1.95                     | 0.64              |
| 34:BA:191:G:O2'    | 53:BX:102:GLY:HA2 | 1.97                     | 0.64              |
| 34:BA:307:C:N4     | 34:BA:308:C:C5    | 2.66                     | 0.64              |
| 34:BA:307:C:N4     | 34:BA:308:C:H5    | 1.94                     | 0.64              |
| 34:BA:489:C:O2'    | 34:BA:490:G:H5'   | 1.98                     | 0.64              |
| 34:BA:675:A:H1'    | 44:BO:116:HIS:CG  | 2.33                     | 0.64              |
| 34:BA:737:A:O2'    | 34:BA:738:C:H5'   | 1.97                     | 0.64              |
| 34:BA:740:U:H2'    | 34:BA:741:G:H8    | 1.63                     | 0.64              |
| 34:BA:841:U:H2'    | 34:BA:841:U:O2    | 1.97                     | 0.64              |
| 34:BA:858:G:N2     | 34:BA:870:U:OP2   | 2.30                     | 0.64              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1021:G:H2'   | 34:BA:1022:G:C1'   | 2.27                     | 0.64              |
| 34:BA:1072:G:C6    | 34:BA:1073:U:C4    | 2.86                     | 0.64              |
| 34:BA:1449:C:C2    | 34:BA:1450:U:C6    | 2.86                     | 0.64              |
| 36:BG:14:ILE:HG22  | 36:BG:15:THR:N     | 2.12                     | 0.64              |
| 36:BG:51:GLY:O     | 36:BG:70:VAL:HG13  | 1.97                     | 0.64              |
| 37:BH:121:VAL:HG11 | 37:BH:136:PRO:HA   | 1.79                     | 0.64              |
| 38:BI:76:ILE:HG22  | 38:BI:78:HIS:CD2   | 2.33                     | 0.64              |
| 38:BI:84:PHE:CG    | 38:BI:134:ALA:HA   | 2.33                     | 0.64              |
| 40:BK:38:LEU:HA    | 40:BK:41:ARG:HB2   | 1.80                     | 0.64              |
| 40:BK:135:VAL:HG12 | 40:BK:139:GLU:OE2  | 1.98                     | 0.64              |
| 41:BL:102:ARG:CZ   | 41:BL:102:ARG:CB   | 2.69                     | 0.64              |
| 42:BM:127:LYS:CD   | 56:BE:30:G:O3'     | 2.46                     | 0.64              |
| 43:BN:85:LEU:HD12  | 43:BN:85:LEU:N     | 2.13                     | 0.64              |
| 45:BP:97:ARG:HB3   | 45:BP:98:TYR:CE1   | 2.33                     | 0.64              |
| 46:BQ:19:LEU:CD1   | 46:BQ:29:ARG:C     | 2.67                     | 0.64              |
| 56:BD:2:C:C4       | 56:BD:3:C:C4       | 2.86                     | 0.64              |
| 56:BE:30:G:H2'     | 56:BE:31:A:H5'     | 1.80                     | 0.64              |
| 57:BZ:6:ARG:NH1    | 57:BZ:196:ALA:HA   | 2.12                     | 0.64              |
| 57:BZ:55:THR:O     | 57:BZ:56:ILE:HD13  | 1.97                     | 0.64              |
| 57:BZ:150:ASN:HD22 | 57:BZ:151:LEU:HD22 | 1.62                     | 0.64              |
| 1:AA:5:A:H2'       | 1:AA:6:A:H8        | 1.63                     | 0.64              |
| 1:AA:60:G:C8       | 1:AA:63:U:O4       | 2.51                     | 0.64              |
| 1:AA:93:C:H2'      | 1:AA:94:G:C8       | 2.32                     | 0.64              |
| 1:AA:116:C:H1'     | 1:AA:127:A:H1'     | 1.80                     | 0.64              |
| 1:AA:271(B):G:H5'' | 1:AA:271(C):U:C4'  | 2.26                     | 0.64              |
| 1:AA:399:G:C5      | 1:AA:400:G:H1'     | 2.33                     | 0.64              |
| 1:AA:582:G:H2'     | 1:AA:583:G:C8      | 2.32                     | 0.64              |
| 1:AA:642:G:H3'     | 1:AA:642:G:C8      | 2.33                     | 0.64              |
| 1:AA:910:A:N6      | 1:AA:911:A:N6      | 2.45                     | 0.64              |
| 1:AA:969:U:C4      | 1:AA:970:C:C5      | 2.85                     | 0.64              |
| 1:AA:1057:A:N6     | 1:AA:1086:A:C2'    | 2.61                     | 0.64              |
| 1:AA:1074:G:H8     | 1:AA:1074:G:O5'    | 1.81                     | 0.64              |
| 1:AA:1264:G:P      | 26:Ab:15:ARG:HH11  | 2.21                     | 0.64              |
| 1:AA:1498:C:H1'    | 1:AA:1576:U:H4'    | 1.80                     | 0.64              |
| 1:AA:1623:G:C2     | 1:AA:1624:G:C8     | 2.85                     | 0.64              |
| 1:AA:1670:C:O5'    | 1:AA:1671:U:H5     | 1.81                     | 0.64              |
| 1:AA:1774:C:C6     | 1:AA:1775:U:C5     | 2.71                     | 0.64              |
| 1:AA:1858:G:O6     | 1:AA:1883:G:C6     | 2.51                     | 0.64              |
| 1:AA:1924:C:C2     | 1:AA:1925:C:C5     | 2.86                     | 0.64              |
| 1:AA:2020:A:N7     | 1:AA:2022:U:C4     | 2.66                     | 0.64              |
| 1:AA:2033:A:N6     | 1:AA:2036:C:N3     | 2.46                     | 0.64              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2181:G:H21   | 1:AA:2182:G:H22    | 1.46                     | 0.64              |
| 1:AA:2362:G:N2    | 1:AA:2363:C:H1'    | 2.13                     | 0.64              |
| 1:AA:2651:C:C2    | 1:AA:2652:C:C5     | 2.86                     | 0.64              |
| 2:AB:25:A:H2'     | 2:AB:26:A:O4'      | 1.98                     | 0.64              |
| 2:AB:95:U:H2'     | 2:AB:96:G:H8       | 1.63                     | 0.64              |
| 3:AC:48:GLY:CA    | 3:AC:210:ARG:CD    | 2.76                     | 0.64              |
| 3:AC:75:LEU:HB2   | 3:AC:110:PHE:CG    | 2.33                     | 0.64              |
| 4:AD:143:HIS:C    | 4:AD:145:VAL:N     | 2.54                     | 0.64              |
| 5:AE:59:VAL:HB    | 5:AE:62:PRO:CD     | 2.28                     | 0.64              |
| 5:AE:98:PRO:HA    | 5:AE:172:VAL:HG23  | 1.79                     | 0.64              |
| 5:AE:131:ALA:HB1  | 5:AE:134:ILE:CG1   | 2.28                     | 0.64              |
| 8:AH:136:ILE:HG23 | 8:AH:137:ASP:N     | 2.10                     | 0.64              |
| 9:AK:100:GLU:C    | 9:AK:103:VAL:HG13  | 2.21                     | 0.64              |
| 9:AK:123:TYR:C    | 9:AK:125:GLY:N     | 2.55                     | 0.64              |
| 12:AN:121:ALA:O   | 12:AN:125:LEU:CG   | 2.44                     | 0.64              |
| 14:AP:89:ARG:CG   | 14:AP:90:GLY:N     | 2.57                     | 0.64              |
| 15:AQ:43:GLN:OE1  | 15:AQ:43:GLN:N     | 2.30                     | 0.64              |
| 15:AQ:54:ARG:H    | 15:AQ:64:ARG:HB3   | 1.62                     | 0.64              |
| 18:AT:66:GLU:HA   | 18:AT:69:LEU:CD1   | 2.28                     | 0.64              |
| 18:AT:69:LEU:HB3  | 18:AT:107:LEU:HD11 | 1.79                     | 0.64              |
| 20:AV:57:GLN:O    | 20:AV:58:GLY:O     | 2.16                     | 0.64              |
| 23:AY:27:LEU:CG   | 23:AY:48:LEU:HB3   | 2.28                     | 0.64              |
| 23:AY:48:LEU:HD12 | 23:AY:51:GLN:NE2   | 2.12                     | 0.64              |
| 24:AZ:4:LEU:HD21  | 24:AZ:56:VAL:CG2   | 2.24                     | 0.64              |
| 27:Ac:7:ILE:CG2   | 27:Ac:8:LYS:N      | 2.61                     | 0.64              |
| 29:Ae:9:GLY:O     | 29:Ae:14:VAL:HB    | 1.98                     | 0.64              |
| 29:Ae:52:LYS:O    | 29:Ae:54:GLU:N     | 2.28                     | 0.64              |
| 32:AJ:90:LYS:HE2  | 32:AJ:90:LYS:H     | 1.62                     | 0.64              |
| 32:AJ:99:ILE:O    | 32:AJ:103:GLN:HB3  | 1.97                     | 0.64              |
| 34:BA:43:C:H2'    | 34:BA:44:G:C8      | 2.33                     | 0.64              |
| 34:BA:392:G:H5'   | 49:BT:12:LYS:HZ3   | 1.62                     | 0.64              |
| 34:BA:523:A:O5'   | 34:BA:523:A:H8     | 1.81                     | 0.64              |
| 34:BA:569:C:H1'   | 34:BA:574:A:C2     | 2.33                     | 0.64              |
| 34:BA:620:C:O2'   | 34:BA:621:A:H5'    | 1.98                     | 0.64              |
| 34:BA:698:G:H2'   | 34:BA:699:C:C6     | 2.32                     | 0.64              |
| 34:BA:978:A:H8    | 34:BA:980:C:H41    | 1.45                     | 0.64              |
| 34:BA:981:U:O5'   | 34:BA:981:U:C6     | 2.51                     | 0.64              |
| 34:BA:1003:G:H8   | 34:BA:1003:G:O5'   | 1.81                     | 0.64              |
| 34:BA:1158:C:C3'  | 35:BF:133:LYS:HZ2  | 2.06                     | 0.64              |
| 34:BA:1163:C:C2'  | 34:BA:1164:G:H5'   | 2.27                     | 0.64              |
| 34:BA:1243:C:OP2  | 54:BY:10:ARG:CZ    | 2.45                     | 0.64              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BA:1287:A:H61   | 34:BA:1371:G:C4'  | 2.10                     | 0.64              |
| 34:BA:1357:A:C5    | 34:BA:1358:U:C4   | 2.84                     | 0.64              |
| 34:BA:1506:U:O5'   | 34:BA:1506:U:H6   | 1.80                     | 0.64              |
| 34:BA:1519:A:C2'   | 34:BA:1520:G:H5'  | 2.27                     | 0.64              |
| 34:BA:1528:U:C1'   | 34:BA:1529:G:H21  | 2.10                     | 0.64              |
| 35:BF:97:TRP:HE1   | 35:BF:101:MET:HE1 | 1.63                     | 0.64              |
| 36:BG:131:ARG:HH12 | 38:BI:51:VAL:HG23 | 1.62                     | 0.64              |
| 36:BG:132:ARG:HB3  | 36:BG:136:GLN:NE2 | 2.13                     | 0.64              |
| 43:BN:49:VAL:O     | 43:BN:60:ARG:HB3  | 1.98                     | 0.64              |
| 45:BP:93:LEU:HD23  | 45:BP:93:LEU:N    | 2.11                     | 0.64              |
| 47:BR:40:CYS:HB2   | 47:BR:42:ILE:HG13 | 1.80                     | 0.64              |
| 48:BS:5:LYS:HB2    | 48:BS:5:LYS:HZ2   | 1.63                     | 0.64              |
| 51:BV:18:ARG:HH21  | 51:BV:21:LYS:CB   | 2.10                     | 0.64              |
| 52:BW:9:VAL:CG2    | 52:BW:42:PRO:CA   | 2.67                     | 0.64              |
| 52:BW:36:ARG:NH2   | 52:BW:51:VAL:HG12 | 2.13                     | 0.64              |
| 55:BC:12:U:O5'     | 55:BC:12:U:H6     | 1.81                     | 0.64              |
| 55:BC:39:U:C2'     | 55:BC:40:C:H5'    | 2.27                     | 0.64              |
| 56:BD:1:G:N3       | 56:BD:2:C:C2      | 2.66                     | 0.64              |
| 56:BE:16:U:C2      | 56:BE:59:U:N3     | 2.56                     | 0.64              |
| 57:BZ:206:GLN:C    | 57:BZ:227:LYS:H   | 2.00                     | 0.64              |
| 57:BZ:212:LEU:HD11 | 57:BZ:220:VAL:CG1 | 2.28                     | 0.64              |
| 57:BZ:403:VAL:HG23 | 57:BZ:466:TYR:O   | 1.96                     | 0.64              |
| 1:AA:72:U:H2'      | 1:AA:73:A:OP1     | 1.97                     | 0.64              |
| 1:AA:312:G:H5''    | 1:AA:313:C:OP2    | 1.97                     | 0.64              |
| 1:AA:476:G:C4      | 1:AA:478:A:OP2    | 2.51                     | 0.64              |
| 1:AA:746:A:O2'     | 1:AA:747:U:OP2    | 2.12                     | 0.64              |
| 1:AA:884:C:H1'     | 1:AA:885:C:OP2    | 1.98                     | 0.64              |
| 1:AA:954:G:H1'     | 1:AA:2274:A:C2    | 2.33                     | 0.64              |
| 1:AA:973:A:C1'     | 1:AA:1188:U:C4    | 2.81                     | 0.64              |
| 1:AA:987:G:HO2'    | 1:AA:1000:A:H1'   | 1.63                     | 0.64              |
| 1:AA:1005:C:C1'    | 1:AA:1012:U:O2    | 2.46                     | 0.64              |
| 1:AA:1033:U:H5''   | 30:Af:9:ARG:NH2   | 2.12                     | 0.64              |
| 1:AA:1083:U:HO2'   | 1:AA:1084:A:H8    | 1.45                     | 0.64              |
| 1:AA:1142(A):A:C6  | 1:AA:1143:A:H8    | 2.15                     | 0.64              |
| 1:AA:1195:G:C2'    | 1:AA:1226:G:N2    | 2.61                     | 0.64              |
| 1:AA:1264:G:C3'    | 1:AA:1265:A:C5'   | 2.75                     | 0.64              |
| 1:AA:1480:G:H2'    | 1:AA:1480:G:N3    | 2.11                     | 0.64              |
| 1:AA:1529:A:H3'    | 1:AA:1530:G:H8    | 1.62                     | 0.64              |
| 1:AA:1650:G:H5'    | 13:AO:104:ARG:NH2 | 2.12                     | 0.64              |
| 1:AA:1684:C:H2'    | 1:AA:1685:C:C6    | 2.33                     | 0.64              |
| 1:AA:1792:G:H2'    | 1:AA:1792:G:N3    | 2.12                     | 0.64              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1819:A:C5'   | 4:AD:178:PRO:HG3  | 2.21                     | 0.64              |
| 1:AA:1887:C:O2'   | 1:AA:2190:G:O2'   | 2.10                     | 0.64              |
| 1:AA:1904:G:C2'   | 1:AA:1905:C:H5'   | 2.28                     | 0.64              |
| 1:AA:1931:U:H2'   | 1:AA:1932:A:O5'   | 1.98                     | 0.64              |
| 1:AA:2176:A:O2'   | 3:AC:213:TYR:CB   | 2.46                     | 0.64              |
| 1:AA:2519:U:C5'   | 1:AA:2520:C:OP1   | 2.46                     | 0.64              |
| 1:AA:2532:G:O2'   | 1:AA:2533:A:H5'   | 1.98                     | 0.64              |
| 1:AA:2611:U:H2'   | 1:AA:2612:C:O4'   | 1.97                     | 0.64              |
| 1:AA:2659:G:OP2   | 8:AH:158:HIS:NE2  | 2.31                     | 0.64              |
| 1:AA:2667:C:H2'   | 1:AA:2668:G:C5'   | 2.28                     | 0.64              |
| 1:AA:2747:G:O6    | 1:AA:2755:C:C5'   | 2.46                     | 0.64              |
| 3:AC:29:VAL:HG13  | 3:AC:30:LYS:N     | 2.13                     | 0.64              |
| 3:AC:48:GLY:HA2   | 3:AC:210:ARG:CD   | 2.28                     | 0.64              |
| 3:AC:130:ILE:N    | 3:AC:130:ILE:CD1  | 2.61                     | 0.64              |
| 4:AD:54:ARG:CB    | 4:AD:218:ARG:HD2  | 2.27                     | 0.64              |
| 4:AD:65:ILE:HG22  | 4:AD:66:ASP:N     | 2.13                     | 0.64              |
| 4:AD:214:TRP:O    | 4:AD:217:ARG:N    | 2.31                     | 0.64              |
| 4:AD:232:PRO:HG2  | 4:AD:246:PRO:O    | 1.98                     | 0.64              |
| 6:AF:56:GLU:O     | 6:AF:58:ALA:C     | 2.41                     | 0.64              |
| 7:AG:4:ASP:O      | 7:AG:7:LEU:HB2    | 1.97                     | 0.64              |
| 7:AG:114:ILE:HD12 | 7:AG:115:ARG:N    | 2.13                     | 0.64              |
| 8:AH:127:GLU:HG3  | 8:AH:130:ARG:CB   | 2.28                     | 0.64              |
| 9:AK:42:TRP:CD1   | 9:AK:42:TRP:H     | 2.17                     | 0.64              |
| 10:AL:11:ALA:HB2  | 10:AL:17:ARG:NE   | 2.13                     | 0.64              |
| 10:AL:39:ILE:C    | 10:AL:59:LYS:HZ1  | 2.05                     | 0.64              |
| 11:AM:52:GLU:O    | 11:AM:55:ARG:HB2  | 1.98                     | 0.64              |
| 12:AN:44:ALA:HB2  | 12:AN:93:TYR:O    | 1.98                     | 0.64              |
| 17:AS:15:GLU:HB3  | 17:AS:16:PRO:HD2  | 1.78                     | 0.64              |
| 20:AV:1:MET:HA    | 20:AV:33:LYS:HE3  | 1.78                     | 0.64              |
| 20:AV:74:PRO:HG2  | 20:AV:100:ALA:HB3 | 1.79                     | 0.64              |
| 26:Ab:34:PRO:HD3  | 26:Ab:40:LYS:CE   | 2.28                     | 0.64              |
| 27:Ac:41:PRO:HD2  | 27:Ac:46:HIS:O    | 1.98                     | 0.64              |
| 31:AI:26:LEU:O    | 31:AI:114:GLY:N   | 2.30                     | 0.64              |
| 32:AJ:20:ALA:CB   | 32:AJ:21:PRO:HD3  | 2.25                     | 0.64              |
| 34:BA:68:G:H2'    | 34:BA:69:G:O4'    | 1.97                     | 0.64              |
| 34:BA:597:G:H2'   | 34:BA:598:U:H5'   | 1.79                     | 0.64              |
| 34:BA:679:C:O2'   | 34:BA:680:C:H5'   | 1.97                     | 0.64              |
| 34:BA:826:C:H5'   | 41:BL:12:ARG:HH21 | 1.63                     | 0.64              |
| 34:BA:1312:G:N2   | 34:BA:1325:C:O2'  | 2.28                     | 0.64              |
| 34:BA:1392:G:H8   | 34:BA:1392:G:O5'  | 1.81                     | 0.64              |
| 34:BA:1416:G:N1   | 34:BA:1485:U:C2   | 2.66                     | 0.64              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1486:G:C3'  | 34:BA:1487:G:H5''  | 2.28                     | 0.64              |
| 34:BA:1520:G:C2'  | 34:BA:1521:G:H8    | 2.11                     | 0.64              |
| 35:BF:74:LYS:HZ3  | 35:BF:76:GLN:HB2   | 1.61                     | 0.64              |
| 35:BF:76:GLN:O    | 35:BF:77:ALA:HB2   | 1.98                     | 0.64              |
| 35:BF:171:ALA:O   | 35:BF:174:VAL:N    | 2.30                     | 0.64              |
| 36:BG:8:ILE:CG1   | 36:BG:16:ARG:HD2   | 2.28                     | 0.64              |
| 36:BG:142:MET:HG2 | 36:BG:170:GLN:HG3  | 1.80                     | 0.64              |
| 37:BH:15:GLU:CB   | 37:BH:19:LEU:HD11  | 2.28                     | 0.64              |
| 37:BH:130:GLY:O   | 37:BH:131:ARG:C    | 2.40                     | 0.64              |
| 37:BH:170:VAL:N   | 37:BH:176:LEU:HD22 | 2.10                     | 0.64              |
| 40:BK:67:GLU:HA   | 40:BK:67:GLU:OE2   | 1.97                     | 0.64              |
| 40:BK:74:GLU:CG   | 40:BK:75:VAL:H     | 2.10                     | 0.64              |
| 44:BO:23:ALA:HB2  | 44:BO:28:THR:HG23  | 1.78                     | 0.64              |
| 45:BP:53:ARG:CZ   | 45:BP:93:LEU:HD22  | 2.28                     | 0.64              |
| 45:BP:117:ARG:NH2 | 45:BP:124:LYS:HG3  | 2.13                     | 0.64              |
| 49:BT:19:ILE:HB   | 49:BT:37:GLY:C     | 2.23                     | 0.64              |
| 49:BT:75:ARG:HA   | 49:BT:80:PHE:HB2   | 1.79                     | 0.64              |
| 52:BW:5:LEU:CD2   | 52:BW:6:LYS:H      | 2.10                     | 0.64              |
| 52:BW:45:VAL:CG2  | 52:BW:67:VAL:HG21  | 2.27                     | 0.64              |
| 57:BZ:7:ASN:OD1   | 57:BZ:69:ARG:HG2   | 1.97                     | 0.64              |
| 57:BZ:31:THR:HB   | 57:BZ:32:PHE:CD1   | 2.32                     | 0.64              |
| 57:BZ:64:ILE:HD11 | 57:BZ:187:TYR:C    | 2.21                     | 0.64              |
| 57:BZ:82:GLY:CA   | 57:BZ:361:ARG:CG   | 2.74                     | 0.64              |
| 57:BZ:101:ALA:HB2 | 57:BZ:130:VAL:HG12 | 1.79                     | 0.64              |
| 57:BZ:426:LEU:CD1 | 57:BZ:441:TYR:CZ   | 2.52                     | 0.64              |
| 1:AA:3:U:O4       | 1:AA:2900:A:N1     | 2.32                     | 0.63              |
| 1:AA:61:G:H5'     | 23:AY:45:ILE:HG12  | 1.80                     | 0.63              |
| 1:AA:76:C:O5'     | 1:AA:76:C:H6       | 1.81                     | 0.63              |
| 1:AA:212:G:H2'    | 1:AA:213:A:H8      | 1.63                     | 0.63              |
| 1:AA:351:G:O2'    | 1:AA:352:G:OP2     | 2.16                     | 0.63              |
| 1:AA:469:G:OP2    | 6:AF:59:TYR:CE2    | 2.51                     | 0.63              |
| 1:AA:638:G:H3'    | 1:AA:638:G:C8      | 2.33                     | 0.63              |
| 1:AA:748:G:C5'    | 18:AT:88:ARG:NH1   | 2.59                     | 0.63              |
| 1:AA:874:G:C2     | 1:AA:875:G:C5      | 2.86                     | 0.63              |
| 1:AA:878:A:C2'    | 1:AA:879:G:H8      | 2.11                     | 0.63              |
| 1:AA:955:C:C2'    | 1:AA:956:G:O5'     | 2.46                     | 0.63              |
| 1:AA:960:A:C2     | 1:AA:962:G:C1'     | 2.81                     | 0.63              |
| 1:AA:1043:C:C1'   | 1:AA:1112:G:N2     | 2.41                     | 0.63              |
| 1:AA:1047:G:H1'   | 1:AA:1111:A:C2     | 2.33                     | 0.63              |
| 1:AA:1085:A:H1'   | 1:AA:1086:A:OP2    | 1.98                     | 0.63              |
| 1:AA:1248:G:H8    | 16:AR:2:PRO:HA     | 1.55                     | 0.63              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1264:G:H5''  | 1:AA:1265:A:C5'   | 2.25                     | 0.63              |
| 1:AA:1336:A:H2'   | 1:AA:1337:G:C8    | 2.33                     | 0.63              |
| 1:AA:1342:A:C2'   | 1:AA:1345:C:N4    | 2.52                     | 0.63              |
| 1:AA:1511:A:C2'   | 1:AA:1512:G:H5''  | 2.28                     | 0.63              |
| 1:AA:1527:G:N2    | 1:AA:1545:A:N7    | 2.46                     | 0.63              |
| 1:AA:1639:U:H2'   | 1:AA:1640:C:C5'   | 2.28                     | 0.63              |
| 1:AA:1659:U:O2'   | 1:AA:2712(A):A:N6 | 2.31                     | 0.63              |
| 1:AA:1878:G:O2'   | 1:AA:1879:C:H5'   | 1.98                     | 0.63              |
| 1:AA:2009:G:C6    | 1:AA:2010:G:N7    | 2.66                     | 0.63              |
| 1:AA:2063:C:H2'   | 1:AA:2064:C:C4'   | 2.28                     | 0.63              |
| 1:AA:2141:G:C6    | 1:AA:2151:G:C6    | 2.86                     | 0.63              |
| 1:AA:2210:G:H4'   | 1:AA:2211:G:H5'   | 1.78                     | 0.63              |
| 1:AA:2250:G:O2'   | 1:AA:2496:C:H5'   | 1.98                     | 0.63              |
| 1:AA:2346:A:N3    | 1:AA:2383:G:C4    | 2.66                     | 0.63              |
| 1:AA:2491:U:C6    | 1:AA:2492:U:P     | 2.90                     | 0.63              |
| 1:AA:2636:U:O5'   | 5:AE:79:ARG:HB3   | 1.98                     | 0.63              |
| 1:AA:2647:U:O2'   | 1:AA:2648:C:O5'   | 2.15                     | 0.63              |
| 1:AA:2682:U:H2'   | 1:AA:2683:C:O5'   | 1.98                     | 0.63              |
| 3:AC:102:LYS:NZ   | 3:AC:107:TRP:HB2  | 2.14                     | 0.63              |
| 4:AD:24:ILE:HG22  | 4:AD:25:THR:N     | 2.12                     | 0.63              |
| 4:AD:151:LYS:HB2  | 4:AD:154:LYS:HE3  | 1.81                     | 0.63              |
| 4:AD:246:PRO:HG2  | 4:AD:251:GLY:O    | 1.98                     | 0.63              |
| 4:AD:247:ALA:O    | 4:AD:248:SER:O    | 2.15                     | 0.63              |
| 5:AE:49:LEU:HD21  | 5:AE:76:ARG:N     | 2.13                     | 0.63              |
| 5:AE:119:ARG:NH2  | 5:AE:155:LYS:HB3  | 2.13                     | 0.63              |
| 6:AF:6:VAL:HA     | 6:AF:20:LEU:HD22  | 1.78                     | 0.63              |
| 6:AF:139:PHE:CE2  | 6:AF:167:ALA:HA   | 2.32                     | 0.63              |
| 6:AF:152:GLU:OE2  | 6:AF:152:GLU:HA   | 1.97                     | 0.63              |
| 8:AH:20:ALA:CB    | 8:AH:21:PRO:CD    | 2.76                     | 0.63              |
| 8:AH:31:GLY:C     | 8:AH:33:LEU:H     | 2.07                     | 0.63              |
| 9:AK:87:LEU:CA    | 9:AK:90:MET:HB2   | 2.28                     | 0.63              |
| 9:AK:91:LEU:O     | 9:AK:93:THR:N     | 2.31                     | 0.63              |
| 12:AN:75:THR:HB   | 12:AN:77:LYS:HE3  | 1.79                     | 0.63              |
| 12:AN:111:GLU:C   | 12:AN:113:GLN:N   | 2.55                     | 0.63              |
| 14:AP:23:ARG:HH11 | 14:AP:42:ASP:H    | 1.46                     | 0.63              |
| 16:AR:87:GLY:C    | 16:AR:89:GLU:H    | 2.06                     | 0.63              |
| 16:AR:108:GLU:CD  | 16:AR:109:LEU:H   | 2.05                     | 0.63              |
| 17:AS:1:MET:SD    | 17:AS:15:GLU:CD   | 2.81                     | 0.63              |
| 20:AV:65:ALA:HB3  | 20:AV:66:PRO:CD   | 2.25                     | 0.63              |
| 24:AZ:22:ALA:O    | 24:AZ:25:ALA:HB3  | 1.98                     | 0.63              |
| 24:AZ:24:LYS:HA   | 24:AZ:27:GLY:O    | 1.98                     | 0.63              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 24:AZ:35:ARG:NH1  | 24:AZ:47:VAL:HG22  | 2.13                     | 0.63              |
| 26:Ab:10:LYS:CD   | 26:Ab:15:ARG:NH1   | 2.61                     | 0.63              |
| 29:Ae:5:LYS:HD2   | 29:Ae:63:PRO:HG2   | 1.79                     | 0.63              |
| 32:AJ:28:GLY:O    | 57:BZ:431:PRO:CG   | 2.46                     | 0.63              |
| 34:BA:127:G:C2'   | 34:BA:128:G:H5'    | 2.28                     | 0.63              |
| 34:BA:537:G:O3'   | 45:BP:113:ARG:NH1  | 2.32                     | 0.63              |
| 34:BA:601:C:H2'   | 34:BA:602:A:C8     | 2.31                     | 0.63              |
| 34:BA:921:U:O2'   | 34:BA:922:G:H5'    | 1.98                     | 0.63              |
| 34:BA:961:U:C5    | 34:BA:983:A:N6     | 2.66                     | 0.63              |
| 34:BA:1154:G:H8   | 34:BA:1154:G:O5'   | 1.81                     | 0.63              |
| 34:BA:1243:C:OP1  | 54:BY:10:ARG:HD2   | 1.98                     | 0.63              |
| 34:BA:1321:C:O5'  | 34:BA:1321:C:C6    | 2.51                     | 0.63              |
| 35:BF:17:PHE:HA   | 35:BF:42:ILE:HG22  | 1.80                     | 0.63              |
| 35:BF:115:LEU:HA  | 35:BF:118:LEU:HD12 | 1.80                     | 0.63              |
| 35:BF:169:LYS:HE2 | 35:BF:170:GLU:CA   | 2.28                     | 0.63              |
| 35:BF:169:LYS:HE2 | 35:BF:170:GLU:N    | 2.13                     | 0.63              |
| 35:BF:219:VAL:O   | 35:BF:223:ILE:CG1  | 2.46                     | 0.63              |
| 36:BG:8:ILE:HD13  | 47:BR:50:LYS:O     | 1.97                     | 0.63              |
| 36:BG:24:ALA:HB1  | 36:BG:28:GLN:HE22  | 1.63                     | 0.63              |
| 37:BH:24:GLU:CD   | 37:BH:25:ARG:N     | 2.56                     | 0.63              |
| 38:BI:31:LEU:CD1  | 38:BI:129:ILE:HA   | 2.27                     | 0.63              |
| 38:BI:147:ASP:O   | 38:BI:148:VAL:C    | 2.40                     | 0.63              |
| 40:BK:99:LEU:HD23 | 40:BK:102:ARG:HB3  | 1.80                     | 0.63              |
| 41:BL:44:PHE:HE2  | 41:BL:109:ILE:HD13 | 1.62                     | 0.63              |
| 41:BL:126:LYS:CD  | 41:BL:127:LEU:N    | 2.61                     | 0.63              |
| 44:BO:19:ALA:N    | 44:BO:80:VAL:HG21  | 2.14                     | 0.63              |
| 44:BO:66:LEU:O    | 44:BO:69:ALA:HB3   | 1.97                     | 0.63              |
| 44:BO:82:VAL:HB   | 44:BO:108:ILE:CG1  | 2.27                     | 0.63              |
| 45:BP:77:LEU:HD22 | 45:BP:81:SER:HB3   | 1.81                     | 0.63              |
| 46:BQ:65:LYS:HG3  | 46:BQ:69:GLU:HG2   | 1.79                     | 0.63              |
| 47:BR:12:ARG:O    | 47:BR:13:THR:C     | 2.41                     | 0.63              |
| 51:BV:56:THR:O    | 51:BV:58:LEU:HG    | 1.97                     | 0.63              |
| 51:BV:63:GLN:HA   | 51:BV:66:LEU:HD11  | 1.79                     | 0.63              |
| 52:BW:3:ARG:HE    | 52:BW:45:VAL:CG1   | 2.11                     | 0.63              |
| 56:BD:45:U:O5'    | 56:BD:45:U:H6      | 1.80                     | 0.63              |
| 56:BD:48:C:C2     | 56:BD:59:U:H1'     | 2.33                     | 0.63              |
| 57:BZ:2:ILE:CD1   | 57:BZ:267:LEU:HB3  | 2.28                     | 0.63              |
| 57:BZ:167:ALA:HB2 | 60:BZ:701:GCP:C2   | 2.28                     | 0.63              |
| 57:BZ:253:LYS:HD2 | 57:BZ:262:ARG:HE   | 1.57                     | 0.63              |
| 57:BZ:406:ASP:C   | 57:BZ:407:VAL:HG13 | 2.23                     | 0.63              |
| 57:BZ:564:THR:CG2 | 57:BZ:566:GLU:HG3  | 2.28                     | 0.63              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:172:C:H2'   | 1:AA:173:G:C8     | 2.22                     | 0.63              |
| 1:AA:233:A:H2'   | 1:AA:234:C:C5'    | 2.28                     | 0.63              |
| 1:AA:292:C:H6    | 1:AA:293:U:O4     | 1.80                     | 0.63              |
| 1:AA:364:C:C2    | 1:AA:365:C:C4     | 2.86                     | 0.63              |
| 1:AA:503:A:C4    | 1:AA:505:A:N7     | 2.66                     | 0.63              |
| 1:AA:533:G:P     | 16:AR:25:TRP:HB2  | 2.37                     | 0.63              |
| 1:AA:581:C:H4'   | 16:AR:32:PHE:CZ   | 2.33                     | 0.63              |
| 1:AA:597:U:O2    | 1:AA:598:G:N7     | 2.30                     | 0.63              |
| 1:AA:669:G:C4    | 1:AA:801:G:C2     | 2.85                     | 0.63              |
| 1:AA:729:G:H5''  | 4:AD:211:ARG:HH12 | 1.63                     | 0.63              |
| 1:AA:832:G:HO2'  | 1:AA:833:U:H6     | 1.46                     | 0.63              |
| 1:AA:899:A:N3    | 1:AA:900:A:C2     | 2.66                     | 0.63              |
| 1:AA:972:G:C5    | 1:AA:973:A:N7     | 2.67                     | 0.63              |
| 1:AA:975:G:C2    | 1:AA:976:C:H6     | 2.16                     | 0.63              |
| 1:AA:988:A:H3'   | 24:AZ:10:LYS:NZ   | 2.06                     | 0.63              |
| 1:AA:1014:U:HO2' | 1:AA:1015:G:H5'   | 1.63                     | 0.63              |
| 1:AA:1335:U:OP2  | 19:AU:65:ARG:NE   | 2.31                     | 0.63              |
| 1:AA:1359:A:N1   | 1:AA:1360:A:C4    | 2.67                     | 0.63              |
| 1:AA:1459:G:O6   | 1:AA:1461:G:C2    | 2.51                     | 0.63              |
| 1:AA:1773:A:H2   | 1:AA:1977:A:N6    | 1.94                     | 0.63              |
| 1:AA:1890:A:H2'  | 1:AA:1891:G:O4'   | 1.98                     | 0.63              |
| 1:AA:1908:C:O5'  | 1:AA:1908:C:H6    | 1.80                     | 0.63              |
| 1:AA:1956:U:C2'  | 1:AA:1957:C:C6    | 2.74                     | 0.63              |
| 1:AA:2134:A:C2'  | 1:AA:2135:A:O5'   | 2.45                     | 0.63              |
| 1:AA:2516:G:O6   | 1:AA:2567:G:O6    | 2.15                     | 0.63              |
| 1:AA:2531:A:C2'  | 1:AA:2532:G:O5'   | 2.46                     | 0.63              |
| 1:AA:2556:C:H5'  | 57:BZ:550:GLY:CA  | 2.28                     | 0.63              |
| 1:AA:2644:G:O5'  | 1:AA:2644:G:C8    | 2.48                     | 0.63              |
| 1:AA:2674:G:C2'  | 1:AA:2675:A:H5'   | 2.27                     | 0.63              |
| 1:AA:2749:A:H8   | 1:AA:2749:A:OP2   | 1.80                     | 0.63              |
| 3:AC:111:ASP:O   | 3:AC:136:LEU:HD23 | 1.98                     | 0.63              |
| 4:AD:39:LYS:HD2  | 4:AD:39:LYS:N     | 2.13                     | 0.63              |
| 4:AD:143:HIS:C   | 4:AD:145:VAL:HG23 | 2.22                     | 0.63              |
| 4:AD:148:GLU:O   | 4:AD:149:PRO:O    | 2.16                     | 0.63              |
| 4:AD:176:ARG:NH2 | 4:AD:270:ILE:HD11 | 2.10                     | 0.63              |
| 5:AE:53:PRO:CG   | 5:AE:75:VAL:HG13  | 2.29                     | 0.63              |
| 5:AE:154:LYS:HZ2 | 5:AE:156:MET:HB2  | 1.63                     | 0.63              |
| 6:AF:197:ASP:HB2 | 6:AF:200:GLU:CD   | 2.23                     | 0.63              |
| 7:AG:57:ALA:O    | 7:AG:58:GLN:C     | 2.40                     | 0.63              |
| 9:AK:97:ARG:O    | 9:AK:98:VAL:C     | 2.41                     | 0.63              |
| 10:AL:85:VAL:HB  | 10:AL:93:PRO:HG3  | 1.79                     | 0.63              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 11:AM:49:ARG:C     | 11:AM:52:GLU:HG2   | 2.21                     | 0.63              |
| 11:AM:79:ARG:CZ    | 11:AM:79:ARG:HA    | 2.29                     | 0.63              |
| 11:AM:132:LYS:HA   | 11:AM:135:LEU:HD13 | 1.79                     | 0.63              |
| 13:AO:97:VAL:O     | 13:AO:98:LEU:HD23  | 1.97                     | 0.63              |
| 16:AR:50:ARG:HB2   | 16:AR:50:ARG:CZ    | 2.27                     | 0.63              |
| 16:AR:83:LEU:O     | 16:AR:90:VAL:HG22  | 1.98                     | 0.63              |
| 16:AR:111:GLU:CA   | 16:AR:114:LYS:HE3  | 2.28                     | 0.63              |
| 17:AS:3:ALA:CA     | 17:AS:44:LYS:HZ2   | 2.11                     | 0.63              |
| 17:AS:66:ARG:NE    | 17:AS:95:LEU:HB2   | 2.09                     | 0.63              |
| 18:AT:6:ILE:HA     | 18:AT:103:ILE:O    | 1.98                     | 0.63              |
| 18:AT:74:ALA:HB1   | 18:AT:105:VAL:CG2  | 2.28                     | 0.63              |
| 21:AW:18:LEU:HD22  | 21:AW:23:LYS:CG    | 2.28                     | 0.63              |
| 21:AW:102:LEU:HG   | 21:AW:125:LEU:HG   | 1.80                     | 0.63              |
| 21:AW:177:PRO:HG2  | 21:AW:178:GLU:N    | 2.12                     | 0.63              |
| 27:Ac:11:LEU:HD22  | 29:Ae:35:GLN:CD    | 2.22                     | 0.63              |
| 32:AJ:107:ILE:O    | 32:AJ:111:LYS:HB2  | 1.98                     | 0.63              |
| 34:BA:452:A:N6     | 34:BA:480:U:C2     | 2.66                     | 0.63              |
| 34:BA:494:U:H2'    | 34:BA:494:U:O2     | 1.96                     | 0.63              |
| 34:BA:566:G:H4'    | 34:BA:567:G:H5'    | 1.81                     | 0.63              |
| 34:BA:585:G:N3     | 34:BA:879:C:H4'    | 2.14                     | 0.63              |
| 34:BA:706:A:C2     | 34:BA:707:C:C6     | 2.86                     | 0.63              |
| 34:BA:755:G:H2'    | 34:BA:756:C:C6     | 2.33                     | 0.63              |
| 34:BA:907:A:H4'    | 34:BA:907:A:OP1    | 1.98                     | 0.63              |
| 34:BA:936:C:H2'    | 34:BA:937:A:O4'    | 1.97                     | 0.63              |
| 34:BA:1239:A:H62   | 34:BA:1299:A:H61   | 1.43                     | 0.63              |
| 34:BA:1434:A:N6    | 34:BA:1435:G:C2    | 2.66                     | 0.63              |
| 34:BA:1449:C:C2'   | 34:BA:1450:U:O5'   | 2.45                     | 0.63              |
| 34:BA:1499:A:H2'   | 34:BA:1500:A:C5'   | 2.23                     | 0.63              |
| 36:BG:134:ILE:HD11 | 36:BG:153:VAL:HG11 | 1.79                     | 0.63              |
| 37:BH:173:TRP:CE2  | 37:BH:189:PRO:HB3  | 2.32                     | 0.63              |
| 37:BH:191:ARG:NH1  | 37:BH:192:GLU:HA   | 2.13                     | 0.63              |
| 38:BI:62:ALA:O     | 38:BI:66:MET:SD    | 2.55                     | 0.63              |
| 39:BJ:45:LEU:HG    | 39:BJ:59:TYR:CD1   | 2.34                     | 0.63              |
| 40:BK:111:ARG:HB3  | 40:BK:111:ARG:HH11 | 1.62                     | 0.63              |
| 41:BL:36:LEU:HD23  | 41:BL:36:LEU:N     | 2.10                     | 0.63              |
| 41:BL:79:VAL:HB    | 41:BL:80:ILE:HD12  | 1.80                     | 0.63              |
| 42:BM:19:LEU:HD23  | 42:BM:20:ARG:N     | 2.12                     | 0.63              |
| 49:BT:3:LYS:HE2    | 49:BT:24:ALA:CB    | 2.28                     | 0.63              |
| 50:BU:97:SER:O     | 50:BU:98:LEU:HD13  | 1.98                     | 0.63              |
| 55:BC:35:A:O2'     | 55:BC:36:A:H5'     | 1.99                     | 0.63              |
| 56:BD:5:G:C4       | 56:BD:69:G:C8      | 2.86                     | 0.63              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:BZ:7:ASN:O     | 57:BZ:92:VAL:HA    | 1.99                     | 0.63              |
| 57:BZ:38:THR:CA   | 57:BZ:39:GLN:HB3   | 2.15                     | 0.63              |
| 57:BZ:351:GLU:HG2 | 57:BZ:352:ASP:N    | 2.12                     | 0.63              |
| 57:BZ:400:TYR:CZ  | 57:BZ:444:PRO:CB   | 2.62                     | 0.63              |
| 57:BZ:502:PHE:HZ  | 57:BZ:556:VAL:CA   | 2.10                     | 0.63              |
| 57:BZ:586:ARG:C   | 57:BZ:587:ILE:HG13 | 2.22                     | 0.63              |
| 1:AA:35:G:C4      | 1:AA:454:A:C2      | 2.86                     | 0.63              |
| 1:AA:149:A:C6     | 1:AA:150:C:C4      | 2.86                     | 0.63              |
| 1:AA:220:G:H21    | 1:AA:265:A:N6      | 1.97                     | 0.63              |
| 1:AA:348:G:H2'    | 1:AA:349:G:H8      | 1.63                     | 0.63              |
| 1:AA:404:C:H5'    | 1:AA:406:G:C1'     | 2.28                     | 0.63              |
| 1:AA:515:A:C8     | 1:AA:515:A:H3'     | 2.34                     | 0.63              |
| 1:AA:556:G:H8     | 1:AA:556:G:O5'     | 1.82                     | 0.63              |
| 1:AA:742:G:C5'    | 1:AA:1675:C:O2'    | 2.47                     | 0.63              |
| 1:AA:821:A:N6     | 1:AA:972:G:O2'     | 2.31                     | 0.63              |
| 1:AA:974:G:N2     | 1:AA:1187:G:C6     | 2.65                     | 0.63              |
| 1:AA:989:G:H2'    | 1:AA:990:A:OP2     | 1.99                     | 0.63              |
| 1:AA:1135:C:O2'   | 1:AA:1136:G:H5'    | 1.99                     | 0.63              |
| 1:AA:1165:U:H2'   | 1:AA:1166:C:C5     | 2.33                     | 0.63              |
| 1:AA:1363:C:N4    | 25:Aa:2:LYS:CE     | 2.58                     | 0.63              |
| 1:AA:1475:G:C2    | 1:AA:1477:A:N6     | 2.58                     | 0.63              |
| 1:AA:1567:A:H4'   | 1:AA:1568:G:N1     | 2.14                     | 0.63              |
| 1:AA:1779:U:C6    | 1:AA:1779:U:H3'    | 2.31                     | 0.63              |
| 1:AA:1790:C:O2'   | 4:AD:213:ARG:NH2   | 2.32                     | 0.63              |
| 1:AA:1909:C:N3    | 1:AA:1922:G:O6     | 2.31                     | 0.63              |
| 1:AA:1920:C:C5    | 58:AA:3001:NMY:H4  | 2.33                     | 0.63              |
| 1:AA:2161:C:C2    | 1:AA:2162:G:N7     | 2.66                     | 0.63              |
| 1:AA:2181:G:C4    | 1:AA:2182:G:C6     | 2.54                     | 0.63              |
| 1:AA:2291:U:H2'   | 1:AA:2292:C:H6     | 1.63                     | 0.63              |
| 1:AA:2378:A:H2'   | 1:AA:2378:A:N3     | 2.13                     | 0.63              |
| 1:AA:2459:A:OP2   | 1:AA:2460:U:C5     | 2.51                     | 0.63              |
| 1:AA:2481:G:O2'   | 1:AA:2482:G:C5'    | 2.46                     | 0.63              |
| 1:AA:2584:U:H3'   | 1:AA:2584:U:C6     | 2.34                     | 0.63              |
| 1:AA:2732:G:H3'   | 1:AA:2733:A:H5'    | 1.81                     | 0.63              |
| 2:AB:71:C:H2'     | 2:AB:72:G:C4'      | 2.28                     | 0.63              |
| 2:AB:81:G:C6      | 2:AB:96:G:C6       | 2.86                     | 0.63              |
| 3:AC:86:ALA:CB    | 3:AC:149:ILE:HG12  | 2.29                     | 0.63              |
| 3:AC:175:VAL:CA   | 3:AC:185:LEU:O     | 2.40                     | 0.63              |
| 4:AD:37:LEU:HD12  | 4:AD:62:TYR:O      | 1.98                     | 0.63              |
| 5:AE:50:GLY:H     | 5:AE:76:ARG:CG     | 2.10                     | 0.63              |
| 5:AE:179:GLU:O    | 5:AE:181:LEU:N     | 2.31                     | 0.63              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:AF:77:ASP:OD1   | 6:AF:80:ALA:HB2   | 1.98                     | 0.63              |
| 9:AK:17:ASP:OD1   | 9:AK:18:ALA:C     | 2.42                     | 0.63              |
| 9:AK:93:THR:HG22  | 9:AK:94:HIS:HD2   | 1.63                     | 0.63              |
| 10:AL:13:ASN:OD1  | 10:AL:13:ASN:O    | 2.16                     | 0.63              |
| 12:AN:36:ALA:O    | 12:AN:37:LEU:CG   | 2.47                     | 0.63              |
| 15:AQ:32:TYR:HD2  | 15:AQ:88:ILE:HA   | 1.62                     | 0.63              |
| 17:AS:22:VAL:CG1  | 17:AS:23:GLU:N    | 2.61                     | 0.63              |
| 17:AS:40:LEU:CD2  | 17:AS:51:VAL:O    | 2.44                     | 0.63              |
| 17:AS:61:VAL:C    | 17:AS:62:LEU:HD23 | 2.23                     | 0.63              |
| 20:AV:7:VAL:HG22  | 20:AV:71:LYS:CG   | 2.28                     | 0.63              |
| 20:AV:81:LYS:HG2  | 20:AV:96:ILE:CG2  | 2.28                     | 0.63              |
| 24:AZ:50:VAL:HG22 | 24:AZ:53:LEU:HD12 | 1.79                     | 0.63              |
| 25:Aa:5:ILE:HD13  | 25:Aa:60:GLN:CD   | 2.23                     | 0.63              |
| 31:AI:54:ALA:CB   | 31:AI:85:ASP:N    | 2.42                     | 0.63              |
| 34:BA:8:A:N6      | 37:BH:209:ARG:NH1 | 2.47                     | 0.63              |
| 34:BA:50:A:C6     | 34:BA:361:G:H4'   | 2.33                     | 0.63              |
| 34:BA:111:G:H5''  | 34:BA:112:G:OP2   | 1.98                     | 0.63              |
| 34:BA:228:A:H2'   | 34:BA:229:U:C5'   | 2.28                     | 0.63              |
| 34:BA:627:G:H2'   | 34:BA:628:G:H8    | 1.63                     | 0.63              |
| 34:BA:689:C:H5''  | 34:BA:690:G:OP2   | 1.99                     | 0.63              |
| 34:BA:736:C:H4'   | 39:BJ:89:MET:SD   | 2.38                     | 0.63              |
| 34:BA:1202:G:N2   | 34:BA:1203:C:C1'  | 2.61                     | 0.63              |
| 34:BA:1256:A:O2'  | 34:BA:1257:U:H1'  | 1.97                     | 0.63              |
| 34:BA:1382:C:O5'  | 34:BA:1382:C:H6   | 1.80                     | 0.63              |
| 34:BA:1399:C:O2'  | 34:BA:1400:C:OP2  | 2.15                     | 0.63              |
| 34:BA:1423:G:H2'  | 34:BA:1424:C:H6   | 1.62                     | 0.63              |
| 34:BA:1454:G:C5   | 34:BA:1455:G:C6   | 2.86                     | 0.63              |
| 34:BA:1471:G:H2'  | 34:BA:1472:U:C6   | 2.33                     | 0.63              |
| 35:BF:21:ARG:O    | 35:BF:23:ARG:HD3  | 1.99                     | 0.63              |
| 35:BF:71:VAL:HG22 | 35:BF:93:VAL:CB   | 2.28                     | 0.63              |
| 35:BF:87:ARG:O    | 35:BF:89:GLY:N    | 2.32                     | 0.63              |
| 35:BF:92:TYR:HE2  | 35:BF:151:GLY:O   | 1.81                     | 0.63              |
| 36:BG:12:LEU:HD21 | 47:BR:58:LYS:N    | 2.13                     | 0.63              |
| 38:BI:9:LYS:CG    | 38:BI:112:LEU:HG  | 2.27                     | 0.63              |
| 40:BK:153:HIS:HE1 | 44:BO:58:PRO:CD   | 2.11                     | 0.63              |
| 41:BL:45:ILE:HG13 | 41:BL:47:GLY:H    | 1.62                     | 0.63              |
| 46:BQ:15:VAL:HG21 | 46:BQ:39:ILE:CD1  | 0.50                     | 0.63              |
| 46:BQ:23:TYR:HD2  | 46:BQ:67:GLU:CA   | 2.02                     | 0.63              |
| 46:BQ:37:THR:HB   | 46:BQ:56:LEU:CB   | 2.28                     | 0.63              |
| 46:BQ:66:LEU:HA   | 46:BQ:70:LEU:HB2  | 1.78                     | 0.63              |
| 47:BR:24:CYS:HB3  | 47:BR:28:GLY:O    | 1.98                     | 0.63              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 48:BS:33:THR:HG23 | 48:BS:87:ILE:HD11 | 1.79                     | 0.63              |
| 49:BT:6:LEU:CD2   | 49:BT:6:LEU:C     | 2.71                     | 0.63              |
| 50:BU:82:MET:HA   | 50:BU:85:VAL:HG21 | 1.78                     | 0.63              |
| 57:BZ:158:LEU:CA  | 57:BZ:159:ASP:HB3 | 2.28                     | 0.63              |
| 1:AA:218:A:N1     | 1:AA:235:U:O2'    | 2.25                     | 0.63              |
| 1:AA:242:G:H2'    | 1:AA:254:G:N1     | 2.13                     | 0.63              |
| 1:AA:252:G:N3     | 1:AA:253:C:C6     | 2.67                     | 0.63              |
| 1:AA:351:G:O2'    | 1:AA:352:G:P      | 2.57                     | 0.63              |
| 1:AA:522:G:O2'    | 1:AA:523:C:H5'    | 1.99                     | 0.63              |
| 1:AA:541:C:C2     | 1:AA:542:C:C5     | 2.86                     | 0.63              |
| 1:AA:558:G:H5'    | 9:AK:112:LEU:CG   | 2.27                     | 0.63              |
| 1:AA:558:G:H5'    | 9:AK:112:LEU:HG   | 1.80                     | 0.63              |
| 1:AA:720:C:H2'    | 1:AA:721:C:C6     | 2.33                     | 0.63              |
| 1:AA:839:U:H2'    | 1:AA:840:C:H6     | 1.55                     | 0.63              |
| 1:AA:944:G:C5'    | 1:AA:945:A:H5''   | 2.24                     | 0.63              |
| 1:AA:1075:C:O2    | 32:AJ:90:LYS:HA   | 1.99                     | 0.63              |
| 1:AA:1079:C:C2    | 32:AJ:129:GLY:O   | 2.50                     | 0.63              |
| 1:AA:1131:G:C4    | 9:AK:74:ARG:NE    | 2.66                     | 0.63              |
| 1:AA:1290:C:H2'   | 1:AA:1291:C:H6    | 1.62                     | 0.63              |
| 1:AA:1527:G:C8    | 1:AA:1527:G:C3'   | 2.77                     | 0.63              |
| 1:AA:1528:A:C8    | 1:AA:1529:A:C2    | 2.87                     | 0.63              |
| 1:AA:1612:C:O3'   | 28:Ad:5:TRP:HD1   | 1.82                     | 0.63              |
| 1:AA:1675:C:O2    | 1:AA:1676:A:O4'   | 2.17                     | 0.63              |
| 1:AA:1743:G:O6    | 1:AA:1746:G:C6    | 2.52                     | 0.63              |
| 1:AA:1788:C:C2'   | 4:AD:222:ARG:NH2  | 2.50                     | 0.63              |
| 1:AA:1878:G:H2'   | 1:AA:1879:C:C6    | 2.33                     | 0.63              |
| 1:AA:1910:G:C2    | 1:AA:1921:G:N9    | 2.38                     | 0.63              |
| 1:AA:1933:G:N2    | 1:AA:1973:G:O2'   | 2.31                     | 0.63              |
| 1:AA:2398:U:H2'   | 1:AA:2399:G:H8    | 1.62                     | 0.63              |
| 1:AA:2556:C:H4'   | 57:BZ:550:GLY:CA  | 2.29                     | 0.63              |
| 1:AA:2629:A:C6    | 1:AA:2896:C:P     | 2.88                     | 0.63              |
| 1:AA:2720:U:C2    | 1:AA:2721:A:C8    | 2.87                     | 0.63              |
| 1:AA:2720:U:O4    | 1:AA:2872:G:C6    | 2.52                     | 0.63              |
| 2:AB:8:U:C2       | 2:AB:9:G:C8       | 2.86                     | 0.63              |
| 2:AB:69:G:H2'     | 2:AB:69:G:N3      | 2.14                     | 0.63              |
| 2:AB:117:G:N3     | 2:AB:117:G:H2'    | 2.13                     | 0.63              |
| 3:AC:54:SER:HA    | 3:AC:57:ASN:HD22  | 1.63                     | 0.63              |
| 3:AC:104:LEU:HD11 | 3:AC:126:LYS:O    | 1.97                     | 0.63              |
| 3:AC:194:ARG:HG3  | 3:AC:194:ARG:HH11 | 1.63                     | 0.63              |
| 4:AD:94:LEU:HD22  | 4:AD:104:TYR:CE1  | 2.33                     | 0.63              |
| 5:AE:81:ILE:HG22  | 5:AE:82:ARG:H     | 1.63                     | 0.63              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 5:AE:179:GLU:C     | 5:AE:181:LEU:HG   | 2.24                     | 0.63              |
| 6:AF:18:ARG:HG3    | 6:AF:19:GLU:H     | 1.63                     | 0.63              |
| 8:AH:149:ARG:HA    | 8:AH:162:ILE:CG2  | 2.28                     | 0.63              |
| 9:AK:7:LYS:HE2     | 9:AK:39:ARG:HH22  | 1.61                     | 0.63              |
| 9:AK:15:LEU:N      | 9:AK:15:LEU:HD23  | 2.13                     | 0.63              |
| 9:AK:128:HIS:O     | 9:AK:131:GLN:CB   | 2.45                     | 0.63              |
| 10:AL:96:THR:CG2   | 10:AL:97:ARG:H    | 1.89                     | 0.63              |
| 11:AM:116:GLY:C    | 11:AM:121:LYS:HB3 | 2.24                     | 0.63              |
| 12:AN:56:ARG:CZ    | 12:AN:57:HIS:CB   | 2.77                     | 0.63              |
| 12:AN:90:VAL:C     | 12:AN:91:GLU:CD   | 2.66                     | 0.63              |
| 12:AN:99:PRO:HG2   | 12:AN:101:ARG:NE  | 2.12                     | 0.63              |
| 12:AN:134:ARG:HH21 | 12:AN:137:TYR:HD1 | 1.36                     | 0.63              |
| 17:AS:5:VAL:CG1    | 17:AS:38:LEU:O    | 2.46                     | 0.63              |
| 17:AS:68:LYS:NZ    | 17:AS:95:LEU:CD1  | 2.61                     | 0.63              |
| 20:AV:12:THR:HG22  | 20:AV:13:VAL:HG12 | 1.81                     | 0.63              |
| 24:AZ:26:LEU:HB2   | 24:AZ:28:LEU:CD2  | 2.28                     | 0.63              |
| 24:AZ:31:LEU:O     | 24:AZ:31:LEU:HD13 | 1.99                     | 0.63              |
| 27:Ac:45:LYS:O     | 27:Ac:46:HIS:HB3  | 1.98                     | 0.63              |
| 34:BA:55:A:H2'     | 34:BA:56:U:H5'    | 1.77                     | 0.63              |
| 34:BA:321:A:H4'    | 34:BA:1436:U:H5'  | 1.80                     | 0.63              |
| 34:BA:375:U:O2'    | 34:BA:376:G:H5'   | 1.99                     | 0.63              |
| 34:BA:1128:C:O2    | 34:BA:1146:A:N6   | 2.31                     | 0.63              |
| 34:BA:1162:C:N1    | 34:BA:1163:C:H5   | 1.94                     | 0.63              |
| 34:BA:1189:C:C2'   | 34:BA:1190:G:H5'  | 2.29                     | 0.63              |
| 34:BA:1203:C:H2'   | 34:BA:1204:A:O4'  | 1.98                     | 0.63              |
| 34:BA:1268:A:H2    | 34:BA:1311:G:N3   | 1.87                     | 0.63              |
| 34:BA:1346:A:H8    | 34:BA:1348:U:C2   | 2.16                     | 0.63              |
| 34:BA:1461:G:H8    | 34:BA:1461:G:O5'  | 1.80                     | 0.63              |
| 35:BF:39:ILE:O     | 35:BF:41:ILE:HD12 | 1.98                     | 0.63              |
| 35:BF:97:TRP:NE1   | 35:BF:101:MET:SD  | 2.72                     | 0.63              |
| 37:BH:150:GLU:O    | 37:BH:152:SER:N   | 2.32                     | 0.63              |
| 38:BI:37:ARG:HH11  | 38:BI:111:GLU:C   | 2.06                     | 0.63              |
| 38:BI:91:LEU:C     | 38:BI:91:LEU:CD2  | 2.68                     | 0.63              |
| 39:BJ:53:ALA:CB    | 39:BJ:86:ARG:HD2  | 2.28                     | 0.63              |
| 41:BL:51:VAL:HG21  | 41:BL:60:ARG:NH2  | 2.09                     | 0.63              |
| 42:BM:113:LYS:HD2  | 42:BM:113:LYS:N   | 2.13                     | 0.63              |
| 44:BO:91:ARG:CG    | 44:BO:95:ILE:HD11 | 2.29                     | 0.63              |
| 46:BQ:13:LYS:HG2   | 46:BQ:17:VAL:HG11 | 1.80                     | 0.63              |
| 46:BQ:86:CYS:HA    | 52:BW:74:PHE:CG   | 2.33                     | 0.63              |
| 47:BR:14:PRO:O     | 47:BR:15:LYS:C    | 2.41                     | 0.63              |
| 52:BW:18:LYS:CE    | 52:BW:22:LEU:HD12 | 2.29                     | 0.63              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 57:BZ:390:ARG:O  | 57:BZ:397:GLN:N  | 2.30                     | 0.63              |
| 1:AA:95:G:H4'    | 23:AY:39:LEU:C   | 2.24                     | 0.63              |
| 1:AA:144:C:C2'   | 1:AA:145:G:H5'   | 2.29                     | 0.63              |
| 1:AA:293:U:C6    | 1:AA:293:U:C3'   | 2.80                     | 0.63              |
| 1:AA:576:U:C2    | 1:AA:577:G:N7    | 2.67                     | 0.63              |
| 1:AA:627:A:H5''  | 11:AM:75:ILE:CB  | 2.28                     | 0.63              |
| 1:AA:792:G:H21   | 1:AA:2072:G:C1'  | 2.10                     | 0.63              |
| 1:AA:1351:C:H4'  | 1:AA:1571:A:O2'  | 1.98                     | 0.63              |
| 1:AA:1424:G:C8   | 1:AA:1424:G:OP2  | 2.52                     | 0.63              |
| 1:AA:1996:C:HO2' | 5:AE:123:ALA:HB3 | 1.60                     | 0.63              |
| 1:AA:2043:C:C4   | 1:AA:2777:G:N3   | 2.67                     | 0.63              |
| 1:AA:2225:A:H5'  | 1:AA:2226:C:C6   | 2.33                     | 0.63              |
| 1:AA:2284:C:OP1  | 27:Ac:9:LEU:HB2  | 1.99                     | 0.63              |
| 1:AA:2320:A:H1'  | 1:AA:2333:A:C6   | 2.33                     | 0.63              |
| 1:AA:2371:G:C2   | 1:AA:2372:G:C5   | 2.86                     | 0.63              |
| 1:AA:2393:A:H5'' | 11:AM:56:SER:N   | 2.14                     | 0.63              |
| 1:AA:2400:G:H2'  | 1:AA:2401:U:O4'  | 1.98                     | 0.63              |
| 1:AA:2445:G:C2'  | 1:AA:2446:G:C8   | 2.67                     | 0.63              |
| 1:AA:2533:A:H2'  | 1:AA:2534:A:C8   | 2.34                     | 0.63              |
| 1:AA:2556:C:C4   | 57:BZ:546:MET:CE | 2.74                     | 0.63              |
| 1:AA:2700:C:C3'  | 1:AA:2701:C:H5'' | 2.28                     | 0.63              |
| 1:AA:2741:A:H2'  | 1:AA:2742:C:O4'  | 1.98                     | 0.63              |
| 1:AA:2755:C:H4'  | 1:AA:2756:U:C6   | 2.33                     | 0.63              |
| 2:AB:11:C:O2     | 2:AB:15:A:N6     | 2.31                     | 0.63              |
| 2:AB:31:C:H1'    | 2:AB:53:A:H61    | 1.63                     | 0.63              |
| 2:AB:77:U:OP1    | 21:AW:19:ARG:NH1 | 2.32                     | 0.63              |
| 2:AB:102:G:C2    | 2:AB:103:U:O4    | 2.52                     | 0.63              |
| 3:AC:74:VAL:HA   | 3:AC:112:ALA:O   | 1.99                     | 0.63              |
| 4:AD:53:PHE:O    | 4:AD:54:ARG:O    | 2.16                     | 0.63              |
| 4:AD:125:ILE:CG2 | 4:AD:137:PRO:HG3 | 2.22                     | 0.63              |
| 4:AD:146:GLU:HA  | 4:AD:154:LYS:HG2 | 1.81                     | 0.63              |
| 4:AD:159:ALA:HB3 | 4:AD:202:LYS:HZ1 | 1.62                     | 0.63              |
| 5:AE:38:THR:HG1  | 5:AE:44:TYR:HB2  | 1.64                     | 0.63              |
| 5:AE:45:THR:HG1  | 5:AE:80:GLU:C    | 2.05                     | 0.63              |
| 5:AE:47:VAL:HG22 | 5:AE:79:ARG:CB   | 2.29                     | 0.63              |
| 5:AE:60:ASN:O    | 5:AE:61:ARG:C    | 2.42                     | 0.63              |
| 6:AF:43:LYS:HG3  | 6:AF:98:SER:HA   | 1.80                     | 0.63              |
| 7:AG:74:LYS:O    | 7:AG:75:LYS:HB2  | 1.97                     | 0.63              |
| 7:AG:102:PHE:O   | 7:AG:103:LEU:C   | 2.42                     | 0.63              |
| 8:AH:25:LYS:NZ   | 8:AH:32:GLU:HB2  | 2.11                     | 0.63              |
| 9:AK:14:VAL:HG22 | 9:AK:138:LEU:CD1 | 2.29                     | 0.63              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 9:AK:22:THR:HG22  | 9:AK:61:ARG:CZ     | 2.29                     | 0.63              |
| 9:AK:54:VAL:C     | 9:AK:130:HIS:CE1   | 2.77                     | 0.63              |
| 9:AK:107:LEU:HD13 | 9:AK:117:PHE:CZ    | 2.33                     | 0.63              |
| 10:AL:25:LEU:HD22 | 10:AL:38:VAL:CG2   | 2.25                     | 0.63              |
| 12:AN:32:TYR:HE2  | 12:AN:108:GLY:H    | 1.45                     | 0.63              |
| 13:AO:55:ALA:CA   | 13:AO:79:LEU:HD21  | 2.28                     | 0.63              |
| 15:AQ:4:GLY:O     | 15:AQ:8:LYS:CG     | 2.46                     | 0.63              |
| 15:AQ:68:TYR:CZ   | 15:AQ:70:VAL:HG22  | 2.34                     | 0.63              |
| 16:AR:92:ARG:HA   | 16:AR:95:LEU:CG    | 2.28                     | 0.63              |
| 17:AS:28:GLU:HG2  | 17:AS:94:LEU:HB2   | 1.79                     | 0.63              |
| 20:AV:19:LYS:HB3  | 20:AV:21:LYS:HG2   | 1.81                     | 0.63              |
| 20:AV:42:VAL:O    | 20:AV:61:ILE:HD13  | 1.97                     | 0.63              |
| 20:AV:47:LYS:HB2  | 20:AV:49:VAL:HG13  | 1.79                     | 0.63              |
| 20:AV:47:LYS:HE2  | 20:AV:49:VAL:HG11  | 1.80                     | 0.63              |
| 23:AY:19:LEU:HD13 | 23:AY:19:LEU:C     | 2.24                     | 0.63              |
| 23:AY:66:ASN:CG   | 23:AY:67:ALA:N     | 2.55                     | 0.63              |
| 27:Ac:19:ARG:H    | 27:Ac:19:ARG:CD    | 2.11                     | 0.63              |
| 28:Ad:1:MET:O     | 28:Ad:3:ARG:N      | 2.31                     | 0.63              |
| 28:Ad:10:ARG:C    | 28:Ad:14:LYS:HG3   | 2.24                     | 0.63              |
| 28:Ad:43:THR:N    | 28:Ad:44:PRO:CD    | 2.61                     | 0.63              |
| 30:Af:9:ARG:C     | 30:Af:10:ILE:HG13  | 2.24                     | 0.63              |
| 34:BA:6:G:N1      | 38:BI:96:PRO:HG2   | 2.12                     | 0.63              |
| 34:BA:236:G:C4    | 34:BA:237:C:C5     | 2.86                     | 0.63              |
| 34:BA:296:U:H1'   | 34:BA:302:G:H22    | 1.63                     | 0.63              |
| 34:BA:363:A:C8    | 45:BP:31:PRO:HD2   | 2.33                     | 0.63              |
| 34:BA:409:G:H5'   | 37:BH:24:GLU:HB3   | 1.79                     | 0.63              |
| 34:BA:1004:A:O2'  | 34:BA:1005:A:O5'   | 2.16                     | 0.63              |
| 34:BA:1210:C:O3'  | 34:BA:1214:C:N4    | 2.32                     | 0.63              |
| 34:BA:1248:A:H2'  | 42:BM:70:LYS:HZ1   | 1.64                     | 0.63              |
| 34:BA:1454:G:HO2' | 34:BA:1455:G:H8    | 1.41                     | 0.63              |
| 35:BF:163:PHE:HE1 | 35:BF:201:ILE:HD13 | 1.64                     | 0.63              |
| 36:BG:29:TYR:CD2  | 36:BG:29:TYR:C     | 2.76                     | 0.63              |
| 36:BG:191:THR:O   | 36:BG:193:TYR:N    | 2.31                     | 0.63              |
| 38:BI:140:ARG:NH1 | 38:BI:140:ARG:CB   | 2.61                     | 0.63              |
| 40:BK:72:ARG:HH22 | 40:BK:138:LYS:NZ   | 1.96                     | 0.63              |
| 41:BL:6:ILE:HD13  | 41:BL:6:ILE:C      | 2.24                     | 0.63              |
| 41:BL:87:SER:HB3  | 41:BL:93:VAL:HG23  | 1.81                     | 0.63              |
| 43:BN:32:ALA:HB2  | 43:BN:75:ILE:C     | 2.24                     | 0.63              |
| 45:BP:30:ALA:HB1  | 45:BP:31:PRO:HD2   | 1.80                     | 0.63              |
| 46:BQ:15:VAL:HG22 | 46:BQ:39:ILE:CD1   | 1.12                     | 0.63              |
| 46:BQ:70:LEU:HD12 | 46:BQ:70:LEU:C     | 2.22                     | 0.63              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 48:BS:36:ILE:CA    | 48:BS:59:MET:HE1  | 2.28                     | 0.63              |
| 48:BS:65:ARG:O     | 48:BS:68:ARG:CB   | 2.45                     | 0.63              |
| 50:BU:43:LEU:HD22  | 50:BU:44:ALA:O    | 1.97                     | 0.63              |
| 50:BU:78:GLU:HG2   | 50:BU:81:ARG:HB2  | 1.80                     | 0.63              |
| 52:BW:9:VAL:HG22   | 52:BW:42:PRO:N    | 2.12                     | 0.63              |
| 52:BW:38:SER:HB3   | 52:BW:71:LEU:HD12 | 1.80                     | 0.63              |
| 57:BZ:79:ALA:HA    | 57:BZ:80:ASP:HB2  | 1.80                     | 0.63              |
| 57:BZ:110:ARG:HH22 | 57:BZ:117:PHE:HE2 | 1.47                     | 0.63              |
| 57:BZ:217:TYR:C    | 57:BZ:219:GLY:H   | 2.07                     | 0.63              |
| 57:BZ:293:ASN:HA   | 57:BZ:294:VAL:HB  | 1.80                     | 0.63              |
| 57:BZ:305:PRO:CB   | 57:BZ:361:ARG:HA  | 2.25                     | 0.63              |
| 1:AA:13:A:N7       | 1:AA:15:G:O6      | 2.31                     | 0.63              |
| 1:AA:49:A:C6       | 1:AA:177:G:C2     | 2.86                     | 0.63              |
| 1:AA:221:A:H3'     | 1:AA:221:A:C8     | 2.33                     | 0.63              |
| 1:AA:247:G:N2      | 1:AA:249:C:HO2'   | 1.95                     | 0.63              |
| 1:AA:247:G:C2      | 1:AA:249:C:O2'    | 2.51                     | 0.63              |
| 1:AA:321:G:H4'     | 6:AF:165:ARG:O    | 1.98                     | 0.63              |
| 1:AA:324:A:C8      | 1:AA:340:A:H1'    | 2.33                     | 0.63              |
| 1:AA:481:G:H1      | 1:AA:509:C:N4     | 1.95                     | 0.63              |
| 1:AA:514:A:H2      | 1:AA:515:A:C1'    | 2.11                     | 0.63              |
| 1:AA:563:G:N2      | 16:AR:34:LYS:CE   | 2.60                     | 0.63              |
| 1:AA:592:G:H3'     | 1:AA:593:G:O4'    | 1.98                     | 0.63              |
| 1:AA:636:G:O6      | 11:AM:111:ARG:NH1 | 2.24                     | 0.63              |
| 1:AA:703:U:H3'     | 1:AA:704:G:C8     | 2.32                     | 0.63              |
| 1:AA:788:A:O2'     | 1:AA:789:A:OP2    | 2.17                     | 0.63              |
| 1:AA:876:C:H2'     | 1:AA:877:U:C6     | 2.33                     | 0.63              |
| 1:AA:903:C:O2'     | 21:AW:169:GLU:OE2 | 2.15                     | 0.63              |
| 1:AA:915:C:H2'     | 1:AA:916:G:C8     | 2.33                     | 0.63              |
| 1:AA:996:A:O3'     | 16:AR:93:LYS:HG2  | 1.98                     | 0.63              |
| 1:AA:1006:C:H4'    | 9:AK:32:THR:OG1   | 1.99                     | 0.63              |
| 1:AA:1079:C:O2     | 32:AJ:132:ARG:CA  | 2.47                     | 0.63              |
| 1:AA:1223:C:C2     | 1:AA:1227:A:C2    | 2.87                     | 0.63              |
| 1:AA:1409:C:O2'    | 1:AA:1410:G:H5'   | 1.98                     | 0.63              |
| 1:AA:1894:C:O2'    | 1:AA:1895:C:H5'   | 1.99                     | 0.63              |
| 1:AA:1977:A:C2     | 1:AA:1978:A:N9    | 2.67                     | 0.63              |
| 1:AA:2142:C:C4     | 1:AA:2143:C:N4    | 2.67                     | 0.63              |
| 1:AA:2547:U:C2'    | 1:AA:2548:G:H5''  | 2.29                     | 0.63              |
| 1:AA:2636:U:OP1    | 5:AE:79:ARG:N     | 2.20                     | 0.63              |
| 1:AA:2733:A:C2'    | 1:AA:2734:A:O5'   | 2.44                     | 0.63              |
| 2:AB:76:G:H5'      | 21:AW:85:HIS:CE1  | 2.33                     | 0.63              |
| 2:AB:90:C:O2'      | 2:AB:91:C:H5'     | 1.98                     | 0.63              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 3:AC:47:LEU:H     | 3:AC:47:LEU:HD23   | 1.62                     | 0.63              |
| 3:AC:131:LEU:HD22 | 3:AC:136:LEU:O     | 1.98                     | 0.63              |
| 3:AC:189:ILE:HD13 | 3:AC:224:ILE:CD1   | 2.28                     | 0.63              |
| 4:AD:61:LEU:C     | 4:AD:62:TYR:CG     | 2.75                     | 0.63              |
| 6:AF:30:PRO:HA    | 6:AF:33:LEU:CD2    | 2.27                     | 0.63              |
| 6:AF:106:ARG:HH21 | 6:AF:106:ARG:HB2   | 1.63                     | 0.63              |
| 7:AG:53:LEU:CD2   | 7:AG:71:THR:N      | 2.61                     | 0.63              |
| 7:AG:118:ARG:CG   | 7:AG:119:GLY:N     | 2.54                     | 0.63              |
| 8:AH:74:ASN:O     | 8:AH:75:ALA:C      | 2.40                     | 0.63              |
| 8:AH:84:SER:HA    | 8:AH:134:SER:CA    | 2.25                     | 0.63              |
| 9:AK:2:LYS:N      | 16:AR:61:TRP:CZ2   | 2.66                     | 0.63              |
| 9:AK:15:LEU:HD11  | 9:AK:137:LYS:HB3   | 1.80                     | 0.63              |
| 9:AK:29:LYS:C     | 9:AK:31:ALA:N      | 2.52                     | 0.63              |
| 9:AK:87:LEU:O     | 9:AK:91:LEU:CG     | 2.47                     | 0.63              |
| 9:AK:99:LEU:HD12  | 9:AK:99:LEU:C      | 2.23                     | 0.63              |
| 10:AL:90:GLN:NE2  | 10:AL:110:GLY:O    | 2.31                     | 0.63              |
| 10:AL:108:GLU:HB3 | 10:AL:111:PHE:CE2  | 2.33                     | 0.63              |
| 11:AM:23:PRO:CB   | 11:AM:29:LYS:N     | 2.60                     | 0.63              |
| 12:AN:27:VAL:HG13 | 12:AN:104:PHE:CE2  | 2.34                     | 0.63              |
| 13:AO:6:SER:OG    | 13:AO:9:LYS:HE2    | 1.99                     | 0.63              |
| 14:AP:9:ARG:HA    | 14:AP:12:PHE:CD2   | 2.34                     | 0.63              |
| 16:AR:102:GLU:O   | 16:AR:105:VAL:CG1  | 2.44                     | 0.63              |
| 19:AU:39:ILE:HG21 | 19:AU:54:VAL:CG1   | 2.29                     | 0.63              |
| 20:AV:42:VAL:HG23 | 20:AV:61:ILE:HG21  | 1.79                     | 0.63              |
| 21:AW:29:TYR:O    | 21:AW:89:PHE:HA    | 1.99                     | 0.63              |
| 21:AW:44:PHE:HD2  | 21:AW:48:PHE:CE1   | 2.17                     | 0.63              |
| 22:AX:59:LEU:HD22 | 22:AX:79:VAL:HG21  | 1.81                     | 0.63              |
| 29:Ae:49:VAL:O    | 29:Ae:53:PRO:CG    | 2.47                     | 0.63              |
| 32:AJ:103:GLN:O   | 32:AJ:107:ILE:HG13 | 1.99                     | 0.63              |
| 34:BA:130:A:N6    | 50:BU:64:PRO:HG2   | 2.14                     | 0.63              |
| 34:BA:362:G:O3'   | 45:BP:33:ARG:NH2   | 2.31                     | 0.63              |
| 34:BA:438:G:H2'   | 34:BA:494:U:O4     | 1.98                     | 0.63              |
| 34:BA:581:G:H2'   | 34:BA:582:U:OP2    | 1.98                     | 0.63              |
| 34:BA:652:U:O2'   | 34:BA:653:A:C2     | 2.51                     | 0.63              |
| 34:BA:676:A:H2'   | 34:BA:677:U:C6     | 2.34                     | 0.63              |
| 34:BA:962:C:H2'   | 34:BA:963:G:O4'    | 1.98                     | 0.63              |
| 34:BA:1194:U:H2'  | 34:BA:1195:C:O4'   | 1.99                     | 0.63              |
| 34:BA:1254:C:OP1  | 43:BN:45:ARG:CZ    | 2.47                     | 0.63              |
| 34:BA:1261:A:H3'  | 34:BA:1262:C:C5    | 2.33                     | 0.63              |
| 34:BA:1373:G:H5'' | 40:BK:36:LYS:HB2   | 1.81                     | 0.63              |
| 34:BA:1437:C:H2'  | 34:BA:1438:G:C8    | 2.33                     | 0.63              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1488:G:O2'   | 34:BA:1489:G:H5'   | 1.99                     | 0.63              |
| 35:BF:70:PHE:CB    | 35:BF:163:PHE:O    | 2.47                     | 0.63              |
| 35:BF:214:ILE:O    | 35:BF:217:ARG:HB2  | 1.99                     | 0.63              |
| 36:BG:11:ARG:HH22  | 36:BG:179:ARG:N    | 1.97                     | 0.63              |
| 36:BG:53:ALA:CB    | 36:BG:115:LEU:HD21 | 2.27                     | 0.63              |
| 36:BG:152:ILE:HG22 | 36:BG:167:TRP:HB3  | 1.81                     | 0.63              |
| 37:BH:26:CYS:O     | 37:BH:31:CYS:SG    | 2.57                     | 0.63              |
| 37:BH:155:LEU:HB2  | 37:BH:158:ILE:CG1  | 2.26                     | 0.63              |
| 40:BK:140:ASP:HA   | 40:BK:143:ARG:NE   | 2.13                     | 0.63              |
| 41:BL:68:ARG:NH2   | 41:BL:74:PRO:HB3   | 2.13                     | 0.63              |
| 44:BO:23:ALA:HB1   | 44:BO:28:THR:OG1   | 1.98                     | 0.63              |
| 45:BP:33:ARG:CG    | 45:BP:60:LEU:HD23  | 2.29                     | 0.63              |
| 45:BP:38:THR:HG23  | 45:BP:39:VAL:H     | 1.63                     | 0.63              |
| 45:BP:48:PRO:CG    | 45:BP:49:ASN:H     | 2.10                     | 0.63              |
| 46:BQ:85:GLY:O     | 52:BW:74:PHE:CB    | 2.47                     | 0.63              |
| 47:BR:27:CYS:H     | 47:BR:43:CYS:CB    | 2.11                     | 0.63              |
| 49:BT:23:ASP:CG    | 49:BT:33:ILE:HD11  | 2.23                     | 0.63              |
| 51:BV:72:ARG:CA    | 51:BV:75:ILE:HD12  | 2.18                     | 0.63              |
| 52:BW:27:GLU:HG2   | 52:BW:28:LYS:H     | 1.63                     | 0.63              |
| 56:BD:2:C:H2'      | 56:BD:3:C:C5'      | 2.28                     | 0.63              |
| 57:BZ:164:TYR:CE2  | 57:BZ:175:ASP:OD2  | 2.48                     | 0.63              |
| 57:BZ:300:LEU:H    | 57:BZ:300:LEU:CD1  | 2.11                     | 0.63              |
| 57:BZ:378:PHE:H    | 57:BZ:582:PRO:CG   | 1.95                     | 0.63              |
| 57:BZ:497:VAL:HA   | 57:BZ:514:HIS:ND1  | 2.06                     | 0.63              |
| 57:BZ:523:ILE:CG1  | 57:BZ:587:ILE:O    | 2.47                     | 0.63              |
| 1:AA:2:G:O6        | 1:AA:2902:C:C4     | 2.42                     | 0.63              |
| 1:AA:119:A:H4'     | 1:AA:120:U:H5'     | 1.80                     | 0.63              |
| 1:AA:498:G:H2'     | 1:AA:499:U:H5'     | 1.81                     | 0.63              |
| 1:AA:515:A:C5'     | 16:AR:32:PHE:HZ    | 2.11                     | 0.63              |
| 1:AA:702:G:C2      | 1:AA:731:C:N3      | 2.67                     | 0.63              |
| 1:AA:747:U:O2'     | 18:AT:88:ARG:HG3   | 1.99                     | 0.63              |
| 1:AA:942:G:C2      | 1:AA:943:U:N3      | 2.67                     | 0.63              |
| 1:AA:997:G:H2'     | 1:AA:998:C:C5      | 2.33                     | 0.63              |
| 1:AA:1081:U:H4'    | 32:AJ:125:ARG:CD   | 2.29                     | 0.63              |
| 1:AA:1338:G:O2'    | 1:AA:1339:G:H5'    | 1.97                     | 0.63              |
| 1:AA:1603:A:C2     | 1:AA:1604:C:C4     | 2.86                     | 0.63              |
| 1:AA:1689:A:N7     | 1:AA:1700:A:C5     | 2.67                     | 0.63              |
| 1:AA:1700:A:H3'    | 1:AA:1701:A:C8     | 2.29                     | 0.63              |
| 1:AA:1735:C:C2     | 1:AA:1741:C:H5     | 2.17                     | 0.63              |
| 1:AA:1799:G:O2'    | 1:AA:1800:C:O5'    | 2.16                     | 0.63              |
| 1:AA:1906:G:N3     | 1:AA:1907:G:C8     | 2.67                     | 0.63              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1964:G:O2'    | 1:AA:1965:C:OP1    | 2.17                     | 0.63              |
| 1:AA:2020:A:P      | 16:AR:27:LEU:HD13  | 2.38                     | 0.63              |
| 1:AA:2122:U:H4'    | 3:AC:166:ASP:HB2   | 0.63                     | 0.63              |
| 1:AA:2227:A:C6     | 1:AA:2228:G:C5     | 2.87                     | 0.63              |
| 1:AA:2365:G:OP1    | 22:AX:55:ARG:N     | 2.31                     | 0.63              |
| 1:AA:2392:A:P      | 29:Ae:33:ASN:HD21  | 2.22                     | 0.63              |
| 1:AA:2419:U:H5'    | 27:Ac:23:THR:CG2   | 2.27                     | 0.63              |
| 1:AA:2459:A:H2     | 1:AA:2492:U:C4     | 2.16                     | 0.63              |
| 1:AA:2625:G:H3'    | 1:AA:2626:C:C5     | 2.33                     | 0.63              |
| 1:AA:2670:A:C2     | 1:AA:2671:A:N9     | 2.66                     | 0.63              |
| 1:AA:2670:A:C6     | 1:AA:2671:A:C6     | 2.87                     | 0.63              |
| 1:AA:2730:C:O2'    | 1:AA:2731:G:H5'    | 1.99                     | 0.63              |
| 1:AA:2772:C:C2     | 1:AA:2773:C:C5     | 2.86                     | 0.63              |
| 2:AB:76:G:P        | 21:AW:11:GLU:HA    | 2.39                     | 0.63              |
| 2:AB:83:G:N2       | 2:AB:84:C:N1       | 2.47                     | 0.63              |
| 3:AC:10:LEU:HD13   | 3:AC:32:LEU:O      | 1.98                     | 0.63              |
| 4:AD:55:GLY:H      | 4:AD:218:ARG:HD3   | 1.64                     | 0.63              |
| 4:AD:61:LEU:HD22   | 4:AD:63:ARG:HH22   | 1.60                     | 0.63              |
| 5:AE:152:LYS:HE3   | 5:AE:153:GLY:HA3   | 1.80                     | 0.63              |
| 6:AF:74:ARG:O      | 6:AF:75:HIS:HB2    | 1.98                     | 0.63              |
| 7:AG:6:ALA:HA      | 7:AG:9:ARG:HH21    | 1.62                     | 0.63              |
| 7:AG:19:LEU:HD12   | 7:AG:19:LEU:N      | 2.13                     | 0.63              |
| 9:AK:37:LYS:HA     | 9:AK:42:TRP:CB     | 2.28                     | 0.63              |
| 9:AK:55:VAL:C      | 9:AK:57:ALA:H      | 2.07                     | 0.63              |
| 12:AN:134:ARG:HH11 | 12:AN:134:ARG:HG3  | 1.63                     | 0.63              |
| 12:AN:137:TYR:O    | 12:AN:138:ASP:CB   | 2.46                     | 0.63              |
| 13:AO:14:SER:HA    | 13:AO:17:ARG:HG2   | 1.81                     | 0.63              |
| 14:AP:12:PHE:C     | 14:AP:14:VAL:N     | 2.53                     | 0.63              |
| 15:AQ:28:VAL:HG13  | 15:AQ:92:GLY:CA    | 2.29                     | 0.63              |
| 16:AR:89:GLU:CD    | 17:AS:52:VAL:H     | 2.07                     | 0.63              |
| 17:AS:14:VAL:HG21  | 17:AS:21:ARG:HH22  | 1.62                     | 0.63              |
| 18:AT:25:ARG:HG2   | 18:AT:71:VAL:HG21  | 1.81                     | 0.63              |
| 20:AV:1:MET:HG3    | 20:AV:67:LEU:HD22  | 1.80                     | 0.63              |
| 20:AV:14:LEU:HB2   | 20:AV:20:TYR:N     | 2.13                     | 0.63              |
| 21:AW:6:LYS:CG     | 21:AW:7:ALA:N      | 2.62                     | 0.63              |
| 21:AW:180:VAL:O    | 21:AW:180:VAL:HG12 | 1.99                     | 0.63              |
| 23:AY:50:ARG:O     | 23:AY:53:ALA:HB3   | 1.98                     | 0.63              |
| 25:Aa:6:HIS:CE1    | 25:Aa:55:ARG:HD3   | 2.34                     | 0.63              |
| 25:Aa:15:ILE:C     | 25:Aa:16:CYS:SG    | 2.81                     | 0.63              |
| 25:Aa:28:LYS:HB3   | 25:Aa:29:PRO:CD    | 2.28                     | 0.63              |
| 27:Ac:28:ARG:O     | 27:Ac:29:ASN:O     | 2.17                     | 0.63              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 31:AI:144:ALA:C    | 33:Ag:133:UNK:CB  | 2.72                     | 0.63              |
| 34:BA:54:C:N4      | 34:BA:352:C:H2'   | 2.14                     | 0.63              |
| 34:BA:449:C:H2'    | 34:BA:450:G:C4'   | 2.29                     | 0.63              |
| 34:BA:560:U:O4'    | 34:BA:566:G:N2    | 2.31                     | 0.63              |
| 34:BA:640:A:O2'    | 34:BA:641:U:H5'   | 1.98                     | 0.63              |
| 34:BA:659:U:OP1    | 48:BS:9:GLN:NE2   | 2.31                     | 0.63              |
| 34:BA:817:C:HO2'   | 34:BA:818:G:H5''  | 1.63                     | 0.63              |
| 34:BA:966:G:H2'    | 34:BA:967:C:C6    | 2.33                     | 0.63              |
| 34:BA:1057:G:H2'   | 34:BA:1058:G:C8   | 2.32                     | 0.63              |
| 34:BA:1077:G:O6    | 38:BI:47:LYS:NZ   | 2.32                     | 0.63              |
| 34:BA:1115:C:N1    | 34:BA:1186:G:C2   | 2.65                     | 0.63              |
| 34:BA:1117:G:N9    | 34:BA:1184:G:C2   | 2.66                     | 0.63              |
| 34:BA:1513:A:H2'   | 34:BA:1514:C:H6   | 1.63                     | 0.63              |
| 35:BF:52:GLU:CG    | 35:BF:53:ARG:N    | 2.62                     | 0.63              |
| 35:BF:64:ARG:HD2   | 35:BF:64:ARG:H    | 1.63                     | 0.63              |
| 35:BF:78:GLN:HE22  | 35:BF:96:ARG:NH2  | 1.96                     | 0.63              |
| 35:BF:91:PRO:CG    | 35:BF:154:LEU:HB3 | 2.22                     | 0.63              |
| 36:BG:47:LEU:HD11  | 36:BG:83:ARG:NH2  | 2.14                     | 0.63              |
| 36:BG:57:ILE:HG22  | 36:BG:59:ARG:HH21 | 1.63                     | 0.63              |
| 36:BG:182:ILE:CG2  | 36:BG:202:ILE:O   | 2.47                     | 0.63              |
| 37:BH:43:HIS:O     | 37:BH:46:LYS:HB2  | 1.99                     | 0.63              |
| 37:BH:61:LYS:O     | 37:BH:64:LEU:HB3  | 1.98                     | 0.63              |
| 37:BH:120:LEU:HA   | 37:BH:125:HIS:NE2 | 2.14                     | 0.63              |
| 37:BH:170:VAL:CG2  | 37:BH:176:LEU:HB3 | 2.28                     | 0.63              |
| 39:BJ:1:MET:SD     | 39:BJ:68:PRO:HG3  | 2.39                     | 0.63              |
| 40:BK:17:VAL:HB    | 40:BK:44:TYR:OH   | 1.99                     | 0.63              |
| 40:BK:129:GLU:CB   | 40:BK:131:LYS:HE2 | 2.29                     | 0.63              |
| 41:BL:38:ILE:HD11  | 41:BL:118:VAL:HB  | 1.79                     | 0.63              |
| 41:BL:137:VAL:HG12 | 41:BL:138:TRP:N   | 2.14                     | 0.63              |
| 44:BO:53:SER:OG    | 44:BO:54:ARG:N    | 2.28                     | 0.63              |
| 44:BO:78:GLN:O     | 44:BO:103:LEU:O   | 2.16                     | 0.63              |
| 44:BO:125:PHE:N    | 44:BO:125:PHE:CD1 | 2.66                     | 0.63              |
| 45:BP:91:LYS:O     | 45:BP:92:ASP:CB   | 2.47                     | 0.63              |
| 46:BQ:15:VAL:CA    | 46:BQ:34:LEU:CD2  | 2.48                     | 0.63              |
| 48:BS:33:THR:HG23  | 48:BS:87:ILE:HD12 | 1.80                     | 0.63              |
| 49:BT:35:LYS:O     | 49:BT:36:ILE:HG23 | 1.98                     | 0.63              |
| 50:BU:80:GLY:O     | 50:BU:82:MET:N    | 2.32                     | 0.63              |
| 50:BU:88:TYR:HA    | 50:BU:91:ARG:CZ   | 2.29                     | 0.63              |
| 56:BD:4:C:N1       | 56:BD:70:G:C2     | 2.67                     | 0.63              |
| 57:BZ:57:LEU:CD1   | 57:BZ:255:LEU:HA  | 2.17                     | 0.63              |
| 57:BZ:67:ASP:OD1   | 57:BZ:68:TYR:HA   | 1.99                     | 0.63              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:BZ:81:PHE:CE2  | 57:BZ:342:ASN:ND2  | 2.66                     | 0.63              |
| 57:BZ:156:GLU:CA  | 57:BZ:157:GLN:HB3  | 2.29                     | 0.63              |
| 57:BZ:228:ARG:N   | 57:BZ:267:LEU:CD1  | 2.38                     | 0.63              |
| 57:BZ:228:ARG:CA  | 57:BZ:267:LEU:HD12 | 2.28                     | 0.63              |
| 57:BZ:377:GLY:C   | 57:BZ:582:PRO:CG   | 2.71                     | 0.63              |
| 57:BZ:383:SER:N   | 57:BZ:384:ARG:HG2  | 2.12                     | 0.63              |
| 57:BZ:401:GLU:HB3 | 57:BZ:468:THR:N    | 2.14                     | 0.63              |
| 1:AA:91:A:N3      | 1:AA:91:A:C2'      | 2.60                     | 0.63              |
| 1:AA:223:A:C5     | 1:AA:408:G:H1'     | 2.33                     | 0.63              |
| 1:AA:226:G:N2     | 1:AA:227:A:N3      | 2.47                     | 0.63              |
| 1:AA:242:G:H8     | 29:Ae:4:MET:HG2    | 1.64                     | 0.63              |
| 1:AA:247:G:N2     | 1:AA:249:C:O2'     | 2.31                     | 0.63              |
| 1:AA:270(U):C:H2' | 1:AA:270(V):G:C1'  | 2.29                     | 0.63              |
| 1:AA:341:G:H2'    | 1:AA:342:G:C8      | 2.34                     | 0.63              |
| 1:AA:355:G:C6     | 1:AA:356:G:C6      | 2.87                     | 0.63              |
| 1:AA:642:G:H3'    | 1:AA:642:G:H8      | 1.64                     | 0.63              |
| 1:AA:704:G:H22    | 1:AA:726:G:C1'     | 2.12                     | 0.63              |
| 1:AA:1131:G:O4'   | 9:AK:82:LEU:HD11   | 1.99                     | 0.63              |
| 1:AA:1245:G:OP1   | 11:AM:15:ARG:HD2   | 1.99                     | 0.63              |
| 1:AA:1309:G:C2'   | 1:AA:1310:G:C5'    | 2.75                     | 0.63              |
| 1:AA:1309:G:C2    | 1:AA:1310:G:C8     | 2.87                     | 0.63              |
| 1:AA:1310:G:N7    | 1:AA:1311:G:N2     | 2.46                     | 0.63              |
| 1:AA:1508:A:N3    | 1:AA:1508:A:OP2    | 2.32                     | 0.63              |
| 1:AA:1538:G:O2'   | 1:AA:1539:G:H5'    | 1.98                     | 0.63              |
| 1:AA:1604:C:O2    | 1:AA:1604:C:H2'    | 1.99                     | 0.63              |
| 1:AA:1626:G:N2    | 1:AA:1634:A:O2'    | 2.32                     | 0.63              |
| 1:AA:1655:A:H4'   | 5:AE:113:PHE:C     | 2.24                     | 0.63              |
| 1:AA:1656:C:H2'   | 1:AA:1657:C:H5     | 1.62                     | 0.63              |
| 1:AA:1669:A:N1    | 1:AA:1994:C:H1'    | 2.14                     | 0.63              |
| 1:AA:1820:U:H5    | 4:AD:159:ALA:C     | 2.06                     | 0.63              |
| 1:AA:1971:A:C2    | 4:AD:239:ARG:HA    | 2.34                     | 0.63              |
| 1:AA:2018:G:N3    | 16:AR:34:LYS:NZ    | 2.47                     | 0.63              |
| 1:AA:2130:U:H5''  | 1:AA:2131:G:OP1    | 1.98                     | 0.63              |
| 1:AA:2177:C:C4'   | 3:AC:223:ARG:CZ    | 2.75                     | 0.63              |
| 1:AA:2209:C:C4'   | 4:AD:150:LYS:HB3   | 2.27                     | 0.63              |
| 1:AA:2467:C:O2    | 12:AN:124:LYS:HD3  | 1.98                     | 0.63              |
| 1:AA:2499:C:H2'   | 1:AA:2499:C:O2     | 1.98                     | 0.63              |
| 1:AA:2542:A:O2'   | 1:AA:2543:G:H5'    | 1.99                     | 0.63              |
| 1:AA:2563:U:H4'   | 10:AL:28:SER:CB    | 2.29                     | 0.63              |
| 2:AB:62:C:C2      | 2:AB:63:G:N7       | 2.67                     | 0.63              |
| 3:AC:59:ARG:NH1   | 3:AC:164:ARG:HH11  | 1.97                     | 0.63              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 4:AD:79:VAL:HB     | 4:AD:114:GLY:N     | 2.14                     | 0.63              |
| 4:AD:208:LYS:HZ1   | 4:AD:211:ARG:NH2   | 1.97                     | 0.63              |
| 8:AH:7:LEU:N       | 8:AH:7:LEU:HD23    | 2.14                     | 0.63              |
| 9:AK:34:LEU:HD23   | 9:AK:116:LEU:HD21  | 1.80                     | 0.63              |
| 10:AL:70:LYS:CE    | 10:AL:103:ALA:HB3  | 2.29                     | 0.63              |
| 11:AM:15:ARG:O     | 11:AM:17:LYS:NZ    | 2.32                     | 0.63              |
| 11:AM:56:SER:CB    | 29:Ae:13:ARG:CZ    | 2.72                     | 0.63              |
| 12:AN:94:VAL:CG2   | 12:AN:95:ALA:N     | 2.52                     | 0.63              |
| 13:AO:40:LYS:O     | 13:AO:44:LEU:HB2   | 1.99                     | 0.63              |
| 14:AP:9:ARG:NH1    | 14:AP:9:ARG:CB     | 2.48                     | 0.63              |
| 17:AS:61:VAL:C     | 17:AS:99:ILE:HB    | 2.23                     | 0.63              |
| 18:AT:103:ILE:H    | 18:AT:103:ILE:HD13 | 1.62                     | 0.63              |
| 20:AV:47:LYS:CB    | 20:AV:49:VAL:HG13  | 2.28                     | 0.63              |
| 20:AV:65:ALA:CB    | 20:AV:66:PRO:HD3   | 2.28                     | 0.63              |
| 21:AW:76:LEU:HD23  | 21:AW:83:PRO:HB3   | 1.80                     | 0.63              |
| 21:AW:79:ARG:HB2   | 21:AW:80:ARG:HH11  | 1.64                     | 0.63              |
| 24:AZ:4:LEU:O      | 24:AZ:37:LEU:CB    | 2.43                     | 0.63              |
| 25:Aa:43:TYR:CA    | 25:Aa:61:ARG:NH2   | 2.41                     | 0.63              |
| 25:Aa:52:THR:O     | 25:Aa:53:GLU:HB2   | 1.98                     | 0.63              |
| 34:BA:21:G:N2      | 34:BA:915:A:N6     | 2.46                     | 0.63              |
| 34:BA:50:A:C6      | 34:BA:361:G:C4'    | 2.82                     | 0.63              |
| 34:BA:190:G:H8     | 34:BA:190:G:OP1    | 1.82                     | 0.63              |
| 34:BA:453:A:H62    | 34:BA:480:U:H3     | 1.45                     | 0.63              |
| 34:BA:523:A:N6     | 45:BP:53:ARG:HH22  | 1.96                     | 0.63              |
| 34:BA:738:C:H2'    | 34:BA:739:C:C6     | 2.33                     | 0.63              |
| 34:BA:809:G:H2'    | 34:BA:810:C:H5'    | 1.79                     | 0.63              |
| 34:BA:947:G:N3     | 34:BA:948:C:C6     | 2.67                     | 0.63              |
| 34:BA:1192:C:N4    | 34:BA:1193:G:C5    | 2.67                     | 0.63              |
| 34:BA:1229:A:C5'   | 56:BE:29:G:H5''    | 2.21                     | 0.63              |
| 34:BA:1271:G:OP1   | 34:BA:1314:C:O5'   | 2.06                     | 0.63              |
| 34:BA:1449:C:H42   | 34:BA:1454:G:H1    | 1.40                     | 0.63              |
| 35:BF:224:GLN:HA   | 35:BF:229:VAL:HG22 | 1.81                     | 0.63              |
| 36:BG:157:ILE:O    | 36:BG:158:GLY:C    | 2.41                     | 0.63              |
| 37:BH:12:CYS:HA    | 37:BH:19:LEU:CB    | 2.21                     | 0.63              |
| 37:BH:61:LYS:CA    | 37:BH:203:VAL:HG22 | 2.29                     | 0.63              |
| 37:BH:181:MET:O    | 37:BH:181:MET:HE2  | 1.99                     | 0.63              |
| 38:BI:28:PHE:HE1   | 38:BI:49:PRO:C     | 2.06                     | 0.63              |
| 38:BI:105:VAL:HG22 | 38:BI:132:ALA:HB2  | 1.80                     | 0.63              |
| 39:BJ:2:ARG:CZ     | 39:BJ:69:GLU:HG2   | 2.28                     | 0.63              |
| 39:BJ:22:GLU:O     | 39:BJ:26:ILE:HG13  | 1.99                     | 0.63              |
| 41:BL:34:GLU:O     | 41:BL:38:ILE:HG12  | 1.99                     | 0.63              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 42:BM:93:ARG:CZ   | 42:BM:97:LYS:HG2  | 2.29                     | 0.63              |
| 42:BM:117:HIS:HD2 | 42:BM:121:ARG:HD3 | 1.63                     | 0.63              |
| 44:BO:14:VAL:O    | 44:BO:14:VAL:HG12 | 1.99                     | 0.63              |
| 44:BO:62:GLN:O    | 44:BO:66:LEU:HG   | 1.99                     | 0.63              |
| 45:BP:32:PHE:HB2  | 45:BP:84:LEU:HD21 | 1.80                     | 0.63              |
| 46:BQ:48:LEU:CD2  | 46:BQ:53:VAL:HG22 | 2.28                     | 0.63              |
| 47:BR:23:ARG:HH11 | 47:BR:28:GLY:C    | 2.07                     | 0.63              |
| 50:BU:63:ARG:HG2  | 50:BU:64:PRO:N    | 2.12                     | 0.63              |
| 51:BV:69:THR:O    | 51:BV:70:ILE:C    | 2.39                     | 0.63              |
| 55:BC:36:A:C2'    | 55:BC:37:A:H5''   | 2.29                     | 0.63              |
| 56:BD:47:U:O2'    | 56:BD:48:C:OP1    | 2.16                     | 0.63              |
| 56:BE:11:C:H2'    | 56:BE:12:U:C6     | 2.33                     | 0.63              |
| 57:BZ:64:ILE:HD11 | 57:BZ:187:TYR:CA  | 2.28                     | 0.63              |
| 57:BZ:233:PRO:HG2 | 57:BZ:248:ASN:HB3 | 1.80                     | 0.63              |
| 57:BZ:377:GLY:C   | 57:BZ:582:PRO:HG3 | 2.24                     | 0.63              |
| 57:BZ:551:ALA:HB1 | 57:BZ:552:ASP:CB  | 2.18                     | 0.63              |
| 1:AA:80:G:H1'     | 1:AA:347:A:H61    | 1.64                     | 0.63              |
| 1:AA:295:G:C1'    | 1:AA:345:A:H2     | 2.12                     | 0.63              |
| 1:AA:363(A):A:H2' | 1:AA:363(B):G:O5' | 1.98                     | 0.63              |
| 1:AA:363(D):G:N1  | 1:AA:363(E):U:C2  | 2.67                     | 0.63              |
| 1:AA:464:U:O5'    | 1:AA:464:U:C6     | 2.50                     | 0.63              |
| 1:AA:693:C:O2'    | 1:AA:694:U:H5'    | 1.99                     | 0.63              |
| 1:AA:729:G:OP1    | 4:AD:13:ARG:NH1   | 2.30                     | 0.63              |
| 1:AA:772:C:C2     | 1:AA:773:U:C5     | 2.87                     | 0.63              |
| 1:AA:811:U:C4     | 11:AM:23:PRO:HD3  | 2.34                     | 0.63              |
| 1:AA:872:A:O2'    | 12:AN:66:ILE:CG1  | 2.46                     | 0.63              |
| 1:AA:970:C:O2'    | 1:AA:984:A:O2'    | 2.12                     | 0.63              |
| 1:AA:1027:A:H2'   | 1:AA:1028:A:H8    | 1.64                     | 0.63              |
| 1:AA:1059:G:H4'   | 32:AJ:74:ALA:N    | 2.05                     | 0.63              |
| 1:AA:1212:G:O2'   | 1:AA:1213:A:C8    | 2.52                     | 0.63              |
| 1:AA:1266:G:HO2'  | 1:AA:2012:G:H1    | 1.37                     | 0.63              |
| 1:AA:1372:U:C2'   | 1:AA:1373:A:H5'   | 2.27                     | 0.63              |
| 1:AA:1471:A:H2'   | 1:AA:1472:A:C5'   | 2.29                     | 0.63              |
| 1:AA:1665:A:O2'   | 10:AL:1:MET:HG3   | 1.98                     | 0.63              |
| 1:AA:1772:G:N2    | 1:AA:1774:C:H5'   | 2.14                     | 0.63              |
| 1:AA:1906:G:N3    | 1:AA:1907:G:N7    | 2.47                     | 0.63              |
| 1:AA:1917:U:O4    | 34:BA:1408:A:O3'  | 2.16                     | 0.63              |
| 1:AA:1992:G:H1'   | 1:AA:1993:U:C4    | 2.34                     | 0.63              |
| 1:AA:2244:U:C2'   | 1:AA:2245:U:O5'   | 2.47                     | 0.63              |
| 1:AA:2283:C:C4    | 1:AA:2284:C:H1'   | 2.33                     | 0.63              |
| 1:AA:2327:A:C2'   | 1:AA:2328:A:C8    | 2.73                     | 0.63              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2329:G:H2'   | 1:AA:2330:G:C8     | 2.33                     | 0.63              |
| 1:AA:2413:G:C2    | 1:AA:2414:G:H1'    | 2.34                     | 0.63              |
| 1:AA:2415:G:C6    | 1:AA:2416:C:N4     | 2.67                     | 0.63              |
| 1:AA:2689:U:O2    | 1:AA:2713:A:OP1    | 2.17                     | 0.63              |
| 2:AB:14:U:OP2     | 2:AB:70:C:O2'      | 2.16                     | 0.63              |
| 3:AC:26:ALA:O     | 3:AC:30:LYS:HG3    | 1.98                     | 0.63              |
| 4:AD:10:THR:N     | 4:AD:23:GLU:OE2    | 2.27                     | 0.63              |
| 4:AD:61:LEU:HD22  | 4:AD:63:ARG:HH21   | 1.59                     | 0.63              |
| 4:AD:135:PHE:O    | 4:AD:137:PRO:HD3   | 1.98                     | 0.63              |
| 4:AD:157:ARG:O    | 4:AD:158:ALA:O     | 2.17                     | 0.63              |
| 4:AD:258:LYS:CA   | 4:AD:261:LYS:HZ2   | 2.09                     | 0.63              |
| 5:AE:33:VAL:HG21  | 5:AE:77:ILE:HD11   | 1.79                     | 0.63              |
| 5:AE:102:VAL:CA   | 5:AE:200:GLU:OE1   | 2.47                     | 0.63              |
| 6:AF:64:ILE:HG23  | 6:AF:78:ILE:HB     | 1.80                     | 0.63              |
| 7:AG:47:LYS:HD3   | 7:AG:72:ARG:O      | 1.99                     | 0.63              |
| 7:AG:68:PRO:HG3   | 7:AG:90:LEU:CD2    | 2.29                     | 0.63              |
| 7:AG:90:LEU:HD13  | 7:AG:90:LEU:O      | 1.99                     | 0.63              |
| 7:AG:107:LEU:CD2  | 7:AG:173:LEU:HD21  | 2.29                     | 0.63              |
| 9:AK:7:LYS:HD3    | 9:AK:39:ARG:NH1    | 2.13                     | 0.63              |
| 9:AK:38:HIS:C     | 9:AK:42:TRP:CE3    | 2.76                     | 0.63              |
| 9:AK:93:THR:O     | 9:AK:94:HIS:HD2    | 1.81                     | 0.63              |
| 12:AN:85:LYS:C    | 12:AN:87:LYS:N     | 2.46                     | 0.63              |
| 15:AQ:53:ARG:HH22 | 15:AQ:102:ILE:N    | 1.95                     | 0.63              |
| 17:AS:28:GLU:O    | 17:AS:30:GLY:N     | 2.32                     | 0.63              |
| 17:AS:35:LEU:HG   | 17:AS:36:PRO:CD    | 2.29                     | 0.63              |
| 17:AS:65:GLY:CA   | 17:AS:97:LYS:HZ1   | 2.11                     | 0.63              |
| 18:AT:8:ARG:C     | 18:AT:102:HIS:CD2  | 2.77                     | 0.63              |
| 18:AT:20:VAL:HG13 | 18:AT:21:VAL:H     | 1.63                     | 0.63              |
| 21:AW:98:MET:HE2  | 21:AW:133:ILE:HG12 | 1.80                     | 0.63              |
| 22:AX:31:VAL:CG1  | 22:AX:67:VAL:HG22  | 2.28                     | 0.63              |
| 24:AZ:52:HIS:C    | 24:AZ:54:VAL:H     | 2.07                     | 0.63              |
| 26:Ab:13:LYS:H    | 26:Ab:13:LYS:CD    | 1.96                     | 0.63              |
| 28:Ad:39:ARG:O    | 28:Ad:40:TRP:HB2   | 1.97                     | 0.63              |
| 32:AJ:104:VAL:CG1 | 32:AJ:127:ILE:HD13 | 0.32                     | 0.63              |
| 34:BA:36:C:N3     | 34:BA:37:U:O2      | 2.32                     | 0.63              |
| 34:BA:50:A:O2'    | 34:BA:360:A:H2     | 1.82                     | 0.63              |
| 34:BA:124:G:H2'   | 34:BA:125:U:H6     | 1.61                     | 0.63              |
| 34:BA:224:C:C2    | 34:BA:225:C:C5     | 2.87                     | 0.63              |
| 34:BA:518:C:C5    | 34:BA:530:G:C5     | 2.85                     | 0.63              |
| 34:BA:553:A:H2'   | 34:BA:554:C:O4'    | 1.99                     | 0.63              |
| 34:BA:580:U:H3'   | 34:BA:581:G:C8     | 2.34                     | 0.63              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:607:A:O2'   | 34:BA:608:A:H5'    | 1.99                     | 0.63              |
| 34:BA:689:C:C2    | 34:BA:690:G:C8     | 2.86                     | 0.63              |
| 34:BA:750:G:N3    | 48:BS:23:GLY:O     | 2.32                     | 0.63              |
| 34:BA:815:A:N1    | 34:BA:1529:G:C2    | 2.67                     | 0.63              |
| 34:BA:820:U:O2'   | 34:BA:821:G:OP2    | 2.14                     | 0.63              |
| 34:BA:830:G:C6    | 34:BA:831:U:C4     | 2.87                     | 0.63              |
| 34:BA:843:U:H3'   | 34:BA:848:C:C5'    | 2.29                     | 0.63              |
| 34:BA:848:C:O2'   | 34:BA:849:C:H5'    | 1.99                     | 0.63              |
| 34:BA:983:A:N3    | 34:BA:983:A:C3'    | 2.60                     | 0.63              |
| 34:BA:992:U:H4'   | 34:BA:993:G:O5'    | 1.98                     | 0.63              |
| 34:BA:1058:G:O2'  | 34:BA:1059:C:H5'   | 1.98                     | 0.63              |
| 34:BA:1219:U:H2'  | 52:BW:52:TYR:HE2   | 1.64                     | 0.63              |
| 34:BA:1278:U:OP1  | 34:BA:1279:A:H4'   | 1.99                     | 0.63              |
| 34:BA:1298:C:O2   | 34:BA:1298:C:H2'   | 1.97                     | 0.63              |
| 35:BF:53:ARG:HH12 | 35:BF:200:ILE:CD1  | 2.12                     | 0.63              |
| 35:BF:70:PHE:O    | 35:BF:92:TYR:HB2   | 1.98                     | 0.63              |
| 35:BF:130:ARG:HD3 | 35:BF:131:PRO:CD   | 2.27                     | 0.63              |
| 35:BF:158:LEU:HB2 | 35:BF:160:ASP:OD2  | 1.99                     | 0.63              |
| 36:BG:64:VAL:O    | 36:BG:99:VAL:HG11  | 1.99                     | 0.63              |
| 37:BH:141:ARG:HD3 | 37:BH:142:PRO:CD   | 2.23                     | 0.63              |
| 39:BJ:23:LYS:CA   | 39:BJ:26:ILE:HD12  | 2.26                     | 0.63              |
| 40:BK:29:LYS:CD   | 40:BK:101:LEU:HD22 | 2.28                     | 0.63              |
| 41:BL:64:LYS:O    | 41:BL:79:VAL:HB    | 1.98                     | 0.63              |
| 43:BN:39:PRO:HA   | 43:BN:70:ARG:HH11  | 1.63                     | 0.63              |
| 45:BP:110:VAL:CG2 | 45:BP:113:ARG:HG3  | 2.29                     | 0.63              |
| 47:BR:48:ALA:CA   | 47:BR:53:LEU:HD12  | 2.29                     | 0.63              |
| 57:BZ:3:GLU:O     | 57:BZ:4:LYS:HE2    | 1.98                     | 0.63              |
| 57:BZ:27:GLN:CG   | 57:BZ:28:GLN:HE21  | 2.04                     | 0.63              |
| 57:BZ:89:MET:HG2  | 57:BZ:119:TYR:CZ   | 2.33                     | 0.63              |
| 57:BZ:114:LYS:HA  | 57:BZ:117:PHE:CD2  | 2.34                     | 0.63              |
| 57:BZ:180:ALA:HB3 | 57:BZ:181:GLU:CA   | 2.28                     | 0.63              |
| 1:AA:27:G:C2      | 1:AA:512:G:O2'     | 2.50                     | 0.62              |
| 1:AA:137:C:O2'    | 1:AA:137(A):G:H5'  | 1.97                     | 0.62              |
| 1:AA:201:C:H2'    | 1:AA:202:U:C5'     | 2.28                     | 0.62              |
| 1:AA:303:U:O2'    | 1:AA:304:G:H5'     | 1.98                     | 0.62              |
| 1:AA:304:G:H2'    | 1:AA:305:U:C6      | 2.34                     | 0.62              |
| 1:AA:535:C:C2'    | 1:AA:536:A:H5'     | 2.29                     | 0.62              |
| 1:AA:672:C:OP2    | 11:AM:38:GLN:CG    | 2.47                     | 0.62              |
| 1:AA:684:G:C6     | 1:AA:775:G:N7      | 2.66                     | 0.62              |
| 1:AA:919:G:N2     | 1:AA:2268:A:H5''   | 2.14                     | 0.62              |
| 1:AA:1083:U:H1'   | 1:AA:1085:A:N6     | 2.12                     | 0.62              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:1214:A:H62    | 1:AA:1236:G:N2    | 1.96                     | 0.62              |
| 1:AA:1273:U:H5''   | 1:AA:1646:C:N4    | 2.13                     | 0.62              |
| 1:AA:1372:U:O5'    | 1:AA:1372:U:H6    | 1.82                     | 0.62              |
| 1:AA:1612:C:O3'    | 28:Ad:5:TRP:CD1   | 2.52                     | 0.62              |
| 1:AA:1773:A:H2'    | 1:AA:1774:C:O4'   | 1.99                     | 0.62              |
| 1:AA:1799:G:H5''   | 4:AD:264:LYS:NZ   | 2.15                     | 0.62              |
| 1:AA:1992:G:H22    | 1:AA:1995:U:H5    | 1.47                     | 0.62              |
| 1:AA:2033:A:O2'    | 1:AA:2034:U:OP1   | 2.16                     | 0.62              |
| 1:AA:2098:U:H2'    | 1:AA:2099:U:C6    | 2.34                     | 0.62              |
| 1:AA:2261:C:O2'    | 1:AA:2262:U:H5'   | 1.99                     | 0.62              |
| 1:AA:2282:G:H5''   | 1:AA:2283:C:O5'   | 1.98                     | 0.62              |
| 1:AA:2329:G:H8     | 1:AA:2329:G:O5'   | 1.82                     | 0.62              |
| 1:AA:2648:C:H3'    | 1:AA:2649:U:C6    | 2.33                     | 0.62              |
| 1:AA:2674:G:C4     | 1:AA:2675:A:C8    | 2.87                     | 0.62              |
| 4:AD:118:VAL:O     | 4:AD:129:ASN:CA   | 2.47                     | 0.62              |
| 4:AD:129:ASN:O     | 4:AD:193:VAL:CG2  | 2.47                     | 0.62              |
| 5:AE:58:ARG:NH2    | 5:AE:73:GLU:OE2   | 2.32                     | 0.62              |
| 5:AE:116:VAL:HG21  | 5:AE:138:PRO:CA   | 2.11                     | 0.62              |
| 5:AE:196:VAL:CG1   | 5:AE:197:ILE:H    | 2.12                     | 0.62              |
| 6:AF:95:ARG:NE     | 6:AF:96:ASP:H     | 1.97                     | 0.62              |
| 7:AG:118:ARG:HB3   | 7:AG:118:ARG:CZ   | 2.29                     | 0.62              |
| 8:AH:89:ILE:O      | 8:AH:129:THR:O    | 2.16                     | 0.62              |
| 8:AH:169:VAL:O     | 8:AH:169:VAL:HG23 | 1.97                     | 0.62              |
| 9:AK:110:GLY:O     | 9:AK:114:ARG:CB   | 2.44                     | 0.62              |
| 10:AL:11:ALA:HB3   | 10:AL:97:ARG:NH1  | 2.13                     | 0.62              |
| 10:AL:16:ALA:C     | 10:AL:18:LYS:N    | 2.57                     | 0.62              |
| 11:AM:49:ARG:HA    | 11:AM:52:GLU:HG2  | 1.80                     | 0.62              |
| 11:AM:88:LEU:HG    | 11:AM:124:LYS:HE3 | 1.81                     | 0.62              |
| 11:AM:111:ARG:HH22 | 11:AM:113:LYS:HB2 | 1.63                     | 0.62              |
| 13:AO:53:HIS:HA    | 13:AO:56:LYS:HD3  | 1.80                     | 0.62              |
| 14:AP:10:ARG:NH1   | 14:AP:89:ARG:HH12 | 1.97                     | 0.62              |
| 15:AQ:35:LYS:O     | 15:AQ:36:GLU:O    | 2.17                     | 0.62              |
| 16:AR:99:ALA:HB2   | 16:AR:106:PHE:CE1 | 2.34                     | 0.62              |
| 17:AS:1:MET:O      | 17:AS:2:PHE:C     | 2.42                     | 0.62              |
| 17:AS:40:LEU:HG    | 17:AS:55:ALA:CA   | 2.29                     | 0.62              |
| 17:AS:45:THR:O     | 17:AS:46:VAL:HB   | 1.98                     | 0.62              |
| 17:AS:76:LYS:HE3   | 17:AS:86:GLY:N    | 2.13                     | 0.62              |
| 19:AU:5:TYR:CB     | 23:AY:24:LYS:HD3  | 2.29                     | 0.62              |
| 20:AV:44:ILE:O     | 20:AV:46:LYS:N    | 2.32                     | 0.62              |
| 20:AV:76:CYS:CB    | 20:AV:100:ALA:HB3 | 2.28                     | 0.62              |
| 21:AW:24:LEU:HD13  | 21:AW:83:PRO:CG   | 2.29                     | 0.62              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:Aa:14:ILE:HB    | 25:Aa:37:SER:O     | 1.99                     | 0.62              |
| 26:Ab:51:TYR:HD1   | 26:Ab:55:ARG:N     | 1.97                     | 0.62              |
| 28:Ad:8:ASN:HD22   | 28:Ad:8:ASN:C      | 2.07                     | 0.62              |
| 32:Aj:27:LEU:HD21  | 32:Aj:57:ILE:CB    | 2.29                     | 0.62              |
| 33:Ag:4:UNK:CB     | 33:Ag:143:UNK:CB   | 2.76                     | 0.62              |
| 34:BA:237:C:H5''   | 50:BU:25:ARG:NH1   | 2.14                     | 0.62              |
| 34:BA:308:C:C2     | 34:BA:309:G:C8     | 2.86                     | 0.62              |
| 34:BA:439:A:H3'    | 34:BA:440:A:H8     | 1.64                     | 0.62              |
| 34:BA:727:G:C8     | 34:BA:727:G:C3'    | 2.82                     | 0.62              |
| 34:BA:730:G:H2'    | 34:BA:731:G:H5'    | 1.81                     | 0.62              |
| 34:BA:755:G:H2'    | 34:BA:756:C:C5     | 2.34                     | 0.62              |
| 34:BA:781:A:N6     | 34:BA:802:A:N3     | 2.47                     | 0.62              |
| 34:BA:826:C:C5'    | 41:BL:12:ARG:HH21  | 2.12                     | 0.62              |
| 34:BA:828:A:O4'    | 34:BA:859:A:H2     | 1.82                     | 0.62              |
| 34:BA:1021:G:H2'   | 34:BA:1022:G:O4'   | 1.99                     | 0.62              |
| 34:BA:1039:C:N4    | 34:BA:1040:U:O4    | 2.31                     | 0.62              |
| 34:BA:1126:U:O4'   | 34:BA:1280:A:N7    | 2.32                     | 0.62              |
| 34:BA:1156:G:H8    | 34:BA:1156:G:O5'   | 1.82                     | 0.62              |
| 34:BA:1454:G:OP2   | 53:BX:39:LYS:CE    | 2.46                     | 0.62              |
| 35:BF:60:ASP:C     | 35:BF:64:ARG:NH1   | 2.57                     | 0.62              |
| 35:BF:175:ARG:HA   | 35:BF:178:ARG:HG3  | 1.81                     | 0.62              |
| 36:BG:17:ASP:HB3   | 36:BG:18:TRP:CE3   | 2.32                     | 0.62              |
| 37:BH:8:VAL:CG1    | 37:BH:11:LEU:HD12  | 2.29                     | 0.62              |
| 37:BH:24:GLU:C     | 37:BH:24:GLU:CD    | 2.66                     | 0.62              |
| 37:BH:57:ARG:NH2   | 38:BI:107:ARG:HD3  | 2.14                     | 0.62              |
| 37:BH:94:LEU:O     | 37:BH:97:LEU:HB2   | 1.99                     | 0.62              |
| 37:BH:146:ILE:HD12 | 37:BH:146:ILE:O    | 1.99                     | 0.62              |
| 38:BI:96:PRO:C     | 38:BI:98:THR:N     | 2.49                     | 0.62              |
| 40:BK:42:ILE:CG2   | 40:BK:120:ILE:HD11 | 2.29                     | 0.62              |
| 42:BM:9:ARG:HD2    | 42:BM:14:VAL:HG13  | 1.80                     | 0.62              |
| 42:BM:110:GLU:O    | 42:BM:111:ARG:HB2  | 1.98                     | 0.62              |
| 42:BM:113:LYS:NZ   | 42:BM:119:ALA:HB1  | 2.13                     | 0.62              |
| 43:BN:12:ASP:O     | 43:BN:15:THR:HG22  | 1.99                     | 0.62              |
| 43:BN:23:ILE:CG2   | 43:BN:85:LEU:HD23  | 2.21                     | 0.62              |
| 43:BN:79:ARG:CZ    | 43:BN:82:ILE:HB    | 2.28                     | 0.62              |
| 44:BO:92:GLU:O     | 44:BO:94:ALA:N     | 2.32                     | 0.62              |
| 49:BT:8:ARG:HD3    | 49:BT:15:PRO:CA    | 2.29                     | 0.62              |
| 49:BT:27:LYS:H     | 49:BT:27:LYS:NZ    | 1.96                     | 0.62              |
| 49:BT:53:VAL:HG23  | 49:BT:54:GLU:N     | 2.14                     | 0.62              |
| 50:BU:21:VAL:CG2   | 50:BU:43:LEU:HA    | 2.29                     | 0.62              |
| 50:BU:75:ARG:CZ    | 50:BU:77:VAL:HG22  | 2.29                     | 0.62              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:BZ:99:VAL:HG12 | 57:BZ:100:ASP:N   | 2.14                     | 0.62              |
| 57:BZ:244:GLY:CA  | 57:BZ:245:LYS:HG2 | 2.21                     | 0.62              |
| 57:BZ:325:PHE:CD2 | 57:BZ:330:GLN:HG2 | 2.34                     | 0.62              |
| 57:BZ:396:LYS:CA  | 57:BZ:474:ASP:C   | 2.68                     | 0.62              |
| 57:BZ:601:ASN:HA  | 57:BZ:602:ARG:C   | 2.23                     | 0.62              |
| 57:BZ:601:ASN:N   | 57:BZ:602:ARG:HB2 | 2.14                     | 0.62              |
| 1:AA:10:G:C2      | 1:AA:2629:A:C2    | 2.86                     | 0.62              |
| 1:AA:197:A:N1     | 1:AA:198:C:H1'    | 2.12                     | 0.62              |
| 1:AA:270(E):G:H2' | 1:AA:270(F):U:C6  | 2.34                     | 0.62              |
| 1:AA:292:C:C6     | 1:AA:293:U:C4     | 2.86                     | 0.62              |
| 1:AA:728:G:C5     | 1:AA:762:U:H2'    | 2.33                     | 0.62              |
| 1:AA:893:C:N1     | 1:AA:894:C:C5     | 2.67                     | 0.62              |
| 1:AA:905:U:H2'    | 1:AA:906:G:O4'    | 1.99                     | 0.62              |
| 1:AA:987:G:OP2    | 24:AZ:13:ILE:CD1  | 2.47                     | 0.62              |
| 1:AA:1020:A:H5''  | 1:AA:1021:A:OP1   | 1.99                     | 0.62              |
| 1:AA:1081:U:O4    | 1:AA:1086:A:H2    | 1.73                     | 0.62              |
| 1:AA:1249:U:N3    | 11:AM:21:ARG:NH1  | 2.48                     | 0.62              |
| 1:AA:1315:C:O2    | 1:AA:1392:A:H2    | 1.81                     | 0.62              |
| 1:AA:1449:A:C8    | 1:AA:1529:A:N1    | 2.67                     | 0.62              |
| 1:AA:1785:A:OP1   | 1:AA:1981:A:H3'   | 1.97                     | 0.62              |
| 1:AA:1787:A:H2'   | 1:AA:1788:C:O4'   | 1.98                     | 0.62              |
| 1:AA:1819:A:OP2   | 4:AD:157:ARG:CZ   | 2.47                     | 0.62              |
| 1:AA:2044:C:C6    | 1:AA:2625:G:N2    | 2.67                     | 0.62              |
| 1:AA:2332:U:O2'   | 1:AA:2336:A:N7    | 2.31                     | 0.62              |
| 1:AA:2373:G:C2    | 1:AA:2374:C:C4    | 2.87                     | 0.62              |
| 1:AA:2453:A:O2'   | 1:AA:2454:G:C5'   | 2.42                     | 0.62              |
| 1:AA:2625:G:H2'   | 1:AA:2626:C:C6    | 2.33                     | 0.62              |
| 1:AA:2690:C:H2'   | 1:AA:2691:C:OP2   | 1.98                     | 0.62              |
| 1:AA:2793:G:C2    | 1:AA:2794:C:C2    | 2.87                     | 0.62              |
| 2:AB:12:C:H5''    | 22:AX:74:ARG:CG   | 2.27                     | 0.62              |
| 2:AB:30:C:H2'     | 2:AB:31:C:C5'     | 2.28                     | 0.62              |
| 2:AB:32:C:C2      | 2:AB:33:G:N7      | 2.67                     | 0.62              |
| 2:AB:62:C:C2      | 2:AB:63:G:C8      | 2.87                     | 0.62              |
| 4:AD:5:LYS:HA     | 4:AD:28:GLU:HB2   | 1.80                     | 0.62              |
| 4:AD:9:TYR:OH     | 4:AD:198:ASN:ND2  | 2.32                     | 0.62              |
| 4:AD:41:GLY:C     | 4:AD:60:ARG:HH12  | 2.06                     | 0.62              |
| 4:AD:137:PRO:HG2  | 4:AD:140:THR:OG1  | 1.98                     | 0.62              |
| 7:AG:60:LEU:HD21  | 7:AG:90:LEU:CD1   | 2.24                     | 0.62              |
| 7:AG:138:GLN:C    | 7:AG:140:ILE:H    | 2.05                     | 0.62              |
| 8:AH:66:GLY:C     | 8:AH:69:ARG:HG2   | 2.24                     | 0.62              |
| 8:AH:127:GLU:CB   | 8:AH:130:ARG:H    | 2.12                     | 0.62              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:AK:4:TYR:O      | 16:AR:64:ARG:NH2  | 2.29                     | 0.62              |
| 9:AK:33:LEU:C     | 9:AK:35:ARG:N     | 2.57                     | 0.62              |
| 12:AN:6:ARG:HG2   | 12:AN:7:MET:H     | 1.64                     | 0.62              |
| 12:AN:6:ARG:CG    | 12:AN:7:MET:N     | 2.62                     | 0.62              |
| 12:AN:124:LYS:HZ2 | 12:AN:124:LYS:CB  | 1.86                     | 0.62              |
| 13:AO:86:ARG:NH1  | 13:AO:86:ARG:CB   | 2.55                     | 0.62              |
| 14:AP:26:LEU:HD13 | 14:AP:26:LEU:C    | 2.24                     | 0.62              |
| 14:AP:49:VAL:HG13 | 14:AP:76:LYS:HZ1  | 1.64                     | 0.62              |
| 14:AP:52:SER:HB3  | 14:AP:73:LEU:HD11 | 1.81                     | 0.62              |
| 15:AQ:63:VAL:O    | 15:AQ:64:ARG:NH1  | 2.32                     | 0.62              |
| 15:AQ:104:ASN:CA  | 15:AQ:107:ASP:OD2 | 2.47                     | 0.62              |
| 18:AT:91:GLY:O    | 18:AT:92:ARG:O    | 2.17                     | 0.62              |
| 19:AU:50:LYS:HG3  | 19:AU:85:PRO:HD3  | 1.81                     | 0.62              |
| 21:AW:1:MET:SD    | 21:AW:59:LEU:O    | 2.57                     | 0.62              |
| 21:AW:41:LEU:O    | 21:AW:42:VAL:C    | 2.42                     | 0.62              |
| 22:AX:56:ASP:C    | 22:AX:57:PHE:HD1  | 2.06                     | 0.62              |
| 23:AY:50:ARG:O    | 23:AY:54:ARG:HG3  | 1.98                     | 0.62              |
| 23:AY:65:GLN:HE21 | 23:AY:65:GLN:CA   | 2.11                     | 0.62              |
| 25:Aa:68:ARG:NH1  | 25:Aa:68:ARG:CB   | 2.62                     | 0.62              |
| 26:Ab:33:CYS:N    | 26:Ab:37:LYS:O    | 2.30                     | 0.62              |
| 26:Ab:48:GLU:CA   | 26:Ab:58:LEU:HG   | 2.29                     | 0.62              |
| 30:Af:7:VAL:CG1   | 30:Af:36:GLN:HE22 | 2.10                     | 0.62              |
| 34:BA:52:G:O2'    | 34:BA:53:A:H5'    | 1.99                     | 0.62              |
| 34:BA:184:G:C4'   | 34:BA:224:C:H4'   | 2.28                     | 0.62              |
| 34:BA:185:A:H2'   | 34:BA:186:C:H6    | 1.61                     | 0.62              |
| 34:BA:265:G:C2'   | 34:BA:266:G:H5'   | 2.29                     | 0.62              |
| 34:BA:301:G:N2    | 34:BA:302:G:C1'   | 2.61                     | 0.62              |
| 34:BA:323:U:H6    | 34:BA:323:U:H3'   | 1.65                     | 0.62              |
| 34:BA:645:C:H2'   | 34:BA:646:U:C6    | 2.34                     | 0.62              |
| 34:BA:811:C:H6    | 34:BA:811:C:H3'   | 1.63                     | 0.62              |
| 34:BA:937:A:N7    | 34:BA:938:A:N7    | 2.48                     | 0.62              |
| 34:BA:947:G:N2    | 34:BA:948:C:C2    | 2.67                     | 0.62              |
| 34:BA:1230:C:H5'  | 56:BE:30:G:P      | 2.39                     | 0.62              |
| 34:BA:1252:A:C5   | 34:BA:1253:G:N7   | 2.67                     | 0.62              |
| 34:BA:1344:C:H5'  | 42:BM:120:ARG:O   | 1.98                     | 0.62              |
| 35:BF:96:ARG:HD2  | 35:BF:96:ARG:H    | 1.64                     | 0.62              |
| 36:BG:10:PHE:HB3  | 36:BG:11:ARG:HE   | 1.64                     | 0.62              |
| 37:BH:52:SER:C    | 37:BH:54:TYR:H    | 2.06                     | 0.62              |
| 38:BI:96:PRO:HD2  | 38:BI:98:THR:OG1  | 1.99                     | 0.62              |
| 39:BJ:89:MET:HE3  | 51:BV:76:LEU:HD21 | 1.81                     | 0.62              |
| 40:BK:74:GLU:CG   | 40:BK:75:VAL:N    | 2.61                     | 0.62              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 42:BM:19:LEU:CD2  | 42:BM:20:ARG:N    | 2.62                     | 0.62              |
| 43:BN:3:LYS:HE3   | 43:BN:77:PRO:CD   | 2.29                     | 0.62              |
| 43:BN:8:LEU:HD13  | 43:BN:94:VAL:CG1  | 2.22                     | 0.62              |
| 49:BT:20:VAL:CG1  | 49:BT:32:TYR:HB2  | 2.30                     | 0.62              |
| 50:BU:9:VAL:HB    | 50:BU:84:LEU:HD13 | 1.81                     | 0.62              |
| 50:BU:35:VAL:HG12 | 50:BU:36:ILE:N    | 2.13                     | 0.62              |
| 50:BU:66:SER:CB   | 50:BU:69:LYS:NZ   | 2.62                     | 0.62              |
| 53:BX:48:LYS:HB3  | 53:BX:51:GLU:HG3  | 1.81                     | 0.62              |
| 53:BX:64:ASP:O    | 53:BX:67:ALA:CB   | 2.47                     | 0.62              |
| 56:BD:4:C:C6      | 56:BD:70:G:N1     | 2.67                     | 0.62              |
| 56:BD:5:G:N2      | 56:BD:69:G:C8     | 2.67                     | 0.62              |
| 57:BZ:18:LYS:HG2  | 57:BZ:76:PRO:HG3  | 1.80                     | 0.62              |
| 57:BZ:87:ARG:HH21 | 57:BZ:87:ARG:HB3  | 1.63                     | 0.62              |
| 57:BZ:205:PHE:HA  | 57:BZ:229:GLY:HA3 | 1.80                     | 0.62              |
| 57:BZ:232:LYS:HD2 | 57:BZ:232:LYS:O   | 1.99                     | 0.62              |
| 57:BZ:243:GLU:CG  | 57:BZ:244:GLY:H   | 2.08                     | 0.62              |
| 57:BZ:253:LYS:HG2 | 57:BZ:271:GLY:HA2 | 1.80                     | 0.62              |
| 1:AA:2:G:N9       | 1:AA:2902:C:O2    | 2.31                     | 0.62              |
| 1:AA:141:A:C2     | 1:AA:1597:A:H5'   | 2.34                     | 0.62              |
| 1:AA:182:A:C2     | 1:AA:183:C:C2     | 2.87                     | 0.62              |
| 1:AA:220:G:N2     | 1:AA:265:A:N6     | 2.47                     | 0.62              |
| 1:AA:270(C):C:OP1 | 1:AA:365:C:H1'    | 1.99                     | 0.62              |
| 1:AA:811:U:O2'    | 1:AA:1251:C:C1'   | 2.41                     | 0.62              |
| 1:AA:877:U:O5'    | 1:AA:877:U:H6     | 1.82                     | 0.62              |
| 1:AA:917:A:H3'    | 1:AA:918:A:C5'    | 2.29                     | 0.62              |
| 1:AA:942:G:H5'    | 11:AM:32:THR:CG2  | 2.29                     | 0.62              |
| 1:AA:1498:C:O2    | 1:AA:1499:C:C5    | 2.52                     | 0.62              |
| 1:AA:1546:C:H4'   | 1:AA:1547:C:C5    | 2.33                     | 0.62              |
| 1:AA:1697:G:C4'   | 1:AA:1698:A:H5'   | 2.29                     | 0.62              |
| 1:AA:1916:A:C2    | 34:BA:1409:C:H5'  | 2.33                     | 0.62              |
| 1:AA:2077:A:C4    | 1:AA:2435:A:C8    | 2.87                     | 0.62              |
| 1:AA:2273:A:N7    | 1:AA:2274:A:N9    | 2.46                     | 0.62              |
| 1:AA:2641:G:H5'   | 9:AK:75:TYR:CG    | 2.35                     | 0.62              |
| 1:AA:2658:C:C4    | 1:AA:2664:G:N2    | 2.67                     | 0.62              |
| 1:AA:2720:U:H2'   | 1:AA:2721:A:H8    | 1.64                     | 0.62              |
| 1:AA:2794:C:C2    | 1:AA:2799:A:C2    | 2.86                     | 0.62              |
| 1:AA:2807:G:N3    | 1:AA:2808:U:C6    | 2.66                     | 0.62              |
| 2:AB:32:C:H2'     | 2:AB:32:C:O2      | 1.99                     | 0.62              |
| 3:AC:7:TYR:OH     | 3:AC:11:LEU:HD13  | 2.00                     | 0.62              |
| 3:AC:64:LEU:CD1   | 3:AC:188:ASN:ND2  | 2.42                     | 0.62              |
| 3:AC:75:LEU:HD11  | 3:AC:99:ILE:CG2   | 2.26                     | 0.62              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:AC:90:GLY:HA3   | 3:AC:157:LYS:CB   | 2.29                     | 0.62              |
| 3:AC:200:LYS:HG2  | 3:AC:200:LYS:O    | 1.99                     | 0.62              |
| 4:AD:59:LYS:C     | 4:AD:59:LYS:CD    | 2.72                     | 0.62              |
| 5:AE:33:VAL:HG21  | 5:AE:77:ILE:HD12  | 1.79                     | 0.62              |
| 7:AG:55:LYS:NZ    | 7:AG:152:LEU:HD11 | 2.14                     | 0.62              |
| 7:AG:74:LYS:HE2   | 7:AG:75:LYS:HE3   | 1.80                     | 0.62              |
| 7:AG:134:GLY:O    | 7:AG:155:MET:O    | 2.17                     | 0.62              |
| 8:AH:44:VAL:O     | 8:AH:50:VAL:HA    | 2.00                     | 0.62              |
| 8:AH:127:GLU:CG   | 8:AH:130:ARG:HB2  | 2.29                     | 0.62              |
| 9:AK:12:ARG:HD2   | 9:AK:50:ASP:HA    | 1.81                     | 0.62              |
| 10:AL:96:THR:HA   | 10:AL:117:LEU:CD1 | 2.17                     | 0.62              |
| 11:AM:113:LYS:CA  | 11:AM:129:ALA:HB1 | 2.29                     | 0.62              |
| 12:AN:34:LEU:CD1  | 12:AN:105:GLU:HB2 | 2.27                     | 0.62              |
| 12:AN:75:THR:CG2  | 12:AN:89:ASN:O    | 2.47                     | 0.62              |
| 12:AN:116:GLU:HA  | 12:AN:119:ARG:HG3 | 1.81                     | 0.62              |
| 13:AO:8:ARG:NH2   | 13:AO:17:ARG:HD2  | 2.14                     | 0.62              |
| 14:AP:3:ARG:HG3   | 14:AP:3:ARG:HH11  | 1.64                     | 0.62              |
| 14:AP:13:ARG:CD   | 14:AP:90:GLY:O    | 2.46                     | 0.62              |
| 14:AP:49:VAL:HB   | 14:AP:80:LEU:CD1  | 2.30                     | 0.62              |
| 14:AP:57:LYS:NZ   | 14:AP:65:VAL:HA   | 2.13                     | 0.62              |
| 17:AS:83:ARG:C    | 17:AS:83:ARG:HD3  | 2.23                     | 0.62              |
| 19:AU:12:VAL:C    | 19:AU:14:SER:H    | 2.07                     | 0.62              |
| 20:AV:31:LEU:O    | 20:AV:33:LYS:N    | 2.33                     | 0.62              |
| 20:AV:96:ILE:HD12 | 20:AV:96:ILE:N    | 2.14                     | 0.62              |
| 20:AV:97:ARG:HB3  | 20:AV:101:LYS:HE2 | 1.80                     | 0.62              |
| 22:AX:21:LEU:O    | 22:AX:24:LYS:HE3  | 1.98                     | 0.62              |
| 23:AY:20:VAL:HG22 | 23:AY:24:LYS:HE3  | 1.81                     | 0.62              |
| 23:AY:46:ARG:HE   | 23:AY:50:ARG:NH2  | 1.96                     | 0.62              |
| 24:AZ:26:LEU:CD2  | 24:AZ:28:LEU:HD11 | 2.25                     | 0.62              |
| 25:Aa:6:HIS:HB2   | 25:Aa:7:PRO:HD3   | 1.82                     | 0.62              |
| 25:Aa:47:GLN:HA   | 25:Aa:52:THR:OG1  | 1.98                     | 0.62              |
| 26:Ab:55:ARG:C    | 26:Ab:57:VAL:N    | 2.56                     | 0.62              |
| 28:Ad:8:ASN:ND2   | 28:Ad:10:ARG:HB2  | 2.14                     | 0.62              |
| 32:AJ:103:GLN:HA  | 32:AJ:106:GLU:HG3 | 1.80                     | 0.62              |
| 34:BA:47:C:C4'    | 34:BA:48:C:H5''   | 2.17                     | 0.62              |
| 34:BA:56:U:H2'    | 34:BA:57:G:H8     | 1.64                     | 0.62              |
| 34:BA:273:A:H1'   | 50:BU:16:GLN:OE1  | 2.00                     | 0.62              |
| 34:BA:490:G:H2'   | 34:BA:491:G:C8    | 2.34                     | 0.62              |
| 34:BA:493:G:H2'   | 34:BA:494:U:H5    | 1.63                     | 0.62              |
| 34:BA:518:C:H3'   | 34:BA:530:G:N2    | 2.13                     | 0.62              |
| 34:BA:519:C:C5'   | 45:BP:51:ALA:HB2  | 2.29                     | 0.62              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:579:G:C2'    | 34:BA:580:U:H5'    | 2.29                     | 0.62              |
| 34:BA:720:C:H2'    | 34:BA:721:G:C8     | 2.34                     | 0.62              |
| 34:BA:922:G:O2'    | 34:BA:923:A:H5'    | 1.99                     | 0.62              |
| 34:BA:1112:C:H1'   | 36:BG:179:ARG:NH1  | 2.14                     | 0.62              |
| 34:BA:1330:U:C5'   | 46:BQ:70:LEU:HD23  | 2.23                     | 0.62              |
| 34:BA:1339:A:H5'   | 56:BE:41:C:H4'     | 1.79                     | 0.62              |
| 34:BA:1357:A:H8    | 34:BA:1357:A:O5'   | 1.83                     | 0.62              |
| 34:BA:1425:U:O2'   | 34:BA:1426:C:H5'   | 1.97                     | 0.62              |
| 34:BA:1528:U:HO2'  | 34:BA:1529:G:H3'   | 1.64                     | 0.62              |
| 35:BF:58:ILE:O     | 35:BF:61:LEU:HD22  | 1.98                     | 0.62              |
| 35:BF:118:LEU:HD22 | 35:BF:142:LEU:CD1  | 2.29                     | 0.62              |
| 35:BF:208:ILE:HA   | 35:BF:211:ILE:CB   | 2.27                     | 0.62              |
| 37:BH:128:VAL:CG2  | 37:BH:133:VAL:HB   | 2.29                     | 0.62              |
| 38:BI:86:ALA:O     | 38:BI:125:SER:CB   | 2.47                     | 0.62              |
| 38:BI:141:GLN:O    | 38:BI:142:LEU:HG   | 2.00                     | 0.62              |
| 40:BK:50:ILE:HD13  | 40:BK:58:PRO:HA    | 1.81                     | 0.62              |
| 40:BK:113:GLU:CB   | 40:BK:118:VAL:HG11 | 2.29                     | 0.62              |
| 41:BL:112:LEU:HD12 | 41:BL:131:GLY:C    | 2.24                     | 0.62              |
| 44:BO:62:GLN:O     | 44:BO:65:ALA:HB3   | 1.98                     | 0.62              |
| 45:BP:38:THR:HG22  | 45:BP:58:VAL:HA    | 1.82                     | 0.62              |
| 47:BR:24:CYS:CB    | 47:BR:40:CYS:N     | 2.60                     | 0.62              |
| 52:BW:22:LEU:C     | 52:BW:24:ALA:H     | 2.07                     | 0.62              |
| 52:BW:51:VAL:CG2   | 52:BW:60:VAL:HG21  | 2.30                     | 0.62              |
| 54:BY:2:GLY:N      | 54:BY:5:ASP:HB2    | 2.14                     | 0.62              |
| 56:BD:27:G:H2'     | 56:BD:28:G:C8      | 2.34                     | 0.62              |
| 57:BZ:6:ARG:NH1    | 57:BZ:196:ALA:HB2  | 2.13                     | 0.62              |
| 57:BZ:13:HIS:CB    | 57:BZ:108:GLN:C    | 2.72                     | 0.62              |
| 57:BZ:239:ILE:HG12 | 57:BZ:244:GLY:HA3  | 1.79                     | 0.62              |
| 57:BZ:483:ARG:NH1  | 57:BZ:576:GLU:OE1  | 2.32                     | 0.62              |
| 1:AA:18:C:OP1      | 16:AR:26:GLY:CA    | 2.46                     | 0.62              |
| 1:AA:64:A:H8       | 1:AA:64:A:O5'      | 1.82                     | 0.62              |
| 1:AA:243:U:H2'     | 1:AA:244:A:H5'     | 1.81                     | 0.62              |
| 1:AA:244:A:O3'     | 11:AM:65:ARG:NH2   | 2.32                     | 0.62              |
| 1:AA:336:C:H4'     | 20:AV:67:LEU:HD23  | 1.81                     | 0.62              |
| 1:AA:531:C:C6      | 1:AA:532:A:C2      | 2.88                     | 0.62              |
| 1:AA:572:A:C5      | 1:AA:573:G:C2      | 2.87                     | 0.62              |
| 1:AA:574:C:H4'     | 1:AA:575:A:O5'     | 1.98                     | 0.62              |
| 1:AA:639:U:O4      | 1:AA:648:G:O6      | 2.17                     | 0.62              |
| 1:AA:656:G:H2'     | 1:AA:657:U:H6      | 1.64                     | 0.62              |
| 1:AA:716:A:H2      | 48:BS:44:LYS:HG3   | 1.48                     | 0.62              |
| 1:AA:815:C:O2'     | 1:AA:816:C:H5''    | 1.99                     | 0.62              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:878:A:H2'    | 1:AA:879:G:H8      | 1.64                     | 0.62              |
| 1:AA:996:A:C6     | 1:AA:1160:G:N1     | 2.67                     | 0.62              |
| 1:AA:1363:C:H41   | 25:Aa:2:LYS:HE2    | 1.60                     | 0.62              |
| 1:AA:1572:A:O4'   | 1:AA:1572:A:OP1    | 2.16                     | 0.62              |
| 1:AA:1742:C:C2    | 1:AA:1743:G:O4'    | 2.53                     | 0.62              |
| 1:AA:2127:G:H3'   | 3:AC:36:LYS:HG2    | 1.78                     | 0.62              |
| 1:AA:2207:C:C2    | 1:AA:2208:U:O4'    | 2.52                     | 0.62              |
| 1:AA:2445:G:H2'   | 1:AA:2446:G:N7     | 2.13                     | 0.62              |
| 1:AA:2466:C:OP1   | 30:Af:5:ALA:HB3    | 1.98                     | 0.62              |
| 1:AA:2574:G:H2'   | 1:AA:2575:C:O4'    | 1.99                     | 0.62              |
| 1:AA:2583:G:N3    | 1:AA:2584:U:O2     | 2.32                     | 0.62              |
| 1:AA:2603:G:O2'   | 1:AA:2604:U:H5'    | 2.00                     | 0.62              |
| 1:AA:2629:A:H5'   | 1:AA:2895:U:C2     | 2.34                     | 0.62              |
| 1:AA:2644:G:N1    | 1:AA:2645:G:N2     | 2.47                     | 0.62              |
| 2:AB:6:C:H4'      | 2:AB:28:C:H5'      | 1.81                     | 0.62              |
| 3:AC:100:ILE:O    | 3:AC:104:LEU:HD23  | 1.99                     | 0.62              |
| 5:AE:198:VAL:C    | 5:AE:199:ARG:HD2   | 2.24                     | 0.62              |
| 6:AF:82:ILE:CD1   | 6:AF:82:ILE:H      | 2.11                     | 0.62              |
| 7:AG:51:ARG:HH21  | 7:AG:51:ARG:N      | 1.96                     | 0.62              |
| 8:AH:28:GLY:N     | 8:AH:79:VAL:HB     | 2.14                     | 0.62              |
| 9:AK:4:TYR:CB     | 16:AR:64:ARG:NH1   | 2.60                     | 0.62              |
| 11:AM:23:PRO:CG   | 11:AM:29:LYS:N     | 2.63                     | 0.62              |
| 11:AM:46:LYS:HB2  | 11:AM:49:ARG:CB    | 2.20                     | 0.62              |
| 11:AM:90:ARG:HA   | 11:AM:125:VAL:HG13 | 1.81                     | 0.62              |
| 12:AN:9:TYR:HD1   | 12:AN:10:ARG:HD3   | 1.63                     | 0.62              |
| 13:AO:36:THR:HB   | 13:AO:40:LYS:HD2   | 1.80                     | 0.62              |
| 13:AO:51:LEU:HG   | 13:AO:66:VAL:HG11  | 1.82                     | 0.62              |
| 14:AP:49:VAL:HG13 | 14:AP:76:LYS:NZ    | 2.13                     | 0.62              |
| 15:AQ:28:VAL:HG12 | 15:AQ:29:ARG:O     | 1.98                     | 0.62              |
| 15:AQ:68:TYR:CD2  | 15:AQ:70:VAL:HG22  | 2.34                     | 0.62              |
| 15:AQ:111:ARG:HG3 | 34:BA:1432:G:OP1   | 1.99                     | 0.62              |
| 17:AS:67:GLY:N    | 17:AS:94:LEU:HA    | 2.15                     | 0.62              |
| 18:AT:33:ARG:HD3  | 18:AT:37:ARG:CD    | 2.30                     | 0.62              |
| 18:AT:43:GLY:O    | 18:AT:47:VAL:HG23  | 1.99                     | 0.62              |
| 20:AV:1:MET:HG2   | 20:AV:33:LYS:HD2   | 1.81                     | 0.62              |
| 24:AZ:6:VAL:HB    | 24:AZ:54:VAL:HG21  | 1.80                     | 0.62              |
| 27:Ac:33:LYS:NZ   | 27:Ac:34:LEU:HD23  | 2.14                     | 0.62              |
| 27:Ac:50:ARG:O    | 27:Ac:51:GLU:CB    | 2.47                     | 0.62              |
| 32:AJ:10:LEU:N    | 32:AJ:56:GLU:CG    | 2.62                     | 0.62              |
| 32:AJ:12:LEU:CD2  | 32:AJ:57:ILE:CG2   | 2.76                     | 0.62              |
| 32:AJ:40:ALA:HB1  | 32:AJ:66:THR:HG1   | 0.79                     | 0.62              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:Ag:3:UNK:O     | 33:Ag:143:UNK:C    | 2.47                     | 0.62              |
| 34:BA:86:U:H2'    | 34:BA:87:A:H5'     | 1.82                     | 0.62              |
| 34:BA:116:A:H8    | 34:BA:116:A:O5'    | 1.83                     | 0.62              |
| 34:BA:649:G:H2'   | 34:BA:650:G:H8     | 1.63                     | 0.62              |
| 34:BA:866:C:C6    | 34:BA:867:G:H1'    | 2.35                     | 0.62              |
| 34:BA:1016:A:H8   | 34:BA:1016:A:O5'   | 1.82                     | 0.62              |
| 34:BA:1084:G:C4   | 34:BA:1085:U:C5    | 2.80                     | 0.62              |
| 34:BA:1100:C:C2'  | 35:BF:98:LEU:HD11  | 2.28                     | 0.62              |
| 34:BA:1114:C:C2   | 34:BA:1115:C:C5    | 2.88                     | 0.62              |
| 34:BA:1202:G:H1'  | 47:BR:29:ARG:HE    | 1.63                     | 0.62              |
| 34:BA:1296:C:C1'  | 34:BA:1302:U:O4    | 2.47                     | 0.62              |
| 34:BA:1312:G:N3   | 34:BA:1326:C:C2    | 2.66                     | 0.62              |
| 35:BF:9:GLU:HG2   | 35:BF:10:LEU:N     | 2.15                     | 0.62              |
| 35:BF:92:TYR:H    | 35:BF:152:PHE:HA   | 1.65                     | 0.62              |
| 35:BF:132:LYS:HZ2 | 35:BF:132:LYS:HB3  | 1.64                     | 0.62              |
| 35:BF:140:HIS:O   | 35:BF:143:GLU:HB3  | 2.00                     | 0.62              |
| 35:BF:196:LEU:HA  | 41:BL:74:PRO:HG3   | 1.82                     | 0.62              |
| 35:BF:208:ILE:HA  | 35:BF:211:ILE:CG1  | 2.29                     | 0.62              |
| 36:BG:63:ASN:O    | 36:BG:99:VAL:HG12  | 1.99                     | 0.62              |
| 36:BG:180:ALA:HB1 | 36:BG:182:ILE:HD11 | 1.81                     | 0.62              |
| 37:BH:148:VAL:CB  | 37:BH:181:MET:HE3  | 2.14                     | 0.62              |
| 40:BK:142:GLU:O   | 40:BK:145:ALA:O    | 2.17                     | 0.62              |
| 41:BL:20:TYR:HE1  | 41:BL:78:GLN:HE22  | 1.46                     | 0.62              |
| 41:BL:112:LEU:HB2 | 41:BL:132:GLU:O    | 1.99                     | 0.62              |
| 43:BN:7:LYS:HG3   | 43:BN:71:LEU:HD13  | 1.80                     | 0.62              |
| 43:BN:60:ARG:HB2  | 43:BN:60:ARG:CZ    | 2.29                     | 0.62              |
| 44:BO:69:ALA:HB1  | 44:BO:103:LEU:CD1  | 2.28                     | 0.62              |
| 45:BP:28:LYS:HZ2  | 45:BP:33:ARG:NH2   | 1.89                     | 0.62              |
| 48:BS:63:ARG:HH12 | 48:BS:87:ILE:CD1   | 2.11                     | 0.62              |
| 49:BT:22:THR:HA   | 49:BT:33:ILE:HG13  | 1.81                     | 0.62              |
| 52:BW:11:VAL:HB   | 52:BW:16:LEU:N     | 2.13                     | 0.62              |
| 53:BX:85:MET:HA   | 53:BX:88:VAL:CG2   | 2.28                     | 0.62              |
| 57:BZ:89:MET:CE   | 57:BZ:119:TYR:CD1  | 2.80                     | 0.62              |
| 57:BZ:158:LEU:HA  | 57:BZ:159:ASP:C    | 2.25                     | 0.62              |
| 1:AA:290:G:H3'    | 1:AA:290:G:H8      | 1.64                     | 0.62              |
| 1:AA:515:A:H5''   | 16:AR:32:PHE:CZ    | 2.34                     | 0.62              |
| 1:AA:651:G:H2'    | 1:AA:652:C:O4'     | 1.98                     | 0.62              |
| 1:AA:723:G:O2'    | 1:AA:724:U:C5'     | 2.47                     | 0.62              |
| 1:AA:744:G:N2     | 1:AA:754:C:C2      | 2.67                     | 0.62              |
| 1:AA:806:C:O5'    | 1:AA:806:C:H6      | 1.81                     | 0.62              |
| 1:AA:828:U:C6     | 1:AA:829:A:N7      | 2.68                     | 0.62              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:AA:1023:U:OP1  | 1:AA:1025:G:N2   | 2.33                     | 0.62              |
| 1:AA:1034:G:C2   | 1:AA:1122:G:C5   | 2.88                     | 0.62              |
| 1:AA:1189:A:H5'' | 1:AA:1190:G:OP2  | 2.00                     | 0.62              |
| 1:AA:1213:A:H1'  | 1:AA:1238:G:H1'  | 1.80                     | 0.62              |
| 1:AA:1229:G:H2'  | 1:AA:1230:C:O4'  | 2.00                     | 0.62              |
| 1:AA:1263:U:H4'  | 26:Ab:10:LYS:CD  | 2.30                     | 0.62              |
| 1:AA:1299:G:N1   | 1:AA:1639:U:H3'  | 2.13                     | 0.62              |
| 1:AA:1602:U:H2'  | 1:AA:1603:A:C5'  | 2.29                     | 0.62              |
| 1:AA:1657:C:C2   | 1:AA:1658:C:C6   | 2.87                     | 0.62              |
| 1:AA:1672:C:C5   | 1:AA:1673:U:H6   | 2.17                     | 0.62              |
| 1:AA:1798:U:H5'  | 1:AA:1803:A:H4'  | 1.82                     | 0.62              |
| 1:AA:1798:U:H5'  | 4:AD:257:LEU:CB  | 2.30                     | 0.62              |
| 1:AA:1838:C:H2'  | 1:AA:1898:U:O4   | 1.99                     | 0.62              |
| 1:AA:1848:A:H2'  | 1:AA:1849:G:O4'  | 1.99                     | 0.62              |
| 1:AA:1901:A:O2'  | 4:AD:244:ARG:CZ  | 2.47                     | 0.62              |
| 1:AA:1931:U:C2'  | 1:AA:1932:A:O5'  | 2.48                     | 0.62              |
| 1:AA:1953:A:N6   | 1:AA:2549:G:O2'  | 2.32                     | 0.62              |
| 1:AA:2123:G:N2   | 3:AC:216:THR:H   | 1.96                     | 0.62              |
| 1:AA:2132:U:C3'  | 1:AA:2133:G:H5'  | 2.27                     | 0.62              |
| 1:AA:2176:A:O3'  | 3:AC:222:VAL:HA  | 2.00                     | 0.62              |
| 1:AA:2378:A:H5'' | 1:AA:2379:G:OP2  | 1.99                     | 0.62              |
| 1:AA:2415:G:C5'  | 11:AM:61:ARG:HB2 | 2.29                     | 0.62              |
| 1:AA:2469:A:H61  | 1:AA:2481:G:H1'  | 1.62                     | 0.62              |
| 1:AA:2482:G:H2'  | 1:AA:2483:C:H5'  | 1.81                     | 0.62              |
| 1:AA:2578:G:HO2' | 1:AA:2579:C:H6   | 1.47                     | 0.62              |
| 1:AA:2626:C:H2'  | 1:AA:2627:G:C8   | 2.33                     | 0.62              |
| 1:AA:2637:U:OP2  | 1:AA:2637:U:C6   | 2.52                     | 0.62              |
| 1:AA:2659:G:H8   | 1:AA:2659:G:O5'  | 1.81                     | 0.62              |
| 1:AA:2746:U:C4   | 1:AA:2756:U:C4   | 2.88                     | 0.62              |
| 1:AA:2784:C:H4'  | 5:AE:40:GLU:OE2  | 1.98                     | 0.62              |
| 1:AA:2880:C:C2   | 1:AA:2881:C:C5   | 2.87                     | 0.62              |
| 2:AB:30:C:C1'    | 2:AB:58:A:C2     | 2.82                     | 0.62              |
| 2:AB:77:U:H6     | 2:AB:77:U:H3'    | 1.64                     | 0.62              |
| 3:AC:63:SER:H    | 3:AC:191:ALA:HB1 | 1.59                     | 0.62              |
| 3:AC:161:ILE:CG2 | 3:AC:174:PRO:HG2 | 2.29                     | 0.62              |
| 5:AE:13:ARG:HD2  | 5:AE:13:ARG:C    | 2.23                     | 0.62              |
| 5:AE:13:ARG:HD2  | 5:AE:20:ALA:O    | 2.00                     | 0.62              |
| 6:AF:65:TRP:HB3  | 6:AF:75:HIS:O    | 1.99                     | 0.62              |
| 7:AG:120:LEU:CD2 | 7:AG:181:ARG:HG2 | 2.29                     | 0.62              |
| 8:AH:83:TYR:HB2  | 8:AH:136:ILE:O   | 2.00                     | 0.62              |
| 8:AH:139:GLN:HG3 | 8:AH:140:LYS:N   | 2.07                     | 0.62              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 9:AK:25:ARG:HA     | 9:AK:28:THR:HG23   | 1.80                     | 0.62              |
| 9:AK:33:LEU:HD13   | 9:AK:34:LEU:N      | 2.15                     | 0.62              |
| 9:AK:63:THR:O      | 9:AK:65:LYS:HD2    | 1.99                     | 0.62              |
| 10:AL:3:GLN:CD     | 10:AL:33:ALA:HB3   | 2.20                     | 0.62              |
| 10:AL:25:LEU:N     | 10:AL:39:ILE:HG22  | 2.15                     | 0.62              |
| 12:AN:42:ILE:CD1   | 12:AN:42:ILE:C     | 2.72                     | 0.62              |
| 12:AN:46:GLN:O     | 12:AN:49:ALA:CB    | 2.46                     | 0.62              |
| 13:AO:44:LEU:HD13  | 13:AO:48:VAL:HG21  | 1.80                     | 0.62              |
| 13:AO:75:LEU:CD2   | 13:AO:78:LYS:HG2   | 2.29                     | 0.62              |
| 15:AQ:32:TYR:HB3   | 15:AQ:88:ILE:HA    | 1.82                     | 0.62              |
| 16:AR:82:GLY:CA    | 16:AR:117:GLN:HG2  | 2.21                     | 0.62              |
| 16:AR:88:ILE:HG12  | 17:AS:52:VAL:HG22  | 1.80                     | 0.62              |
| 17:AS:7:THR:HG23   | 17:AS:11:GLN:NE2   | 2.15                     | 0.62              |
| 18:AT:76:VAL:CG2   | 18:AT:77:ASP:H     | 2.13                     | 0.62              |
| 20:AV:33:LYS:O     | 20:AV:34:LYS:C     | 2.42                     | 0.62              |
| 21:AW:175:VAL:CG2  | 21:AW:176:PRO:HD2  | 2.28                     | 0.62              |
| 23:AY:12:SER:CB    | 23:AY:13:PRO:CD    | 2.78                     | 0.62              |
| 32:AJ:51:ALA:CB    | 32:AJ:72:PRO:CB    | 2.76                     | 0.62              |
| 34:BA:68:G:O4'     | 34:BA:171:A:H1'    | 1.99                     | 0.62              |
| 34:BA:280:C:N3     | 50:BU:39:SER:HB2   | 2.14                     | 0.62              |
| 34:BA:541:G:H4'    | 37:BH:42:GLN:CB    | 2.30                     | 0.62              |
| 34:BA:812:C:O2     | 34:BA:813:U:H5     | 1.82                     | 0.62              |
| 34:BA:836:G:P      | 51:BV:61:LYS:NZ    | 2.73                     | 0.62              |
| 34:BA:1105:A:N3    | 34:BA:1106:G:C8    | 2.68                     | 0.62              |
| 34:BA:1112:C:C2'   | 36:BG:179:ARG:NH1  | 2.62                     | 0.62              |
| 34:BA:1148:U:O2    | 34:BA:1149:C:N1    | 2.33                     | 0.62              |
| 34:BA:1255:G:N2    | 34:BA:1276:G:N2    | 2.45                     | 0.62              |
| 34:BA:1311:G:C2    | 34:BA:1327:C:N1    | 2.63                     | 0.62              |
| 34:BA:1363:A:H1'   | 34:BA:1365:G:C6    | 2.34                     | 0.62              |
| 35:BF:25:ASN:O     | 35:BF:27:LYS:N     | 2.31                     | 0.62              |
| 35:BF:100:GLY:C    | 35:BF:104:ASN:HD21 | 2.07                     | 0.62              |
| 35:BF:101:MET:HB3  | 35:BF:108:ILE:HG13 | 1.80                     | 0.62              |
| 35:BF:118:LEU:HD11 | 35:BF:141:GLU:CD   | 2.23                     | 0.62              |
| 35:BF:185:ILE:CB   | 35:BF:199:TYR:HB2  | 2.29                     | 0.62              |
| 36:BG:87:LEU:HB2   | 36:BG:101:LEU:HD11 | 1.81                     | 0.62              |
| 37:BH:11:LEU:C     | 37:BH:19:LEU:HD12  | 2.25                     | 0.62              |
| 37:BH:78:LEU:O     | 37:BH:79:PHE:C     | 2.43                     | 0.62              |
| 39:BJ:94:GLN:HB3   | 51:BV:32:ARG:NH2   | 2.15                     | 0.62              |
| 40:BK:35:LYS:HE2   | 40:BK:38:LEU:HB2   | 1.82                     | 0.62              |
| 40:BK:37:ASN:CG    | 40:BK:38:LEU:H     | 2.07                     | 0.62              |
| 40:BK:99:LEU:HD21  | 40:BK:102:ARG:HD2  | 1.81                     | 0.62              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 40:BK:140:ASP:O   | 40:BK:144:MET:HB3 | 1.99                     | 0.62              |
| 40:BK:143:ARG:CD  | 40:BK:144:MET:H   | 2.12                     | 0.62              |
| 41:BL:38:ILE:O    | 41:BL:41:ARG:HB2  | 1.99                     | 0.62              |
| 43:BN:5:ARG:HD3   | 43:BN:6:ILE:N     | 2.14                     | 0.62              |
| 44:BO:57:THR:CG2  | 44:BO:59:TYR:HB3  | 2.29                     | 0.62              |
| 44:BO:79:SER:HA   | 44:BO:104:GLN:HG3 | 1.82                     | 0.62              |
| 45:BP:24:VAL:HG22 | 45:BP:98:TYR:CE1  | 2.34                     | 0.62              |
| 45:BP:56:ALA:HB2  | 45:BP:70:ILE:HG13 | 1.80                     | 0.62              |
| 46:BQ:8:GLU:OE1   | 46:BQ:18:ALA:O    | 2.18                     | 0.62              |
| 47:BR:16:PHE:HE1  | 52:BW:14:HIS:HE2  | 0.67                     | 0.62              |
| 50:BU:100:LYS:HB3 | 50:BU:100:LYS:NZ  | 2.15                     | 0.62              |
| 50:BU:104:LYS:HD3 | 50:BU:105:ALA:CB  | 2.29                     | 0.62              |
| 53:BX:26:ASN:ND2  | 53:BX:27:LYS:H    | 1.98                     | 0.62              |
| 56:BE:2:C:C6      | 56:BE:70:G:N1     | 2.68                     | 0.62              |
| 57:BZ:39:GLN:CA   | 57:BZ:40:GLU:HG3  | 2.30                     | 0.62              |
| 57:BZ:124:ILE:HA  | 57:BZ:161:ALA:HB1 | 1.81                     | 0.62              |
| 57:BZ:374:ARG:NE  | 57:BZ:584:SER:H   | 1.97                     | 0.62              |
| 1:AA:30:G:OP1     | 16:AR:8:VAL:HG12  | 2.00                     | 0.62              |
| 1:AA:482:A:N7     | 1:AA:506:G:C2     | 2.68                     | 0.62              |
| 1:AA:520:G:O2'    | 1:AA:521:G:H5'    | 2.00                     | 0.62              |
| 1:AA:593:G:C6     | 1:AA:594:U:C4     | 2.87                     | 0.62              |
| 1:AA:613:U:H5     | 1:AA:614:U:O2     | 1.83                     | 0.62              |
| 1:AA:820:A:C2     | 1:AA:821:A:O4'    | 2.52                     | 0.62              |
| 1:AA:918:A:N3     | 1:AA:918:A:H5'    | 2.15                     | 0.62              |
| 1:AA:942:G:O3'    | 11:AM:32:THR:HA   | 1.99                     | 0.62              |
| 1:AA:980:A:H2     | 1:AA:2038:G:C1'   | 2.12                     | 0.62              |
| 1:AA:1062:G:C5    | 1:AA:1063:G:N7    | 2.67                     | 0.62              |
| 1:AA:1081:U:C5    | 1:AA:1082:U:C5    | 2.87                     | 0.62              |
| 1:AA:1241:A:N6    | 1:AA:1244:G:O6    | 2.31                     | 0.62              |
| 1:AA:1801:G:C4    | 4:AD:263:ARG:NH2  | 2.66                     | 0.62              |
| 1:AA:1862:G:H2'   | 1:AA:1863:G:C8    | 2.35                     | 0.62              |
| 1:AA:1900:A:C2    | 1:AA:1970:A:C6    | 2.87                     | 0.62              |
| 1:AA:1909:C:O2'   | 1:AA:1910:G:H5'   | 2.00                     | 0.62              |
| 1:AA:1935:G:C4    | 1:AA:1962:C:C4    | 2.88                     | 0.62              |
| 1:AA:2308:G:N3    | 1:AA:2308:G:H2'   | 2.15                     | 0.62              |
| 1:AA:2352:A:C2    | 1:AA:2353:G:H1'   | 2.34                     | 0.62              |
| 1:AA:2360:A:N7    | 1:AA:2361:A:C8    | 2.67                     | 0.62              |
| 1:AA:2597:G:H5'   | 4:AD:242:ARG:CG   | 2.29                     | 0.62              |
| 1:AA:2861:G:O4'   | 1:AA:2861:G:OP2   | 2.18                     | 0.62              |
| 2:AB:12:C:C5      | 22:AX:74:ARG:O    | 2.53                     | 0.62              |
| 2:AB:100:G:C4     | 2:AB:101:A:N7     | 2.68                     | 0.62              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:AD:7:LYS:HA     | 4:AD:26:LYS:O     | 1.99                     | 0.62              |
| 5:AE:5:LEU:HA     | 5:AE:76:ARG:HH22  | 1.65                     | 0.62              |
| 6:AF:122:LYS:HE3  | 6:AF:192:LEU:CD1  | 2.24                     | 0.62              |
| 7:AG:1:MET:C      | 7:AG:3:LEU:H      | 2.08                     | 0.62              |
| 7:AG:128:ARG:NH1  | 7:AG:130:ASN:HD21 | 1.97                     | 0.62              |
| 8:AH:9:ILE:CD1    | 8:AH:73:ALA:HB2   | 2.29                     | 0.62              |
| 8:AH:66:GLY:O     | 8:AH:69:ARG:CG    | 2.46                     | 0.62              |
| 9:AK:62:VAL:C     | 9:AK:64:GLY:H     | 2.07                     | 0.62              |
| 10:AL:35:VAL:CA   | 10:AL:61:VAL:HG11 | 2.29                     | 0.62              |
| 10:AL:64:ARG:NH2  | 10:AL:77:ILE:HA   | 2.14                     | 0.62              |
| 12:AN:99:PRO:HD2  | 12:AN:101:ARG:NE  | 2.15                     | 0.62              |
| 13:AO:55:ALA:CB   | 13:AO:79:LEU:HD11 | 2.29                     | 0.62              |
| 13:AO:73:VAL:O    | 13:AO:74:LYS:C    | 2.42                     | 0.62              |
| 14:AP:14:VAL:O    | 14:AP:18:ILE:HD13 | 1.99                     | 0.62              |
| 15:AQ:6:LEU:HD23  | 15:AQ:7:ILE:N     | 2.14                     | 0.62              |
| 15:AQ:112:ARG:CZ  | 34:BA:1465:C:OP2  | 2.41                     | 0.62              |
| 18:AT:13:SER:O    | 18:AT:17:VAL:CG1  | 2.47                     | 0.62              |
| 19:AU:12:VAL:HG13 | 19:AU:14:SER:HB3  | 1.80                     | 0.62              |
| 19:AU:55:ASN:N    | 19:AU:55:ASN:ND2  | 2.48                     | 0.62              |
| 21:AW:91:LEU:HD12 | 21:AW:95:PRO:HG3  | 1.80                     | 0.62              |
| 22:AX:46:LYS:HE2  | 22:AX:77:ARG:O    | 1.99                     | 0.62              |
| 27:Ac:30:THR:CB   | 27:Ac:31:PRO:CD   | 2.77                     | 0.62              |
| 32:AJ:27:LEU:CG   | 32:AJ:57:ILE:HB   | 2.29                     | 0.62              |
| 32:AJ:34:ILE:HD13 | 32:AJ:63:ARG:HH22 | 1.63                     | 0.62              |
| 34:BA:193:C:H2'   | 34:BA:194:C:C5    | 2.34                     | 0.62              |
| 34:BA:527:G:C2    | 34:BA:528:C:C2    | 2.88                     | 0.62              |
| 34:BA:665:A:H2'   | 34:BA:725:G:H21   | 1.57                     | 0.62              |
| 34:BA:687:A:O2'   | 34:BA:688:G:P     | 2.56                     | 0.62              |
| 34:BA:765:G:O2'   | 34:BA:766:A:C5'   | 2.42                     | 0.62              |
| 34:BA:817:C:O2'   | 34:BA:818:G:P     | 2.57                     | 0.62              |
| 34:BA:867:G:H2'   | 34:BA:868:C:H6    | 1.63                     | 0.62              |
| 34:BA:1062:U:C2'  | 34:BA:1063:C:C6   | 2.82                     | 0.62              |
| 34:BA:1064:G:OP1  | 34:BA:1386:G:C4'  | 2.46                     | 0.62              |
| 34:BA:1308:U:P    | 46:BQ:99:ARG:H    | 2.22                     | 0.62              |
| 34:BA:1363:A:H1'  | 34:BA:1365:G:C5   | 2.34                     | 0.62              |
| 34:BA:1389:C:H2'  | 34:BA:1390:U:H5'  | 1.80                     | 0.62              |
| 35:BF:47:THR:O    | 35:BF:51:LEU:CG   | 2.45                     | 0.62              |
| 35:BF:111:ARG:HA  | 35:BF:111:ARG:NH1 | 2.08                     | 0.62              |
| 35:BF:115:LEU:HB2 | 35:BF:145:LEU:CD2 | 2.30                     | 0.62              |
| 36:BG:172:ARG:CZ  | 36:BG:172:ARG:HB3 | 2.27                     | 0.62              |
| 36:BG:178:LEU:O   | 36:BG:179:ARG:HB2 | 1.99                     | 0.62              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 37:BH:170:VAL:HG11 | 37:BH:174:LEU:HB2  | 1.82                     | 0.62              |
| 39:BJ:2:ARG:O      | 39:BJ:67:MET:SD    | 2.57                     | 0.62              |
| 39:BJ:36:ARG:O     | 39:BJ:66:GLU:HG2   | 1.99                     | 0.62              |
| 39:BJ:60:PHE:CE2   | 51:BV:78:LEU:HD11  | 2.34                     | 0.62              |
| 40:BK:44:TYR:O     | 40:BK:47:CYS:N     | 2.32                     | 0.62              |
| 41:BL:67:PRO:O     | 41:BL:76:PRO:HA    | 1.99                     | 0.62              |
| 41:BL:89:PRO:HB3   | 41:BL:92:ARG:HH21  | 1.64                     | 0.62              |
| 41:BL:114:THR:HA   | 41:BL:131:GLY:CA   | 2.29                     | 0.62              |
| 42:BM:37:PHE:CD1   | 42:BM:43:ALA:HA    | 2.35                     | 0.62              |
| 43:BN:47:PHE:CE1   | 43:BN:64:GLU:HA    | 2.34                     | 0.62              |
| 43:BN:79:ARG:NH1   | 43:BN:82:ILE:HB    | 2.14                     | 0.62              |
| 44:BO:27:ASN:HA    | 44:BO:55:LYS:O     | 2.00                     | 0.62              |
| 44:BO:48:ILE:HD11  | 44:BO:64:ALA:CB    | 2.29                     | 0.62              |
| 44:BO:73:MET:O     | 44:BO:75:TYR:N     | 2.32                     | 0.62              |
| 44:BO:73:MET:CE    | 44:BO:103:LEU:HD22 | 2.29                     | 0.62              |
| 45:BP:27:LEU:HD23  | 45:BP:33:ARG:CD    | 2.28                     | 0.62              |
| 45:BP:64:TYR:C     | 45:BP:65:GLU:HG3   | 2.25                     | 0.62              |
| 45:BP:65:GLU:O     | 45:BP:66:VAL:HG13  | 1.99                     | 0.62              |
| 46:BQ:95:GLY:C     | 46:BQ:110:ARG:HG2  | 2.24                     | 0.62              |
| 47:BR:4:LYS:O      | 47:BR:7:ILE:HG13   | 2.00                     | 0.62              |
| 49:BT:43:LYS:HG3   | 49:BT:48:TRP:CZ3   | 2.34                     | 0.62              |
| 50:BU:88:TYR:N     | 50:BU:91:ARG:NH2   | 2.40                     | 0.62              |
| 50:BU:100:LYS:HB3  | 50:BU:100:LYS:HZ2  | 1.63                     | 0.62              |
| 52:BW:47:HIS:H     | 52:BW:62:ILE:CG2   | 2.13                     | 0.62              |
| 53:BX:14:LYS:N     | 53:BX:17:ARG:HH21  | 1.98                     | 0.62              |
| 55:BC:35:A:H2'     | 55:BC:36:A:N7      | 2.13                     | 0.62              |
| 57:BZ:97:LEU:HD22  | 57:BZ:113:THR:HG21 | 1.81                     | 0.62              |
| 57:BZ:251:VAL:CA   | 57:BZ:274:VAL:HG22 | 2.28                     | 0.62              |
| 57:BZ:267:LEU:HG   | 57:BZ:268:ALA:H    | 1.63                     | 0.62              |
| 57:BZ:408:GLU:C    | 57:BZ:410:GLN:H    | 2.08                     | 0.62              |
| 57:BZ:562:ARG:O    | 57:BZ:563:MET:HB2  | 1.98                     | 0.62              |
| 57:BZ:603:ALA:CB   | 57:BZ:604:PRO:HD3  | 2.25                     | 0.62              |
| 1:AA:84:A:H1'      | 1:AA:103:A:H61     | 1.64                     | 0.62              |
| 1:AA:120:U:H1'     | 1:AA:149:A:N3      | 2.14                     | 0.62              |
| 1:AA:221:A:C5      | 1:AA:266:G:N7      | 2.68                     | 0.62              |
| 1:AA:262:A:O2'     | 1:AA:263:C:H5'     | 1.99                     | 0.62              |
| 1:AA:492:A:C8      | 1:AA:492:A:OP2     | 2.53                     | 0.62              |
| 1:AA:602:G:H2'     | 1:AA:655:A:C2      | 2.34                     | 0.62              |
| 1:AA:919:G:H2'     | 1:AA:920:G:C8      | 2.29                     | 0.62              |
| 1:AA:1023:U:H2'    | 1:AA:1024:G:H5'    | 1.81                     | 0.62              |
| 1:AA:1046:A:H1'    | 31:AI:11:ALA:CB    | 2.28                     | 0.62              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1521:G:H3'   | 1:AA:1522:G:C5'    | 2.30                     | 0.62              |
| 1:AA:1650:G:H5'   | 13:AO:104:ARG:HH21 | 1.63                     | 0.62              |
| 1:AA:1661:G:H2'   | 1:AA:1662:C:C6     | 2.34                     | 0.62              |
| 1:AA:1675:C:C4    | 5:AE:128:SER:HB2   | 2.35                     | 0.62              |
| 1:AA:1817:G:OP1   | 4:AD:88:ARG:NH1    | 2.30                     | 0.62              |
| 1:AA:1913:A:C2    | 56:BD:37:A:O2'     | 2.52                     | 0.62              |
| 1:AA:2039:C:H2'   | 1:AA:2040:C:C6     | 2.34                     | 0.62              |
| 1:AA:2122:U:H2'   | 1:AA:2123:G:C5'    | 2.25                     | 0.62              |
| 1:AA:2468:G:HO2'  | 1:AA:2469:A:H8     | 1.48                     | 0.62              |
| 1:AA:2484:G:N2    | 12:AN:124:LYS:HD2  | 2.15                     | 0.62              |
| 1:AA:2603:G:C5    | 1:AA:2604:U:C5     | 2.87                     | 0.62              |
| 1:AA:2646:C:C5    | 1:AA:2647:U:O4     | 2.53                     | 0.62              |
| 1:AA:2747:G:N2    | 1:AA:2754:U:C2     | 2.68                     | 0.62              |
| 1:AA:2825:C:O5'   | 1:AA:2825:C:C6     | 2.52                     | 0.62              |
| 1:AA:2876:G:OP1   | 15:AQ:2:ASN:CB     | 2.47                     | 0.62              |
| 2:AB:0:A:N3       | 2:AB:0:A:C5'       | 2.63                     | 0.62              |
| 2:AB:52:A:H2'     | 2:AB:52:A:N3       | 2.15                     | 0.62              |
| 2:AB:57:A:H3'     | 2:AB:57:A:C8       | 2.34                     | 0.62              |
| 3:AC:59:ARG:HD3   | 3:AC:164:ARG:CG    | 2.28                     | 0.62              |
| 4:AD:5:LYS:CB     | 4:AD:82:ILE:HD12   | 2.29                     | 0.62              |
| 4:AD:8:PRO:CD     | 4:AD:26:LYS:H      | 2.12                     | 0.62              |
| 5:AE:47:VAL:HG22  | 5:AE:79:ARG:CG     | 2.30                     | 0.62              |
| 5:AE:182:LEU:HD23 | 5:AE:183:LEU:N     | 2.14                     | 0.62              |
| 6:AF:41:LEU:CA    | 6:AF:44:ARG:NE     | 2.63                     | 0.62              |
| 7:AG:1:MET:C      | 7:AG:3:LEU:N       | 2.53                     | 0.62              |
| 7:AG:68:PRO:CB    | 7:AG:72:ARG:HH12   | 2.12                     | 0.62              |
| 7:AG:81:LYS:O     | 56:BE:52:G:O5'     | 2.17                     | 0.62              |
| 7:AG:157:ILE:HG12 | 7:AG:158:ALA:N     | 2.15                     | 0.62              |
| 8:AH:127:GLU:HB2  | 8:AH:130:ARG:O     | 2.00                     | 0.62              |
| 10:AL:31:LYS:C    | 10:AL:32:TYR:CG    | 2.78                     | 0.62              |
| 10:AL:122:LEU:C   | 15:AQ:74:ARG:NH2   | 2.58                     | 0.62              |
| 12:AN:37:LEU:HD11 | 12:AN:130:LYS:CB   | 2.27                     | 0.62              |
| 12:AN:59:ARG:C    | 12:AN:60:ARG:HD2   | 2.24                     | 0.62              |
| 13:AO:102:GLU:CG  | 13:AO:103:ARG:N    | 2.62                     | 0.62              |
| 14:AP:10:ARG:O    | 14:AP:12:PHE:N     | 2.32                     | 0.62              |
| 17:AS:18:LEU:HA   | 17:AS:96:ILE:O     | 2.00                     | 0.62              |
| 20:AV:88:LYS:O    | 20:AV:91:GLU:HB2   | 1.99                     | 0.62              |
| 21:AW:19:ARG:N    | 21:AW:23:LYS:O     | 2.33                     | 0.62              |
| 21:AW:158:PRO:CB  | 21:AW:159:PRO:HD2  | 2.27                     | 0.62              |
| 23:AY:20:VAL:HG23 | 23:AY:55:LEU:HD23  | 1.79                     | 0.62              |
| 25:Aa:62:ARG:O    | 25:Aa:65:ASP:OD1   | 2.17                     | 0.62              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:Aa:65:ASP:N     | 25:Aa:68:ARG:NH2   | 2.48                     | 0.62              |
| 32:AJ:72:PRO:HG2   | 32:AJ:77:LEU:HB2   | 1.69                     | 0.62              |
| 32:AJ:83:GLY:C     | 32:AJ:85:GLU:N     | 2.57                     | 0.62              |
| 33:Ag:7:UNK:CB     | 33:Ag:147:UNK:CB   | 2.77                     | 0.62              |
| 34:BA:279:A:N3     | 34:BA:281:G:N2     | 2.48                     | 0.62              |
| 34:BA:292:G:N7     | 34:BA:293:G:H1'    | 2.15                     | 0.62              |
| 34:BA:438:G:N2     | 34:BA:495:A:C8     | 2.68                     | 0.62              |
| 34:BA:520:A:C8     | 34:BA:521:G:O4'    | 2.52                     | 0.62              |
| 34:BA:710:G:O2'    | 34:BA:711:G:H5'    | 1.99                     | 0.62              |
| 34:BA:778:G:H2'    | 34:BA:779:C:C6     | 2.34                     | 0.62              |
| 34:BA:895:G:H2'    | 34:BA:896:C:C6     | 2.35                     | 0.62              |
| 34:BA:972:C:O2     | 43:BN:55:LYS:HE3   | 1.98                     | 0.62              |
| 34:BA:1117:G:C4    | 34:BA:1184:G:C4    | 2.86                     | 0.62              |
| 34:BA:1273:G:H3'   | 34:BA:1274:G:H8    | 1.63                     | 0.62              |
| 34:BA:1315:U:H2'   | 34:BA:1316:G:O4'   | 1.99                     | 0.62              |
| 34:BA:1321:C:H2'   | 34:BA:1322:C:C6    | 2.34                     | 0.62              |
| 34:BA:1454:G:O6    | 34:BA:1455:G:O6    | 2.14                     | 0.62              |
| 34:BA:1484:C:C2    | 34:BA:1485:U:C6    | 2.88                     | 0.62              |
| 35:BF:175:ARG:HA   | 35:BF:178:ARG:HB2  | 1.80                     | 0.62              |
| 36:BG:150:LYS:CB   | 36:BG:173:VAL:HG21 | 2.22                     | 0.62              |
| 37:BH:18:LYS:HG2   | 37:BH:33:MET:CB    | 2.25                     | 0.62              |
| 38:BI:56:GLN:N     | 38:BI:56:GLN:NE2   | 2.47                     | 0.62              |
| 41:BL:87:SER:HB3   | 41:BL:93:VAL:H     | 1.64                     | 0.62              |
| 44:BO:66:LEU:CB    | 44:BO:70:LYS:HZ2   | 2.11                     | 0.62              |
| 44:BO:73:MET:SD    | 44:BO:103:LEU:HB3  | 2.40                     | 0.62              |
| 44:BO:114:VAL:HG22 | 44:BO:115:PRO:N    | 2.14                     | 0.62              |
| 47:BR:16:PHE:O     | 47:BR:18:VAL:N     | 2.32                     | 0.62              |
| 48:BS:45:VAL:O     | 48:BS:45:VAL:HG12  | 1.99                     | 0.62              |
| 49:BT:27:LYS:O     | 49:BT:29:ASP:N     | 2.33                     | 0.62              |
| 49:BT:51:VAL:O     | 49:BT:52:ASP:C     | 2.42                     | 0.62              |
| 53:BX:8:ARG:NH1    | 53:BX:8:ARG:HB3    | 2.14                     | 0.62              |
| 56:BD:65:G:C2      | 56:BD:66:U:C2      | 2.88                     | 0.62              |
| 57:BZ:87:ARG:HH22  | 57:BZ:211:GLN:N    | 1.96                     | 0.62              |
| 57:BZ:212:LEU:HD12 | 57:BZ:221:ILE:O    | 1.98                     | 0.62              |
| 1:AA:164:U:H2'     | 1:AA:172:C:C1'     | 2.29                     | 0.62              |
| 1:AA:197:A:C2      | 1:AA:198:C:C1'     | 2.82                     | 0.62              |
| 1:AA:298:G:O5'     | 1:AA:298:G:C8      | 2.48                     | 0.62              |
| 1:AA:607:U:C2      | 1:AA:608:A:C8      | 2.87                     | 0.62              |
| 1:AA:648:G:H2'     | 1:AA:649:G:H8      | 1.65                     | 0.62              |
| 1:AA:919:G:H4'     | 2:AB:81:G:O2'      | 2.00                     | 0.62              |
| 1:AA:936:C:H2'     | 1:AA:937:U:H6      | 1.65                     | 0.62              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:949:C:C2     | 1:AA:950:G:C8      | 2.88                     | 0.62              |
| 1:AA:966:G:C1'    | 1:AA:2267:A:H61    | 2.12                     | 0.62              |
| 1:AA:987:G:O6     | 1:AA:988:A:C5      | 2.52                     | 0.62              |
| 1:AA:1000:A:H61   | 1:AA:1155:A:C5'    | 2.12                     | 0.62              |
| 1:AA:1025:G:N3    | 1:AA:1025:G:C2'    | 2.63                     | 0.62              |
| 1:AA:1210:A:H1'   | 1:AA:1212:G:N2     | 2.15                     | 0.62              |
| 1:AA:1343:G:H21   | 1:AA:1405:U:H1'    | 1.65                     | 0.62              |
| 1:AA:1418:G:H5'   | 1:AA:1587:A:O2'    | 2.00                     | 0.62              |
| 1:AA:1472:A:C6    | 1:AA:1518:C:N4     | 2.68                     | 0.62              |
| 1:AA:1491:G:H2'   | 1:AA:1492:G:O3'    | 1.99                     | 0.62              |
| 1:AA:1662:C:C4    | 1:AA:1663:C:N4     | 2.68                     | 0.62              |
| 1:AA:1703:G:N2    | 1:AA:1704:G:C4     | 2.67                     | 0.62              |
| 1:AA:1826:G:O5'   | 1:AA:1826:G:H8     | 1.82                     | 0.62              |
| 1:AA:1882:C:C2'   | 1:AA:1883:G:H5'    | 2.30                     | 0.62              |
| 1:AA:1935:G:H1'   | 1:AA:1964:G:N2     | 2.15                     | 0.62              |
| 1:AA:1992:G:C5    | 1:AA:1997:G:C4     | 2.88                     | 0.62              |
| 1:AA:2009:G:H5''  | 18:AT:41:LYS:HG2   | 1.81                     | 0.62              |
| 1:AA:2115:G:O2'   | 1:AA:2117:A:N6     | 2.27                     | 0.62              |
| 1:AA:2152:G:P     | 3:AC:3:HIS:C       | 2.82                     | 0.62              |
| 1:AA:2228:G:C8    | 1:AA:2229:C:C6     | 2.88                     | 0.62              |
| 1:AA:2246:G:H2'   | 1:AA:2247:A:H8     | 1.62                     | 0.62              |
| 1:AA:2331:G:H4'   | 22:AX:43:THR:N     | 2.14                     | 0.62              |
| 1:AA:2436:G:H2'   | 1:AA:2437:U:H6     | 1.64                     | 0.62              |
| 1:AA:2484:G:N3    | 12:AN:124:LYS:CE   | 2.62                     | 0.62              |
| 1:AA:2484:G:N3    | 12:AN:124:LYS:HE2  | 2.14                     | 0.62              |
| 1:AA:2548:G:H5'   | 1:AA:2548:G:C8     | 2.32                     | 0.62              |
| 1:AA:2602:A:N1    | 56:BD:74:C:H3'     | 2.15                     | 0.62              |
| 4:AD:84:TYR:CD1   | 4:AD:91:ARG:HG3    | 2.35                     | 0.62              |
| 4:AD:175:LEU:O    | 4:AD:175:LEU:HD13  | 1.98                     | 0.62              |
| 6:AF:155:LEU:CG   | 6:AF:189:THR:HG21  | 2.24                     | 0.62              |
| 7:AG:2:PRO:HA     | 7:AG:5:VAL:CG2     | 2.30                     | 0.62              |
| 7:AG:53:LEU:O     | 7:AG:68:PRO:HB2    | 1.99                     | 0.62              |
| 7:AG:119:GLY:HA3  | 7:AG:180:PHE:CZ    | 2.35                     | 0.62              |
| 7:AG:173:LEU:HG   | 7:AG:173:LEU:O     | 1.98                     | 0.62              |
| 9:AK:87:LEU:HA    | 9:AK:90:MET:HB2    | 1.82                     | 0.62              |
| 9:AK:95:PRO:HA    | 9:AK:98:VAL:CG2    | 2.29                     | 0.62              |
| 9:AK:104:LYS:O    | 9:AK:107:LEU:N     | 2.33                     | 0.62              |
| 10:AL:64:ARG:CZ   | 10:AL:66:LYS:H     | 2.13                     | 0.62              |
| 11:AM:16:ARG:HD2  | 11:AM:16:ARG:C     | 2.24                     | 0.62              |
| 12:AN:32:TYR:CZ   | 12:AN:106:VAL:HG23 | 2.35                     | 0.62              |
| 12:AN:111:GLU:HB3 | 12:AN:112:GLU:OE2  | 2.00                     | 0.62              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 13:AO:28:LEU:HD11 | 13:AO:116:LEU:HD23 | 1.80                     | 0.62              |
| 13:AO:75:LEU:HA   | 13:AO:78:LYS:CB    | 2.29                     | 0.62              |
| 15:AQ:93:ARG:HG2  | 15:AQ:95:ARG:NH1   | 2.14                     | 0.62              |
| 16:AR:93:LYS:HB2  | 17:AS:10:LYS:CD    | 2.29                     | 0.62              |
| 17:AS:5:VAL:HG12  | 17:AS:37:VAL:HG22  | 1.79                     | 0.62              |
| 19:AU:36:LYS:CD   | 19:AU:39:ILE:HD12  | 2.30                     | 0.62              |
| 21:AW:43:GLU:O    | 21:AW:44:PHE:C     | 2.43                     | 0.62              |
| 21:AW:115:GLY:O   | 21:AW:117:LEU:HD12 | 2.00                     | 0.62              |
| 25:Aa:33:VAL:HG12 | 25:Aa:35:VAL:HG23  | 1.82                     | 0.62              |
| 25:Aa:35:VAL:HG12 | 25:Aa:36:CYS:N     | 2.14                     | 0.62              |
| 26:Ab:12:SER:HB3  | 26:Ab:14:ALA:HB3   | 1.82                     | 0.62              |
| 30:Af:20:HIS:O    | 30:Af:22:ARG:HG2   | 1.99                     | 0.62              |
| 34:BA:186:C:O2'   | 34:BA:186(A):C:H5' | 2.00                     | 0.62              |
| 34:BA:363:A:C5    | 45:BP:31:PRO:HD2   | 2.35                     | 0.62              |
| 34:BA:404:U:C4'   | 37:BH:122:ARG:NH1  | 2.62                     | 0.62              |
| 34:BA:775:G:H2'   | 34:BA:776:G:C8     | 2.34                     | 0.62              |
| 34:BA:826:C:H5'   | 41:BL:12:ARG:NE    | 2.15                     | 0.62              |
| 34:BA:933:G:N7    | 40:BK:3:ARG:NH2    | 2.46                     | 0.62              |
| 34:BA:948:C:OP1   | 46:BQ:109:THR:HB   | 2.00                     | 0.62              |
| 34:BA:955:U:C2    | 34:BA:956:U:C5     | 2.88                     | 0.62              |
| 34:BA:983:A:C1'   | 34:BA:1201:A:N7    | 2.59                     | 0.62              |
| 34:BA:1216:G:H5'' | 47:BR:5:ALA:CB     | 2.29                     | 0.62              |
| 34:BA:1219:U:H2'  | 52:BW:52:TYR:CE2   | 2.35                     | 0.62              |
| 34:BA:1220:G:N2   | 52:BW:55:LYS:HG3   | 2.14                     | 0.62              |
| 34:BA:1305:G:H21  | 34:BA:1331:G:H2'   | 1.64                     | 0.62              |
| 34:BA:1306:A:H61  | 34:BA:1331:G:H1'   | 1.65                     | 0.62              |
| 34:BA:1454:G:C4   | 34:BA:1455:G:C5    | 2.88                     | 0.62              |
| 35:BF:141:GLU:OE1 | 35:BF:142:LEU:N    | 2.33                     | 0.62              |
| 35:BF:200:ILE:O   | 35:BF:202:PRO:CD   | 2.47                     | 0.62              |
| 36:BG:91:LEU:HD23 | 36:BG:92:ALA:N     | 2.15                     | 0.62              |
| 37:BH:100:ARG:HB2 | 37:BH:103:ASN:HB2  | 1.82                     | 0.62              |
| 38:BI:79:GLU:CG   | 38:BI:93:PRO:HD2   | 2.29                     | 0.62              |
| 38:BI:137:GLU:HA  | 38:BI:137:GLU:OE2  | 1.97                     | 0.62              |
| 39:BJ:52:ILE:HG21 | 39:BJ:87:ARG:CZ    | 2.30                     | 0.62              |
| 40:BK:113:GLU:OE1 | 40:BK:118:VAL:C    | 2.42                     | 0.62              |
| 41:BL:6:ILE:HG13  | 41:BL:85:ARG:NH2   | 2.14                     | 0.62              |
| 41:BL:11:THR:O    | 41:BL:13:ILE:N     | 2.33                     | 0.62              |
| 42:BM:15:ALA:HB3  | 42:BM:76:ALA:CB    | 2.29                     | 0.62              |
| 42:BM:111:ARG:HD2 | 47:BR:61:TRP:NE1   | 2.15                     | 0.62              |
| 43:BN:10:GLY:CA   | 43:BN:94:VAL:HG22  | 2.29                     | 0.62              |
| 44:BO:75:TYR:O    | 44:BO:77:MET:N     | 2.30                     | 0.62              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 49:BT:4:ILE:CG2   | 49:BT:21:VAL:HG13  | 2.30                     | 0.62              |
| 51:BV:21:LYS:HD2  | 51:BV:23:LYS:H     | 1.64                     | 0.62              |
| 52:BW:5:LEU:HD23  | 52:BW:6:LYS:H      | 1.61                     | 0.62              |
| 56:BD:2:C:C4      | 56:BD:71:G:N1      | 2.46                     | 0.62              |
| 56:BD:50:U:O4     | 56:BD:65:G:C6      | 2.53                     | 0.62              |
| 56:BD:56:C:O2'    | 56:BD:57:G:O4'     | 2.17                     | 0.62              |
| 57:BZ:6:ARG:C     | 57:BZ:72:ILE:HD11  | 2.17                     | 0.62              |
| 57:BZ:6:ARG:NH1   | 57:BZ:196:ALA:CA   | 2.63                     | 0.62              |
| 57:BZ:169:ASN:HA  | 57:BZ:171:ILE:HD13 | 1.81                     | 0.62              |
| 57:BZ:438:ARG:NH2 | 57:BZ:440:ASP:OD2  | 2.32                     | 0.62              |
| 57:BZ:559:PRO:O   | 57:BZ:561:ILE:HG13 | 2.00                     | 0.62              |
| 1:AA:244:A:C5     | 1:AA:245:G:H1'     | 2.35                     | 0.62              |
| 1:AA:270(X):G:H4' | 1:AA:272:G:O3'     | 1.99                     | 0.62              |
| 1:AA:627:A:C2'    | 1:AA:628:G:O4'     | 2.42                     | 0.62              |
| 1:AA:637:A:H2     | 1:AA:651:G:C5'     | 2.13                     | 0.62              |
| 1:AA:643:A:H1'    | 1:AA:644:A:C8      | 2.35                     | 0.62              |
| 1:AA:673:C:H5''   | 6:AF:81:PRO:HG2    | 1.81                     | 0.62              |
| 1:AA:675:A:H2'    | 1:AA:676:A:N3      | 2.14                     | 0.62              |
| 1:AA:959:A:H2'    | 1:AA:960:A:H8      | 1.62                     | 0.62              |
| 1:AA:1000:A:C2    | 1:AA:1155:A:C2     | 2.88                     | 0.62              |
| 1:AA:1020:A:N3    | 1:AA:1140:C:O2     | 2.33                     | 0.62              |
| 1:AA:1204:A:O4'   | 1:AA:1204:A:P      | 2.58                     | 0.62              |
| 1:AA:1265:A:O2'   | 1:AA:1266:G:H4'    | 2.00                     | 0.62              |
| 1:AA:1279:G:H2'   | 1:AA:1280:G:H8     | 1.65                     | 0.62              |
| 1:AA:1506:C:N3    | 1:AA:1507:A:H1'    | 2.15                     | 0.62              |
| 1:AA:1650:G:O2'   | 1:AA:1651:G:P      | 2.58                     | 0.62              |
| 1:AA:1661:G:N2    | 1:AA:2000:G:H1'    | 2.15                     | 0.62              |
| 1:AA:1829:A:C2    | 1:AA:1830:C:H1'    | 2.35                     | 0.62              |
| 1:AA:1853:A:N1    | 1:AA:2087:G:H1'    | 2.15                     | 0.62              |
| 1:AA:2009:G:H1'   | 13:AO:107:ASP:O    | 1.99                     | 0.62              |
| 1:AA:2043:C:C2'   | 1:AA:2044:C:O5'    | 2.48                     | 0.62              |
| 1:AA:2083:G:N2    | 1:AA:2084:C:C2     | 2.68                     | 0.62              |
| 1:AA:2093:G:H2'   | 1:AA:2094:G:O5'    | 1.99                     | 0.62              |
| 1:AA:2392:A:H2'   | 1:AA:2393:A:C5'    | 2.29                     | 0.62              |
| 1:AA:2418:A:C2'   | 1:AA:2419:U:O4'    | 2.44                     | 0.62              |
| 1:AA:2482:G:C2    | 1:AA:2483:C:H1'    | 2.35                     | 0.62              |
| 1:AA:2537:U:H2'   | 1:AA:2538:C:C5     | 2.34                     | 0.62              |
| 1:AA:2538:C:H2'   | 1:AA:2539:C:H6     | 1.61                     | 0.62              |
| 1:AA:2620:C:OP1   | 5:AE:153:GLY:HA2   | 1.98                     | 0.62              |
| 1:AA:2787:C:H1'   | 5:AE:61:ARG:NH2    | 2.15                     | 0.62              |
| 1:AA:2807:G:N9    | 1:AA:2808:U:H5     | 1.93                     | 0.62              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 59:AA:3003:8AN:C5' | 56:BE:75:C:H3'    | 2.26                     | 0.62              |
| 2:AB:74:U:H5''     | 2:AB:75:G:OP2     | 1.98                     | 0.62              |
| 2:AB:90:C:H2'      | 2:AB:91:C:H6      | 1.64                     | 0.62              |
| 3:AC:29:VAL:HG21   | 3:AC:41:VAL:HG11  | 1.80                     | 0.62              |
| 4:AD:89:SER:OG     | 4:AD:159:ALA:N    | 2.33                     | 0.62              |
| 4:AD:155:LEU:HA    | 4:AD:157:ARG:HH21 | 1.65                     | 0.62              |
| 4:AD:267:SER:O     | 4:AD:268:ARG:O    | 2.18                     | 0.62              |
| 5:AE:9:VAL:HG12    | 5:AE:192:ASN:ND2  | 2.14                     | 0.62              |
| 5:AE:92:THR:O      | 5:AE:94:GLU:N     | 2.32                     | 0.62              |
| 5:AE:105:THR:O     | 5:AE:197:ILE:HD12 | 2.00                     | 0.62              |
| 5:AE:136:ARG:CZ    | 5:AE:137:HIS:HA   | 2.30                     | 0.62              |
| 6:AF:121:GLY:HA3   | 6:AF:191:ARG:NE   | 2.11                     | 0.62              |
| 6:AF:137:LYS:HA    | 6:AF:137:LYS:HZ3  | 1.65                     | 0.62              |
| 7:AG:68:PRO:CG     | 7:AG:72:ARG:HH12  | 2.12                     | 0.62              |
| 7:AG:162:THR:O     | 7:AG:164:GLU:N    | 2.31                     | 0.62              |
| 8:AH:45:VAL:HG13   | 8:AH:50:VAL:HG13  | 1.82                     | 0.62              |
| 9:AK:31:ALA:O      | 9:AK:33:LEU:N     | 2.32                     | 0.62              |
| 9:AK:100:GLU:HA    | 9:AK:103:VAL:HG13 | 1.81                     | 0.62              |
| 9:AK:107:LEU:HD13  | 9:AK:117:PHE:CE2  | 2.35                     | 0.62              |
| 10:AL:57:VAL:HG23  | 10:AL:58:VAL:N    | 2.14                     | 0.62              |
| 10:AL:89:ASN:O     | 10:AL:90:GLN:HB2  | 2.00                     | 0.62              |
| 11:AM:122:PRO:HB3  | 11:AM:134:ALA:O   | 2.00                     | 0.62              |
| 11:AM:131:SER:O    | 11:AM:134:ALA:CB  | 2.43                     | 0.62              |
| 12:AN:75:THR:HA    | 12:AN:91:GLU:CG   | 2.29                     | 0.62              |
| 13:AO:54:LEU:HD12  | 13:AO:54:LEU:H    | 1.64                     | 0.62              |
| 13:AO:61:HIS:CE1   | 13:AO:64:ARG:NE   | 2.68                     | 0.62              |
| 13:AO:67:LEU:O     | 13:AO:68:ARG:C    | 2.43                     | 0.62              |
| 14:AP:40:ILE:HG22  | 14:AP:41:ASP:N    | 2.12                     | 0.62              |
| 14:AP:49:VAL:HG21  | 14:AP:80:LEU:HG   | 1.82                     | 0.62              |
| 15:AQ:28:VAL:HG12  | 15:AQ:30:VAL:CG1  | 2.30                     | 0.62              |
| 15:AQ:76:PHE:CE2   | 15:AQ:78:LEU:HB2  | 2.35                     | 0.62              |
| 20:AV:47:LYS:O     | 20:AV:48:ALA:CB   | 2.48                     | 0.62              |
| 21:AW:1:MET:HE1    | 21:AW:59:LEU:CD2  | 2.30                     | 0.62              |
| 21:AW:48:PHE:CB    | 21:AW:54:HIS:HE1  | 2.13                     | 0.62              |
| 22:AX:44:ARG:HE    | 22:AX:77:ARG:CD   | 2.12                     | 0.62              |
| 22:AX:50:ASN:HB2   | 22:AX:81:VAL:CG2  | 2.29                     | 0.62              |
| 25:Aa:5:ILE:HD11   | 25:Aa:9:LEU:C     | 2.24                     | 0.62              |
| 26:Ab:44:THR:C     | 26:Ab:52:TYR:OH   | 2.41                     | 0.62              |
| 27:Ac:49:HIS:O     | 27:Ac:50:ARG:CB   | 2.47                     | 0.62              |
| 29:Ae:2:PRO:HB2    | 29:Ae:4:MET:HE3   | 1.82                     | 0.62              |
| 29:Ae:39:LYS:HA    | 29:Ae:42:ARG:HD3  | 1.80                     | 0.62              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 32:AJ:12:LEU:CD2   | 32:AJ:23:VAL:HG22  | 2.28                     | 0.62              |
| 32:AJ:15:GLY:HA2   | 32:AJ:45:THR:O     | 2.00                     | 0.62              |
| 32:AJ:123:ALA:O    | 32:AJ:127:ILE:HD12 | 2.00                     | 0.62              |
| 34:BA:54:C:H41     | 34:BA:352:C:H2'    | 1.65                     | 0.62              |
| 34:BA:135:C:H3'    | 34:BA:135:C:C6     | 2.35                     | 0.62              |
| 34:BA:257:G:O2'    | 34:BA:258:G:H5'    | 1.99                     | 0.62              |
| 34:BA:274:A:O2'    | 34:BA:275:G:H1'    | 2.00                     | 0.62              |
| 34:BA:375:U:H4'    | 49:BT:17:TYR:HE2   | 1.62                     | 0.62              |
| 34:BA:571:U:H5''   | 34:BA:571:U:C6     | 2.35                     | 0.62              |
| 34:BA:851:G:C2     | 34:BA:852:G:H1'    | 2.35                     | 0.62              |
| 34:BA:900:A:C5     | 34:BA:901:A:N7     | 2.68                     | 0.62              |
| 34:BA:1055:A:N6    | 34:BA:1206:G:C5    | 2.68                     | 0.62              |
| 34:BA:1132:C:C4    | 34:BA:1133:G:N7    | 2.67                     | 0.62              |
| 34:BA:1272:G:H2'   | 34:BA:1273:G:H8    | 1.65                     | 0.62              |
| 34:BA:1418:A:C3'   | 34:BA:1419:G:H5'   | 2.30                     | 0.62              |
| 34:BA:1438:G:C6    | 34:BA:1439:C:C4    | 2.88                     | 0.62              |
| 35:BF:29:ALA:O     | 35:BF:32:ILE:HB    | 2.00                     | 0.62              |
| 35:BF:189:ASP:OD1  | 35:BF:205:ASP:N    | 2.33                     | 0.62              |
| 36:BG:191:THR:C    | 36:BG:193:TYR:H    | 2.08                     | 0.62              |
| 37:BH:120:LEU:HD12 | 37:BH:120:LEU:C    | 2.25                     | 0.62              |
| 37:BH:157:LEU:O    | 37:BH:158:ILE:C    | 2.43                     | 0.62              |
| 39:BJ:33:TYR:CE2   | 39:BJ:74:ASP:HB2   | 2.32                     | 0.62              |
| 39:BJ:60:PHE:N     | 39:BJ:60:PHE:CD1   | 2.66                     | 0.62              |
| 40:BK:125:MET:HG3  | 40:BK:126:ASP:N    | 2.10                     | 0.62              |
| 41:BL:112:LEU:HD21 | 41:BL:114:THR:HG23 | 1.81                     | 0.62              |
| 43:BN:31:GLY:HA3   | 43:BN:74:ILE:CG2   | 2.29                     | 0.62              |
| 46:BQ:13:LYS:HB3   | 46:BQ:17:VAL:CB    | 2.28                     | 0.62              |
| 46:BQ:77:ASN:O     | 46:BQ:81:LEU:HD12  | 1.99                     | 0.62              |
| 48:BS:41:GLU:CD    | 48:BS:41:GLU:C     | 2.65                     | 0.62              |
| 49:BT:4:ILE:HG23   | 49:BT:21:VAL:HG13  | 1.82                     | 0.62              |
| 51:BV:21:LYS:CE    | 51:BV:23:LYS:HB3   | 2.28                     | 0.62              |
| 56:BE:3:C:N3       | 56:BE:70:G:H2'     | 2.15                     | 0.62              |
| 57:BZ:14:VAL:N     | 57:BZ:108:GLN:CG   | 2.19                     | 0.62              |
| 57:BZ:230:LYS:CD   | 57:BZ:265:THR:O    | 2.31                     | 0.62              |
| 57:BZ:338:GLU:OE1  | 57:BZ:338:GLU:HA   | 1.98                     | 0.62              |
| 1:AA:6:A:C2        | 1:AA:2898:U:C1'    | 2.82                     | 0.62              |
| 1:AA:46:C:N4       | 1:AA:214:G:C8      | 2.68                     | 0.62              |
| 1:AA:190:A:OP2     | 1:AA:205:G:N2      | 2.33                     | 0.62              |
| 1:AA:453:C:H4'     | 1:AA:457:A:H62     | 1.65                     | 0.62              |
| 1:AA:531:C:C5'     | 1:AA:532:A:C2      | 2.82                     | 0.62              |
| 1:AA:533:G:C6      | 1:AA:534:U:N3      | 2.68                     | 0.62              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:663:G:H5'    | 11:AM:18:ARG:CB    | 2.20                     | 0.62              |
| 1:AA:668:G:H2'    | 1:AA:670:A:N6      | 2.13                     | 0.62              |
| 1:AA:685:A:O4'    | 1:AA:774:A:N6      | 2.32                     | 0.62              |
| 1:AA:685:A:C2     | 1:AA:689:A:C6      | 2.88                     | 0.62              |
| 1:AA:852:G:O4'    | 24:AZ:42:ALA:HA    | 1.99                     | 0.62              |
| 1:AA:960:A:C2     | 1:AA:962:G:H1'     | 2.35                     | 0.62              |
| 1:AA:1034:G:OP2   | 30:Af:18:ARG:NE    | 2.33                     | 0.62              |
| 1:AA:1072:C:C2'   | 1:AA:1093:G:C5     | 2.82                     | 0.62              |
| 1:AA:1085:A:O2'   | 1:AA:1086:A:OP2    | 2.16                     | 0.62              |
| 1:AA:1131:G:N2    | 9:AK:72:TYR:HE1    | 1.97                     | 0.62              |
| 1:AA:1268:A:C4    | 1:AA:2013:A:N6     | 2.68                     | 0.62              |
| 1:AA:1725:G:N3    | 1:AA:1725:G:H2'    | 2.15                     | 0.62              |
| 1:AA:1916:A:O2'   | 1:AA:1917:U:O4'    | 2.16                     | 0.62              |
| 1:AA:1988:C:H2'   | 1:AA:1989:G:O5'    | 2.00                     | 0.62              |
| 1:AA:1997:G:N1    | 1:AA:1998:G:C6     | 2.67                     | 0.62              |
| 1:AA:2058:A:N3    | 1:AA:2059:A:N7     | 2.48                     | 0.62              |
| 1:AA:2199:A:C5    | 1:AA:2225:A:N1     | 2.67                     | 0.62              |
| 1:AA:2325:G:H2'   | 1:AA:2326:C:O4'    | 2.00                     | 0.62              |
| 1:AA:2392:A:C2'   | 1:AA:2393:A:O5'    | 2.47                     | 0.62              |
| 1:AA:2530:A:C2'   | 1:AA:2531:A:H5''   | 2.30                     | 0.62              |
| 1:AA:2646:C:C5    | 1:AA:2647:U:C4     | 2.87                     | 0.62              |
| 2:AB:14:U:H1'     | 2:AB:107:U:O4'     | 2.00                     | 0.62              |
| 4:AD:118:VAL:O    | 4:AD:119:ALA:HB2   | 1.98                     | 0.62              |
| 5:AE:49:LEU:CD1   | 5:AE:76:ARG:HG2    | 2.30                     | 0.62              |
| 6:AF:121:GLY:CA   | 6:AF:191:ARG:HE    | 2.11                     | 0.62              |
| 7:AG:4:ASP:HB3    | 7:AG:104:GLU:CD    | 2.24                     | 0.62              |
| 7:AG:27:ASN:HB3   | 7:AG:29:TRP:CE2    | 2.35                     | 0.62              |
| 7:AG:135:LEU:HD12 | 7:AG:155:MET:HB2   | 1.82                     | 0.62              |
| 8:AH:124:GLU:OE1  | 8:AH:124:GLU:N     | 2.32                     | 0.62              |
| 8:AH:133:VAL:HG22 | 8:AH:134:SER:N     | 2.15                     | 0.62              |
| 10:AL:11:ALA:HB3  | 10:AL:97:ARG:HH22  | 1.64                     | 0.62              |
| 11:AM:78:PRO:HG2  | 11:AM:117:GLU:OE1  | 2.00                     | 0.62              |
| 11:AM:122:PRO:HD3 | 11:AM:137:LYS:HB2  | 1.82                     | 0.62              |
| 12:AN:55:VAL:HG23 | 12:AN:64:ILE:HD11  | 1.81                     | 0.62              |
| 13:AO:10:LEU:HB2  | 13:AO:17:ARG:NH1   | 2.14                     | 0.62              |
| 14:AP:97:ARG:HG3  | 14:AP:97:ARG:HH21  | 1.63                     | 0.62              |
| 15:AQ:102:ILE:C   | 15:AQ:104:ASN:N    | 2.56                     | 0.62              |
| 15:AQ:103:ARG:HB3 | 15:AQ:107:ASP:OD1  | 2.00                     | 0.62              |
| 16:AR:8:VAL:N     | 16:AR:11:ARG:HH21  | 1.98                     | 0.62              |
| 16:AR:98:LEU:HB3  | 16:AR:105:VAL:HG13 | 1.80                     | 0.62              |
| 17:AS:3:ALA:O     | 17:AS:12:TYR:CE2   | 2.53                     | 0.62              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AS:12:TYR:O     | 17:AS:13:ARG:HB2   | 2.00                     | 0.62              |
| 17:AS:39:LEU:O     | 17:AS:40:LEU:HD12  | 2.00                     | 0.62              |
| 20:AV:13:VAL:HG13  | 20:AV:70:SER:CB    | 2.29                     | 0.62              |
| 20:AV:109:GLU:O    | 20:AV:110:GLU:C    | 2.42                     | 0.62              |
| 24:AZ:50:VAL:HG13  | 24:AZ:53:LEU:HB2   | 1.82                     | 0.62              |
| 32:AJ:27:LEU:HD21  | 32:AJ:57:ILE:HB    | 1.80                     | 0.62              |
| 34:BA:235:C:H2'    | 34:BA:236:G:H8     | 1.64                     | 0.62              |
| 34:BA:255:G:OP2    | 50:BU:66:SER:HB2   | 2.00                     | 0.62              |
| 34:BA:293:G:H2'    | 34:BA:293:G:N3     | 2.15                     | 0.62              |
| 34:BA:362:G:N3     | 34:BA:364:A:H8     | 1.98                     | 0.62              |
| 34:BA:407:G:N2     | 34:BA:436:C:H1'    | 2.15                     | 0.62              |
| 34:BA:538:G:OP1    | 45:BP:114:LYS:N    | 2.33                     | 0.62              |
| 34:BA:690:G:H2'    | 34:BA:690:G:N3     | 2.15                     | 0.62              |
| 34:BA:706:A:H4'    | 44:BO:29:ILE:CD1   | 2.30                     | 0.62              |
| 34:BA:752:G:O4'    | 34:BA:752:G:OP2    | 2.18                     | 0.62              |
| 34:BA:851:G:O2'    | 34:BA:852:G:H5'    | 1.99                     | 0.62              |
| 34:BA:914:A:O2'    | 34:BA:915:A:O5'    | 2.17                     | 0.62              |
| 34:BA:1117:G:O3'   | 42:BM:103:THR:HG21 | 2.00                     | 0.62              |
| 34:BA:1180:A:O2'   | 34:BA:1181:G:H5'   | 2.00                     | 0.62              |
| 34:BA:1226:C:N3    | 46:BQ:104:ARG:HG3  | 1.98                     | 0.62              |
| 34:BA:1279:A:O2'   | 34:BA:1282:C:C4    | 2.52                     | 0.62              |
| 34:BA:1338:G:H1'   | 56:BE:42:C:H4'     | 1.82                     | 0.62              |
| 34:BA:1346:A:C8    | 34:BA:1348:U:C2    | 2.88                     | 0.62              |
| 35:BF:7:VAL:HG23   | 35:BF:8:LYS:N      | 2.13                     | 0.62              |
| 35:BF:97:TRP:CZ3   | 35:BF:176:GLU:HG3  | 2.35                     | 0.62              |
| 35:BF:105:PHE:C    | 35:BF:107:THR:H    | 2.06                     | 0.62              |
| 36:BG:138:VAL:HG22 | 36:BG:151:VAL:HG21 | 1.81                     | 0.62              |
| 36:BG:196:LEU:N    | 36:BG:196:LEU:HD23 | 2.14                     | 0.62              |
| 37:BH:135:LEU:C    | 37:BH:137:SER:N    | 2.55                     | 0.62              |
| 38:BI:87:SER:HB3   | 38:BI:131:ILE:HG12 | 1.81                     | 0.62              |
| 39:BJ:80:ARG:CG    | 39:BJ:88:VAL:HG21  | 2.29                     | 0.62              |
| 41:BL:129:VAL:CG2  | 41:BL:130:GLY:H    | 2.09                     | 0.62              |
| 43:BN:23:ILE:HG23  | 43:BN:85:LEU:CD2   | 2.21                     | 0.62              |
| 43:BN:83:GLU:OE1   | 43:BN:83:GLU:HA    | 1.99                     | 0.62              |
| 44:BO:23:ALA:HB1   | 44:BO:88:GLY:HA3   | 1.82                     | 0.62              |
| 46:BQ:16:ASP:N     | 46:BQ:34:LEU:HD21  | 2.15                     | 0.62              |
| 53:BX:23:ARG:HD3   | 53:BX:24:LEU:H     | 1.64                     | 0.62              |
| 56:BD:7:A:C6       | 56:BD:66:U:O2      | 2.53                     | 0.62              |
| 57:BZ:15:ASP:HB2   | 57:BZ:16:HIS:CE1   | 2.12                     | 0.62              |
| 57:BZ:313:VAL:H    | 57:BZ:354:ASP:HB3  | 1.64                     | 0.62              |
| 57:BZ:509:LYS:CG   | 57:BZ:561:ILE:HG21 | 2.30                     | 0.62              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:13:A:H61     | 1:AA:525:U:H2'    | 1.63                     | 0.61              |
| 1:AA:140:A:C2     | 1:AA:1408:C:O2    | 2.53                     | 0.61              |
| 1:AA:213:A:C2'    | 1:AA:214:G:H5'    | 2.29                     | 0.61              |
| 1:AA:463:G:N2     | 1:AA:466:A:OP2    | 2.26                     | 0.61              |
| 1:AA:489:G:H2'    | 1:AA:491:G:O4'    | 2.00                     | 0.61              |
| 1:AA:506:G:H2'    | 1:AA:507:A:OP2    | 2.00                     | 0.61              |
| 1:AA:811:U:H1'    | 1:AA:1251:C:O2    | 2.00                     | 0.61              |
| 1:AA:895:U:C5'    | 1:AA:896:A:H5'    | 2.30                     | 0.61              |
| 1:AA:974(A):C:O2  | 1:AA:989:G:C2     | 2.53                     | 0.61              |
| 1:AA:996:A:C2     | 1:AA:997:G:C5     | 2.88                     | 0.61              |
| 1:AA:997:G:O2'    | 1:AA:998:C:C5'    | 2.48                     | 0.61              |
| 1:AA:1058:G:H2'   | 1:AA:1059:G:C5'   | 2.30                     | 0.61              |
| 1:AA:1082:U:N3    | 1:AA:1086:A:H2    | 1.92                     | 0.61              |
| 1:AA:1147:C:C2'   | 1:AA:1148:A:H5'   | 2.30                     | 0.61              |
| 1:AA:1171:G:H1    | 1:AA:1179:C:N4    | 1.98                     | 0.61              |
| 1:AA:1363:C:O3'   | 1:AA:1809:A:N6    | 2.32                     | 0.61              |
| 1:AA:1459:G:O6    | 1:AA:1461:G:C6    | 2.53                     | 0.61              |
| 1:AA:1774:C:C5    | 4:AD:18:VAL:HG11  | 2.35                     | 0.61              |
| 1:AA:1808:U:C4    | 1:AA:1810:A:N1    | 2.68                     | 0.61              |
| 1:AA:2263:C:O2'   | 1:AA:2264:C:H5'   | 2.01                     | 0.61              |
| 1:AA:2392:A:O2'   | 1:AA:2393:A:H5'   | 2.00                     | 0.61              |
| 1:AA:2569:G:C6    | 1:AA:2570:G:N7    | 2.67                     | 0.61              |
| 1:AA:2696:U:O2'   | 1:AA:2697:G:H5'   | 2.00                     | 0.61              |
| 1:AA:2720:U:O4    | 1:AA:2873:A:N6    | 2.33                     | 0.61              |
| 2:AB:13:A:N3      | 2:AB:13:A:H2'     | 2.15                     | 0.61              |
| 2:AB:44:G:O2'     | 2:AB:47:C:N4      | 2.33                     | 0.61              |
| 2:AB:57:A:H2'     | 2:AB:58:A:H5'     | 1.82                     | 0.61              |
| 2:AB:104:A:N6     | 2:AB:105:G:N2     | 2.48                     | 0.61              |
| 4:AD:7:LYS:HD3    | 4:AD:9:TYR:OH     | 2.00                     | 0.61              |
| 4:AD:82:ILE:HG22  | 4:AD:83:GLU:N     | 2.15                     | 0.61              |
| 5:AE:124:GLY:HA3  | 5:AE:136:ARG:HB3  | 1.81                     | 0.61              |
| 6:AF:103:LYS:C    | 6:AF:106:ARG:HG2  | 2.24                     | 0.61              |
| 7:AG:157:ILE:HG12 | 7:AG:158:ALA:H    | 1.63                     | 0.61              |
| 9:AK:48:MET:O     | 9:AK:119:ARG:NH1  | 2.31                     | 0.61              |
| 9:AK:57:ALA:O     | 9:AK:58:ASP:O     | 2.18                     | 0.61              |
| 10:AL:18:LYS:NZ   | 10:AL:44:LYS:HD3  | 2.14                     | 0.61              |
| 10:AL:24:VAL:HG22 | 10:AL:30:ALA:CA   | 2.30                     | 0.61              |
| 11:AM:80:TYR:CZ   | 11:AM:85:LEU:HD22 | 2.34                     | 0.61              |
| 12:AN:52:VAL:O    | 12:AN:53:ALA:C    | 2.43                     | 0.61              |
| 16:AR:60:LEU:HB2  | 16:AR:61:TRP:HD1  | 1.64                     | 0.61              |
| 18:AT:98:LYS:NZ   | 18:AT:98:LYS:HB3  | 2.15                     | 0.61              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 20:AV:84:ARG:HD2   | 20:AV:84:ARG:O     | 2.00                     | 0.61              |
| 22:AX:50:ASN:HB3   | 22:AX:63:VAL:HG13  | 1.82                     | 0.61              |
| 22:AX:67:VAL:HG12  | 22:AX:67:VAL:O     | 2.00                     | 0.61              |
| 26:Ab:35:GLU:CB    | 26:Ab:49:CYS:HB3   | 2.28                     | 0.61              |
| 28:Ad:34:ARG:HH22  | 28:Ad:42:LEU:CD2   | 2.14                     | 0.61              |
| 28:Ad:36:GLN:HA    | 28:Ad:36:GLN:NE2   | 2.14                     | 0.61              |
| 34:BA:28:G:O2'     | 34:BA:296:U:OP1    | 2.16                     | 0.61              |
| 34:BA:118:U:O4     | 34:BA:289:G:H4'    | 2.00                     | 0.61              |
| 34:BA:177:C:N3     | 34:BA:178:C:C5     | 2.68                     | 0.61              |
| 34:BA:301:G:N2     | 34:BA:302:G:C4     | 2.67                     | 0.61              |
| 34:BA:677:U:H2'    | 34:BA:678:U:H5     | 1.59                     | 0.61              |
| 34:BA:857:C:O2'    | 34:BA:858:G:H5'    | 2.00                     | 0.61              |
| 34:BA:859:A:H2'    | 34:BA:860:A:O5'    | 1.99                     | 0.61              |
| 34:BA:971:G:P      | 34:BA:1231:G:H21   | 2.23                     | 0.61              |
| 34:BA:1171:G:HO2'  | 34:BA:1172:C:H6    | 1.46                     | 0.61              |
| 34:BA:1220:G:O2'   | 52:BW:52:TYR:CA    | 2.44                     | 0.61              |
| 35:BF:67:THR:CB    | 35:BF:155:LEU:HD21 | 2.28                     | 0.61              |
| 35:BF:70:PHE:HB3   | 35:BF:163:PHE:O    | 2.00                     | 0.61              |
| 36:BG:151:VAL:HG22 | 36:BG:200:ALA:HB1  | 1.82                     | 0.61              |
| 38:BI:76:ILE:HG21  | 38:BI:142:LEU:HD13 | 1.82                     | 0.61              |
| 39:BJ:39:LYS:O     | 39:BJ:63:TYR:HA    | 2.00                     | 0.61              |
| 39:BJ:52:ILE:HG22  | 39:BJ:53:ALA:H     | 1.63                     | 0.61              |
| 40:BK:50:ILE:HG21  | 40:BK:58:PRO:CA    | 2.30                     | 0.61              |
| 41:BL:9:MET:CE     | 41:BL:13:ILE:HD11  | 2.30                     | 0.61              |
| 41:BL:28:ALA:O     | 41:BL:29:SER:CB    | 2.48                     | 0.61              |
| 41:BL:41:ARG:HB3   | 41:BL:41:ARG:HH11  | 1.64                     | 0.61              |
| 43:BN:8:LEU:HD22   | 43:BN:94:VAL:HG12  | 1.80                     | 0.61              |
| 43:BN:40:LEU:HB2   | 43:BN:69:ASN:HB2   | 1.82                     | 0.61              |
| 43:BN:75:ILE:HG22  | 43:BN:76:ASN:H     | 1.65                     | 0.61              |
| 44:BO:34:ASP:OD1   | 44:BO:37:GLY:N     | 2.31                     | 0.61              |
| 44:BO:101:SER:O    | 44:BO:103:LEU:N    | 2.32                     | 0.61              |
| 49:BT:58:TYR:HD1   | 49:BT:59:TRP:N     | 1.98                     | 0.61              |
| 53:BX:8:ARG:HB3    | 53:BX:8:ARG:HH11   | 1.63                     | 0.61              |
| 53:BX:50:GLU:OE1   | 53:BX:100:ILE:HG23 | 2.00                     | 0.61              |
| 57:BZ:37:GLU:HG2   | 57:BZ:37:GLU:O     | 1.99                     | 0.61              |
| 57:BZ:205:PHE:HZ   | 57:BZ:226:ILE:HD11 | 1.61                     | 0.61              |
| 57:BZ:320:GLY:CA   | 57:BZ:321:LYS:HB2  | 2.28                     | 0.61              |
| 1:AA:27:G:N2       | 1:AA:512:G:O2'     | 2.33                     | 0.61              |
| 1:AA:59:U:H3'      | 1:AA:60:G:H5''     | 1.82                     | 0.61              |
| 1:AA:82:G:N2       | 1:AA:83:G:N2       | 2.48                     | 0.61              |
| 1:AA:257:A:O5'     | 1:AA:257:A:C8      | 2.53                     | 0.61              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 1:AA:290:G:H3'   | 1:AA:290:G:C8      | 2.33                     | 0.61              |
| 1:AA:326:G:C4    | 1:AA:327:G:C8      | 2.88                     | 0.61              |
| 1:AA:461:C:O2    | 1:AA:461:C:H2'     | 1.99                     | 0.61              |
| 1:AA:558:G:C2'   | 1:AA:559:G:H5'     | 2.30                     | 0.61              |
| 1:AA:627:A:C4    | 1:AA:637:A:C4      | 2.88                     | 0.61              |
| 1:AA:775:G:H4'   | 1:AA:777:A:C5      | 2.35                     | 0.61              |
| 1:AA:808:G:H2'   | 1:AA:809:G:O4'     | 1.99                     | 0.61              |
| 1:AA:1034:G:OP2  | 30:Af:18:ARG:CZ    | 2.48                     | 0.61              |
| 1:AA:1080:C:C6   | 32:AJ:129:GLY:CA   | 2.83                     | 0.61              |
| 1:AA:1127:A:H3'  | 1:AA:1127:A:H8     | 1.65                     | 0.61              |
| 1:AA:1195:G:H2'  | 1:AA:1226:G:N2     | 2.14                     | 0.61              |
| 1:AA:1227:A:H3'  | 1:AA:1227:A:H8     | 1.65                     | 0.61              |
| 1:AA:1273:U:H4'  | 1:AA:1275:A:OP2    | 2.01                     | 0.61              |
| 1:AA:1278:A:OP1  | 13:AO:36:THR:HG22  | 1.99                     | 0.61              |
| 1:AA:1587:A:H2'  | 1:AA:1588:C:C6     | 2.34                     | 0.61              |
| 1:AA:1693:U:O2   | 1:AA:1693:U:H2'    | 1.99                     | 0.61              |
| 1:AA:2107:C:C5   | 1:AA:2181:G:C6     | 2.49                     | 0.61              |
| 1:AA:2439:A:H4'  | 1:AA:2440:C:O5'    | 1.99                     | 0.61              |
| 1:AA:2466:C:H2'  | 1:AA:2467:C:C6     | 2.35                     | 0.61              |
| 1:AA:2512:C:H2'  | 1:AA:2513:G:H4'    | 1.82                     | 0.61              |
| 1:AA:2570:G:H2'  | 1:AA:2570:G:N3     | 2.16                     | 0.61              |
| 1:AA:2580:U:OP2  | 1:AA:2580:U:C6     | 2.54                     | 0.61              |
| 1:AA:2793:G:C5   | 1:AA:2794:C:C5     | 2.88                     | 0.61              |
| 1:AA:2895:U:H2'  | 1:AA:2896:C:C6     | 2.35                     | 0.61              |
| 2:AB:45:A:H1'    | 7:AG:95:ARG:NH1    | 2.15                     | 0.61              |
| 2:AB:93:C:H2'    | 2:AB:94:C:H6       | 1.65                     | 0.61              |
| 4:AD:69:ARG:HH22 | 4:AD:130:ALA:HB2   | 1.64                     | 0.61              |
| 5:AE:8:LYS:HZ2   | 15:AQ:3:ARG:CG     | 2.13                     | 0.61              |
| 7:AG:165:THR:HB  | 7:AG:168:GLU:CD    | 2.25                     | 0.61              |
| 8:AH:171:LEU:CA  | 8:AH:172:LYS:HZ2   | 2.13                     | 0.61              |
| 9:AK:99:LEU:CD1  | 9:AK:100:GLU:N     | 2.60                     | 0.61              |
| 13:AO:32:GLY:O   | 13:AO:115:GLU:CB   | 2.32                     | 0.61              |
| 13:AO:44:LEU:CD1 | 13:AO:48:VAL:CG2   | 2.78                     | 0.61              |
| 13:AO:110:PRO:C  | 13:AO:111:LEU:HD23 | 2.26                     | 0.61              |
| 14:AP:41:ASP:CG  | 14:AP:42:ASP:N     | 2.54                     | 0.61              |
| 14:AP:75:GLU:C   | 14:AP:78:LEU:HB3   | 2.25                     | 0.61              |
| 14:AP:95:HIS:ND1 | 14:AP:96:GLY:N     | 2.48                     | 0.61              |
| 15:AQ:65:LYS:CD  | 15:AQ:75:ILE:HD13  | 2.28                     | 0.61              |
| 15:AQ:82:LEU:C   | 15:AQ:84:GLN:H     | 2.09                     | 0.61              |
| 16:AR:76:TYR:O   | 16:AR:80:ILE:HB    | 2.00                     | 0.61              |
| 17:AS:68:LYS:NZ  | 17:AS:95:LEU:HD11  | 2.15                     | 0.61              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 17:AS:69:LYS:HG2  | 17:AS:70:ILE:N     | 2.14                     | 0.61              |
| 18:AT:21:VAL:HG22 | 18:AT:25:ARG:HG3   | 1.80                     | 0.61              |
| 18:AT:73:ALA:O    | 18:AT:74:ALA:HB2   | 2.00                     | 0.61              |
| 19:AU:33:LYS:HB2  | 19:AU:33:LYS:NZ    | 2.14                     | 0.61              |
| 21:AW:100:VAL:CG2 | 21:AW:137:ILE:HD12 | 2.20                     | 0.61              |
| 21:AW:104:PHE:N   | 21:AW:104:PHE:CD2  | 2.68                     | 0.61              |
| 25:Aa:31:ILE:O    | 25:Aa:32:TYR:CB    | 2.48                     | 0.61              |
| 28:Ad:21:ARG:HB2  | 28:Ad:21:ARG:CZ    | 2.30                     | 0.61              |
| 33:Ag:4:UNK:O     | 33:Ag:147:UNK:CB   | 2.48                     | 0.61              |
| 34:BA:218:C:H5'   | 34:BA:466:C:H41    | 1.64                     | 0.61              |
| 34:BA:243:A:O2'   | 34:BA:244:U:OP2    | 2.16                     | 0.61              |
| 34:BA:246:A:H1'   | 34:BA:247:G:H1'    | 1.82                     | 0.61              |
| 34:BA:266:G:H2'   | 50:BU:67:LYS:HZ2   | 1.63                     | 0.61              |
| 34:BA:518:C:C2    | 34:BA:529:G:O6     | 2.53                     | 0.61              |
| 34:BA:551:U:H2'   | 34:BA:552:U:H6     | 1.54                     | 0.61              |
| 34:BA:657:G:H2'   | 34:BA:658:G:C5'    | 2.30                     | 0.61              |
| 34:BA:762:C:C2    | 34:BA:763:G:N7     | 2.68                     | 0.61              |
| 34:BA:771:G:C6    | 34:BA:809:G:C6     | 2.88                     | 0.61              |
| 34:BA:835:U:OP1   | 51:BV:64:ARG:NH1   | 2.33                     | 0.61              |
| 34:BA:934:C:N4    | 34:BA:1344:C:N3    | 2.48                     | 0.61              |
| 34:BA:989:C:O2'   | 34:BA:990:C:H5'    | 2.00                     | 0.61              |
| 34:BA:1026:G:C8   | 34:BA:1027:C:C6    | 2.89                     | 0.61              |
| 34:BA:1191:A:OP1  | 36:BG:4:LYS:CG     | 2.47                     | 0.61              |
| 34:BA:1305:G:N3   | 34:BA:1331:G:N2    | 2.48                     | 0.61              |
| 34:BA:1320:C:H3'  | 34:BA:1321:C:C6    | 2.35                     | 0.61              |
| 34:BA:1496:C:C5   | 34:BA:1497:G:N7    | 2.68                     | 0.61              |
| 35:BF:69:LEU:O    | 35:BF:162:ILE:CB   | 2.47                     | 0.61              |
| 36:BG:10:PHE:O    | 36:BG:11:ARG:NH2   | 2.33                     | 0.61              |
| 36:BG:108:ASN:ND2 | 36:BG:111:LEU:HD13 | 2.09                     | 0.61              |
| 39:BJ:75:LEU:HD23 | 39:BJ:78:GLU:HB3   | 1.82                     | 0.61              |
| 42:BM:111:ARG:HD2 | 47:BR:61:TRP:HE1   | 1.65                     | 0.61              |
| 44:BO:54:ARG:C    | 44:BO:56:GLY:H     | 2.06                     | 0.61              |
| 45:BP:57:LYS:HE2  | 45:BP:67:THR:HG21  | 1.82                     | 0.61              |
| 45:BP:88:GLY:N    | 45:BP:98:TYR:HA    | 2.04                     | 0.61              |
| 45:BP:90:VAL:HG12 | 45:BP:93:LEU:HD21  | 1.82                     | 0.61              |
| 46:BQ:69:GLU:OE1  | 46:BQ:72:ALA:HB2   | 2.00                     | 0.61              |
| 47:BR:19:ARG:O    | 47:BR:20:ALA:C     | 2.44                     | 0.61              |
| 50:BU:59:ILE:CD1  | 50:BU:72:ARG:N     | 2.63                     | 0.61              |
| 50:BU:75:ARG:HG2  | 50:BU:76:LEU:N     | 2.14                     | 0.61              |
| 51:BV:51:LEU:N    | 51:BV:51:LEU:CD1   | 2.63                     | 0.61              |
| 52:BW:5:LEU:CD2   | 52:BW:41:VAL:HG12  | 2.30                     | 0.61              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 52:BW:33:THR:CG2  | 52:BW:49:ILE:HD12  | 2.30                     | 0.61              |
| 56:BD:71:G:H2'    | 56:BD:72:C:H5'     | 1.81                     | 0.61              |
| 56:BE:4:C:C5      | 56:BE:6:G:C5       | 2.85                     | 0.61              |
| 57:BZ:26:LEU:C    | 57:BZ:27:GLN:HG2   | 2.25                     | 0.61              |
| 57:BZ:55:THR:O    | 57:BZ:56:ILE:CB    | 2.48                     | 0.61              |
| 57:BZ:210:SER:C   | 57:BZ:284:ILE:HG23 | 2.15                     | 0.61              |
| 57:BZ:223:ILE:H   | 57:BZ:272:ASP:HB3  | 0.52                     | 0.61              |
| 1:AA:80:G:H1'     | 1:AA:347:A:N6      | 2.14                     | 0.61              |
| 1:AA:81:G:O2'     | 1:AA:294:A:H2'     | 2.01                     | 0.61              |
| 1:AA:247:G:HO2'   | 1:AA:386:G:H1      | 1.44                     | 0.61              |
| 1:AA:270(I):G:H2' | 1:AA:270(J):G:O4'  | 2.00                     | 0.61              |
| 1:AA:594:U:OP1    | 29:Ae:61:LEU:HD13  | 2.01                     | 0.61              |
| 1:AA:748:G:N7     | 1:AA:750:A:C5      | 2.67                     | 0.61              |
| 1:AA:823:G:C6     | 1:AA:835:A:C6      | 2.88                     | 0.61              |
| 1:AA:883:G:C6     | 1:AA:884:C:C5      | 2.87                     | 0.61              |
| 1:AA:894:C:H2'    | 1:AA:895:U:H5'     | 1.82                     | 0.61              |
| 1:AA:1081:U:C4'   | 32:AJ:125:ARG:HD3  | 2.29                     | 0.61              |
| 1:AA:1340:U:C5    | 19:AU:57:LEU:HG    | 2.35                     | 0.61              |
| 1:AA:1341:U:O4    | 1:AA:1395:A:C2     | 2.54                     | 0.61              |
| 1:AA:1347:G:N2    | 1:AA:1600:C:C2     | 2.69                     | 0.61              |
| 1:AA:1434:A:C2    | 1:AA:1435:G:N9     | 2.68                     | 0.61              |
| 1:AA:1475:G:N7    | 1:AA:1517:G:N2     | 2.48                     | 0.61              |
| 1:AA:1588:C:H2'   | 1:AA:1589:C:H6     | 1.65                     | 0.61              |
| 1:AA:1780:A:OP2   | 1:AA:1782:C:OP1    | 2.19                     | 0.61              |
| 1:AA:1797:C:C4    | 1:AA:1798:U:O4     | 2.53                     | 0.61              |
| 1:AA:1861:G:H2'   | 1:AA:1862:G:H5'    | 1.83                     | 0.61              |
| 1:AA:1890:A:H3'   | 1:AA:1891:G:C8     | 2.35                     | 0.61              |
| 1:AA:2206:C:H5''  | 1:AA:2228:G:H21    | 1.65                     | 0.61              |
| 1:AA:2394:C:O2    | 1:AA:2394:C:H2'    | 1.99                     | 0.61              |
| 1:AA:2507:C:C6    | 59:AA:3002:8AN:O2' | 2.53                     | 0.61              |
| 1:AA:2657:A:N6    | 1:AA:2664:G:H2'    | 2.14                     | 0.61              |
| 1:AA:2747:G:C5    | 1:AA:2756:U:O4     | 2.53                     | 0.61              |
| 2:AB:77:U:O2'     | 21:AW:78:LYS:NZ    | 2.33                     | 0.61              |
| 2:AB:99:A:C6      | 2:AB:100:G:C5      | 2.88                     | 0.61              |
| 3:AC:67:GLY:N     | 3:AC:184:LYS:NZ    | 2.45                     | 0.61              |
| 4:AD:7:LYS:HD2    | 4:AD:91:ARG:HE     | 1.64                     | 0.61              |
| 4:AD:181:GLU:HA   | 4:AD:270:ILE:CG2   | 2.29                     | 0.61              |
| 5:AE:101:ARG:NH2  | 5:AE:171:GLU:HG2   | 2.11                     | 0.61              |
| 5:AE:116:VAL:O    | 5:AE:120:TRP:NE1   | 2.33                     | 0.61              |
| 6:AF:74:ARG:O     | 6:AF:75:HIS:CB     | 2.48                     | 0.61              |
| 6:AF:171:PRO:HB2  | 6:AF:172:TRP:CE3   | 2.32                     | 0.61              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 6:AF:201:VAL:O    | 6:AF:205:ARG:HG3   | 1.98                     | 0.61              |
| 7:AG:9:ARG:HG3    | 7:AG:9:ARG:HH11    | 1.65                     | 0.61              |
| 7:AG:12:TYR:CD1   | 7:AG:13:GLU:N      | 2.68                     | 0.61              |
| 7:AG:142:PRO:C    | 7:AG:143:GLU:HG2   | 2.25                     | 0.61              |
| 8:AH:98:LEU:O     | 8:AH:98:LEU:HD23   | 2.00                     | 0.61              |
| 9:AK:16:ILE:HD12  | 9:AK:16:ILE:H      | 1.63                     | 0.61              |
| 9:AK:107:LEU:HD23 | 9:AK:108:PRO:N     | 2.16                     | 0.61              |
| 11:AM:81:GLN:CG   | 11:AM:86:LYS:HE3   | 2.30                     | 0.61              |
| 12:AN:104:PHE:O   | 12:AN:105:GLU:CD   | 2.43                     | 0.61              |
| 12:AN:120:ILE:O   | 12:AN:121:ALA:C    | 2.43                     | 0.61              |
| 14:AP:68:GLN:O    | 14:AP:69:VAL:C     | 2.42                     | 0.61              |
| 16:AR:47:TYR:O    | 16:AR:51:LYS:HG3   | 1.99                     | 0.61              |
| 16:AR:88:ILE:HG12 | 17:AS:52:VAL:CG1   | 2.31                     | 0.61              |
| 18:AT:72:LYS:O    | 18:AT:106:ILE:O    | 2.19                     | 0.61              |
| 18:AT:72:LYS:O    | 18:AT:106:ILE:HG22 | 2.00                     | 0.61              |
| 23:AY:65:GLN:HE21 | 23:AY:65:GLN:N     | 1.99                     | 0.61              |
| 24:AZ:29:ARG:CB   | 24:AZ:30:ARG:CZ    | 2.79                     | 0.61              |
| 26:Ab:9:LYS:HD3   | 26:Ab:10:LYS:H     | 1.64                     | 0.61              |
| 26:Ab:55:ARG:C    | 26:Ab:57:VAL:H     | 2.09                     | 0.61              |
| 27:Ac:20:ASN:ND2  | 27:Ac:43:CYS:CB    | 2.64                     | 0.61              |
| 33:Ag:7:UNK:O     | 33:Ag:148:UNK:CB   | 2.48                     | 0.61              |
| 34:BA:127:G:HO2'  | 50:BU:2:PRO:N      | 1.98                     | 0.61              |
| 34:BA:129(A):G:C2 | 34:BA:188:U:O2'    | 2.53                     | 0.61              |
| 34:BA:134:A:C6    | 34:BA:135:C:C4     | 2.88                     | 0.61              |
| 34:BA:221:C:H2'   | 34:BA:222:U:H6     | 1.65                     | 0.61              |
| 34:BA:594:G:N7    | 34:BA:595:G:C2     | 2.68                     | 0.61              |
| 34:BA:765:G:N2    | 34:BA:816:A:C2     | 2.69                     | 0.61              |
| 34:BA:775:G:H2'   | 34:BA:776:G:N7     | 2.15                     | 0.61              |
| 34:BA:873:A:OP1   | 34:BA:873:A:C8     | 2.52                     | 0.61              |
| 34:BA:1005:A:H4'  | 34:BA:1037:C:O2    | 2.00                     | 0.61              |
| 34:BA:1011:G:N2   | 34:BA:1019:C:H1'   | 2.15                     | 0.61              |
| 34:BA:1288:A:C4   | 34:BA:1289:A:N7    | 2.69                     | 0.61              |
| 34:BA:1295:G:H21  | 34:BA:1302:U:H3    | 1.47                     | 0.61              |
| 34:BA:1299:A:C5   | 34:BA:1301:U:H1'   | 2.34                     | 0.61              |
| 36:BG:67:THR:CA   | 36:BG:102:ASN:HB2  | 2.30                     | 0.61              |
| 37:BH:80:GLU:HA   | 37:BH:83:SER:OG    | 2.00                     | 0.61              |
| 38:BI:31:LEU:CD1  | 38:BI:129:ILE:HG23 | 2.19                     | 0.61              |
| 38:BI:45:PHE:HE1  | 38:BI:47:LYS:HD2   | 1.65                     | 0.61              |
| 41:BL:75:ARG:HB2  | 41:BL:75:ARG:NH1   | 2.15                     | 0.61              |
| 42:BM:109:VAL:O   | 42:BM:109:VAL:HG12 | 1.98                     | 0.61              |
| 43:BN:6:ILE:HG22  | 43:BN:98:ILE:HA    | 1.81                     | 0.61              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 45:BP:106:ASP:CA  | 57:BZ:329:ARG:CZ   | 2.54                     | 0.61              |
| 46:BQ:15:VAL:HG23 | 46:BQ:39:ILE:HD12  | 0.62                     | 0.61              |
| 48:BS:39:LEU:CD1  | 48:BS:56:LEU:HD13  | 2.30                     | 0.61              |
| 52:BW:4:SER:N     | 52:BW:5:LEU:HB3    | 2.16                     | 0.61              |
| 56:BD:74:C:H1'    | 56:BD:75:C:OP2     | 2.00                     | 0.61              |
| 57:BZ:11:ILE:CG2  | 57:BZ:112:VAL:HG11 | 2.17                     | 0.61              |
| 57:BZ:325:PHE:HA  | 57:BZ:330:GLN:CD   | 2.24                     | 0.61              |
| 57:BZ:449:ILE:C   | 57:BZ:451:PHE:H    | 2.08                     | 0.61              |
| 1:AA:6:A:O2'      | 1:AA:7:G:H5'       | 1.99                     | 0.61              |
| 1:AA:7:G:H1       | 1:AA:2896:C:H2'    | 1.63                     | 0.61              |
| 1:AA:18:C:O2      | 1:AA:553:U:H5''    | 2.01                     | 0.61              |
| 1:AA:76:C:O5'     | 1:AA:76:C:C6       | 2.53                     | 0.61              |
| 1:AA:270(U):C:H2' | 1:AA:270(V):G:H1'  | 1.82                     | 0.61              |
| 1:AA:293:U:H2'    | 1:AA:294:A:H8      | 1.65                     | 0.61              |
| 1:AA:343:C:C2'    | 1:AA:344:G:C5'     | 2.75                     | 0.61              |
| 1:AA:439:G:H2'    | 1:AA:440:G:H8      | 1.64                     | 0.61              |
| 1:AA:440:G:H2'    | 1:AA:441:U:C6      | 2.36                     | 0.61              |
| 1:AA:603:A:N6     | 1:AA:625:G:N7      | 2.48                     | 0.61              |
| 1:AA:638:G:H2'    | 1:AA:639:U:H5'     | 1.81                     | 0.61              |
| 1:AA:684:G:H5''   | 1:AA:684:G:H8      | 1.65                     | 0.61              |
| 1:AA:801:G:OP1    | 6:AF:57:VAL:N      | 2.34                     | 0.61              |
| 1:AA:845:G:H5''   | 1:AA:846:C:OP1     | 2.00                     | 0.61              |
| 1:AA:861:A:N7     | 1:AA:917:A:H2      | 1.97                     | 0.61              |
| 1:AA:873:G:H5'    | 12:AN:66:ILE:HD11  | 1.82                     | 0.61              |
| 1:AA:976:C:N4     | 1:AA:988:A:N3      | 2.48                     | 0.61              |
| 1:AA:995:C:H1'    | 16:AR:57:PHE:CZ    | 2.35                     | 0.61              |
| 1:AA:1022:G:C5    | 1:AA:1139:G:C6     | 2.89                     | 0.61              |
| 1:AA:1034:G:C6    | 1:AA:1122:G:O6     | 2.52                     | 0.61              |
| 1:AA:1341:U:H5''  | 1:AA:1342:A:N7     | 2.15                     | 0.61              |
| 1:AA:1726:G:C6    | 1:AA:1727:U:O4     | 2.53                     | 0.61              |
| 1:AA:1775:U:OP2   | 1:AA:1776:G:OP2    | 2.18                     | 0.61              |
| 1:AA:1824:G:OP1   | 4:AD:53:PHE:CE2    | 2.54                     | 0.61              |
| 1:AA:1912:A:N6    | 1:AA:1919:A:C4     | 2.68                     | 0.61              |
| 1:AA:1931:U:H2'   | 1:AA:1932:A:H8     | 1.65                     | 0.61              |
| 1:AA:1942:C:OP2   | 1:AA:1943:U:H3'    | 2.01                     | 0.61              |
| 1:AA:2091:U:H2'   | 1:AA:2092:U:C5'    | 2.24                     | 0.61              |
| 1:AA:2254:C:O2'   | 1:AA:2255:G:H5'    | 2.00                     | 0.61              |
| 1:AA:2393:A:C5'   | 11:AM:56:SER:N     | 2.63                     | 0.61              |
| 1:AA:2447:G:O3'   | 1:AA:2499:C:OP1    | 2.18                     | 0.61              |
| 1:AA:2519:U:O2    | 1:AA:2522:U:O4     | 2.18                     | 0.61              |
| 1:AA:2523:G:H1'   | 1:AA:2765:A:N7     | 2.13                     | 0.61              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:2695:C:H2'    | 1:AA:2696:U:H5     | 1.63                     | 0.61              |
| 1:AA:2696:U:C2'    | 1:AA:2697:G:O5'    | 2.48                     | 0.61              |
| 1:AA:2733:A:C8     | 1:AA:2734:A:C8     | 2.88                     | 0.61              |
| 1:AA:2781:A:H2'    | 1:AA:2782:G:C2'    | 2.29                     | 0.61              |
| 2:AB:51:G:OP1      | 14:AP:60:GLY:C     | 2.44                     | 0.61              |
| 3:AC:71:GLN:HG3    | 3:AC:72:VAL:N      | 2.13                     | 0.61              |
| 3:AC:100:ILE:CG2   | 3:AC:127:LEU:HG    | 2.18                     | 0.61              |
| 3:AC:122:ALA:CA    | 3:AC:126:LYS:HD3   | 2.30                     | 0.61              |
| 3:AC:161:ILE:HG13  | 3:AC:161:ILE:O     | 2.01                     | 0.61              |
| 4:AD:8:PRO:O       | 4:AD:25:THR:HG23   | 2.00                     | 0.61              |
| 4:AD:14:ARG:C      | 4:AD:15:PHE:CD1    | 2.79                     | 0.61              |
| 4:AD:176:ARG:N     | 4:AD:182:LEU:HD23  | 2.15                     | 0.61              |
| 5:AE:14:ILE:HG22   | 5:AE:19:ARG:HA     | 1.82                     | 0.61              |
| 5:AE:113:PHE:CD1   | 5:AE:113:PHE:N     | 2.69                     | 0.61              |
| 6:AF:36:VAL:O      | 6:AF:184:TYR:OH    | 2.19                     | 0.61              |
| 6:AF:95:ARG:CZ     | 6:AF:96:ASP:O      | 2.49                     | 0.61              |
| 6:AF:109:GLY:C     | 6:AF:111:ALA:N     | 2.57                     | 0.61              |
| 6:AF:185:ASP:O     | 6:AF:188:ARG:HG3   | 2.01                     | 0.61              |
| 7:AG:125:PHE:HD2   | 7:AG:129:GLY:N     | 1.98                     | 0.61              |
| 8:AH:13:LYS:HG3    | 8:AH:15:VAL:N      | 2.14                     | 0.61              |
| 8:AH:119:GLU:C     | 8:AH:121:ILE:N     | 2.55                     | 0.61              |
| 9:AK:14:VAL:HG13   | 9:AK:138:LEU:CB    | 2.21                     | 0.61              |
| 10:AL:4:PRO:CG     | 10:AL:5:GLN:N      | 2.51                     | 0.61              |
| 10:AL:12:ASP:H     | 10:AL:14:THR:HG22  | 1.63                     | 0.61              |
| 10:AL:24:VAL:CG1   | 10:AL:32:TYR:H     | 2.13                     | 0.61              |
| 11:AM:54:GLY:HA2   | 29:Ae:12:LYS:CD    | 2.30                     | 0.61              |
| 11:AM:121:LYS:N    | 11:AM:122:PRO:CD   | 2.62                     | 0.61              |
| 12:AN:7:MET:O      | 12:AN:70:PRO:HD2   | 1.99                     | 0.61              |
| 12:AN:67:ARG:NH2   | 12:AN:103:MET:C    | 2.58                     | 0.61              |
| 12:AN:116:GLU:O    | 12:AN:119:ARG:HB2  | 2.00                     | 0.61              |
| 13:AO:51:LEU:HG    | 13:AO:66:VAL:CG1   | 2.30                     | 0.61              |
| 13:AO:96:ARG:O     | 13:AO:114:VAL:HG13 | 2.01                     | 0.61              |
| 14:AP:64:GLU:C     | 14:AP:66:ALA:N     | 2.49                     | 0.61              |
| 15:AQ:27:THR:O     | 15:AQ:52:ILE:HD12  | 2.00                     | 0.61              |
| 15:AQ:112:ARG:HH22 | 34:BA:1464:G:H3'   | 1.64                     | 0.61              |
| 16:AR:57:PHE:O     | 16:AR:58:ARG:C     | 2.43                     | 0.61              |
| 18:AT:74:ALA:HB1   | 18:AT:105:VAL:HA   | 1.81                     | 0.61              |
| 20:AV:83:THR:HG22  | 20:AV:84:ARG:N     | 2.13                     | 0.61              |
| 21:AW:39:VAL:HG13  | 21:AW:44:PHE:CE2   | 2.34                     | 0.61              |
| 23:AY:48:LEU:HA    | 23:AY:51:GLN:CD    | 2.25                     | 0.61              |
| 24:AZ:6:VAL:HG23   | 24:AZ:35:ARG:CG    | 2.14                     | 0.61              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 24:AZ:15:TYR:N     | 24:AZ:15:TYR:HD1  | 1.98                     | 0.61              |
| 29:Ae:25:MET:O     | 29:Ae:27:THR:CG2  | 2.45                     | 0.61              |
| 29:Ae:42:ARG:HB3   | 29:Ae:43:GLN:NE2  | 2.16                     | 0.61              |
| 32:AJ:12:LEU:CD1   | 32:AJ:41:PHE:CE1  | 2.67                     | 0.61              |
| 32:AJ:23:VAL:CG1   | 32:AJ:37:PHE:CB   | 2.75                     | 0.61              |
| 34:BA:5:U:C4       | 37:BH:86:LYS:HD3  | 2.35                     | 0.61              |
| 34:BA:96:G:H2'     | 34:BA:97:U:H6     | 1.63                     | 0.61              |
| 34:BA:129(A):G:H2' | 34:BA:189:U:C5    | 2.36                     | 0.61              |
| 34:BA:254:G:H2'    | 34:BA:255:G:H8    | 1.63                     | 0.61              |
| 34:BA:375:U:O2'    | 49:BT:6:LEU:CD2   | 2.48                     | 0.61              |
| 34:BA:376:G:OP1    | 49:BT:6:LEU:HD13  | 2.00                     | 0.61              |
| 34:BA:383:A:H2'    | 34:BA:384:G:O4'   | 2.00                     | 0.61              |
| 34:BA:869:G:H4'    | 34:BA:872:A:C8    | 2.34                     | 0.61              |
| 34:BA:1164:G:H2'   | 34:BA:1165:C:H5'  | 1.82                     | 0.61              |
| 34:BA:1358:U:H5'   | 47:BR:34:TYR:HA   | 1.83                     | 0.61              |
| 36:BG:36:ASP:OD2   | 36:BG:40:ARG:NH1  | 2.34                     | 0.61              |
| 37:BH:15:GLU:OE2   | 37:BH:63:LYS:HB3  | 2.00                     | 0.61              |
| 38:BI:18:ARG:H     | 38:BI:26:PHE:HB3  | 1.65                     | 0.61              |
| 38:BI:77:PRO:O     | 38:BI:93:PRO:HG3  | 2.01                     | 0.61              |
| 39:BJ:36:ARG:HB3   | 39:BJ:36:ARG:CZ   | 2.28                     | 0.61              |
| 39:BJ:78:GLU:HA    | 39:BJ:81:ILE:CD1  | 2.31                     | 0.61              |
| 41:BL:5:PRO:O      | 41:BL:6:ILE:C     | 2.42                     | 0.61              |
| 41:BL:8:ASP:OD2    | 41:BL:12:ARG:HD2  | 2.00                     | 0.61              |
| 41:BL:40:ALA:HA    | 41:BL:45:ILE:HG23 | 1.81                     | 0.61              |
| 42:BM:26:VAL:HG22  | 42:BM:61:ALA:HB3  | 1.81                     | 0.61              |
| 42:BM:32:ASP:CG    | 42:BM:33:PHE:N    | 2.58                     | 0.61              |
| 47:BR:16:PHE:CZ    | 52:BW:14:HIS:CD2  | 2.87                     | 0.61              |
| 48:BS:71:GLN:O     | 48:BS:75:PRO:HD3  | 2.01                     | 0.61              |
| 50:BU:25:ARG:HH21  | 50:BU:40:LYS:CD   | 1.99                     | 0.61              |
| 50:BU:50:LYS:HD2   | 50:BU:51:TYR:CZ   | 2.35                     | 0.61              |
| 51:BV:53:ARG:HD3   | 51:BV:63:GLN:NE2  | 2.16                     | 0.61              |
| 53:BX:79:ARG:O     | 53:BX:80:ARG:C    | 2.42                     | 0.61              |
| 57:BZ:77:GLY:HA2   | 57:BZ:78:HIS:CB   | 2.30                     | 0.61              |
| 57:BZ:303:ASP:C    | 57:BZ:346:ARG:NH2 | 2.59                     | 0.61              |
| 57:BZ:304:GLU:N    | 57:BZ:346:ARG:NH2 | 2.49                     | 0.61              |
| 57:BZ:427:LYS:O    | 57:BZ:428:ASN:HB2 | 1.98                     | 0.61              |
| 1:AA:35:G:O4'      | 1:AA:454:A:H1'    | 1.99                     | 0.61              |
| 1:AA:200:U:O4      | 1:AA:248:G:N7     | 2.33                     | 0.61              |
| 1:AA:324:A:N1      | 1:AA:325:G:N3     | 2.49                     | 0.61              |
| 1:AA:338:G:OP1     | 20:AV:2:ARG:CZ    | 2.48                     | 0.61              |
| 1:AA:566:U:C5'     | 17:AS:82:ARG:NH2  | 2.64                     | 0.61              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:570:G:H22    | 1:AA:2498:C:C1'   | 2.12                     | 0.61              |
| 1:AA:572:A:H2'    | 1:AA:573:G:C1'    | 2.31                     | 0.61              |
| 1:AA:619:G:H3'    | 1:AA:619:G:H8     | 1.64                     | 0.61              |
| 1:AA:820:A:O2'    | 1:AA:836:G:N2     | 2.34                     | 0.61              |
| 1:AA:1035:U:O3'   | 8:AH:59:ARG:NH2   | 2.27                     | 0.61              |
| 1:AA:1075:C:H3'   | 1:AA:1075:C:P     | 2.41                     | 0.61              |
| 1:AA:1081:U:C5'   | 32:AJ:125:ARG:CG  | 2.54                     | 0.61              |
| 1:AA:1287:A:C8    | 13:AO:104:ARG:NH1 | 2.69                     | 0.61              |
| 1:AA:1431:U:C2'   | 1:AA:1432:C:H5'   | 2.30                     | 0.61              |
| 1:AA:1510:A:H3'   | 1:AA:1511:A:C5    | 2.36                     | 0.61              |
| 1:AA:1563:G:H2'   | 1:AA:1564:C:H6    | 1.64                     | 0.61              |
| 1:AA:1943:U:H4'   | 1:AA:1944:U:H5'   | 1.82                     | 0.61              |
| 1:AA:1993:U:C2    | 1:AA:1994:C:C5    | 2.88                     | 0.61              |
| 1:AA:2173:A:N1    | 3:AC:219:GLY:HA2  | 2.14                     | 0.61              |
| 1:AA:2362:G:C2'   | 1:AA:2363:C:H5'   | 2.30                     | 0.61              |
| 1:AA:2439:A:H8    | 1:AA:2586:C:H4'   | 1.61                     | 0.61              |
| 1:AA:2469:A:C2    | 1:AA:2482:G:C1'   | 2.83                     | 0.61              |
| 1:AA:2653:U:O4    | 1:AA:2668:G:N2    | 2.20                     | 0.61              |
| 1:AA:2761:G:O2'   | 1:AA:2762:G:H5'   | 2.00                     | 0.61              |
| 2:AB:71:C:C3'     | 2:AB:72:G:H5'     | 2.31                     | 0.61              |
| 3:AC:193:ILE:HG22 | 3:AC:197:GLU:OE1  | 2.01                     | 0.61              |
| 5:AE:13:ARG:CZ    | 5:AE:20:ALA:CB    | 2.79                     | 0.61              |
| 6:AF:113:ALA:HB1  | 6:AF:187:VAL:CG1  | 2.30                     | 0.61              |
| 7:AG:55:LYS:HE2   | 7:AG:151:ALA:CB   | 2.29                     | 0.61              |
| 8:AH:37:VAL:CG2   | 8:AH:37:VAL:O     | 2.47                     | 0.61              |
| 8:AH:167:GLU:C    | 8:AH:169:VAL:H    | 2.08                     | 0.61              |
| 9:AK:17:ASP:O     | 9:AK:18:ALA:HB3   | 2.00                     | 0.61              |
| 9:AK:37:LYS:HD2   | 9:AK:43:THR:N     | 2.14                     | 0.61              |
| 9:AK:42:TRP:HE1   | 16:AR:64:ARG:HG2  | 1.64                     | 0.61              |
| 9:AK:69:GLN:C     | 9:AK:70:LYS:HD3   | 2.26                     | 0.61              |
| 10:AL:21:CYS:CA   | 10:AL:41:ALA:HB2  | 2.31                     | 0.61              |
| 11:AM:96:THR:O    | 11:AM:102:ARG:HD3 | 2.00                     | 0.61              |
| 13:AO:97:VAL:HG22 | 13:AO:114:VAL:CG1 | 2.30                     | 0.61              |
| 15:AQ:99:LEU:O    | 15:AQ:100:TYR:O   | 2.19                     | 0.61              |
| 15:AQ:102:ILE:C   | 15:AQ:104:ASN:H   | 2.08                     | 0.61              |
| 17:AS:43:GLU:C    | 17:AS:44:LYS:HD3  | 2.25                     | 0.61              |
| 20:AV:95:LYS:HG3  | 20:AV:103:GLY:HA2 | 1.80                     | 0.61              |
| 21:AW:19:ARG:NH2  | 21:AW:84:GLU:O    | 2.33                     | 0.61              |
| 21:AW:127:LYS:CE  | 21:AW:165:VAL:HB  | 2.31                     | 0.61              |
| 21:AW:151:HIS:ND1 | 21:AW:151:HIS:N   | 2.48                     | 0.61              |
| 27:Ac:16:CYS:SG   | 27:Ac:19:ARG:NE   | 2.72                     | 0.61              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 28:Ad:43:THR:CG2   | 28:Ad:46:VAL:HB    | 2.31                     | 0.61              |
| 29:Ae:51:ALA:O     | 29:Ae:54:GLU:OE1   | 2.18                     | 0.61              |
| 31:AI:59:ILE:C     | 31:AI:61:LEU:H     | 2.09                     | 0.61              |
| 32:AJ:108:ALA:HA   | 32:AJ:109:LYS:C    | 2.25                     | 0.61              |
| 34:BA:17:U:O2'     | 34:BA:18:C:H5'     | 2.01                     | 0.61              |
| 34:BA:191(C):G:O5' | 34:BA:191(C):G:H8  | 1.84                     | 0.61              |
| 34:BA:227:G:H2'    | 34:BA:228:A:C8     | 2.36                     | 0.61              |
| 34:BA:520:A:N6     | 34:BA:529:G:C2     | 2.67                     | 0.61              |
| 34:BA:594:G:H3'    | 34:BA:595:G:O4'    | 2.01                     | 0.61              |
| 34:BA:782:A:C6     | 34:BA:801:U:C2     | 2.88                     | 0.61              |
| 34:BA:789:U:C6     | 34:BA:789:U:H3'    | 2.36                     | 0.61              |
| 34:BA:1001:G:H8    | 34:BA:1001:G:H5'   | 1.65                     | 0.61              |
| 34:BA:1044:A:H2'   | 34:BA:1045:C:C5'   | 2.30                     | 0.61              |
| 34:BA:1109:C:H2'   | 34:BA:1110:A:O4'   | 2.01                     | 0.61              |
| 34:BA:1227:A:C5'   | 52:BW:81:ARG:NE    | 2.62                     | 0.61              |
| 34:BA:1313:U:O4    | 34:BA:1325:C:N3    | 2.33                     | 0.61              |
| 35:BF:82:ARG:HD2   | 35:BF:92:TYR:HH    | 1.66                     | 0.61              |
| 35:BF:87:ARG:C     | 35:BF:89:GLY:N     | 2.54                     | 0.61              |
| 35:BF:115:LEU:HD12 | 35:BF:118:LEU:CD1  | 2.28                     | 0.61              |
| 35:BF:146:GLN:O    | 35:BF:147:LYS:C    | 2.43                     | 0.61              |
| 35:BF:162:ILE:HD13 | 35:BF:162:ILE:N    | 2.14                     | 0.61              |
| 36:BG:48:TYR:CA    | 36:BG:52:LEU:HD22  | 2.30                     | 0.61              |
| 37:BH:18:LYS:C     | 37:BH:20:TYR:H     | 2.06                     | 0.61              |
| 37:BH:146:ILE:HD12 | 37:BH:146:ILE:H    | 1.65                     | 0.61              |
| 38:BI:15:ARG:CZ    | 38:BI:26:PHE:CE2   | 2.83                     | 0.61              |
| 39:BJ:44:GLY:HA2   | 39:BJ:59:TYR:CZ    | 2.34                     | 0.61              |
| 39:BJ:68:PRO:HB2   | 39:BJ:71:ARG:HG2   | 1.80                     | 0.61              |
| 41:BL:32:LYS:CG    | 41:BL:33:GLU:N     | 2.61                     | 0.61              |
| 41:BL:53:VAL:HG12  | 41:BL:54:ASP:OD1   | 2.00                     | 0.61              |
| 43:BN:79:ARG:NH2   | 43:BN:82:ILE:HD12  | 2.13                     | 0.61              |
| 44:BO:104:GLN:HE22 | 44:BO:106:LYS:HB2  | 1.65                     | 0.61              |
| 50:BU:81:ARG:HG2   | 50:BU:84:LEU:HD21  | 1.83                     | 0.61              |
| 50:BU:104:LYS:HD3  | 50:BU:105:ALA:HB3  | 1.82                     | 0.61              |
| 57:BZ:5:LEU:CD1    | 57:BZ:268:ALA:CB   | 2.70                     | 0.61              |
| 57:BZ:170:GLY:N    | 57:BZ:171:ILE:HD13 | 2.16                     | 0.61              |
| 57:BZ:172:ALA:HB1  | 57:BZ:179:MET:CE   | 2.20                     | 0.61              |
| 57:BZ:206:GLN:HB3  | 57:BZ:227:LYS:HB2  | 1.80                     | 0.61              |
| 57:BZ:309:MET:SD   | 57:BZ:366:LEU:HB3  | 2.40                     | 0.61              |
| 57:BZ:310:PHE:CA   | 57:BZ:385:PRO:CG   | 2.72                     | 0.61              |
| 57:BZ:562:ARG:CG   | 57:BZ:563:MET:HE3  | 2.30                     | 0.61              |
| 57:BZ:563:MET:HE2  | 57:BZ:563:MET:H    | 1.63                     | 0.61              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:BZ:580:VAL:CB  | 57:BZ:585:ILE:HD13 | 2.30                     | 0.61              |
| 1:AA:6:A:C5       | 1:AA:2898:U:C4     | 2.51                     | 0.61              |
| 1:AA:64:A:C2'     | 1:AA:65:C:C5'      | 2.79                     | 0.61              |
| 1:AA:252:G:N7     | 29:Ae:8:LYS:HE3    | 2.15                     | 0.61              |
| 1:AA:269:U:H3'    | 1:AA:270(Y):G:O2'  | 2.00                     | 0.61              |
| 1:AA:270(L):U:H2' | 1:AA:270(L):U:O2   | 1.98                     | 0.61              |
| 1:AA:445:C:O3'    | 16:AR:3:ARG:HG2    | 1.99                     | 0.61              |
| 1:AA:804:A:C5'    | 1:AA:805:G:OP1     | 2.48                     | 0.61              |
| 1:AA:969:U:O2'    | 1:AA:970:C:H5'     | 2.01                     | 0.61              |
| 1:AA:1022:G:O2'   | 1:AA:1023:U:P      | 2.59                     | 0.61              |
| 1:AA:1065:U:H2'   | 1:AA:1066:U:H5''   | 1.81                     | 0.61              |
| 1:AA:1079:C:OP1   | 32:AJ:137:GLU:CB   | 2.48                     | 0.61              |
| 1:AA:1226:G:H3'   | 1:AA:1226:G:C8     | 2.34                     | 0.61              |
| 1:AA:1303:G:C8    | 1:AA:1304:C:C5     | 2.88                     | 0.61              |
| 1:AA:1355:G:C2    | 1:AA:1377:G:N3     | 2.68                     | 0.61              |
| 1:AA:1419:A:N7    | 1:AA:1421:G:C6     | 2.68                     | 0.61              |
| 1:AA:1613:G:P     | 28:Ad:5:TRP:HD1    | 2.24                     | 0.61              |
| 1:AA:1619:G:C2    | 28:Ad:3:ARG:NH1    | 2.68                     | 0.61              |
| 1:AA:1742:C:C4    | 1:AA:1743:G:C8     | 2.88                     | 0.61              |
| 1:AA:1764:G:O2'   | 1:AA:1765:C:C5'    | 2.45                     | 0.61              |
| 1:AA:2063:C:C2    | 1:AA:2450:A:N6     | 2.66                     | 0.61              |
| 1:AA:2103:C:C2    | 1:AA:2104:G:N7     | 2.68                     | 0.61              |
| 1:AA:2392:A:O3'   | 29:Ae:32:LEU:HD11  | 1.99                     | 0.61              |
| 1:AA:2439:A:H4'   | 1:AA:2440:C:H5''   | 1.82                     | 0.61              |
| 1:AA:2459:A:N3    | 1:AA:2460:U:O2'    | 2.28                     | 0.61              |
| 1:AA:2550:G:N2    | 1:AA:2559:C:C2     | 2.69                     | 0.61              |
| 1:AA:2661:G:H2'   | 1:AA:2662:A:C8     | 2.35                     | 0.61              |
| 3:AC:43:VAL:HG13  | 3:AC:224:ILE:CG1   | 2.29                     | 0.61              |
| 4:AD:29:PRO:HG3   | 4:AD:82:ILE:C      | 2.24                     | 0.61              |
| 4:AD:258:LYS:HA   | 4:AD:261:LYS:HD2   | 1.83                     | 0.61              |
| 5:AE:51:PHE:C     | 5:AE:74:PRO:HB3    | 2.25                     | 0.61              |
| 5:AE:133:LYS:O    | 5:AE:137:HIS:CE1   | 2.54                     | 0.61              |
| 6:AF:74:ARG:CD    | 6:AF:75:HIS:H      | 2.12                     | 0.61              |
| 6:AF:99:TYR:O     | 6:AF:101:LEU:N     | 2.33                     | 0.61              |
| 7:AG:13:GLU:O     | 7:AG:17:PRO:HD2    | 2.01                     | 0.61              |
| 7:AG:79:ASN:OD1   | 7:AG:82:LEU:HG     | 2.01                     | 0.61              |
| 8:AH:153:LYS:N    | 8:AH:154:PRO:CD    | 2.57                     | 0.61              |
| 9:AK:55:VAL:HG13  | 9:AK:56:ASN:N      | 2.13                     | 0.61              |
| 9:AK:68:GLU:H     | 9:AK:70:LYS:CE     | 2.14                     | 0.61              |
| 9:AK:140:VAL:OXT  | 9:AK:140:VAL:HG12  | 2.00                     | 0.61              |
| 10:AL:3:GLN:O     | 10:AL:3:GLN:OE1    | 2.19                     | 0.61              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AL:31:LYS:HB3   | 10:AL:32:TYR:CZ    | 2.36                     | 0.61              |
| 11:AM:52:GLU:O     | 11:AM:55:ARG:N     | 2.34                     | 0.61              |
| 11:AM:91:PHE:CD2   | 11:AM:96:THR:HG22  | 2.36                     | 0.61              |
| 12:AN:6:ARG:HE     | 12:AN:8:LYS:CG     | 2.14                     | 0.61              |
| 12:AN:45:GLN:HA    | 12:AN:48:GLU:CG    | 2.30                     | 0.61              |
| 13:AO:24:GLN:O     | 13:AO:25:ALA:C     | 2.44                     | 0.61              |
| 13:AO:73:VAL:HA    | 13:AO:76:VAL:HB    | 1.81                     | 0.61              |
| 13:AO:77:ARG:O     | 13:AO:78:LYS:C     | 2.42                     | 0.61              |
| 15:AQ:1:MET:CG     | 15:AQ:2:ASN:N      | 2.64                     | 0.61              |
| 16:AR:111:GLU:HG3  | 16:AR:112:ARG:N    | 2.16                     | 0.61              |
| 19:AU:8:ILE:HD11   | 19:AU:42:ALA:CB    | 2.30                     | 0.61              |
| 21:AW:73:GLN:O     | 21:AW:87:ASP:CB    | 2.48                     | 0.61              |
| 21:AW:116:VAL:HG21 | 21:AW:145:GLU:CG   | 2.30                     | 0.61              |
| 22:AX:19:LYS:O     | 22:AX:20:ARG:NH1   | 2.33                     | 0.61              |
| 22:AX:50:ASN:HB3   | 22:AX:63:VAL:HG22  | 1.82                     | 0.61              |
| 24:AZ:26:LEU:HG    | 24:AZ:35:ARG:HH11  | 1.64                     | 0.61              |
| 25:Aa:22:ILE:HD13  | 25:Aa:30:GLU:OE1   | 2.01                     | 0.61              |
| 25:Aa:56:VAL:HB    | 25:Aa:61:ARG:CD    | 2.31                     | 0.61              |
| 29:Ae:7:HIS:O      | 29:Ae:8:LYS:C      | 2.43                     | 0.61              |
| 29:Ae:49:VAL:O     | 29:Ae:53:PRO:CD    | 2.48                     | 0.61              |
| 30:Af:32:HIS:O     | 30:Af:34:GLN:HG3   | 2.01                     | 0.61              |
| 34:BA:9:G:H3'      | 38:BI:126:ARG:HH11 | 1.66                     | 0.61              |
| 34:BA:37:U:P       | 45:BP:123:LYS:HD2  | 2.40                     | 0.61              |
| 34:BA:109:A:O2'    | 34:BA:110:C:OP1    | 2.19                     | 0.61              |
| 34:BA:131:C:N4     | 34:BA:232:G:N1     | 2.48                     | 0.61              |
| 34:BA:254:G:C6     | 34:BA:273:A:N6     | 2.69                     | 0.61              |
| 34:BA:314:C:H2'    | 34:BA:315:A:C1'    | 2.31                     | 0.61              |
| 34:BA:354:G:N2     | 34:BA:355:C:C2     | 2.69                     | 0.61              |
| 34:BA:373:A:O2'    | 34:BA:374:A:H5'    | 1.99                     | 0.61              |
| 34:BA:434:U:H2'    | 34:BA:435:C:C6     | 2.35                     | 0.61              |
| 34:BA:544:G:H2'    | 34:BA:545:C:H6     | 1.64                     | 0.61              |
| 34:BA:594:G:C5     | 34:BA:595:G:N3     | 2.69                     | 0.61              |
| 34:BA:938:A:C4     | 34:BA:939:G:C8     | 2.89                     | 0.61              |
| 34:BA:1005:A:C3'   | 34:BA:1006:C:H6    | 2.09                     | 0.61              |
| 34:BA:1124:G:N7    | 34:BA:1145:C:H2'   | 2.15                     | 0.61              |
| 34:BA:1137:C:H4'   | 34:BA:1138:G:N1    | 2.15                     | 0.61              |
| 34:BA:1227:A:H5'   | 52:BW:81:ARG:NE    | 2.08                     | 0.61              |
| 34:BA:1381:U:H2'   | 34:BA:1382:C:H5'   | 1.81                     | 0.61              |
| 35:BF:69:LEU:CD2   | 35:BF:91:PRO:HB3   | 2.30                     | 0.61              |
| 35:BF:182:ILE:HD13 | 35:BF:182:ILE:H    | 1.66                     | 0.61              |
| 36:BG:35:GLU:C     | 36:BG:38:ARG:HG2   | 2.25                     | 0.61              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 36:BG:84:ILE:HG13 | 36:BG:101:LEU:CD2  | 2.31                     | 0.61              |
| 37:BH:87:GLY:O    | 37:BH:89:THR:N     | 2.33                     | 0.61              |
| 39:BJ:89:MET:CE   | 51:BV:76:LEU:HD21  | 2.31                     | 0.61              |
| 39:BJ:95:GLU:H    | 39:BJ:96:PRO:HD2   | 1.64                     | 0.61              |
| 40:BK:22:LEU:HB3  | 40:BK:62:PHE:HE2   | 1.65                     | 0.61              |
| 41:BL:12:ARG:HH11 | 41:BL:27:PRO:CD    | 2.05                     | 0.61              |
| 42:BM:45:ALA:O    | 42:BM:78:LYS:HG3   | 2.01                     | 0.61              |
| 46:BQ:81:LEU:CD1  | 46:BQ:81:LEU:H     | 2.13                     | 0.61              |
| 46:BQ:100:GLY:HA3 | 46:BQ:101:GLN:CG   | 2.22                     | 0.61              |
| 48:BS:43:LEU:HD11 | 48:BS:56:LEU:CD2   | 2.31                     | 0.61              |
| 50:BU:99:SER:C    | 50:BU:100:LYS:HG2  | 2.24                     | 0.61              |
| 51:BV:20:ALA:HB1  | 51:BV:55:ARG:HH21  | 1.65                     | 0.61              |
| 52:BW:40:ILE:O    | 52:BW:41:VAL:HG13  | 2.00                     | 0.61              |
| 52:BW:40:ILE:HD12 | 52:BW:74:PHE:CE2   | 2.35                     | 0.61              |
| 53:BX:31:SER:OG   | 53:BX:32:ALA:N     | 2.26                     | 0.61              |
| 56:BE:2:C:C5      | 56:BE:71:G:C5      | 2.75                     | 0.61              |
| 57:BZ:18:LYS:NZ   | 57:BZ:50:LYS:HA    | 2.15                     | 0.61              |
| 57:BZ:54:ILE:CG1  | 57:BZ:211:GLN:NE2  | 2.55                     | 0.61              |
| 57:BZ:266:ASP:O   | 57:BZ:267:LEU:HB2  | 1.99                     | 0.61              |
| 57:BZ:398:GLU:N   | 57:BZ:473:ASP:H    | 1.99                     | 0.61              |
| 57:BZ:400:TYR:HB3 | 57:BZ:442:VAL:HG12 | 0.62                     | 0.61              |
| 57:BZ:400:TYR:HE1 | 57:BZ:444:PRO:HD3  | 1.58                     | 0.61              |
| 57:BZ:455:PHE:CZ  | 57:BZ:465:LEU:CD2  | 2.83                     | 0.61              |
| 57:BZ:496:ALA:HB2 | 57:BZ:513:GLY:O    | 1.96                     | 0.61              |
| 1:AA:123:G:H2'    | 1:AA:124:G:C8      | 2.36                     | 0.61              |
| 1:AA:324:A:N3     | 1:AA:324:A:H2'     | 2.16                     | 0.61              |
| 1:AA:445:C:C3'    | 16:AR:3:ARG:HE     | 2.07                     | 0.61              |
| 1:AA:447:A:C6     | 1:AA:454:A:N7      | 2.69                     | 0.61              |
| 1:AA:503:A:H4'    | 1:AA:504:U:O5'     | 2.01                     | 0.61              |
| 1:AA:519:U:H6     | 1:AA:519:U:C5'     | 2.06                     | 0.61              |
| 1:AA:559:G:C2'    | 1:AA:560:C:H6      | 2.04                     | 0.61              |
| 1:AA:566:U:OP1    | 1:AA:1253:A:N1     | 2.34                     | 0.61              |
| 1:AA:648:G:C4     | 1:AA:649:G:N7      | 2.69                     | 0.61              |
| 1:AA:716:A:H2'    | 1:AA:717:G:C5'     | 2.28                     | 0.61              |
| 1:AA:990:A:N6     | 1:AA:1186:G:H1'    | 2.16                     | 0.61              |
| 1:AA:1024:G:O6    | 1:AA:1138:G:O6     | 2.18                     | 0.61              |
| 1:AA:1038:C:O3'   | 1:AA:1039:G:C3'    | 2.44                     | 0.61              |
| 1:AA:1155:A:C2'   | 1:AA:1156:A:C5'    | 2.75                     | 0.61              |
| 1:AA:1463:C:C2'   | 1:AA:1464:C:O5'    | 2.47                     | 0.61              |
| 1:AA:1572:A:O4'   | 1:AA:1572:A:P      | 2.59                     | 0.61              |
| 1:AA:1598:C:H5''  | 19:AU:36:LYS:CB    | 2.19                     | 0.61              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:1603:A:OP1    | 1:AA:1604:C:OP2   | 2.19                     | 0.61              |
| 1:AA:1613:G:H2'    | 1:AA:1617:C:H42   | 1.63                     | 0.61              |
| 1:AA:1654:A:HO2'   | 5:AE:113:PHE:HD1  | 1.48                     | 0.61              |
| 1:AA:1783:A:H8     | 1:AA:1783:A:OP2   | 1.84                     | 0.61              |
| 1:AA:1784:A:H1'    | 1:AA:1785:A:N7    | 2.16                     | 0.61              |
| 1:AA:1795:C:O2'    | 1:AA:1796:U:H5'   | 2.01                     | 0.61              |
| 1:AA:1823:G:C2     | 1:AA:1824:G:C8    | 2.89                     | 0.61              |
| 1:AA:1853:A:H1'    | 1:AA:2234:G:H5'   | 1.82                     | 0.61              |
| 1:AA:2004:G:C8     | 1:AA:2005:A:N7    | 2.69                     | 0.61              |
| 1:AA:2210:G:N7     | 4:AD:150:LYS:O    | 2.33                     | 0.61              |
| 1:AA:2373:G:H8     | 1:AA:2373:G:OP2   | 1.84                     | 0.61              |
| 1:AA:2620:C:H4'    | 5:AE:156:MET:HB2  | 1.80                     | 0.61              |
| 1:AA:2637:U:O2'    | 1:AA:2638:G:O4'   | 2.19                     | 0.61              |
| 1:AA:2713:A:P      | 1:AA:2713:A:C8    | 2.94                     | 0.61              |
| 1:AA:2723:C:HO2'   | 13:AO:2:ARG:N     | 1.98                     | 0.61              |
| 1:AA:2770:G:H2'    | 1:AA:2771:C:H5'   | 1.82                     | 0.61              |
| 1:AA:2831:G:O4'    | 1:AA:2883:A:C2    | 2.53                     | 0.61              |
| 2:AB:73:A:N1       | 21:AW:29:TYR:CE1  | 2.69                     | 0.61              |
| 2:AB:104:A:N6      | 2:AB:105:G:H21    | 1.98                     | 0.61              |
| 3:AC:61:THR:HG21   | 3:AC:160:ARG:NH2  | 2.16                     | 0.61              |
| 3:AC:97:GLU:OE1    | 3:AC:122:ALA:HB2  | 2.01                     | 0.61              |
| 4:AD:259:THR:CG2   | 4:AD:260:ARG:HH12 | 2.13                     | 0.61              |
| 5:AE:147:PRO:CG    | 5:AE:149:ARG:CD   | 2.77                     | 0.61              |
| 6:AF:11:VAL:HG23   | 6:AF:17:ARG:NH2   | 2.15                     | 0.61              |
| 6:AF:34:TRP:O      | 6:AF:37:VAL:HB    | 1.99                     | 0.61              |
| 6:AF:183:VAL:CA    | 6:AF:186:ILE:HD12 | 2.25                     | 0.61              |
| 7:AG:84:LYS:NZ     | 56:BE:54:U:H5     | 1.93                     | 0.61              |
| 7:AG:135:LEU:C     | 7:AG:135:LEU:HD13 | 2.26                     | 0.61              |
| 7:AG:149:VAL:HG13  | 7:AG:150:ASP:H    | 1.66                     | 0.61              |
| 9:AK:54:VAL:HG12   | 9:AK:122:VAL:CG1  | 2.30                     | 0.61              |
| 10:AL:63:VAL:HG23  | 10:AL:64:ARG:N    | 2.14                     | 0.61              |
| 11:AM:46:LYS:CB    | 11:AM:49:ARG:HB2  | 2.20                     | 0.61              |
| 11:AM:135:LEU:HD12 | 11:AM:135:LEU:H   | 1.65                     | 0.61              |
| 13:AO:83:ILE:CA    | 13:AO:86:ARG:HG3  | 2.21                     | 0.61              |
| 14:AP:7:TYR:HB3    | 14:AP:11:LYS:HZ2  | 1.65                     | 0.61              |
| 14:AP:57:LYS:NZ    | 14:AP:62:LYS:HB3  | 2.16                     | 0.61              |
| 14:AP:76:LYS:O     | 14:AP:80:LEU:HD23 | 2.01                     | 0.61              |
| 18:AT:24:ILE:HG23  | 18:AT:35:ILE:HG23 | 1.82                     | 0.61              |
| 19:AU:27:THR:HB    | 19:AU:80:ILE:CD1  | 2.26                     | 0.61              |
| 19:AU:29:TRP:CE3   | 19:AU:76:ARG:HG3  | 2.36                     | 0.61              |
| 21:AW:18:LEU:HD22  | 21:AW:23:LYS:CD   | 2.31                     | 0.61              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 21:AW:95:PRO:HB2  | 21:AW:130:PRO:HA  | 1.83                     | 0.61              |
| 25:Aa:18:CYS:SG   | 25:Aa:19:GLY:N    | 2.71                     | 0.61              |
| 25:Aa:58:ARG:CB   | 25:Aa:62:ARG:NH2  | 2.64                     | 0.61              |
| 26:Ab:12:SER:C    | 26:Ab:14:ALA:N    | 2.52                     | 0.61              |
| 29:Ae:26:LYS:HB2  | 29:Ae:44:LYS:HZ1  | 1.66                     | 0.61              |
| 32:AJ:12:LEU:HD21 | 32:AJ:23:VAL:HG22 | 1.83                     | 0.61              |
| 34:BA:129(A):G:N2 | 34:BA:191(A):G:C4 | 2.69                     | 0.61              |
| 34:BA:558:G:C5'   | 34:BA:559:A:H5'   | 2.31                     | 0.61              |
| 34:BA:730:G:H2'   | 34:BA:731:G:C5'   | 2.30                     | 0.61              |
| 34:BA:755:G:N3    | 41:BL:1:MET:HE1   | 2.16                     | 0.61              |
| 34:BA:815:A:C2    | 34:BA:1529:G:C2   | 2.89                     | 0.61              |
| 34:BA:949:A:OP1   | 46:BQ:101:GLN:HB3 | 2.01                     | 0.61              |
| 34:BA:1017:G:O2'  | 34:BA:1018:C:H5'  | 2.01                     | 0.61              |
| 34:BA:1208:C:H2'  | 34:BA:1209:C:C6   | 2.33                     | 0.61              |
| 34:BA:1438:G:C2'  | 34:BA:1439:C:H5'  | 2.30                     | 0.61              |
| 35:BF:10:LEU:HD23 | 35:BF:11:LEU:HD21 | 1.81                     | 0.61              |
| 35:BF:56:ARG:HD2  | 35:BF:56:ARG:C    | 2.26                     | 0.61              |
| 35:BF:58:ILE:O    | 35:BF:61:LEU:HB3  | 2.01                     | 0.61              |
| 35:BF:113:HIS:HA  | 35:BF:116:GLU:CD  | 2.26                     | 0.61              |
| 35:BF:132:LYS:HA  | 35:BF:135:GLN:OE1 | 2.01                     | 0.61              |
| 36:BG:24:ALA:HB3  | 36:BG:29:TYR:HB2  | 1.81                     | 0.61              |
| 37:BH:35:ARG:O    | 37:BH:37:PRO:CD   | 2.49                     | 0.61              |
| 37:BH:57:ARG:HH22 | 38:BI:107:ARG:CD  | 2.13                     | 0.61              |
| 38:BI:91:LEU:HD12 | 38:BI:118:ILE:CG2 | 2.31                     | 0.61              |
| 39:BJ:14:LEU:HD13 | 39:BJ:15:ASP:N    | 2.13                     | 0.61              |
| 39:BJ:46:ARG:HH22 | 51:BV:37:VAL:HG22 | 1.64                     | 0.61              |
| 40:BK:6:ARG:HA    | 40:BK:6:ARG:NH1   | 2.16                     | 0.61              |
| 42:BM:66:ARG:HG2  | 42:BM:67:GLY:N    | 2.15                     | 0.61              |
| 48:BS:81:LEU:HD23 | 48:BS:81:LEU:C    | 2.25                     | 0.61              |
| 51:BV:46:GLU:HB3  | 51:BV:85:LEU:CD1  | 2.24                     | 0.61              |
| 52:BW:38:SER:HB3  | 52:BW:71:LEU:CG   | 2.29                     | 0.61              |
| 54:BY:11:GLY:O    | 54:BY:15:ARG:HG2  | 1.99                     | 0.61              |
| 56:BD:66:U:H2'    | 56:BD:67:C:C5     | 2.36                     | 0.61              |
| 1:AA:161:U:O2'    | 1:AA:162:U:H5     | 1.83                     | 0.61              |
| 1:AA:273:G:H2'    | 1:AA:273(A):G:H8  | 1.66                     | 0.61              |
| 1:AA:279:C:H2'    | 1:AA:280:C:C6     | 2.36                     | 0.61              |
| 1:AA:458:G:H2'    | 28:Ad:40:TRP:NE1  | 2.15                     | 0.61              |
| 1:AA:539:G:H2'    | 1:AA:540:G:H8     | 1.66                     | 0.61              |
| 1:AA:551:G:H5'    | 1:AA:552:G:OP2    | 2.00                     | 0.61              |
| 1:AA:565:C:O2'    | 1:AA:1252:G:N7    | 2.33                     | 0.61              |
| 1:AA:649:G:O3'    | 29:Ae:17:THR:HG21 | 2.00                     | 0.61              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:684:G:C2'    | 1:AA:687:C:N4     | 2.55                     | 0.61              |
| 1:AA:712:G:C5     | 1:AA:713:G:N7     | 2.68                     | 0.61              |
| 1:AA:772:C:H4'    | 4:AD:48:ARG:HD3   | 1.83                     | 0.61              |
| 1:AA:962:G:C2'    | 1:AA:963:U:H6     | 2.11                     | 0.61              |
| 1:AA:1074:G:O2'   | 1:AA:1075:C:O5'   | 2.18                     | 0.61              |
| 1:AA:1075:C:O2'   | 32:AJ:90:LYS:CD   | 2.48                     | 0.61              |
| 1:AA:1203:G:C2    | 1:AA:1241:A:H8    | 2.18                     | 0.61              |
| 1:AA:1348:G:O6    | 1:AA:1599:C:N4    | 2.33                     | 0.61              |
| 1:AA:1363:C:H4'   | 1:AA:1809:A:N7    | 2.15                     | 0.61              |
| 1:AA:1451:C:H2'   | 1:AA:1457:A:H61   | 1.65                     | 0.61              |
| 1:AA:1483:G:H1'   | 1:AA:1507:A:H2    | 1.66                     | 0.61              |
| 1:AA:1583:A:H5'   | 1:AA:1585:C:OP1   | 2.01                     | 0.61              |
| 1:AA:1767:C:C4    | 1:AA:1768:U:C5    | 2.89                     | 0.61              |
| 1:AA:1775:U:O2'   | 1:AA:1776:G:C5'   | 2.47                     | 0.61              |
| 1:AA:1870:C:H2'   | 1:AA:1870:C:O2    | 2.01                     | 0.61              |
| 1:AA:1937:A:N6    | 1:AA:1939:U:O4    | 2.25                     | 0.61              |
| 1:AA:1995:U:H5'   | 1:AA:1996:C:H5'   | 1.82                     | 0.61              |
| 1:AA:2271:G:O5'   | 1:AA:2271:G:H8    | 1.84                     | 0.61              |
| 1:AA:2278:A:N7    | 22:AX:14:ARG:HG3  | 2.15                     | 0.61              |
| 1:AA:2408:U:O2    | 1:AA:2409:G:C8    | 2.54                     | 0.61              |
| 1:AA:2458:G:H2'   | 1:AA:2460:U:C4    | 2.34                     | 0.61              |
| 1:AA:2838:G:O2'   | 13:AO:45:ARG:NH1  | 2.34                     | 0.61              |
| 2:AB:3:C:H2'      | 2:AB:4:C:C6       | 2.36                     | 0.61              |
| 2:AB:6:C:H5'      | 2:AB:27:C:O2'     | 2.01                     | 0.61              |
| 2:AB:75:G:C2      | 21:AW:27:VAL:HG21 | 2.35                     | 0.61              |
| 2:AB:99:A:C2      | 2:AB:100:G:C4     | 2.88                     | 0.61              |
| 3:AC:213:TYR:CD1  | 3:AC:213:TYR:N    | 2.63                     | 0.61              |
| 4:AD:127:VAL:CA   | 4:AD:193:VAL:HG12 | 2.17                     | 0.61              |
| 6:AF:34:TRP:CH2   | 11:AM:8:PRO:HD2   | 2.36                     | 0.61              |
| 7:AG:55:LYS:CG    | 7:AG:148:MET:HB2  | 2.30                     | 0.61              |
| 7:AG:75:LYS:HZ3   | 7:AG:85:GLY:HA3   | 1.65                     | 0.61              |
| 8:AH:68:THR:HG22  | 8:AH:72:ILE:CD1   | 2.30                     | 0.61              |
| 9:AK:23:LEU:HD12  | 9:AK:63:THR:H     | 1.60                     | 0.61              |
| 10:AL:24:VAL:HG11 | 10:AL:32:TYR:H    | 1.66                     | 0.61              |
| 11:AM:149:GLU:CD  | 11:AM:150:ALA:N   | 2.58                     | 0.61              |
| 12:AN:34:LEU:CG   | 12:AN:67:ARG:HH22 | 2.13                     | 0.61              |
| 13:AO:63:ARG:NH1  | 13:AO:80:PHE:CD2  | 2.67                     | 0.61              |
| 14:AP:31:SER:HB3  | 14:AP:34:HIS:HB3  | 1.81                     | 0.61              |
| 15:AQ:28:VAL:HG12 | 15:AQ:30:VAL:HG12 | 1.81                     | 0.61              |
| 15:AQ:63:VAL:O    | 15:AQ:63:VAL:HG13 | 1.99                     | 0.61              |
| 16:AR:70:ARG:O    | 16:AR:71:GLN:C    | 2.43                     | 0.61              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 16:AR:88:ILE:HB    | 17:AS:52:VAL:HG13  | 1.83                     | 0.61              |
| 16:AR:95:LEU:HD23  | 16:AR:95:LEU:N     | 2.13                     | 0.61              |
| 16:AR:98:LEU:CB    | 16:AR:105:VAL:HG11 | 2.31                     | 0.61              |
| 18:AT:59:VAL:CG2   | 18:AT:66:GLU:HB2   | 2.30                     | 0.61              |
| 18:AT:72:LYS:O     | 18:AT:106:ILE:CG2  | 2.49                     | 0.61              |
| 20:AV:23:ARG:CD    | 20:AV:39:VAL:HG22  | 2.28                     | 0.61              |
| 22:AX:38:VAL:HG12  | 22:AX:45:PHE:CE1   | 2.36                     | 0.61              |
| 22:AX:76:GLY:C     | 22:AX:78:TYR:CE1   | 2.79                     | 0.61              |
| 23:AY:2:ARG:H      | 23:AY:2:ARG:CZ     | 2.14                     | 0.61              |
| 23:AY:44:LYS:HG3   | 23:AY:48:LEU:CD2   | 2.28                     | 0.61              |
| 23:AY:59:LEU:HD11  | 23:AY:63:ARG:CD    | 2.31                     | 0.61              |
| 27:Ac:22:ALA:CB    | 27:Ac:39:TYR:CE2   | 2.83                     | 0.61              |
| 27:Ac:41:PRO:CG    | 27:Ac:43:CYS:HB2   | 2.30                     | 0.61              |
| 29:Ae:50:LEU:O     | 29:Ae:53:PRO:HD2   | 2.01                     | 0.61              |
| 30:Af:9:ARG:NH2    | 30:Af:16:VAL:HG11  | 2.16                     | 0.61              |
| 32:AJ:22:PRO:HD2   | 32:AJ:23:VAL:H     | 1.66                     | 0.61              |
| 34:BA:59:A:O2'     | 34:BA:388:G:H5''   | 2.00                     | 0.61              |
| 34:BA:186:C:H2'    | 34:BA:186(A):C:H6  | 1.66                     | 0.61              |
| 34:BA:265:G:C2'    | 34:BA:267:C:H5     | 2.10                     | 0.61              |
| 34:BA:377:G:OP1    | 49:BT:5:ARG:HD3    | 2.00                     | 0.61              |
| 34:BA:406:G:H21    | 37:BH:119:GLN:HE22 | 1.48                     | 0.61              |
| 34:BA:671:G:H2'    | 34:BA:672:U:O4'    | 1.99                     | 0.61              |
| 34:BA:826:C:H5'    | 41:BL:12:ARG:NH2   | 2.15                     | 0.61              |
| 34:BA:1061:G:C2    | 34:BA:1197:G:C2    | 2.88                     | 0.61              |
| 34:BA:1193:G:H2'   | 34:BA:1194:U:O5'   | 1.99                     | 0.61              |
| 34:BA:1317:C:H2'   | 34:BA:1318:A:O4'   | 2.00                     | 0.61              |
| 34:BA:1318:A:C8    | 52:BW:37:ARG:CB    | 2.84                     | 0.61              |
| 34:BA:1373:G:O2'   | 40:BK:34:GLY:HA2   | 2.00                     | 0.61              |
| 34:BA:1429:C:H2'   | 34:BA:1430:C:C6    | 2.36                     | 0.61              |
| 34:BA:1435:G:H2'   | 34:BA:1436:U:C5    | 2.35                     | 0.61              |
| 34:BA:1455:G:O3'   | 53:BX:28:ALA:O     | 2.19                     | 0.61              |
| 35:BF:19:HIS:HB3   | 35:BF:189:ASP:OD2  | 2.00                     | 0.61              |
| 35:BF:109:SER:O    | 35:BF:110:GLN:C    | 2.42                     | 0.61              |
| 35:BF:211:ILE:HG22 | 35:BF:212:GLN:N    | 2.14                     | 0.61              |
| 36:BG:11:ARG:HG3   | 36:BG:16:ARG:NE    | 2.15                     | 0.61              |
| 36:BG:91:LEU:CD2   | 36:BG:92:ALA:N     | 2.64                     | 0.61              |
| 37:BH:31:CYS:SG    | 37:BH:33:MET:CG    | 2.89                     | 0.61              |
| 37:BH:36:ARG:HB3   | 37:BH:38:TYR:CE2   | 2.35                     | 0.61              |
| 37:BH:205:GLU:O    | 37:BH:206:PHE:C    | 2.44                     | 0.61              |
| 40:BK:88:PRO:CG    | 40:BK:152:ALA:HB2  | 2.29                     | 0.61              |
| 40:BK:93:PRO:O     | 40:BK:94:ARG:C     | 2.43                     | 0.61              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 41:BL:46:LYS:HD2  | 41:BL:63:LEU:O    | 2.01                     | 0.61              |
| 41:BL:51:VAL:HG12 | 41:BL:52:ASP:N    | 2.16                     | 0.61              |
| 43:BN:4:ILE:HG12  | 43:BN:99:LYS:O    | 2.00                     | 0.61              |
| 43:BN:20:ALA:HB1  | 43:BN:37:PRO:HB3  | 1.83                     | 0.61              |
| 43:BN:23:ILE:CG2  | 43:BN:72:VAL:HG11 | 2.30                     | 0.61              |
| 44:BO:28:THR:HG22 | 44:BO:29:ILE:N    | 2.16                     | 0.61              |
| 51:BV:34:TYR:HD1  | 51:BV:35:ARG:N    | 1.99                     | 0.61              |
| 51:BV:77:GLY:C    | 51:BV:79:LEU:HD12 | 2.25                     | 0.61              |
| 53:BX:53:LEU:O    | 53:BX:54:LYS:C    | 2.43                     | 0.61              |
| 55:BC:5:G:O6      | 55:BC:69:G:C6     | 2.54                     | 0.61              |
| 56:BD:20:U:H2'    | 56:BD:21:A:H4'    | 1.81                     | 0.61              |
| 57:BZ:123:PRO:CD  | 57:BZ:156:GLU:OE1 | 2.42                     | 0.61              |
| 57:BZ:239:ILE:CG1 | 57:BZ:244:GLY:CA  | 2.79                     | 0.61              |
| 57:BZ:309:MET:HG2 | 57:BZ:358:VAL:HB  | 1.83                     | 0.61              |
| 1:AA:230:U:O2'    | 1:AA:231:C:O4'    | 2.19                     | 0.61              |
| 1:AA:270(X):G:C3' | 1:AA:270(Y):G:H5' | 2.31                     | 0.61              |
| 1:AA:302:C:C2     | 1:AA:303:U:C5     | 2.88                     | 0.61              |
| 1:AA:371:A:H62    | 1:AA:424:G:H4'    | 1.66                     | 0.61              |
| 1:AA:586:A:OP1    | 6:AF:89:VAL:CG2   | 2.49                     | 0.61              |
| 1:AA:602:G:N2     | 1:AA:655:A:H3'    | 2.15                     | 0.61              |
| 1:AA:607:U:O2     | 1:AA:607:U:C2'    | 2.48                     | 0.61              |
| 1:AA:612:G:H4'    | 1:AA:616:A:N1     | 2.16                     | 0.61              |
| 1:AA:901:A:N7     | 1:AA:902:C:C5     | 2.68                     | 0.61              |
| 1:AA:954:G:OP1    | 12:AN:17:LEU:HB3  | 2.00                     | 0.61              |
| 1:AA:1024:G:OP2   | 1:AA:1025:G:H3'   | 2.01                     | 0.61              |
| 1:AA:1038:C:H4'   | 1:AA:1039:G:OP1   | 2.01                     | 0.61              |
| 1:AA:1135:C:O2    | 1:AA:2038:G:H4'   | 2.00                     | 0.61              |
| 1:AA:1207:C:OP2   | 1:AA:1207:C:H6    | 1.83                     | 0.61              |
| 1:AA:1299:G:O4'   | 1:AA:1301:A:N3    | 2.34                     | 0.61              |
| 1:AA:1351:C:O2'   | 1:AA:1571:A:C1'   | 2.49                     | 0.61              |
| 1:AA:1418:G:OP2   | 1:AA:1418:G:C8    | 2.54                     | 0.61              |
| 1:AA:1454:U:O2    | 1:AA:1454:U:C2'   | 2.47                     | 0.61              |
| 1:AA:1537:C:C6    | 1:AA:1537:C:C3'   | 2.84                     | 0.61              |
| 1:AA:1650:G:O6    | 1:AA:2008:C:N4    | 2.34                     | 0.61              |
| 1:AA:1675:C:H5    | 5:AE:129:HIS:NE2  | 1.99                     | 0.61              |
| 1:AA:1956:U:C2'   | 1:AA:1957:C:H6    | 2.09                     | 0.61              |
| 1:AA:1996:C:C6    | 1:AA:1996:C:OP1   | 2.54                     | 0.61              |
| 1:AA:2245:U:O2    | 1:AA:2435:A:C8    | 2.53                     | 0.61              |
| 1:AA:2284:C:H5''  | 27:Ac:9:LEU:HD21  | 1.81                     | 0.61              |
| 1:AA:2307:G:H8    | 1:AA:2307:G:OP2   | 1.84                     | 0.61              |
| 1:AA:2360:A:C8    | 1:AA:2361:A:C8    | 2.89                     | 0.61              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2403:C:N4    | 1:AA:2415:G:C6    | 2.69                     | 0.61              |
| 1:AA:2479:G:C2    | 1:AA:2480:C:H1'   | 2.36                     | 0.61              |
| 1:AA:2570:G:C5'   | 1:AA:2571:C:OP2   | 2.47                     | 0.61              |
| 1:AA:2597:G:O4'   | 4:AD:242:ARG:CZ   | 2.49                     | 0.61              |
| 1:AA:2651:C:O2    | 1:AA:2670:A:C4    | 2.53                     | 0.61              |
| 1:AA:2777:G:H4'   | 1:AA:2778:A:C5'   | 2.31                     | 0.61              |
| 1:AA:2807:G:C5    | 1:AA:2808:U:C4    | 2.89                     | 0.61              |
| 1:AA:2850:A:H2    | 13:AO:61:HIS:CE1  | 2.18                     | 0.61              |
| 2:AB:13:A:C6      | 2:AB:70:C:O4'     | 2.54                     | 0.61              |
| 2:AB:61:G:C2      | 2:AB:62:C:C4      | 2.89                     | 0.61              |
| 2:AB:115:G:H8     | 2:AB:115:G:OP2    | 1.83                     | 0.61              |
| 3:AC:163:PHE:N    | 3:AC:163:PHE:CD2  | 2.68                     | 0.61              |
| 4:AD:34:VAL:N     | 4:AD:104:TYR:OH   | 2.34                     | 0.61              |
| 4:AD:59:LYS:O     | 4:AD:60:ARG:HG2   | 2.01                     | 0.61              |
| 4:AD:145:VAL:HB   | 4:AD:155:LEU:HD22 | 1.83                     | 0.61              |
| 4:AD:223:GLY:C    | 4:AD:225:ALA:N    | 2.55                     | 0.61              |
| 5:AE:4:ILE:CD1    | 5:AE:76:ARG:NH2   | 2.64                     | 0.61              |
| 5:AE:49:LEU:CD2   | 5:AE:76:ARG:N     | 2.64                     | 0.61              |
| 5:AE:106:GLY:HA3  | 5:AE:196:VAL:HG22 | 1.82                     | 0.61              |
| 5:AE:187:ALA:O    | 5:AE:188:VAL:C    | 2.44                     | 0.61              |
| 7:AG:8:LYS:HE2    | 7:AG:100:TRP:HD1  | 1.65                     | 0.61              |
| 7:AG:45:GLU:C     | 7:AG:47:LYS:N     | 2.58                     | 0.61              |
| 8:AH:88:LEU:CD2   | 8:AH:90:LYS:HB3   | 2.30                     | 0.61              |
| 8:AH:101:ARG:CD   | 8:AH:117:PRO:HG3  | 2.30                     | 0.61              |
| 8:AH:103:LEU:HB3  | 8:AH:105:LEU:HD11 | 1.82                     | 0.61              |
| 9:AK:75:TYR:O     | 9:AK:76:SER:O     | 2.18                     | 0.61              |
| 10:AL:111:PHE:O   | 10:AL:112:MET:C   | 2.43                     | 0.61              |
| 12:AN:36:ALA:O    | 12:AN:100:GLY:HA2 | 2.01                     | 0.61              |
| 12:AN:77:LYS:HG2  | 12:AN:87:LYS:HA   | 1.81                     | 0.61              |
| 15:AQ:57:PHE:N    | 15:AQ:57:PHE:HD2  | 1.98                     | 0.61              |
| 15:AQ:115:ARG:HD3 | 34:BA:1463:C:OP1  | 2.01                     | 0.61              |
| 16:AR:111:GLU:O   | 16:AR:114:LYS:HG2 | 2.01                     | 0.61              |
| 20:AV:83:THR:O    | 20:AV:94:LYS:HA   | 2.00                     | 0.61              |
| 21:AW:71:VAL:CG1  | 21:AW:74:VAL:HG23 | 2.30                     | 0.61              |
| 24:AZ:36:VAL:O    | 24:AZ:36:VAL:HG23 | 1.99                     | 0.61              |
| 29:Ae:5:LYS:HE3   | 29:Ae:10:ALA:CB   | 2.30                     | 0.61              |
| 32:AJ:27:LEU:HD22 | 32:AJ:58:THR:O    | 2.01                     | 0.61              |
| 32:AJ:67:PHE:O    | 32:AJ:68:VAL:HG22 | 2.00                     | 0.61              |
| 34:BA:8:A:H5'     | 38:BI:120:THR:O   | 2.00                     | 0.61              |
| 34:BA:38:G:N2     | 34:BA:397:A:C4    | 2.68                     | 0.61              |
| 34:BA:151:A:N7    | 34:BA:152:A:C2    | 2.69                     | 0.61              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:287:U:O2     | 34:BA:287:U:C2'    | 2.46                     | 0.61              |
| 34:BA:355:C:C1'    | 34:BA:388:G:H2'    | 2.24                     | 0.61              |
| 34:BA:425:G:O2'    | 34:BA:426:G:H5'    | 2.00                     | 0.61              |
| 34:BA:818:G:N3     | 34:BA:820:U:C5     | 2.69                     | 0.61              |
| 34:BA:1005:A:C1'   | 34:BA:1036:G:N2    | 2.63                     | 0.61              |
| 34:BA:1044:A:C2'   | 34:BA:1045:C:H5'   | 2.31                     | 0.61              |
| 34:BA:1274:G:N2    | 34:BA:1275:A:N6    | 2.46                     | 0.61              |
| 34:BA:1419:G:O2'   | 34:BA:1420:C:O4'   | 2.17                     | 0.61              |
| 35:BF:56:ARG:HB3   | 35:BF:56:ARG:CZ    | 2.29                     | 0.61              |
| 35:BF:84:GLU:OE1   | 35:BF:216:SER:HA   | 2.01                     | 0.61              |
| 36:BG:156:ARG:NH2  | 36:BG:160:ALA:O    | 2.34                     | 0.61              |
| 36:BG:188:LEU:HD22 | 36:BG:189:ALA:H    | 1.64                     | 0.61              |
| 37:BH:110:PHE:CE1  | 37:BH:148:VAL:HG23 | 2.34                     | 0.61              |
| 37:BH:196:LEU:HD12 | 37:BH:196:LEU:O    | 2.00                     | 0.61              |
| 38:BI:74:GLY:O     | 38:BI:75:THR:HB    | 2.01                     | 0.61              |
| 39:BJ:95:GLU:C     | 51:BV:32:ARG:HG3   | 2.26                     | 0.61              |
| 40:BK:50:ILE:HD12  | 40:BK:58:PRO:HB3   | 1.82                     | 0.61              |
| 40:BK:71:PRO:CD    | 40:BK:100:ALA:HB2  | 2.31                     | 0.61              |
| 41:BL:8:ASP:O      | 41:BL:11:THR:OG1   | 2.19                     | 0.61              |
| 41:BL:97:VAL:HG22  | 41:BL:98:LYS:N     | 2.14                     | 0.61              |
| 45:BP:97:ARG:C     | 45:BP:98:TYR:CD1   | 2.79                     | 0.61              |
| 46:BQ:25:ILE:CG1   | 46:BQ:66:LEU:HD21  | 2.29                     | 0.61              |
| 49:BT:19:ILE:HD12  | 49:BT:38:TYR:N     | 2.16                     | 0.61              |
| 49:BT:59:TRP:HA    | 49:BT:59:TRP:CE3   | 2.36                     | 0.61              |
| 50:BU:27:PHE:O     | 50:BU:35:VAL:HG13  | 2.00                     | 0.61              |
| 57:BZ:13:HIS:HB2   | 57:BZ:108:GLN:CA   | 2.31                     | 0.61              |
| 57:BZ:22:VAL:HG23  | 57:BZ:23:ASP:N     | 2.16                     | 0.61              |
| 57:BZ:27:GLN:H     | 57:BZ:28:GLN:C     | 2.09                     | 0.61              |
| 1:AA:56:A:H2'      | 1:AA:57:C:C6       | 2.36                     | 0.61              |
| 1:AA:72:U:C5       | 1:AA:112:U:O2      | 2.54                     | 0.61              |
| 1:AA:84:A:H5'      | 20:AV:8:LYS:CE     | 2.29                     | 0.61              |
| 1:AA:128:C:H2'     | 1:AA:129:C:H6      | 1.64                     | 0.61              |
| 1:AA:161:U:C2      | 1:AA:164:U:N3      | 2.64                     | 0.61              |
| 1:AA:279:C:H41     | 1:AA:359:A:H1'     | 1.66                     | 0.61              |
| 1:AA:318:C:O2      | 1:AA:334:C:C2      | 2.54                     | 0.61              |
| 1:AA:402:A:H2'     | 1:AA:402:A:N3      | 2.15                     | 0.61              |
| 1:AA:548:A:H62     | 1:AA:549:G:N2      | 1.98                     | 0.61              |
| 1:AA:624:C:OP2     | 11:AM:105:LEU:CD2  | 2.49                     | 0.61              |
| 1:AA:675:A:C4'     | 6:AF:67:GLN:HE22   | 1.98                     | 0.61              |
| 1:AA:730:C:H2'     | 1:AA:731:C:C5      | 2.36                     | 0.61              |
| 1:AA:798:G:OP1     | 6:AF:58:ALA:O      | 2.18                     | 0.61              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:828:U:C2'   | 1:AA:829:A:C8     | 2.74                     | 0.61              |
| 1:AA:873:G:C4    | 1:AA:874:G:C8     | 2.88                     | 0.61              |
| 1:AA:876:C:C2    | 1:AA:902:C:O2     | 2.54                     | 0.61              |
| 1:AA:957:A:C5    | 1:AA:959:A:C8     | 2.89                     | 0.61              |
| 1:AA:961:C:C4    | 1:AA:2031:A:N3    | 2.69                     | 0.61              |
| 1:AA:1062:G:O2'  | 1:AA:1063:G:O5'   | 2.19                     | 0.61              |
| 1:AA:1083:U:H1'  | 1:AA:1085:A:C5    | 2.36                     | 0.61              |
| 1:AA:1138:G:H2'  | 1:AA:1138:G:N3    | 2.16                     | 0.61              |
| 1:AA:1176:G:H5'' | 1:AA:1177:A:C8    | 2.36                     | 0.61              |
| 1:AA:1519:G:H2'  | 1:AA:1520:U:O4'   | 2.00                     | 0.61              |
| 1:AA:1536:A:H2'  | 1:AA:1537:C:C6    | 2.36                     | 0.61              |
| 1:AA:1754:C:H5   | 15:AQ:98:LYS:HD3  | 1.66                     | 0.61              |
| 1:AA:1786:A:H4'  | 1:AA:1938:A:N6    | 2.10                     | 0.61              |
| 1:AA:1954:G:H2'  | 1:AA:1956:U:C4    | 2.36                     | 0.61              |
| 1:AA:1972:A:H2'  | 1:AA:1973:G:H8    | 1.66                     | 0.61              |
| 1:AA:2132:U:H2'  | 1:AA:2132:U:O2    | 1.99                     | 0.61              |
| 1:AA:2216:G:O2'  | 1:AA:2217:G:H5'   | 2.01                     | 0.61              |
| 1:AA:2273:A:N7   | 1:AA:2274:A:C4    | 2.68                     | 0.61              |
| 1:AA:2320:A:C8   | 1:AA:2320:A:P     | 2.94                     | 0.61              |
| 1:AA:2393:A:H2'  | 1:AA:2394:C:H6    | 1.66                     | 0.61              |
| 1:AA:2491:U:C5   | 1:AA:2492:U:OP2   | 2.54                     | 0.61              |
| 1:AA:2491:U:O2   | 1:AA:2492:U:C5    | 2.54                     | 0.61              |
| 1:AA:2578:G:O2'  | 1:AA:2579:C:H6    | 1.84                     | 0.61              |
| 1:AA:2595:G:N2   | 1:AA:2599:G:C6    | 2.69                     | 0.61              |
| 2:AB:75:G:N3     | 2:AB:75:G:H2'     | 2.15                     | 0.61              |
| 4:AD:169:GLU:CG  | 4:AD:184:LYS:HZ1  | 2.12                     | 0.61              |
| 5:AE:27:LEU:HD12 | 5:AE:76:ARG:NH1   | 2.16                     | 0.61              |
| 5:AE:92:THR:CG2  | 5:AE:96:PHE:HB2   | 2.30                     | 0.61              |
| 6:AF:49:ALA:HB3  | 6:AF:94:PRO:HA    | 1.83                     | 0.61              |
| 7:AG:35:GLU:O    | 7:AG:36:LYS:O     | 2.18                     | 0.61              |
| 7:AG:81:LYS:O    | 56:BE:52:G:H5'    | 2.01                     | 0.61              |
| 7:AG:97:ASP:O    | 7:AG:98:ARG:C     | 2.43                     | 0.61              |
| 8:AH:9:ILE:HD13  | 8:AH:73:ALA:CB    | 2.30                     | 0.61              |
| 8:AH:54:ARG:HH11 | 8:AH:57:ASP:HB2   | 1.65                     | 0.61              |
| 8:AH:149:ARG:CG  | 8:AH:153:LYS:HD2  | 2.28                     | 0.61              |
| 9:AK:33:LEU:O    | 9:AK:35:ARG:HG3   | 2.00                     | 0.61              |
| 9:AK:45:ASN:O    | 9:AK:46:VAL:CG2   | 2.45                     | 0.61              |
| 9:AK:88:GLU:HB2  | 9:AK:89:LYS:NZ    | 2.16                     | 0.61              |
| 10:AL:13:ASN:HB2 | 10:AL:94:ARG:HB2  | 1.82                     | 0.61              |
| 12:AN:67:ARG:NE  | 12:AN:105:GLU:OE1 | 2.34                     | 0.61              |
| 12:AN:106:VAL:O  | 12:AN:107:ALA:HB2 | 2.00                     | 0.61              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 14:AP:39:ILE:O     | 14:AP:47:THR:HG23  | 2.00                     | 0.61              |
| 14:AP:62:LYS:O     | 14:AP:65:VAL:HG22  | 2.01                     | 0.61              |
| 14:AP:79:ALA:O     | 14:AP:80:LEU:C     | 2.44                     | 0.61              |
| 15:AQ:6:LEU:O      | 15:AQ:9:LEU:HB2    | 2.01                     | 0.61              |
| 15:AQ:28:VAL:HG13  | 15:AQ:92:GLY:C     | 2.26                     | 0.61              |
| 15:AQ:44:ASP:C     | 15:AQ:46:GLU:N     | 2.59                     | 0.61              |
| 17:AS:65:GLY:N     | 17:AS:97:LYS:NZ    | 2.49                     | 0.61              |
| 22:AX:49:LYS:N     | 22:AX:80:HIS:CE1   | 2.67                     | 0.61              |
| 23:AY:28:MET:O     | 23:AY:29:GLU:C     | 2.44                     | 0.61              |
| 28:Ad:40:TRP:O     | 28:Ad:41:ARG:HB3   | 2.01                     | 0.61              |
| 34:BA:191(D):U:H2' | 34:BA:191(E):G:C8  | 2.35                     | 0.61              |
| 34:BA:511:C:C2     | 34:BA:512:U:C5     | 2.88                     | 0.61              |
| 34:BA:558:G:C3'    | 34:BA:559:A:C5'    | 2.72                     | 0.61              |
| 34:BA:684:A:C4'    | 44:BO:12:ARG:NH2   | 2.55                     | 0.61              |
| 34:BA:796:C:H2'    | 34:BA:797:C:C6     | 2.35                     | 0.61              |
| 34:BA:948:C:OP1    | 46:BQ:109:THR:OG1  | 2.19                     | 0.61              |
| 34:BA:949:A:H3'    | 46:BQ:102:ARG:HH12 | 0.79                     | 0.61              |
| 34:BA:969:A:OP1    | 34:BA:969:A:C4'    | 2.48                     | 0.61              |
| 34:BA:1068:G:N2    | 34:BA:1108:G:O4'   | 2.34                     | 0.61              |
| 34:BA:1128:C:C4'   | 42:BM:16:ARG:NH2   | 2.64                     | 0.61              |
| 34:BA:1205:U:C4'   | 36:BG:195:VAL:HG13 | 2.26                     | 0.61              |
| 34:BA:1255:G:H21   | 34:BA:1276:G:H22   | 1.49                     | 0.61              |
| 35:BF:114:ARG:HH12 | 35:BF:141:GLU:HG3  | 1.66                     | 0.61              |
| 37:BH:92:VAL:HG12  | 37:BH:96:LEU:HD11  | 1.81                     | 0.61              |
| 37:BH:176:LEU:HG   | 37:BH:176:LEU:O    | 2.01                     | 0.61              |
| 37:BH:187:ARG:CZ   | 37:BH:188:LEU:HG   | 2.31                     | 0.61              |
| 39:BJ:50:TYR:HE1   | 51:BV:81:PHE:CE2   | 2.19                     | 0.61              |
| 40:BK:87:VAL:HG21  | 40:BK:154:TYR:HB2  | 1.82                     | 0.61              |
| 41:BL:5:PRO:C      | 41:BL:8:ASP:HB3    | 2.24                     | 0.61              |
| 41:BL:6:ILE:O      | 41:BL:7:ALA:C      | 2.42                     | 0.61              |
| 42:BM:28:VAL:O     | 42:BM:29:ASN:C     | 2.44                     | 0.61              |
| 43:BN:49:VAL:CG1   | 47:BR:41:ARG:HD2   | 2.23                     | 0.61              |
| 44:BO:95:ILE:HA    | 44:BO:98:LEU:HD12  | 1.82                     | 0.61              |
| 44:BO:104:GLN:NE2  | 44:BO:106:LYS:HB2  | 2.15                     | 0.61              |
| 45:BP:7:ILE:HB     | 45:BP:8:ASN:ND2    | 2.16                     | 0.61              |
| 45:BP:100:ILE:O    | 45:BP:101:VAL:HG13 | 2.01                     | 0.61              |
| 46:BQ:16:ASP:OD2   | 46:BQ:17:VAL:N     | 2.33                     | 0.61              |
| 48:BS:49:ASP:OD1   | 48:BS:52:SER:HB2   | 2.01                     | 0.61              |
| 48:BS:62:GLN:CD    | 48:BS:65:ARG:NH2   | 2.59                     | 0.61              |
| 49:BT:8:ARG:NH2    | 49:BT:11:SER:O     | 2.32                     | 0.61              |
| 50:BU:7:THR:HG22   | 50:BU:56:VAL:HG12  | 1.83                     | 0.61              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 52:BW:46:GLY:O     | 52:BW:47:HIS:ND1  | 2.34                     | 0.61              |
| 54:BY:5:ASP:O      | 54:BY:7:ARG:N     | 2.32                     | 0.61              |
| 55:BC:5:G:O2'      | 55:BC:6:G:O4'     | 2.16                     | 0.61              |
| 57:BZ:13:HIS:CD2   | 57:BZ:106:MET:HB3 | 2.26                     | 0.61              |
| 57:BZ:89:MET:CE    | 57:BZ:119:TYR:CZ  | 2.82                     | 0.61              |
| 57:BZ:407:VAL:C    | 57:BZ:436:ARG:NH1 | 2.58                     | 0.61              |
| 57:BZ:565:LEU:HD21 | 57:BZ:585:ILE:CG2 | 2.29                     | 0.61              |
| 1:AA:403:U:H5''    | 1:AA:404:C:OP1    | 2.01                     | 0.60              |
| 1:AA:443:A:O4'     | 1:AA:1201:C:C4'   | 2.48                     | 0.60              |
| 1:AA:493:G:N2      | 1:AA:494:G:H1'    | 2.15                     | 0.60              |
| 1:AA:582:G:N1      | 1:AA:1259:G:C6    | 2.69                     | 0.60              |
| 1:AA:744:G:H2'     | 1:AA:745:G:C8     | 2.35                     | 0.60              |
| 1:AA:977:G:N3      | 1:AA:978:G:H1'    | 2.15                     | 0.60              |
| 1:AA:1012:U:H5'    | 1:AA:1013:C:OP1   | 2.01                     | 0.60              |
| 1:AA:1046:A:C5     | 31:AI:6:ASN:HA    | 2.36                     | 0.60              |
| 1:AA:1086:A:H3'    | 1:AA:1087:G:H5'   | 1.83                     | 0.60              |
| 1:AA:1241:A:O2'    | 1:AA:1242:A:P     | 2.59                     | 0.60              |
| 1:AA:1250:G:H4'    | 16:AR:6:THR:HG21  | 1.83                     | 0.60              |
| 1:AA:1419:A:N6     | 1:AA:1421:G:C2    | 2.69                     | 0.60              |
| 1:AA:1457:A:C2'    | 1:AA:1458:C:H5'   | 2.30                     | 0.60              |
| 1:AA:1650:G:N2     | 1:AA:1651:G:C1'   | 2.62                     | 0.60              |
| 1:AA:1937:A:H2'    | 1:AA:1938:A:OP1   | 2.00                     | 0.60              |
| 1:AA:1955:U:H2'    | 1:AA:1955:U:O2    | 2.00                     | 0.60              |
| 1:AA:2085:C:H2'    | 1:AA:2086:U:O4'   | 2.01                     | 0.60              |
| 1:AA:2177:C:H4'    | 3:AC:223:ARG:CZ   | 2.31                     | 0.60              |
| 1:AA:2259:G:C2     | 1:AA:2282:G:C6    | 2.89                     | 0.60              |
| 1:AA:2298:A:H3'    | 1:AA:2299:G:H8    | 1.65                     | 0.60              |
| 1:AA:2311:A:H2     | 7:AG:45:GLU:HG2   | 1.66                     | 0.60              |
| 1:AA:2357:U:O5'    | 1:AA:2357:U:H6    | 1.84                     | 0.60              |
| 1:AA:2371:G:N2     | 1:AA:2372:G:C5    | 2.69                     | 0.60              |
| 1:AA:2431:U:O2'    | 1:AA:2432:A:H5''  | 2.00                     | 0.60              |
| 1:AA:2450:A:C2     | 1:AA:2451:A:C4    | 2.89                     | 0.60              |
| 1:AA:2495:G:C5'    | 12:AN:82:ARG:HA   | 2.31                     | 0.60              |
| 1:AA:2636:U:O4'    | 5:AE:79:ARG:HD3   | 2.00                     | 0.60              |
| 1:AA:2647:U:O2'    | 1:AA:2648:C:H6    | 1.83                     | 0.60              |
| 1:AA:2653:U:C4     | 1:AA:2669:G:C2    | 2.83                     | 0.60              |
| 2:AB:55:U:C2'      | 2:AB:56:G:H5'     | 2.31                     | 0.60              |
| 3:AC:10:LEU:O      | 3:AC:13:LYS:HB2   | 2.01                     | 0.60              |
| 3:AC:190:ARG:O     | 3:AC:193:ILE:N    | 2.33                     | 0.60              |
| 4:AD:29:PRO:HB2    | 4:AD:31:LYS:NZ    | 2.16                     | 0.60              |
| 4:AD:145:VAL:O     | 4:AD:154:LYS:O    | 2.19                     | 0.60              |

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| Atom-1              | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 4:AD:176:ARG:CA     | 4:AD:182:LEU:HD23  | 2.31                     | 0.60              |
| 4:AD:181:GLU:C      | 4:AD:270:ILE:HD12  | 2.24                     | 0.60              |
| 5:AE:49:LEU:HD21    | 5:AE:75:VAL:CA     | 2.31                     | 0.60              |
| 5:AE:58:ARG:HH11    | 5:AE:75:VAL:HG13   | 1.66                     | 0.60              |
| 5:AE:151:TYR:CE1    | 5:AE:153:GLY:N     | 2.67                     | 0.60              |
| 6:AF:77:ASP:O       | 6:AF:80:ALA:HB2    | 2.01                     | 0.60              |
| 7:AG:10:LYS:O       | 7:AG:11:TYR:C      | 2.45                     | 0.60              |
| 7:AG:44:GLY:HA3     | 7:AG:72:ARG:HG2    | 1.83                     | 0.60              |
| 7:AG:126:ASP:HA     | 7:AG:166:ASP:OD1   | 2.01                     | 0.60              |
| 9:AK:54:VAL:C       | 9:AK:130:HIS:NE2   | 2.59                     | 0.60              |
| 10:AL:82:ASN:OD1    | 10:AL:82:ASN:N     | 2.34                     | 0.60              |
| 10:AL:112:MET:O     | 10:AL:115:VAL:N    | 2.34                     | 0.60              |
| 12:AN:16:ARG:CG     | 12:AN:72:LYS:HD2   | 2.25                     | 0.60              |
| 12:AN:43:THR:HG23   | 12:AN:46:GLN:HB3   | 1.83                     | 0.60              |
| 14:AP:100:ALA:HA    | 14:AP:103:GLU:OE2  | 2.00                     | 0.60              |
| 15:AQ:28:VAL:HG22   | 15:AQ:93:ARG:C     | 2.24                     | 0.60              |
| 16:AR:8:VAL:HG23    | 16:AR:9:VAL:HG23   | 1.82                     | 0.60              |
| 17:AS:28:GLU:C      | 17:AS:30:GLY:N     | 2.59                     | 0.60              |
| 17:AS:52:VAL:O      | 17:AS:55:ALA:HB3   | 2.01                     | 0.60              |
| 17:AS:62:LEU:HD13   | 17:AS:98:GLU:CA    | 2.31                     | 0.60              |
| 21:AW:23:LYS:HG3    | 21:AW:39:VAL:O     | 2.01                     | 0.60              |
| 21:AW:56:VAL:HG13   | 21:AW:133:ILE:HD11 | 1.82                     | 0.60              |
| 25:Aa:5:ILE:C       | 25:Aa:7:PRO:HD2    | 2.25                     | 0.60              |
| 25:Aa:33:VAL:CG1    | 25:Aa:35:VAL:HG23  | 2.31                     | 0.60              |
| 27:Ac:20:ASN:CG     | 27:Ac:43:CYS:SG    | 2.84                     | 0.60              |
| 28:Ad:17:GLY:O      | 28:Ad:21:ARG:NH2   | 2.34                     | 0.60              |
| 34:BA:229:U:H2'     | 34:BA:230:G:C8     | 2.36                     | 0.60              |
| 34:BA:389:A:C6      | 34:BA:390:C:C1'    | 2.83                     | 0.60              |
| 34:BA:405:U:H5''    | 34:BA:406:G:O4'    | 2.01                     | 0.60              |
| 34:BA:515:G:H2'     | 34:BA:516:U:O4'    | 2.00                     | 0.60              |
| 34:BA:574:A:H5''    | 34:BA:575:G:OP2    | 2.00                     | 0.60              |
| 34:BA:632:A:C4      | 34:BA:633:G:C8     | 2.89                     | 0.60              |
| 34:BA:675:A:H2'     | 34:BA:676:A:O4'    | 2.01                     | 0.60              |
| 34:BA:703:G:H8      | 34:BA:703:G:O5'    | 1.84                     | 0.60              |
| 34:BA:714:G:O2'     | 34:BA:715:A:H5'    | 2.00                     | 0.60              |
| 34:BA:1028(B):C:H2' | 34:BA:1028(B):C:O2 | 1.99                     | 0.60              |
| 34:BA:1064:G:C1'    | 34:BA:1066:C:N3    | 2.63                     | 0.60              |
| 34:BA:1484:C:C4     | 34:BA:1485:U:C4    | 2.88                     | 0.60              |
| 37:BH:43:HIS:CB     | 37:BH:46:LYS:HG3   | 2.19                     | 0.60              |
| 37:BH:65:ARG:HG3    | 37:BH:72:GLU:OE1   | 2.01                     | 0.60              |
| 37:BH:80:GLU:O      | 37:BH:83:SER:N     | 2.34                     | 0.60              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 37:BH:190:ASP:O   | 37:BH:191:ARG:C    | 2.43                     | 0.60              |
| 37:BH:195:ALA:O   | 37:BH:196:LEU:C    | 2.44                     | 0.60              |
| 38:BI:12:LEU:HG   | 38:BI:129:ILE:CG1  | 2.30                     | 0.60              |
| 39:BJ:52:ILE:HG21 | 39:BJ:87:ARG:NH2   | 2.16                     | 0.60              |
| 40:BK:75:VAL:HG22 | 40:BK:88:PRO:N     | 2.16                     | 0.60              |
| 41:BL:37:ARG:HD2  | 41:BL:38:ILE:N     | 2.16                     | 0.60              |
| 42:BM:127:LYS:HG3 | 56:BE:31:A:P       | 2.41                     | 0.60              |
| 43:BN:12:ASP:OD1  | 43:BN:14:LYS:HB2   | 2.01                     | 0.60              |
| 44:BO:53:SER:O    | 44:BO:55:LYS:N     | 2.32                     | 0.60              |
| 44:BO:54:ARG:O    | 44:BO:56:GLY:N     | 2.35                     | 0.60              |
| 48:BS:70:LEU:HG   | 48:BS:78:TYR:CB    | 2.30                     | 0.60              |
| 49:BT:27:LYS:C    | 49:BT:29:ASP:N     | 2.58                     | 0.60              |
| 49:BT:75:ARG:HA   | 49:BT:80:PHE:CB    | 2.31                     | 0.60              |
| 50:BU:28:PRO:C    | 50:BU:36:ILE:HD11  | 2.26                     | 0.60              |
| 50:BU:59:ILE:CD1  | 50:BU:72:ARG:O     | 2.49                     | 0.60              |
| 51:BV:66:LEU:O    | 51:BV:70:ILE:HG13  | 2.01                     | 0.60              |
| 52:BW:46:GLY:HA2  | 52:BW:62:ILE:O     | 2.01                     | 0.60              |
| 53:BX:57:ARG:NH2  | 53:BX:100:ILE:HD12 | 2.15                     | 0.60              |
| 56:BE:2:C:C3'     | 56:BE:70:G:H1      | 2.10                     | 0.60              |
| 57:BZ:6:ARG:HB2   | 57:BZ:68:TYR:C     | 2.26                     | 0.60              |
| 57:BZ:10:ILE:HG12 | 57:BZ:96:LEU:HB2   | 1.82                     | 0.60              |
| 57:BZ:67:ASP:H    | 57:BZ:68:TYR:CA    | 2.13                     | 0.60              |
| 57:BZ:309:MET:HE3 | 57:BZ:366:LEU:CD1  | 2.31                     | 0.60              |
| 57:BZ:521:GLY:HA3 | 57:BZ:592:LEU:HA   | 1.82                     | 0.60              |
| 1:AA:13:A:C2      | 1:AA:526:A:N6      | 2.68                     | 0.60              |
| 1:AA:64:A:H2      | 19:AU:66:LEU:HD13  | 1.66                     | 0.60              |
| 1:AA:182:A:C8     | 1:AA:182:A:OP2     | 2.53                     | 0.60              |
| 1:AA:315:G:H2'    | 1:AA:316:C:C1'     | 2.32                     | 0.60              |
| 1:AA:316:C:OP2    | 1:AA:316:C:H6      | 1.84                     | 0.60              |
| 1:AA:718:A:C8     | 1:AA:719:C:C6      | 2.89                     | 0.60              |
| 1:AA:728:G:H22    | 1:AA:762:U:P       | 2.24                     | 0.60              |
| 1:AA:749:C:H3'    | 1:AA:749:C:C6      | 2.36                     | 0.60              |
| 1:AA:819:A:H2'    | 1:AA:820:A:O4'     | 2.00                     | 0.60              |
| 1:AA:1023:U:OP2   | 1:AA:1025:G:N1     | 2.33                     | 0.60              |
| 1:AA:1164:G:C5    | 1:AA:1165:U:C5     | 2.89                     | 0.60              |
| 1:AA:1207:C:C2    | 1:AA:1208:C:C5     | 2.89                     | 0.60              |
| 1:AA:1444(A):A:N1 | 1:AA:1461:G:O5'    | 2.35                     | 0.60              |
| 1:AA:1634:A:O3'   | 1:AA:1635:G:C8     | 2.54                     | 0.60              |
| 1:AA:1647:G:H2'   | 1:AA:1647:G:N3     | 2.15                     | 0.60              |
| 1:AA:1691:C:C2'   | 1:AA:1692:U:H5'    | 2.31                     | 0.60              |
| 1:AA:1703:G:N2    | 1:AA:1704:G:N3     | 2.50                     | 0.60              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1751:C:O4'   | 1:AA:2860:A:C2     | 2.55                     | 0.60              |
| 1:AA:1939:U:C2'   | 1:AA:1940:U:OP1    | 2.49                     | 0.60              |
| 1:AA:2445:G:C2'   | 1:AA:2446:G:H8     | 2.07                     | 0.60              |
| 1:AA:2567:G:H2'   | 1:AA:2568:C:C6     | 2.36                     | 0.60              |
| 1:AA:2571:C:C1'   | 5:AE:146:THR:HG23  | 2.28                     | 0.60              |
| 1:AA:2618:G:C2    | 1:AA:2619:C:C5     | 2.89                     | 0.60              |
| 1:AA:2713:A:H8    | 1:AA:2713:A:O5'    | 1.84                     | 0.60              |
| 3:AC:77:ILE:HG22  | 3:AC:119:VAL:CG2   | 2.31                     | 0.60              |
| 3:AC:100:ILE:HA   | 3:AC:127:LEU:HD11  | 1.82                     | 0.60              |
| 3:AC:211:SER:HB2  | 3:AC:223:ARG:NH2   | 2.15                     | 0.60              |
| 4:AD:160:GLY:C    | 4:AD:196:VAL:HG21  | 2.26                     | 0.60              |
| 4:AD:171:ASP:O    | 4:AD:186:HIS:CA    | 2.43                     | 0.60              |
| 4:AD:216:GLY:O    | 4:AD:217:ARG:CB    | 2.42                     | 0.60              |
| 5:AE:49:LEU:HD13  | 5:AE:76:ARG:HG3    | 1.82                     | 0.60              |
| 5:AE:104:VAL:CG1  | 5:AE:198:VAL:HG22  | 2.30                     | 0.60              |
| 6:AF:41:LEU:HD12  | 6:AF:42:ALA:N      | 2.16                     | 0.60              |
| 7:AG:119:GLY:HA3  | 7:AG:180:PHE:CE2   | 2.35                     | 0.60              |
| 7:AG:123:ASN:HB2  | 7:AG:126:ASP:HB2   | 1.84                     | 0.60              |
| 8:AH:5:GLY:O      | 8:AH:6:ARG:HB2     | 2.00                     | 0.60              |
| 8:AH:157:TYR:HD1  | 8:AH:158:HIS:HB2   | 1.66                     | 0.60              |
| 9:AK:100:GLU:HA   | 9:AK:103:VAL:CG1   | 2.31                     | 0.60              |
| 9:AK:107:LEU:C    | 9:AK:107:LEU:CD2   | 2.70                     | 0.60              |
| 10:AL:62:VAL:O    | 10:AL:63:VAL:CG2   | 2.39                     | 0.60              |
| 11:AM:15:ARG:O    | 11:AM:16:ARG:C     | 2.43                     | 0.60              |
| 11:AM:72:PRO:HB2  | 11:AM:111:ARG:HB2  | 1.81                     | 0.60              |
| 12:AN:44:ALA:C    | 12:AN:48:GLU:OE2   | 2.44                     | 0.60              |
| 13:AO:11:ASN:OD1  | 13:AO:12:ARG:HG3   | 2.02                     | 0.60              |
| 13:AO:25:ALA:HA   | 13:AO:48:VAL:HG22  | 1.82                     | 0.60              |
| 14:AP:69:VAL:O    | 14:AP:73:LEU:CD1   | 2.47                     | 0.60              |
| 15:AQ:27:THR:HG22 | 15:AQ:28:VAL:N     | 2.15                     | 0.60              |
| 15:AQ:53:ARG:NH2  | 15:AQ:102:ILE:HG12 | 2.14                     | 0.60              |
| 16:AR:59:ARG:O    | 16:AR:62:ILE:N     | 2.34                     | 0.60              |
| 16:AR:65:ILE:HD13 | 16:AR:65:ILE:H     | 1.64                     | 0.60              |
| 16:AR:81:HIS:HB3  | 16:AR:117:GLN:OE1  | 2.01                     | 0.60              |
| 16:AR:105:VAL:O   | 16:AR:109:LEU:CG   | 2.40                     | 0.60              |
| 17:AS:40:LEU:CG   | 17:AS:55:ALA:N     | 2.52                     | 0.60              |
| 18:AT:98:LYS:HB3  | 18:AT:98:LYS:HZ2   | 1.64                     | 0.60              |
| 19:AU:7:VAL:CG2   | 23:AY:31:ARG:HH22  | 2.14                     | 0.60              |
| 19:AU:35:THR:HG22 | 19:AU:37:THR:H     | 1.66                     | 0.60              |
| 19:AU:50:LYS:NZ   | 19:AU:85:PRO:HD2   | 2.15                     | 0.60              |
| 19:AU:89:ILE:HG23 | 19:AU:92:LEU:HD22  | 1.83                     | 0.60              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 21:AW:4:ARG:NH2    | 21:AW:88:PHE:CE1   | 2.68                     | 0.60              |
| 21:AW:166:SER:O    | 21:AW:168:GLU:N    | 2.35                     | 0.60              |
| 25:Aa:20:ASN:HB2   | 25:Aa:30:GLU:CB    | 2.30                     | 0.60              |
| 28:Ad:38:GLY:O     | 28:Ad:39:ARG:HB2   | 2.01                     | 0.60              |
| 29:Ae:4:MET:HE1    | 29:Ae:62:LEU:CD1   | 2.30                     | 0.60              |
| 31:AI:54:ALA:C     | 31:AI:56:ASN:H     | 2.07                     | 0.60              |
| 34:BA:49:U:O2'     | 34:BA:50:A:OP1     | 2.16                     | 0.60              |
| 34:BA:62:U:OP1     | 34:BA:386:C:H5'    | 2.00                     | 0.60              |
| 34:BA:64:G:N2      | 34:BA:67:C:C4      | 2.69                     | 0.60              |
| 34:BA:136:C:O2'    | 49:BT:63:GLY:HA2   | 2.01                     | 0.60              |
| 34:BA:137:C:C2'    | 34:BA:138:G:O5'    | 2.48                     | 0.60              |
| 34:BA:161:A:N6     | 34:BA:162:A:C6     | 2.70                     | 0.60              |
| 34:BA:169:C:H2'    | 34:BA:170:U:C5     | 2.35                     | 0.60              |
| 34:BA:186(E):C:O2' | 34:BA:186(F):C:H5' | 2.01                     | 0.60              |
| 34:BA:373:A:C2     | 34:BA:374:A:C8     | 2.89                     | 0.60              |
| 34:BA:397:A:C2'    | 34:BA:399:G:OP2    | 2.49                     | 0.60              |
| 34:BA:591:U:O5'    | 34:BA:591:U:H6     | 1.82                     | 0.60              |
| 34:BA:620:C:C4     | 37:BH:135:LEU:HD22 | 2.36                     | 0.60              |
| 34:BA:687:A:O2'    | 34:BA:688:G:O5'    | 2.20                     | 0.60              |
| 34:BA:692:U:O4     | 44:BO:52:GLY:C     | 2.43                     | 0.60              |
| 34:BA:780:A:H2     | 34:BA:803:G:C6     | 2.19                     | 0.60              |
| 34:BA:796:C:H2'    | 34:BA:797:C:H6     | 1.66                     | 0.60              |
| 34:BA:922:G:C4'    | 38:BI:20:GLN:HA    | 2.23                     | 0.60              |
| 34:BA:979:C:H42    | 47:BR:18:VAL:CB    | 2.13                     | 0.60              |
| 34:BA:1162:C:N3    | 34:BA:1175:G:N2    | 2.49                     | 0.60              |
| 34:BA:1262:C:H2'   | 34:BA:1263:C:H6    | 1.65                     | 0.60              |
| 34:BA:1269:A:C4    | 34:BA:1312:G:N3    | 2.66                     | 0.60              |
| 34:BA:1373:G:OP1   | 42:BM:42:ARG:NH2   | 2.34                     | 0.60              |
| 34:BA:1461:G:C2'   | 34:BA:1462:G:H5'   | 2.31                     | 0.60              |
| 35:BF:150:SER:O    | 35:BF:151:GLY:C    | 2.44                     | 0.60              |
| 36:BG:200:ALA:C    | 36:BG:201:TYR:CD1  | 2.79                     | 0.60              |
| 37:BH:32:ALA:HB3   | 37:BH:33:MET:HE3   | 1.83                     | 0.60              |
| 37:BH:105:VAL:CG2  | 37:BH:121:VAL:HG22 | 2.29                     | 0.60              |
| 40:BK:51:GLN:HE22  | 40:BK:58:PRO:CG    | 2.13                     | 0.60              |
| 40:BK:70:LYS:HA    | 40:BK:100:ALA:HB2  | 1.81                     | 0.60              |
| 41:BL:11:THR:C     | 41:BL:13:ILE:N     | 2.56                     | 0.60              |
| 41:BL:34:GLU:HA    | 41:BL:34:GLU:OE1   | 2.00                     | 0.60              |
| 41:BL:119:LEU:HB3  | 41:BL:124:ALA:HB2  | 1.83                     | 0.60              |
| 42:BM:38:GLN:C     | 42:BM:40:LEU:H     | 2.09                     | 0.60              |
| 43:BN:6:ILE:O      | 43:BN:71:LEU:HD13  | 2.00                     | 0.60              |
| 43:BN:62:HIS:O     | 47:BR:59:ALA:HB3   | 2.01                     | 0.60              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 46:BQ:84:ILE:CD1  | 46:BQ:86:CYS:HB3   | 2.31                     | 0.60              |
| 48:BS:16:ALA:O    | 48:BS:17:ARG:C     | 2.44                     | 0.60              |
| 51:BV:62:GLU:O    | 51:BV:63:GLN:C     | 2.45                     | 0.60              |
| 51:BV:67:ALA:O    | 51:BV:70:ILE:N     | 2.34                     | 0.60              |
| 52:BW:19:VAL:HG21 | 52:BW:44:MET:HG2   | 1.82                     | 0.60              |
| 56:BE:21:A:N6     | 56:BE:46:G:C1'     | 2.63                     | 0.60              |
| 57:BZ:431:PRO:CA  | 57:BZ:437:VAL:HG23 | 2.31                     | 0.60              |
| 57:BZ:491:ASN:ND2 | 57:BZ:536:ASN:N    | 2.49                     | 0.60              |
| 1:AA:3:U:O2       | 1:AA:2900:A:C2     | 2.42                     | 0.60              |
| 1:AA:204:A:H4'    | 1:AA:205:G:C5'     | 2.31                     | 0.60              |
| 1:AA:293:U:H2'    | 1:AA:294:A:C8      | 2.36                     | 0.60              |
| 1:AA:363(D):G:O2' | 1:AA:363(E):U:H5'  | 2.00                     | 0.60              |
| 1:AA:373:U:O2'    | 1:AA:375:C:N4      | 2.26                     | 0.60              |
| 1:AA:626:U:H2'    | 1:AA:626:U:O2      | 2.00                     | 0.60              |
| 1:AA:716:A:N7     | 1:AA:717:G:C8      | 2.69                     | 0.60              |
| 1:AA:1071:G:H2'   | 1:AA:1072:C:H5''   | 1.81                     | 0.60              |
| 1:AA:1108:U:OP2   | 31:AI:59:ILE:CB    | 2.48                     | 0.60              |
| 1:AA:1239:G:H2'   | 1:AA:1240:U:O4'    | 2.01                     | 0.60              |
| 1:AA:1258:C:O2'   | 1:AA:1259:G:H5'    | 2.01                     | 0.60              |
| 1:AA:1655:A:C2    | 1:AA:1656:C:H1'    | 2.37                     | 0.60              |
| 1:AA:1687:G:C2    | 1:AA:1688:U:C5     | 2.89                     | 0.60              |
| 1:AA:1780:A:OP2   | 1:AA:1782:C:OP2    | 2.19                     | 0.60              |
| 1:AA:1795:C:H2'   | 1:AA:1796:U:O4'    | 2.02                     | 0.60              |
| 1:AA:2051:A:C5'   | 1:AA:2578:G:H5''   | 2.28                     | 0.60              |
| 1:AA:2115:G:C2'   | 1:AA:2117:A:H62    | 2.14                     | 0.60              |
| 1:AA:2219:G:H2'   | 1:AA:2224:G:O5'    | 2.00                     | 0.60              |
| 1:AA:2226:C:O2    | 1:AA:2226:C:C2'    | 2.47                     | 0.60              |
| 1:AA:2483:C:N3    | 12:AN:124:LYS:HE2  | 2.16                     | 0.60              |
| 1:AA:2671:A:C2    | 1:AA:2672:G:C5     | 2.90                     | 0.60              |
| 1:AA:2694:G:C2    | 1:AA:2716:U:O2     | 2.53                     | 0.60              |
| 1:AA:2734:A:H61   | 1:AA:2770:G:H1'    | 1.64                     | 0.60              |
| 1:AA:2824:C:N4    | 1:AA:2825:C:O2     | 2.35                     | 0.60              |
| 2:AB:87:G:N1      | 2:AB:90:C:C4       | 2.69                     | 0.60              |
| 4:AD:28:GLU:N     | 4:AD:29:PRO:HD2    | 2.17                     | 0.60              |
| 4:AD:76:PRO:HA    | 4:AD:118:VAL:HG21  | 1.81                     | 0.60              |
| 4:AD:136:ILE:CB   | 4:AD:168:ARG:NH2   | 2.59                     | 0.60              |
| 4:AD:158:ALA:C    | 4:AD:160:GLY:N     | 2.57                     | 0.60              |
| 4:AD:181:GLU:CB   | 4:AD:268:ARG:HE    | 2.14                     | 0.60              |
| 4:AD:232:PRO:HG2  | 4:AD:247:ALA:N     | 2.16                     | 0.60              |
| 7:AG:77:ILE:HD12  | 7:AG:83:ARG:NH1    | 2.16                     | 0.60              |
| 7:AG:91:ARG:C     | 7:AG:91:ARG:HD3    | 2.26                     | 0.60              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 7:AG:121:ASN:ND2   | 7:AG:133:LEU:HD21  | 2.16                     | 0.60              |
| 8:AH:25:LYS:HD3    | 8:AH:27:LYS:CD     | 2.30                     | 0.60              |
| 8:AH:143:GLN:O     | 8:AH:146:ALA:HB3   | 2.01                     | 0.60              |
| 8:AH:149:ARG:O     | 8:AH:153:LYS:HB3   | 2.01                     | 0.60              |
| 10:AL:32:TYR:O     | 10:AL:34:THR:N     | 2.34                     | 0.60              |
| 11:AM:52:GLU:HA    | 11:AM:55:ARG:CG    | 2.30                     | 0.60              |
| 12:AN:33:GLY:C     | 12:AN:34:LEU:HD23  | 2.26                     | 0.60              |
| 12:AN:43:THR:O     | 12:AN:47:ILE:CG1   | 2.49                     | 0.60              |
| 12:AN:65:PHE:C     | 12:AN:66:ILE:HD12  | 2.25                     | 0.60              |
| 13:AO:5:LYS:HZ1    | 13:AO:6:SER:N      | 1.99                     | 0.60              |
| 16:AR:70:ARG:HB2   | 16:AR:70:ARG:NH1   | 2.16                     | 0.60              |
| 22:AX:31:VAL:HG21  | 22:AX:67:VAL:HA    | 1.83                     | 0.60              |
| 23:AY:20:VAL:HA    | 23:AY:55:LEU:CD2   | 2.29                     | 0.60              |
| 24:AZ:50:VAL:CG1   | 24:AZ:53:LEU:HB2   | 2.32                     | 0.60              |
| 29:Ae:60:LEU:HD11  | 29:Ae:64:TYR:CB    | 2.32                     | 0.60              |
| 32:AJ:72:PRO:HG2   | 32:AJ:77:LEU:CD2   | 1.03                     | 0.60              |
| 34:BA:224:C:H2'    | 34:BA:225:C:C6     | 2.35                     | 0.60              |
| 34:BA:244:U:O2'    | 34:BA:245:C:P      | 2.60                     | 0.60              |
| 34:BA:245:C:C2     | 34:BA:284:G:C2     | 2.89                     | 0.60              |
| 34:BA:375:U:C3'    | 49:BT:6:LEU:HD21   | 2.30                     | 0.60              |
| 34:BA:538:G:N2     | 34:BA:539:A:H1'    | 2.16                     | 0.60              |
| 34:BA:597:G:H2'    | 34:BA:598:U:C5'    | 2.31                     | 0.60              |
| 34:BA:600:C:C2     | 34:BA:639:G:N2     | 2.69                     | 0.60              |
| 34:BA:678:U:H2'    | 34:BA:679:C:C5     | 2.35                     | 0.60              |
| 34:BA:761:G:H1'    | 50:BU:104:LYS:O    | 2.01                     | 0.60              |
| 34:BA:794:A:H2'    | 34:BA:795:C:C6     | 2.37                     | 0.60              |
| 34:BA:858:G:C2     | 34:BA:869:G:H3'    | 2.36                     | 0.60              |
| 34:BA:1025:U:H2'   | 34:BA:1026:G:N7    | 2.17                     | 0.60              |
| 34:BA:1117:G:N7    | 34:BA:1184:G:N1    | 2.48                     | 0.60              |
| 34:BA:1127:G:H21   | 34:BA:1147:C:H42   | 1.50                     | 0.60              |
| 34:BA:1158:C:H1'   | 35:BF:133:LYS:NZ   | 2.15                     | 0.60              |
| 34:BA:1215:G:C2    | 34:BA:1216:G:C8    | 2.89                     | 0.60              |
| 34:BA:1253:G:OP1   | 43:BN:44:VAL:HB    | 2.01                     | 0.60              |
| 35:BF:41:ILE:HD12  | 35:BF:41:ILE:N     | 2.16                     | 0.60              |
| 35:BF:97:TRP:HB3   | 35:BF:172:ILE:HD12 | 1.83                     | 0.60              |
| 35:BF:118:LEU:HD22 | 35:BF:142:LEU:HD12 | 1.82                     | 0.60              |
| 35:BF:162:ILE:O    | 35:BF:185:ILE:HD13 | 2.01                     | 0.60              |
| 35:BF:208:ILE:HG12 | 35:BF:211:ILE:HD12 | 1.82                     | 0.60              |
| 36:BG:47:LEU:HD12  | 36:BG:83:ARG:HH21  | 1.66                     | 0.60              |
| 37:BH:132:ARG:NH1  | 37:BH:132:ARG:CG   | 2.63                     | 0.60              |
| 37:BH:144:ASP:O    | 37:BH:184:LYS:HD3  | 2.00                     | 0.60              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 38:BI:11:ILE:CB    | 38:BI:31:LEU:HD22 | 2.31                     | 0.60              |
| 38:BI:90:VAL:O     | 38:BI:120:THR:OG1 | 2.16                     | 0.60              |
| 39:BJ:30:LEU:CA    | 39:BJ:75:LEU:HD11 | 2.23                     | 0.60              |
| 39:BJ:33:TYR:CE2   | 39:BJ:75:LEU:N    | 2.69                     | 0.60              |
| 42:BM:49:PRO:CD    | 42:BM:78:LYS:HG2  | 2.29                     | 0.60              |
| 45:BP:34:ARG:HG3   | 45:BP:105:TYR:CE1 | 2.37                     | 0.60              |
| 46:BQ:20:THR:N     | 46:BQ:25:ILE:HG22 | 2.16                     | 0.60              |
| 46:BQ:84:ILE:CD1   | 52:BW:66:MET:O    | 2.48                     | 0.60              |
| 47:BR:26:ARG:CB    | 47:BR:43:CYS:CB   | 2.79                     | 0.60              |
| 49:BT:20:VAL:HG11  | 49:BT:32:TYR:CB   | 2.31                     | 0.60              |
| 50:BU:58:GLU:OE2   | 50:BU:74:LEU:HB3  | 2.01                     | 0.60              |
| 52:BW:5:LEU:HG     | 52:BW:6:LYS:H     | 1.66                     | 0.60              |
| 53:BX:53:LEU:O     | 53:BX:56:MET:N    | 2.34                     | 0.60              |
| 56:BD:52:G:C2      | 56:BD:63:G:C4     | 2.90                     | 0.60              |
| 56:BD:65:G:C5      | 56:BD:66:U:C4     | 2.89                     | 0.60              |
| 57:BZ:12:ALA:O     | 57:BZ:13:HIS:HB3  | 2.01                     | 0.60              |
| 57:BZ:239:ILE:HG22 | 57:BZ:240:ILE:N   | 2.16                     | 0.60              |
| 1:AA:6:A:C5        | 1:AA:2897:U:N3    | 2.68                     | 0.60              |
| 1:AA:38:A:H5'      | 6:AF:50:SER:HA    | 1.84                     | 0.60              |
| 1:AA:59:U:O5'      | 1:AA:59:U:H6      | 1.84                     | 0.60              |
| 1:AA:111:A:H4'     | 23:AY:60:ASN:OD1  | 2.02                     | 0.60              |
| 1:AA:188:G:OP2     | 25:Aa:13:ARG:CZ   | 2.49                     | 0.60              |
| 1:AA:200:U:H3'     | 1:AA:201:C:H5'    | 1.82                     | 0.60              |
| 1:AA:251:A:H3'     | 1:AA:251:A:P      | 2.41                     | 0.60              |
| 1:AA:558:G:C2      | 1:AA:559:G:C5     | 2.89                     | 0.60              |
| 1:AA:873:G:C6      | 1:AA:874:G:C8     | 2.89                     | 0.60              |
| 1:AA:931:G:N2      | 24:AZ:25:ALA:N    | 2.48                     | 0.60              |
| 1:AA:944:G:H4'     | 1:AA:945:A:O5'    | 2.02                     | 0.60              |
| 1:AA:1079:C:OP1    | 32:AJ:137:GLU:HB3 | 2.01                     | 0.60              |
| 1:AA:1114:G:C2     | 1:AA:1115:G:C1'   | 2.84                     | 0.60              |
| 1:AA:1270:C:O5'    | 1:AA:1270:C:H6    | 1.84                     | 0.60              |
| 1:AA:1296:G:H2'    | 1:AA:1297:C:C6    | 2.36                     | 0.60              |
| 1:AA:1422:G:O2'    | 1:AA:1493:C:O2    | 2.18                     | 0.60              |
| 1:AA:1491:G:H2'    | 1:AA:1492:G:C4'   | 2.26                     | 0.60              |
| 1:AA:1507:A:N3     | 1:AA:1507:A:C2'   | 2.62                     | 0.60              |
| 1:AA:1567:A:N6     | 4:AD:84:TYR:CD1   | 2.70                     | 0.60              |
| 1:AA:1592:C:H2'    | 1:AA:1593:G:C8    | 2.33                     | 0.60              |
| 1:AA:1788:C:N3     | 1:AA:1789:A:C8    | 2.68                     | 0.60              |
| 1:AA:1797:C:H2'    | 1:AA:1798:U:H6    | 1.63                     | 0.60              |
| 1:AA:1992:G:N7     | 1:AA:1997:G:C2    | 2.70                     | 0.60              |
| 1:AA:2043:C:O2'    | 1:AA:2044:C:H5'   | 2.02                     | 0.60              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:2061:G:OP2    | 1:AA:2502:G:OP2    | 2.19                     | 0.60              |
| 1:AA:2378:A:N3     | 14:AP:20:ARG:NH2   | 2.50                     | 0.60              |
| 1:AA:2415:G:N2     | 1:AA:2416:C:C2     | 2.69                     | 0.60              |
| 1:AA:2507:C:C2     | 1:AA:2583:G:C2     | 2.89                     | 0.60              |
| 1:AA:2792:G:N1     | 1:AA:2793:G:C6     | 2.70                     | 0.60              |
| 3:AC:67:GLY:N      | 3:AC:184:LYS:HZ3   | 2.00                     | 0.60              |
| 3:AC:77:ILE:HG21   | 3:AC:100:ILE:HD11  | 1.83                     | 0.60              |
| 3:AC:97:GLU:CG     | 3:AC:122:ALA:HB3   | 2.30                     | 0.60              |
| 4:AD:62:TYR:N      | 4:AD:62:TYR:CD1    | 2.63                     | 0.60              |
| 4:AD:260:ARG:HH11  | 4:AD:260:ARG:CB    | 2.14                     | 0.60              |
| 5:AE:118:LYS:O     | 5:AE:120:TRP:N     | 2.34                     | 0.60              |
| 6:AF:39:TRP:CE3    | 6:AF:99:TYR:HB3    | 2.36                     | 0.60              |
| 7:AG:138:GLN:HB2   | 7:AG:155:MET:CE    | 2.32                     | 0.60              |
| 8:AH:31:GLY:O      | 8:AH:79:VAL:HG12   | 2.00                     | 0.60              |
| 12:AN:119:ARG:O    | 12:AN:123:HIS:CB   | 2.48                     | 0.60              |
| 13:AO:10:LEU:HB2   | 13:AO:17:ARG:CZ    | 2.31                     | 0.60              |
| 13:AO:33:ARG:HH21  | 26:Ab:56:LYS:HE2   | 1.67                     | 0.60              |
| 14:AP:71:ARG:N     | 14:AP:104:GLY:CA   | 2.64                     | 0.60              |
| 15:AQ:34:VAL:HG21  | 15:AQ:36:GLU:CD    | 2.25                     | 0.60              |
| 15:AQ:57:PHE:C     | 15:AQ:58:ASN:ND2   | 2.58                     | 0.60              |
| 15:AQ:92:GLY:HA2   | 15:AQ:93:ARG:CZ    | 2.31                     | 0.60              |
| 16:AR:93:LYS:HB2   | 17:AS:10:LYS:CE    | 2.30                     | 0.60              |
| 17:AS:6:LYS:NZ     | 17:AS:10:LYS:HB3   | 2.15                     | 0.60              |
| 19:AU:63:LYS:HA    | 19:AU:63:LYS:CE    | 2.32                     | 0.60              |
| 19:AU:90:GLU:O     | 19:AU:93:GLU:CG    | 2.50                     | 0.60              |
| 20:AV:42:VAL:HG22  | 20:AV:61:ILE:HG21  | 1.83                     | 0.60              |
| 20:AV:76:CYS:HB3   | 20:AV:100:ALA:HB3  | 1.83                     | 0.60              |
| 21:AW:102:LEU:HD11 | 21:AW:137:ILE:HG22 | 1.82                     | 0.60              |
| 22:AX:39:ARG:HG2   | 22:AX:58:THR:OG1   | 2.01                     | 0.60              |
| 23:AY:16:LEU:O     | 23:AY:20:VAL:HG12  | 2.01                     | 0.60              |
| 24:AZ:9:VAL:CG2    | 24:AZ:10:LYS:N     | 2.57                     | 0.60              |
| 24:AZ:40:THR:O     | 24:AZ:41:PRO:C     | 2.40                     | 0.60              |
| 25:Aa:64:GLY:HA2   | 25:Aa:67:TYR:HD1   | 1.66                     | 0.60              |
| 29:Ae:7:HIS:C      | 29:Ae:11:LYS:HE3   | 2.26                     | 0.60              |
| 33:Ag:7:UNK:C      | 33:Ag:147:UNK:CA   | 2.79                     | 0.60              |
| 34:BA:51:A:O2'     | 34:BA:52:G:P       | 2.59                     | 0.60              |
| 34:BA:130:A:H4'    | 34:BA:190:G:C4     | 2.37                     | 0.60              |
| 34:BA:155:C:O2'    | 34:BA:156:G:H5'    | 2.01                     | 0.60              |
| 34:BA:244:U:C2'    | 34:BA:245:C:OP2    | 2.50                     | 0.60              |
| 34:BA:822:C:H2'    | 34:BA:823:G:H8     | 1.67                     | 0.60              |
| 34:BA:1126:U:C2    | 34:BA:1127:G:C8    | 2.89                     | 0.60              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1269:A:C8    | 34:BA:1270:C:H1'   | 2.35                     | 0.60              |
| 34:BA:1419:G:HO2'  | 34:BA:1420:C:H6    | 1.45                     | 0.60              |
| 34:BA:1489:G:N2    | 34:BA:1490:C:O2    | 2.33                     | 0.60              |
| 35:BF:115:LEU:HD12 | 35:BF:115:LEU:O    | 2.02                     | 0.60              |
| 35:BF:146:GLN:O    | 35:BF:148:TYR:N    | 2.34                     | 0.60              |
| 36:BG:67:THR:HA    | 36:BG:102:ASN:O    | 2.00                     | 0.60              |
| 37:BH:165:MET:CE   | 37:BH:167:GLY:H    | 2.15                     | 0.60              |
| 37:BH:172:PRO:HG3  | 37:BH:193:ASP:HB3  | 1.83                     | 0.60              |
| 41:BL:40:ALA:HA    | 41:BL:43:GLY:O     | 2.01                     | 0.60              |
| 41:BL:100:ILE:CD1  | 41:BL:125:ARG:HE   | 2.13                     | 0.60              |
| 43:BN:39:PRO:O     | 43:BN:69:ASN:O     | 2.19                     | 0.60              |
| 43:BN:69:ASN:O     | 43:BN:70:ARG:HD3   | 2.01                     | 0.60              |
| 44:BO:87:THR:HG22  | 44:BO:91:ARG:NH1   | 2.16                     | 0.60              |
| 45:BP:11:VAL:HG22  | 50:BU:32:TYR:HD1   | 1.66                     | 0.60              |
| 45:BP:12:ARG:HB3   | 45:BP:12:ARG:CZ    | 2.30                     | 0.60              |
| 48:BS:36:ILE:HG13  | 48:BS:59:MET:CE    | 2.30                     | 0.60              |
| 49:BT:31:LYS:HG2   | 49:BT:32:TYR:N     | 2.15                     | 0.60              |
| 50:BU:3:LYS:O      | 50:BU:5:VAL:HG23   | 2.01                     | 0.60              |
| 50:BU:58:GLU:HG2   | 50:BU:59:ILE:N     | 2.17                     | 0.60              |
| 51:BV:31:LEU:HD12  | 51:BV:31:LEU:N     | 2.16                     | 0.60              |
| 51:BV:58:LEU:C     | 51:BV:62:GLU:HB2   | 2.27                     | 0.60              |
| 57:BZ:64:ILE:HG23  | 57:BZ:188:GLN:HE22 | 1.62                     | 0.60              |
| 57:BZ:411:HIS:HD2  | 57:BZ:459:THR:CG2  | 2.13                     | 0.60              |
| 57:BZ:580:VAL:HB   | 57:BZ:585:ILE:CD1  | 2.31                     | 0.60              |
| 1:AA:154:G:H8      | 1:AA:154:G:O5'     | 1.84                     | 0.60              |
| 1:AA:237:C:H2'     | 1:AA:238:C:C6      | 2.36                     | 0.60              |
| 1:AA:270(Z):U:C4   | 1:AA:271(C):U:H1'  | 2.36                     | 0.60              |
| 1:AA:274:G:H2'     | 1:AA:275:G:H5'     | 1.82                     | 0.60              |
| 1:AA:290:G:C8      | 1:AA:290:G:OP1     | 2.54                     | 0.60              |
| 1:AA:290:G:H2'     | 1:AA:291:C:O5'     | 2.01                     | 0.60              |
| 1:AA:361:G:H2'     | 1:AA:362:U:C6      | 2.36                     | 0.60              |
| 1:AA:534:U:H4'     | 16:AR:49:HIS:CE1   | 2.36                     | 0.60              |
| 1:AA:559:G:O2'     | 1:AA:560:C:O5'     | 2.16                     | 0.60              |
| 1:AA:771:G:C2      | 1:AA:772:C:C4      | 2.90                     | 0.60              |
| 1:AA:818:G:OP2     | 1:AA:1187:G:O6     | 2.20                     | 0.60              |
| 1:AA:822:U:C2      | 1:AA:823:G:C8      | 2.89                     | 0.60              |
| 1:AA:860:U:H5      | 1:AA:2267:A:H4'    | 1.65                     | 0.60              |
| 1:AA:909:A:H2'     | 1:AA:912:C:C5      | 2.37                     | 0.60              |
| 1:AA:942:G:H5'     | 11:AM:32:THR:HG23  | 1.82                     | 0.60              |
| 1:AA:1059:G:O3'    | 32:AJ:74:ALA:N     | 2.35                     | 0.60              |
| 1:AA:1106:G:C5     | 1:AA:1107:G:C6     | 2.89                     | 0.60              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:1363:C:N3     | 1:AA:1369:G:C6    | 2.70                     | 0.60              |
| 1:AA:1458:C:H4'    | 1:AA:1459:G:N7    | 2.16                     | 0.60              |
| 1:AA:1523:U:H2'    | 1:AA:1524:G:O4'   | 2.01                     | 0.60              |
| 1:AA:1654:A:OP1    | 13:AO:3:HIS:CE1   | 2.55                     | 0.60              |
| 1:AA:1683:C:H2'    | 1:AA:1684:C:H6    | 1.65                     | 0.60              |
| 1:AA:1797:C:HO2'   | 4:AD:257:LEU:HD12 | 1.66                     | 0.60              |
| 1:AA:1893:C:O2'    | 1:AA:1894:C:H5'   | 2.02                     | 0.60              |
| 1:AA:1973:G:H2'    | 1:AA:1974:C:C6    | 2.37                     | 0.60              |
| 1:AA:2080:G:O2'    | 1:AA:2081:C:H5'   | 2.00                     | 0.60              |
| 1:AA:2124:G:C6     | 3:AC:218:MET:HA   | 2.33                     | 0.60              |
| 1:AA:2311:A:O3'    | 7:AG:86:MET:HE2   | 2.01                     | 0.60              |
| 1:AA:2414:G:H2'    | 1:AA:2414:G:N3    | 2.15                     | 0.60              |
| 1:AA:2497:A:C2'    | 1:AA:2498:C:OP2   | 2.49                     | 0.60              |
| 1:AA:2525:G:N2     | 1:AA:2539:C:N3    | 2.49                     | 0.60              |
| 1:AA:2668:G:H2'    | 1:AA:2669:G:H8    | 1.59                     | 0.60              |
| 2:AB:12:C:C4'      | 22:AX:74:ARG:HG2  | 2.31                     | 0.60              |
| 2:AB:25:A:O2'      | 2:AB:26:A:H5'     | 2.01                     | 0.60              |
| 2:AB:60:C:H2'      | 2:AB:60:C:O2      | 1.99                     | 0.60              |
| 2:AB:73:A:C8       | 2:AB:104:A:C6     | 2.90                     | 0.60              |
| 3:AC:62:VAL:CB     | 3:AC:191:ALA:O    | 2.41                     | 0.60              |
| 4:AD:46:GLN:O      | 4:AD:48:ARG:N     | 2.34                     | 0.60              |
| 4:AD:242:ARG:O     | 4:AD:244:ARG:N    | 2.34                     | 0.60              |
| 4:AD:268:ARG:O     | 4:AD:269:PHE:CD1  | 2.54                     | 0.60              |
| 5:AE:66:HIS:ND1    | 5:AE:66:HIS:C     | 2.60                     | 0.60              |
| 5:AE:119:ARG:HH22  | 5:AE:155:LYS:HD2  | 1.67                     | 0.60              |
| 9:AK:28:THR:C      | 9:AK:31:ALA:HB3   | 2.26                     | 0.60              |
| 10:AL:11:ALA:HB2   | 10:AL:17:ARG:CD   | 2.31                     | 0.60              |
| 10:AL:11:ALA:O     | 10:AL:97:ARG:NH2  | 2.35                     | 0.60              |
| 11:AM:81:GLN:CB    | 11:AM:86:LYS:HG3  | 2.30                     | 0.60              |
| 12:AN:8:LYS:HZ3    | 12:AN:11:LYS:HZ3  | 1.47                     | 0.60              |
| 13:AO:13:HIS:CE1   | 13:AO:15:SER:H    | 2.18                     | 0.60              |
| 14:AP:73:LEU:HD13  | 14:AP:73:LEU:N    | 2.17                     | 0.60              |
| 15:AQ:30:VAL:C     | 15:AQ:32:TYR:OH   | 2.44                     | 0.60              |
| 15:AQ:55:ASN:ND2   | 15:AQ:57:PHE:HZ   | 1.99                     | 0.60              |
| 15:AQ:82:LEU:HD22  | 15:AQ:84:GLN:HB2  | 1.84                     | 0.60              |
| 15:AQ:110:ILE:HD12 | 15:AQ:113:LYS:HE3 | 1.82                     | 0.60              |
| 16:AR:9:VAL:HG12   | 16:AR:13:LYS:HD3  | 1.83                     | 0.60              |
| 16:AR:37:GLU:O     | 16:AR:38:THR:C    | 2.44                     | 0.60              |
| 16:AR:52:ARG:C     | 16:AR:54:LYS:N    | 2.58                     | 0.60              |
| 16:AR:65:ILE:CD1   | 16:AR:65:ILE:H    | 2.12                     | 0.60              |
| 16:AR:112:ARG:NH2  | 17:AS:49:THR:HG22 | 2.16                     | 0.60              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 20:AV:47:LYS:O    | 20:AV:48:ALA:HB3   | 2.00                     | 0.60              |
| 21:AW:10:ARG:NH2  | 21:AW:36:LYS:H     | 1.98                     | 0.60              |
| 27:Ac:9:LEU:HD13  | 27:Ac:27:LYS:HA    | 1.82                     | 0.60              |
| 29:Ae:25:MET:C    | 29:Ae:27:THR:N     | 2.58                     | 0.60              |
| 31:AI:135:ARG:C   | 31:AI:137:GLU:H    | 2.10                     | 0.60              |
| 32:AJ:40:ALA:O    | 32:AJ:66:THR:CB    | 2.47                     | 0.60              |
| 34:BA:173:U:H5''  | 34:BA:197:A:H1'    | 1.82                     | 0.60              |
| 34:BA:321:A:H61   | 34:BA:332:G:H1     | 1.49                     | 0.60              |
| 34:BA:467:G:OP2   | 34:BA:467:G:H3'    | 2.01                     | 0.60              |
| 34:BA:1319:A:C2   | 34:BA:1361:G:N2    | 2.70                     | 0.60              |
| 34:BA:1376:U:O2   | 34:BA:1377:A:N6    | 2.35                     | 0.60              |
| 34:BA:1411:C:C2   | 34:BA:1412:C:C5    | 2.90                     | 0.60              |
| 34:BA:1454:G:N9   | 34:BA:1455:G:N7    | 2.50                     | 0.60              |
| 34:BA:1485:U:H2'  | 34:BA:1486:G:C8    | 2.37                     | 0.60              |
| 34:BA:1493:A:OP1  | 58:BA:1601:NMY:H5  | 2.01                     | 0.60              |
| 35:BF:58:ILE:HG22 | 35:BF:61:LEU:HD22  | 1.83                     | 0.60              |
| 36:BG:46:GLU:C    | 36:BG:47:LEU:HD22  | 2.26                     | 0.60              |
| 36:BG:149:ALA:HB3 | 36:BG:170:GLN:HE21 | 1.67                     | 0.60              |
| 36:BG:156:ARG:H   | 36:BG:163:ALA:HB1  | 1.67                     | 0.60              |
| 39:BJ:72:VAL:O    | 39:BJ:73:ASN:C     | 2.44                     | 0.60              |
| 43:BN:16:LEU:HB3  | 43:BN:70:ARG:CG    | 2.32                     | 0.60              |
| 44:BO:42:TRP:HE3  | 44:BO:43:SER:N     | 1.99                     | 0.60              |
| 51:BV:80:PRO:O    | 51:BV:81:PHE:C     | 2.44                     | 0.60              |
| 52:BW:4:SER:HA    | 52:BW:5:LEU:C      | 2.26                     | 0.60              |
| 56:BD:3:C:C2      | 56:BD:70:G:O6      | 2.55                     | 0.60              |
| 57:BZ:5:LEU:CD1   | 57:BZ:269:GLU:HG3  | 2.31                     | 0.60              |
| 57:BZ:64:ILE:H    | 57:BZ:65:LYS:CA    | 2.15                     | 0.60              |
| 57:BZ:565:LEU:CG  | 57:BZ:566:GLU:OE2  | 2.50                     | 0.60              |
| 1:AA:85:G:H1'     | 1:AA:103:A:N1      | 2.16                     | 0.60              |
| 1:AA:179:G:H5'    | 28:Ad:32:LYS:HZ1   | 1.67                     | 0.60              |
| 1:AA:179:G:OP1    | 28:Ad:32:LYS:NZ    | 2.30                     | 0.60              |
| 1:AA:319:C:C2'    | 1:AA:320:A:O4'     | 2.49                     | 0.60              |
| 1:AA:410:G:O6     | 1:AA:418:G:C6      | 2.54                     | 0.60              |
| 1:AA:574:C:C1'    | 1:AA:2055:C:H5     | 2.14                     | 0.60              |
| 1:AA:614:U:H5''   | 1:AA:615:G:OP2     | 2.02                     | 0.60              |
| 1:AA:628:G:H8     | 1:AA:628:G:P       | 2.24                     | 0.60              |
| 1:AA:636:G:N2     | 11:AM:75:ILE:CG2   | 2.61                     | 0.60              |
| 1:AA:675:A:O2'    | 1:AA:2443:C:H4'    | 2.01                     | 0.60              |
| 1:AA:834:C:O2'    | 1:AA:2358:G:N3     | 2.26                     | 0.60              |
| 1:AA:861:A:N3     | 2:AB:79:C:O2'      | 2.31                     | 0.60              |
| 1:AA:936:C:H2'    | 1:AA:937:U:C6      | 2.37                     | 0.60              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1024:G:H3'   | 1:AA:1025:G:H5''   | 1.83                     | 0.60              |
| 1:AA:1045:A:H4'   | 1:AA:1047:G:OP1    | 2.02                     | 0.60              |
| 1:AA:1389:G:H5'   | 1:AA:1525:G:H5''   | 1.82                     | 0.60              |
| 1:AA:1515:C:O2'   | 1:AA:1516:U:OP1    | 2.10                     | 0.60              |
| 1:AA:1616:A:H5''  | 1:AA:1617:C:OP1    | 2.01                     | 0.60              |
| 1:AA:1631:A:N1    | 1:AA:1632:A:C2     | 2.70                     | 0.60              |
| 1:AA:1754:C:O2    | 1:AA:1755:A:C1'    | 2.38                     | 0.60              |
| 1:AA:1857:G:C8    | 1:AA:1858:G:N7     | 2.69                     | 0.60              |
| 1:AA:2194:G:H2'   | 1:AA:2195:C:C5     | 2.36                     | 0.60              |
| 1:AA:2253:G:C5    | 1:AA:2254:C:C5     | 2.90                     | 0.60              |
| 1:AA:2356:C:H3'   | 1:AA:2357:U:C5     | 2.36                     | 0.60              |
| 1:AA:2446:G:O2'   | 1:AA:2448:A:C5'    | 2.50                     | 0.60              |
| 1:AA:2455:G:C6    | 1:AA:2456:C:N4     | 2.70                     | 0.60              |
| 1:AA:2555:U:H3    | 57:BZ:547:ARG:HH12 | 1.49                     | 0.60              |
| 1:AA:2597:G:H5'   | 4:AD:242:ARG:NE    | 2.16                     | 0.60              |
| 1:AA:2652:C:N3    | 1:AA:2669:G:N3     | 2.50                     | 0.60              |
| 1:AA:2672:G:C2'   | 1:AA:2673:G:H5'    | 2.31                     | 0.60              |
| 1:AA:2793:G:N1    | 1:AA:2794:C:C4     | 2.69                     | 0.60              |
| 2:AB:31:C:N3      | 2:AB:32:C:C5       | 2.70                     | 0.60              |
| 4:AD:5:LYS:HD3    | 4:AD:29:PRO:CB     | 2.24                     | 0.60              |
| 4:AD:58:HIS:O     | 4:AD:59:LYS:CE     | 2.49                     | 0.60              |
| 4:AD:209:ALA:O    | 4:AD:213:ARG:HG2   | 2.01                     | 0.60              |
| 5:AE:15:PHE:O     | 5:AE:16:ARG:C      | 2.44                     | 0.60              |
| 6:AF:64:ILE:CD1   | 6:AF:65:TRP:N      | 2.59                     | 0.60              |
| 7:AG:7:LEU:HD22   | 7:AG:11:TYR:CE1    | 2.29                     | 0.60              |
| 7:AG:75:LYS:NZ    | 7:AG:87:PRO:HD3    | 2.15                     | 0.60              |
| 7:AG:77:ILE:O     | 7:AG:83:ARG:CZ     | 2.49                     | 0.60              |
| 7:AG:118:ARG:O    | 7:AG:180:PHE:CE1   | 2.54                     | 0.60              |
| 7:AG:139:LEU:HD13 | 7:AG:142:PRO:HB3   | 1.82                     | 0.60              |
| 8:AH:59:ARG:O     | 8:AH:62:LYS:HG2    | 2.02                     | 0.60              |
| 8:AH:85:LYS:HD2   | 8:AH:145:ALA:HB1   | 1.81                     | 0.60              |
| 9:AK:139:GLU:C    | 9:AK:139:GLU:OE2   | 2.45                     | 0.60              |
| 12:AN:16:ARG:NE   | 12:AN:73:PRO:CD    | 2.65                     | 0.60              |
| 14:AP:39:ILE:HD11 | 14:AP:77:ALA:HB2   | 1.83                     | 0.60              |
| 15:AQ:110:ILE:HB  | 15:AQ:113:LYS:HG3  | 1.83                     | 0.60              |
| 16:AR:97:ASP:HB3  | 16:AR:101:ARG:NE   | 2.17                     | 0.60              |
| 17:AS:41:GLY:H    | 17:AS:51:VAL:HA    | 1.67                     | 0.60              |
| 18:AT:75:TYR:O    | 18:AT:104:THR:CG2  | 2.49                     | 0.60              |
| 21:AW:23:LYS:NZ   | 21:AW:38:TYR:O     | 2.33                     | 0.60              |
| 21:AW:94:GLU:CA   | 21:AW:130:PRO:HB3  | 2.31                     | 0.60              |
| 22:AX:7:LEU:HD13  | 56:BE:74:C:C2      | 2.36                     | 0.60              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 23:AY:15:GLU:O     | 23:AY:16:LEU:C     | 2.44                     | 0.60              |
| 25:Aa:6:HIS:HB2    | 25:Aa:56:VAL:HA    | 1.84                     | 0.60              |
| 25:Aa:20:ASN:HB2   | 25:Aa:30:GLU:OE2   | 2.01                     | 0.60              |
| 25:Aa:41:PRO:HB3   | 25:Aa:58:ARG:CD    | 2.31                     | 0.60              |
| 25:Aa:47:GLN:HA    | 25:Aa:52:THR:HB    | 1.83                     | 0.60              |
| 28:Ad:11:LYS:HE3   | 28:Ad:15:THR:HG21  | 1.84                     | 0.60              |
| 32:AJ:106:GLU:CA   | 32:AJ:109:LYS:HG3  | 2.29                     | 0.60              |
| 34:BA:44:G:C6      | 34:BA:45:U:C2      | 2.90                     | 0.60              |
| 34:BA:189:U:H2'    | 50:BU:63:ARG:NH2   | 2.16                     | 0.60              |
| 34:BA:258:G:O6     | 34:BA:259:G:O6     | 2.19                     | 0.60              |
| 34:BA:274:A:H5'    | 34:BA:275:G:OP1    | 2.01                     | 0.60              |
| 34:BA:404:U:H4'    | 37:BH:122:ARG:NH1  | 2.17                     | 0.60              |
| 34:BA:409:G:H5''   | 37:BH:24:GLU:OE1   | 2.01                     | 0.60              |
| 34:BA:474:G:O5'    | 49:BT:81:ARG:HG3   | 2.02                     | 0.60              |
| 34:BA:558:G:C4     | 34:BA:559:A:C2     | 2.90                     | 0.60              |
| 34:BA:1145:C:HO2'  | 34:BA:1146:A:H8    | 1.48                     | 0.60              |
| 34:BA:1308:U:N3    | 34:BA:1309:G:H8    | 1.89                     | 0.60              |
| 34:BA:1314:C:N4    | 34:BA:1324:A:C6    | 2.70                     | 0.60              |
| 34:BA:1327:C:OP1   | 54:BY:20:LYS:HE2   | 2.01                     | 0.60              |
| 34:BA:1329:A:O2'   | 34:BA:1330:U:H5'   | 2.01                     | 0.60              |
| 34:BA:1374:A:H1'   | 40:BK:31:MET:HE1   | 1.84                     | 0.60              |
| 34:BA:1455:G:O3'   | 53:BX:31:SER:CB    | 2.49                     | 0.60              |
| 35:BF:18:GLY:CA    | 35:BF:41:ILE:HG23  | 2.31                     | 0.60              |
| 35:BF:52:GLU:HG2   | 35:BF:53:ARG:N     | 2.16                     | 0.60              |
| 35:BF:102:LEU:HD22 | 35:BF:176:GLU:OE1  | 2.02                     | 0.60              |
| 35:BF:149:LEU:C    | 35:BF:151:GLY:N    | 2.56                     | 0.60              |
| 36:BG:8:ILE:O      | 36:BG:11:ARG:N     | 2.33                     | 0.60              |
| 36:BG:48:TYR:HD2   | 36:BG:48:TYR:O     | 1.85                     | 0.60              |
| 38:BI:75:THR:HA    | 38:BI:118:ILE:HD11 | 1.82                     | 0.60              |
| 38:BI:81:GLU:CD    | 38:BI:81:GLU:H     | 2.09                     | 0.60              |
| 39:BJ:10:LEU:HD11  | 39:BJ:61:LEU:CD1   | 2.31                     | 0.60              |
| 40:BK:65:ALA:HB2   | 40:BK:124:LEU:HD23 | 1.83                     | 0.60              |
| 40:BK:115:ARG:O    | 40:BK:118:VAL:HB   | 2.00                     | 0.60              |
| 41:BL:48:TYR:HA    | 41:BL:60:ARG:O     | 2.01                     | 0.60              |
| 41:BL:104:ARG:HB3  | 41:BL:107:LEU:HG   | 1.83                     | 0.60              |
| 41:BL:113:SER:O    | 41:BL:131:GLY:HA3  | 2.00                     | 0.60              |
| 42:BM:53:VAL:HG11  | 42:BM:92:TYR:CZ    | 2.37                     | 0.60              |
| 43:BN:12:ASP:O     | 43:BN:16:LEU:HD23  | 2.01                     | 0.60              |
| 45:BP:47:LYS:N     | 45:BP:48:PRO:CD    | 2.63                     | 0.60              |
| 46:BQ:15:VAL:CG2   | 46:BQ:39:ILE:HD11  | 1.25                     | 0.60              |
| 46:BQ:15:VAL:CG2   | 46:BQ:39:ILE:HD12  | 0.36                     | 0.60              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 46:BQ:52:GLU:HA    | 46:BQ:55:ARG:NE   | 2.17                     | 0.60              |
| 46:BQ:91:ARG:HG2   | 46:BQ:91:ARG:HH11 | 1.67                     | 0.60              |
| 46:BQ:96:LEU:HD12  | 46:BQ:97:PRO:HD2  | 1.84                     | 0.60              |
| 53:BX:57:ARG:O     | 53:BX:58:LYS:C    | 2.44                     | 0.60              |
| 54:BY:9:ARG:HD2    | 54:BY:9:ARG:N     | 2.16                     | 0.60              |
| 57:BZ:154:THR:O    | 57:BZ:156:GLU:N   | 2.32                     | 0.60              |
| 57:BZ:209:ILE:HD12 | 57:BZ:209:ILE:H   | 1.66                     | 0.60              |
| 57:BZ:393:ASP:N    | 57:BZ:394:GLY:HA3 | 2.14                     | 0.60              |
| 57:BZ:572:ILE:HG22 | 57:BZ:576:GLU:HB2 | 1.84                     | 0.60              |
| 1:AA:32:C:OP1      | 1:AA:1238:G:H5'   | 2.02                     | 0.60              |
| 1:AA:197:A:H3'     | 1:AA:198:C:C5     | 2.36                     | 0.60              |
| 1:AA:225:A:O2'     | 1:AA:257:A:H4'    | 2.01                     | 0.60              |
| 1:AA:373:U:H4'     | 1:AA:374:A:H8     | 1.64                     | 0.60              |
| 1:AA:411:G:N2      | 1:AA:415:A:H61    | 2.00                     | 0.60              |
| 1:AA:459:U:OP2     | 28:Ad:40:TRP:CA   | 2.49                     | 0.60              |
| 1:AA:511:U:OP2     | 1:AA:512:G:N7     | 2.35                     | 0.60              |
| 1:AA:566:U:O2'     | 1:AA:809:G:OP2    | 2.17                     | 0.60              |
| 1:AA:704:G:H22     | 1:AA:726:G:C2'    | 2.14                     | 0.60              |
| 1:AA:709:U:H2'     | 1:AA:710:G:H8     | 1.65                     | 0.60              |
| 1:AA:734:A:H2'     | 1:AA:735:A:O5'    | 2.00                     | 0.60              |
| 1:AA:805:G:H1'     | 1:AA:831:G:O2'    | 2.01                     | 0.60              |
| 1:AA:860:U:H2'     | 1:AA:861:A:C5'    | 2.31                     | 0.60              |
| 1:AA:883:G:O2'     | 1:AA:884:C:OP1    | 2.13                     | 0.60              |
| 1:AA:914:C:H2'     | 1:AA:915:C:H5'    | 1.83                     | 0.60              |
| 1:AA:988:A:H5''    | 24:AZ:10:LYS:CE   | 2.31                     | 0.60              |
| 1:AA:1050:A:O2'    | 1:AA:1051:G:H5'   | 1.94                     | 0.60              |
| 1:AA:1122:G:C2     | 1:AA:1123:C:C5    | 2.90                     | 0.60              |
| 1:AA:1301:A:O2'    | 1:AA:1302:A:C8    | 2.55                     | 0.60              |
| 1:AA:1416:G:N2     | 1:AA:1417:C:N4    | 2.48                     | 0.60              |
| 1:AA:1675:C:C5     | 5:AE:129:HIS:CD2  | 2.89                     | 0.60              |
| 1:AA:1695:G:N3     | 1:AA:1695:G:C3'   | 2.62                     | 0.60              |
| 1:AA:1820:U:O4     | 4:AD:159:ALA:O    | 2.20                     | 0.60              |
| 1:AA:1913:A:H2     | 56:BD:37:A:O2'    | 1.83                     | 0.60              |
| 1:AA:1934:C:H2'    | 1:AA:1935:G:H8    | 1.67                     | 0.60              |
| 1:AA:1997:G:C2     | 1:AA:1998:G:C5    | 2.89                     | 0.60              |
| 1:AA:2053:G:C2'    | 1:AA:2054:A:O5'   | 2.49                     | 0.60              |
| 1:AA:2277:G:H3'    | 1:AA:2278:A:C5'   | 2.25                     | 0.60              |
| 1:AA:2472:G:OP1    | 1:AA:2473:U:H5''  | 2.02                     | 0.60              |
| 1:AA:2507:C:O3'    | 56:BD:75:C:C2     | 2.53                     | 0.60              |
| 1:AA:2527:C:OP2    | 1:AA:2527:C:H3'   | 2.01                     | 0.60              |
| 1:AA:2582:G:C2     | 1:AA:2583:G:H1'   | 2.36                     | 0.60              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2630:G:O6    | 1:AA:2894:G:O6    | 2.06                     | 0.60              |
| 1:AA:2646:C:C4    | 1:AA:2647:U:O4    | 2.54                     | 0.60              |
| 1:AA:2740:A:N6    | 1:AA:2764:A:H1'   | 2.17                     | 0.60              |
| 2:AB:114:G:H1'    | 14:AP:38:GLN:HE22 | 1.63                     | 0.60              |
| 4:AD:7:LYS:NZ     | 4:AD:91:ARG:NE    | 2.50                     | 0.60              |
| 4:AD:21:PHE:HB3   | 4:AD:205:VAL:HG21 | 1.84                     | 0.60              |
| 4:AD:76:PRO:HG2   | 4:AD:98:VAL:CG2   | 2.23                     | 0.60              |
| 4:AD:132:PRO:HB2  | 4:AD:134:ARG:CD   | 2.32                     | 0.60              |
| 4:AD:132:PRO:HG2  | 4:AD:135:PHE:CD1  | 2.37                     | 0.60              |
| 5:AE:115:GLY:C    | 5:AE:117:MET:N    | 2.54                     | 0.60              |
| 6:AF:125:LEU:HD22 | 6:AF:128:ALA:HB2  | 1.82                     | 0.60              |
| 7:AG:6:ALA:HA     | 7:AG:9:ARG:NE     | 2.17                     | 0.60              |
| 7:AG:64:THR:HG21  | 7:AG:92:VAL:HG11  | 1.83                     | 0.60              |
| 7:AG:139:LEU:O    | 7:AG:139:LEU:HD22 | 2.02                     | 0.60              |
| 7:AG:147:ASP:O    | 7:AG:148:MET:HB2  | 2.01                     | 0.60              |
| 8:AH:87:LEU:N     | 8:AH:132:ARG:HB3  | 2.16                     | 0.60              |
| 9:AK:25:ARG:C     | 9:AK:28:THR:HG23  | 2.27                     | 0.60              |
| 9:AK:87:LEU:O     | 9:AK:90:MET:CB    | 2.44                     | 0.60              |
| 10:AL:23:ARG:HB2  | 10:AL:23:ARG:NH1  | 2.04                     | 0.60              |
| 10:AL:23:ARG:HD3  | 10:AL:23:ARG:H    | 1.67                     | 0.60              |
| 10:AL:122:LEU:OXT | 15:AQ:74:ARG:NH2  | 2.35                     | 0.60              |
| 11:AM:94:GLU:CD   | 11:AM:94:GLU:C    | 2.70                     | 0.60              |
| 13:AO:60:LEU:H    | 13:AO:60:LEU:HD23 | 1.65                     | 0.60              |
| 14:AP:8:GLU:C     | 14:AP:10:ARG:N    | 2.58                     | 0.60              |
| 14:AP:74:ALA:CB   | 14:AP:108:GLY:CA  | 2.67                     | 0.60              |
| 15:AQ:95:ARG:NH2  | 15:AQ:95:ARG:CB   | 2.64                     | 0.60              |
| 17:AS:20:LEU:CB   | 17:AS:95:LEU:HD13 | 2.31                     | 0.60              |
| 18:AT:22:ASP:HB2  | 26:Ab:25:LEU:HD21 | 1.83                     | 0.60              |
| 18:AT:43:GLY:O    | 18:AT:44:ALA:C    | 2.45                     | 0.60              |
| 20:AV:13:VAL:CG1  | 20:AV:70:SER:HB3  | 2.32                     | 0.60              |
| 21:AW:9:TYR:HD2   | 21:AW:14:LYS:HZ3  | 1.48                     | 0.60              |
| 21:AW:43:GLU:HA   | 21:AW:46:LYS:HD2  | 1.84                     | 0.60              |
| 21:AW:165:VAL:CG1 | 21:AW:166:SER:H   | 1.97                     | 0.60              |
| 23:AY:14:VAL:HA   | 23:AY:17:GLU:OE2  | 2.01                     | 0.60              |
| 23:AY:30:LEU:O    | 23:AY:33:GLN:N    | 2.35                     | 0.60              |
| 27:Ac:27:LYS:CG   | 27:Ac:29:ASN:HD21 | 2.14                     | 0.60              |
| 29:Ae:8:LYS:N     | 29:Ae:11:LYS:HE3  | 2.15                     | 0.60              |
| 32:AJ:71:THR:HB   | 32:AJ:72:PRO:HD3  | 1.83                     | 0.60              |
| 34:BA:33:A:N3     | 45:BP:32:PHE:CZ   | 2.70                     | 0.60              |
| 34:BA:95:G:C2'    | 34:BA:96:G:H5'    | 2.32                     | 0.60              |
| 34:BA:107:G:C6    | 53:BX:15:ARG:NH2  | 2.69                     | 0.60              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BA:110:C:O5'    | 34:BA:110:C:H6    | 1.85                     | 0.60              |
| 34:BA:277:C:OP2    | 50:BU:41:LYS:NZ   | 2.34                     | 0.60              |
| 34:BA:290:C:H2'    | 34:BA:291:C:H5'   | 1.84                     | 0.60              |
| 34:BA:306:G:N3     | 34:BA:307:C:C6    | 2.69                     | 0.60              |
| 34:BA:564:C:C5     | 50:BU:31:LEU:HD11 | 2.37                     | 0.60              |
| 34:BA:599:C:O2'    | 41:BL:130:GLY:N   | 2.34                     | 0.60              |
| 34:BA:719:C:O2     | 51:BV:50:ILE:HG13 | 2.02                     | 0.60              |
| 34:BA:766:A:N7     | 34:BA:814:A:C6    | 2.69                     | 0.60              |
| 34:BA:816:A:C2'    | 34:BA:817:C:OP2   | 2.49                     | 0.60              |
| 34:BA:978:A:N6     | 34:BA:1361:G:N2   | 2.38                     | 0.60              |
| 34:BA:1025:U:H2'   | 34:BA:1026:G:C8   | 2.37                     | 0.60              |
| 34:BA:1054:C:OP2   | 34:BA:1197:G:P    | 2.59                     | 0.60              |
| 34:BA:1196:U:H3'   | 34:BA:1196:U:C6   | 2.36                     | 0.60              |
| 34:BA:1270:C:C4'   | 34:BA:1313:U:H4'  | 2.28                     | 0.60              |
| 34:BA:1307:U:O3'   | 46:BQ:97:PRO:HA   | 2.01                     | 0.60              |
| 34:BA:1389:C:H2'   | 34:BA:1390:U:C5'  | 2.31                     | 0.60              |
| 34:BA:1419:G:O6    | 34:BA:1482:G:C6   | 2.54                     | 0.60              |
| 34:BA:1455:G:P     | 53:BX:32:ALA:C    | 2.78                     | 0.60              |
| 34:BA:1463:C:H2'   | 34:BA:1464:G:H5'  | 1.84                     | 0.60              |
| 35:BF:55:PHE:HA    | 35:BF:58:ILE:CG1  | 2.31                     | 0.60              |
| 35:BF:56:ARG:O     | 35:BF:59:GLU:HG3  | 2.02                     | 0.60              |
| 35:BF:78:GLN:NE2   | 35:BF:96:ARG:HH12 | 1.98                     | 0.60              |
| 36:BG:35:GLU:HA    | 36:BG:38:ARG:HG2  | 1.82                     | 0.60              |
| 36:BG:173:VAL:O    | 36:BG:175:LEU:N   | 2.35                     | 0.60              |
| 39:BJ:7:ASN:C      | 39:BJ:8:ILE:CG1   | 2.74                     | 0.60              |
| 39:BJ:52:ILE:HG21  | 39:BJ:87:ARG:NH1  | 2.17                     | 0.60              |
| 40:BK:26:PHE:CD2   | 40:BK:43:PHE:HE1  | 2.19                     | 0.60              |
| 40:BK:54:THR:O     | 40:BK:55:GLY:C    | 2.42                     | 0.60              |
| 41:BL:6:ILE:CD1    | 41:BL:85:ARG:HD3  | 2.32                     | 0.60              |
| 41:BL:10:LEU:CD1   | 41:BL:85:ARG:HB2  | 2.32                     | 0.60              |
| 41:BL:98:LYS:HG2   | 41:BL:98:LYS:O    | 2.01                     | 0.60              |
| 41:BL:122:ARG:N    | 41:BL:122:ARG:HD3 | 2.17                     | 0.60              |
| 44:BO:54:ARG:HG3   | 44:BO:54:ARG:NH1  | 2.09                     | 0.60              |
| 46:BQ:20:THR:N     | 46:BQ:25:ILE:CG2  | 2.65                     | 0.60              |
| 51:BV:34:TYR:CD1   | 51:BV:35:ARG:N    | 2.69                     | 0.60              |
| 51:BV:36:ASN:C     | 51:BV:40:LEU:HG   | 2.26                     | 0.60              |
| 56:BD:67:C:H2'     | 56:BD:68:C:C5'    | 2.32                     | 0.60              |
| 56:BE:19:G:N3      | 56:BE:57:G:N2     | 2.50                     | 0.60              |
| 56:BE:21:A:H2'     | 56:BE:22:G:C4'    | 2.32                     | 0.60              |
| 57:BZ:9:ALA:HB1    | 57:BZ:73:VAL:CB   | 2.26                     | 0.60              |
| 57:BZ:251:VAL:HG12 | 57:BZ:274:VAL:N   | 2.17                     | 0.60              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:BZ:258:LEU:HB3  | 57:BZ:259:GLY:CA   | 2.32                     | 0.60              |
| 57:BZ:400:TYR:C    | 57:BZ:442:VAL:HG13 | 2.25                     | 0.60              |
| 57:BZ:488:LEU:HD21 | 57:BZ:527:HIS:CA   | 2.32                     | 0.60              |
| 57:BZ:499:PHE:C    | 57:BZ:540:GLY:HA2  | 2.26                     | 0.60              |
| 1:AA:242:G:C8      | 29:Ae:4:MET:CG     | 2.77                     | 0.60              |
| 1:AA:270(B):A:H1'  | 1:AA:270(C):C:H5   | 1.62                     | 0.60              |
| 1:AA:294:A:H2'     | 1:AA:295:G:H5'     | 1.84                     | 0.60              |
| 1:AA:404:C:H5'     | 1:AA:406:G:O4'     | 2.01                     | 0.60              |
| 1:AA:412:A:H2'     | 1:AA:413:C:O4'     | 2.01                     | 0.60              |
| 1:AA:475:U:C2      | 1:AA:479:A:N6      | 2.69                     | 0.60              |
| 1:AA:601:C:O2      | 1:AA:601:C:H2'     | 2.02                     | 0.60              |
| 1:AA:729:G:C5'     | 4:AD:211:ARG:HH12  | 2.14                     | 0.60              |
| 1:AA:878:A:C4      | 1:AA:879:G:N7      | 2.69                     | 0.60              |
| 1:AA:878:A:H2      | 1:AA:879:G:H3'     | 1.66                     | 0.60              |
| 1:AA:879:G:N1      | 1:AA:897:C:O2'     | 2.35                     | 0.60              |
| 1:AA:957:A:N6      | 1:AA:959:A:C4      | 2.70                     | 0.60              |
| 1:AA:986:C:O5'     | 1:AA:986:C:H6      | 1.84                     | 0.60              |
| 1:AA:1043:C:O2'    | 1:AA:1045:A:OP1    | 2.18                     | 0.60              |
| 1:AA:1104:C:HO2'   | 1:AA:1106:G:P      | 2.23                     | 0.60              |
| 1:AA:1313:U:P      | 19:AU:63:LYS:HD2   | 2.41                     | 0.60              |
| 1:AA:1364:G:P      | 1:AA:1809:A:C6     | 2.94                     | 0.60              |
| 1:AA:1366:A:C2     | 1:AA:1367:A:N3     | 2.69                     | 0.60              |
| 1:AA:1579:A:H62    | 1:AA:1581:G:N2     | 1.98                     | 0.60              |
| 1:AA:1801:G:N7     | 1:AA:2207:C:O2'    | 2.31                     | 0.60              |
| 1:AA:1813:G:O2'    | 4:AD:46:GLN:CG     | 2.49                     | 0.60              |
| 1:AA:1966:A:C1'    | 1:AA:2593:U:H5'    | 2.25                     | 0.60              |
| 1:AA:1969:A:C5'    | 1:AA:1970:A:OP1    | 2.49                     | 0.60              |
| 1:AA:2011:U:H2'    | 1:AA:2012:G:H8     | 1.67                     | 0.60              |
| 1:AA:2043:C:O2'    | 1:AA:2044:C:C5'    | 2.50                     | 0.60              |
| 1:AA:2043:C:O2'    | 1:AA:2044:C:O5'    | 2.20                     | 0.60              |
| 1:AA:2124:G:O4'    | 3:AC:44:HIS:HE1    | 1.84                     | 0.60              |
| 1:AA:2135:A:C5'    | 1:AA:2136:C:H5     | 2.15                     | 0.60              |
| 1:AA:2306:C:H4'    | 7:AG:153:ARG:HH21  | 1.66                     | 0.60              |
| 1:AA:2313:C:H2'    | 1:AA:2314:C:H6     | 1.65                     | 0.60              |
| 1:AA:2321:G:H2'    | 1:AA:2321:G:N3     | 2.16                     | 0.60              |
| 1:AA:2682:U:N3     | 5:AE:21:VAL:HG11   | 2.16                     | 0.60              |
| 1:AA:2742:C:C5'    | 30:Af:35:ARG:NH1   | 2.65                     | 0.60              |
| 1:AA:2787:C:H1'    | 5:AE:61:ARG:CD     | 2.30                     | 0.60              |
| 1:AA:2882:A:C2'    | 1:AA:2883:A:O5'    | 2.50                     | 0.60              |
| 2:AB:97:G:C2'      | 2:AB:98:G:H5'      | 2.31                     | 0.60              |
| 3:AC:62:VAL:HB     | 3:AC:192:PHE:N     | 2.08                     | 0.60              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 4:AD:229:VAL:HG13  | 4:AD:230:ASP:OD1  | 2.02                     | 0.60              |
| 5:AE:104:VAL:CG1   | 5:AE:105:THR:N    | 2.61                     | 0.60              |
| 5:AE:120:TRP:CD1   | 5:AE:120:TRP:C    | 2.77                     | 0.60              |
| 5:AE:154:LYS:HD2   | 5:AE:155:LYS:O    | 2.01                     | 0.60              |
| 7:AG:119:GLY:HA3   | 7:AG:180:PHE:CE1  | 2.37                     | 0.60              |
| 7:AG:139:LEU:HD13  | 7:AG:142:PRO:CB   | 2.31                     | 0.60              |
| 7:AG:170:ARG:HD3   | 7:AG:174:GLU:CB   | 2.31                     | 0.60              |
| 10:AL:115:VAL:HG12 | 34:BA:345:C:O2'   | 2.02                     | 0.60              |
| 11:AM:29:LYS:C     | 11:AM:30:THR:CG2  | 2.70                     | 0.60              |
| 11:AM:46:LYS:HA    | 11:AM:49:ARG:NH1  | 2.17                     | 0.60              |
| 11:AM:112:LEU:O    | 11:AM:129:ALA:HB3 | 2.02                     | 0.60              |
| 11:AM:114:ILE:HG21 | 11:AM:134:ALA:HB2 | 1.83                     | 0.60              |
| 12:AN:38:GLU:N     | 12:AN:38:GLU:OE2  | 2.35                     | 0.60              |
| 12:AN:124:LYS:O    | 12:AN:125:LEU:C   | 2.44                     | 0.60              |
| 14:AP:56:LEU:HB3   | 14:AP:59:LYS:NZ   | 2.17                     | 0.60              |
| 16:AR:89:GLU:OE1   | 17:AS:50:PRO:CB   | 2.47                     | 0.60              |
| 17:AS:4:ILE:CG1    | 17:AS:13:ARG:HG2  | 2.32                     | 0.60              |
| 22:AX:9:SER:C      | 22:AX:10:THR:O    | 2.41                     | 0.60              |
| 23:AY:48:LEU:HD12  | 23:AY:51:GLN:HE22 | 1.64                     | 0.60              |
| 29:Ae:53:PRO:HA    | 29:Ae:56:GLU:CG   | 2.32                     | 0.60              |
| 30:Af:11:CYS:CB    | 30:Af:32:HIS:NE2  | 2.64                     | 0.60              |
| 32:AJ:66:THR:HG22  | 32:AJ:67:PHE:H    | 1.67                     | 0.60              |
| 32:AJ:99:ILE:O     | 32:AJ:103:GLN:OE1 | 2.20                     | 0.60              |
| 34:BA:67:C:H4'     | 34:BA:172:A:C1'   | 2.32                     | 0.60              |
| 34:BA:362:G:N3     | 34:BA:364:A:C8    | 2.69                     | 0.60              |
| 34:BA:362:G:H4'    | 45:BP:28:LYS:HZ2  | 1.65                     | 0.60              |
| 34:BA:390:C:C4     | 34:BA:391:G:N7    | 2.70                     | 0.60              |
| 34:BA:425:G:C2'    | 34:BA:426:G:H5'   | 2.32                     | 0.60              |
| 34:BA:570:G:N2     | 34:BA:873:A:N1    | 2.50                     | 0.60              |
| 34:BA:696:A:H2'    | 34:BA:697:U:C5'   | 2.31                     | 0.60              |
| 34:BA:866:C:H3'    | 34:BA:867:G:H8    | 1.66                     | 0.60              |
| 34:BA:877:C:O2'    | 34:BA:878:G:H5'   | 2.02                     | 0.60              |
| 34:BA:918:A:O2'    | 34:BA:919:A:OP1   | 2.19                     | 0.60              |
| 34:BA:990:C:H2'    | 34:BA:991:U:C1'   | 2.31                     | 0.60              |
| 34:BA:995:C:O2'    | 47:BR:4:LYS:HE2   | 2.00                     | 0.60              |
| 34:BA:1225:A:OP2   | 46:BQ:102:ARG:O   | 2.20                     | 0.60              |
| 34:BA:1302:U:P     | 46:BQ:21:TYR:HE2  | 2.25                     | 0.60              |
| 34:BA:1392:G:H2'   | 34:BA:1393:U:C6   | 2.36                     | 0.60              |
| 34:BA:1468:A:C8    | 34:BA:1469:G:C8   | 2.90                     | 0.60              |
| 35:BF:35:GLU:O     | 35:BF:36:ARG:NE   | 2.35                     | 0.60              |
| 35:BF:97:TRP:CE3   | 35:BF:172:ILE:HB  | 2.36                     | 0.60              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BF:113:HIS:HA   | 35:BF:116:GLU:OE1  | 2.02                     | 0.60              |
| 35:BF:138:LEU:O    | 35:BF:141:GLU:HB3  | 2.01                     | 0.60              |
| 35:BF:166:ASP:OD1  | 35:BF:205:ASP:OD2  | 2.20                     | 0.60              |
| 35:BF:222:ILE:O    | 35:BF:226:ARG:CB   | 2.42                     | 0.60              |
| 36:BG:33:LEU:CG    | 47:BR:54:PRO:HD2   | 2.31                     | 0.60              |
| 36:BG:142:MET:CB   | 36:BG:149:ALA:HB2  | 2.32                     | 0.60              |
| 36:BG:157:ILE:O    | 36:BG:157:ILE:HG22 | 2.00                     | 0.60              |
| 37:BH:8:VAL:C      | 37:BH:10:ARG:N     | 2.59                     | 0.60              |
| 37:BH:100:ARG:HH22 | 37:BH:137:SER:CA   | 2.13                     | 0.60              |
| 37:BH:170:VAL:HG12 | 37:BH:171:GLY:N    | 2.17                     | 0.60              |
| 38:BI:78:HIS:ND1   | 41:BL:104:ARG:HD3  | 2.17                     | 0.60              |
| 41:BL:38:ILE:CA    | 41:BL:41:ARG:HB2   | 2.32                     | 0.60              |
| 41:BL:69:ARG:NH1   | 41:BL:73:ASP:O     | 2.34                     | 0.60              |
| 43:BN:79:ARG:NH2   | 43:BN:82:ILE:HG21  | 2.15                     | 0.60              |
| 44:BO:45:GLY:O     | 44:BO:50:TYR:HB2   | 2.01                     | 0.60              |
| 45:BP:126:LYS:HD2  | 45:BP:128:ALA:HB3  | 1.84                     | 0.60              |
| 47:BR:40:CYS:O     | 47:BR:44:LEU:HB2   | 2.02                     | 0.60              |
| 48:BS:70:LEU:HD11  | 48:BS:77:ARG:HH21  | 1.67                     | 0.60              |
| 54:BY:9:ARG:O      | 54:BY:10:ARG:C     | 2.43                     | 0.60              |
| 56:BE:11:C:HO2'    | 56:BE:12:U:H5'     | 1.66                     | 0.60              |
| 56:BE:18:G:N9      | 56:BE:58:A:C2      | 2.69                     | 0.60              |
| 56:BE:21:A:N6      | 56:BE:46:G:C2'     | 2.65                     | 0.60              |
| 56:BE:27:G:H2'     | 56:BE:28:G:H8      | 1.66                     | 0.60              |
| 57:BZ:109:THR:C    | 57:BZ:111:PHE:H    | 2.10                     | 0.60              |
| 57:BZ:173:GLY:CA   | 57:BZ:174:LEU:C    | 2.74                     | 0.60              |
| 57:BZ:483:ARG:HH12 | 57:BZ:576:GLU:CD   | 2.09                     | 0.60              |
| 1:AA:7:G:H2'       | 1:AA:8:A:H8        | 1.67                     | 0.60              |
| 1:AA:139:G:C2'     | 1:AA:140:A:O5'     | 2.49                     | 0.60              |
| 1:AA:223:A:H4'     | 1:AA:223:A:OP2     | 2.02                     | 0.60              |
| 1:AA:387:U:H3'     | 25:Aa:29:PRO:HB3   | 1.84                     | 0.60              |
| 1:AA:557:U:H2'     | 1:AA:558:G:O4'     | 2.01                     | 0.60              |
| 1:AA:569:U:P       | 1:AA:945:A:N6      | 2.75                     | 0.60              |
| 1:AA:590:A:H5'     | 6:AF:93:LYS:NZ     | 2.17                     | 0.60              |
| 1:AA:601:C:O2'     | 1:AA:604:G:H5''    | 2.02                     | 0.60              |
| 1:AA:637:A:C2      | 1:AA:651:G:H4'     | 2.37                     | 0.60              |
| 1:AA:819:A:H62     | 1:AA:1188:U:H3     | 1.49                     | 0.60              |
| 1:AA:901:A:C3'     | 1:AA:902:C:H5'     | 2.31                     | 0.60              |
| 1:AA:980:A:C2      | 1:AA:2038:G:O4'    | 2.53                     | 0.60              |
| 1:AA:1055:G:O5'    | 1:AA:1055:G:H8     | 1.84                     | 0.60              |
| 1:AA:1078:U:C5'    | 32:AJ:137:GLU:OE1  | 2.49                     | 0.60              |
| 1:AA:1129:A:O2'    | 1:AA:2515:C:H1'    | 2.01                     | 0.60              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1179:C:C2     | 1:AA:1180:C:C5     | 2.90                     | 0.60              |
| 1:AA:1243:G:C6     | 1:AA:1244:G:C5     | 2.89                     | 0.60              |
| 1:AA:1264:G:N7     | 1:AA:1265:A:N9     | 2.50                     | 0.60              |
| 1:AA:1326:U:H2'    | 1:AA:1327:C:C5'    | 2.25                     | 0.60              |
| 1:AA:1340:U:H5     | 19:AU:57:LEU:CG    | 2.14                     | 0.60              |
| 1:AA:1365:A:C5     | 1:AA:1366:A:N7     | 2.70                     | 0.60              |
| 1:AA:1449:A:C2     | 1:AA:1449(A):G:C1' | 2.85                     | 0.60              |
| 1:AA:1528:A:N7     | 1:AA:1529:A:N1     | 2.50                     | 0.60              |
| 1:AA:1534:G:H21    | 1:AA:1537:C:N4     | 1.99                     | 0.60              |
| 1:AA:1690:A:N6     | 1:AA:1697:G:N2     | 2.49                     | 0.60              |
| 1:AA:1813:G:C4'    | 4:AD:46:GLN:HB2    | 2.29                     | 0.60              |
| 1:AA:1825:A:C6     | 1:AA:1826:G:O6     | 2.54                     | 0.60              |
| 1:AA:2009:G:H5''   | 18:AT:41:LYS:CG    | 2.32                     | 0.60              |
| 1:AA:2020:A:N6     | 1:AA:2022:U:C2     | 2.69                     | 0.60              |
| 1:AA:2059:A:H2     | 1:AA:2503:A:H62    | 1.42                     | 0.60              |
| 1:AA:2116:G:C5'    | 1:AA:2117:A:OP2    | 2.48                     | 0.60              |
| 1:AA:2199:A:OP2    | 1:AA:2205:C:H5     | 1.85                     | 0.60              |
| 1:AA:2251:G:N1     | 1:AA:2252:G:C2     | 2.70                     | 0.60              |
| 1:AA:2283:C:C4     | 1:AA:2389:G:N2     | 2.70                     | 0.60              |
| 1:AA:2330:G:H2'    | 1:AA:2331:G:O4'    | 2.00                     | 0.60              |
| 1:AA:2432:A:C2     | 25:Aa:30:GLU:HA    | 2.30                     | 0.60              |
| 1:AA:2522:U:O2     | 1:AA:2765:A:N6     | 2.34                     | 0.60              |
| 1:AA:2537:U:N3     | 1:AA:2538:C:N4     | 2.50                     | 0.60              |
| 1:AA:2652:C:C2     | 1:AA:2670:A:C1'    | 2.84                     | 0.60              |
| 1:AA:2688:U:O2     | 1:AA:2688:U:C2'    | 2.46                     | 0.60              |
| 1:AA:2774:C:H3'    | 1:AA:2775:A:H8     | 1.67                     | 0.60              |
| 2:AB:23:G:N2       | 2:AB:61:G:C5       | 2.70                     | 0.60              |
| 3:AC:156:ILE:CD1   | 3:AC:160:ARG:HG3   | 2.27                     | 0.60              |
| 4:AD:143:HIS:NE2   | 4:AD:192:THR:CG2   | 2.65                     | 0.60              |
| 5:AE:81:ILE:CG2    | 5:AE:82:ARG:N      | 2.64                     | 0.60              |
| 7:AG:36:LYS:NZ     | 7:AG:38:VAL:HG13   | 2.17                     | 0.60              |
| 8:AH:17:VAL:CG2    | 8:AH:45:VAL:HG21   | 2.32                     | 0.60              |
| 8:AH:68:THR:HG22   | 8:AH:72:ILE:HD12   | 1.83                     | 0.60              |
| 8:AH:76:VAL:O      | 8:AH:79:VAL:HG22   | 2.02                     | 0.60              |
| 9:AK:33:LEU:CD1    | 9:AK:34:LEU:HG     | 2.29                     | 0.60              |
| 9:AK:42:TRP:HA     | 9:AK:47:ALA:CB     | 2.31                     | 0.60              |
| 10:AL:97:ARG:CZ    | 10:AL:97:ARG:CB    | 2.78                     | 0.60              |
| 13:AO:110:PRO:O    | 13:AO:111:LEU:HD23 | 2.01                     | 0.60              |
| 15:AQ:27:THR:HB    | 15:AQ:95:ARG:H     | 1.67                     | 0.60              |
| 15:AQ:111:ARG:HH22 | 34:BA:1433:A:H5''  | 1.66                     | 0.60              |
| 16:AR:53:ARG:NH1   | 16:AR:53:ARG:CB    | 2.62                     | 0.60              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 16:AR:58:ARG:HG3   | 16:AR:58:ARG:HH11  | 1.65                     | 0.60              |
| 17:AS:5:VAL:HG13   | 17:AS:39:LEU:HA    | 1.83                     | 0.60              |
| 20:AV:97:ARG:NH2   | 20:AV:101:LYS:HD3  | 2.16                     | 0.60              |
| 21:AW:98:MET:O     | 21:AW:125:LEU:O    | 2.19                     | 0.60              |
| 23:AY:11:LEU:HD12  | 23:AY:11:LEU:N     | 2.16                     | 0.60              |
| 24:AZ:26:LEU:CB    | 24:AZ:35:ARG:HH11  | 2.14                     | 0.60              |
| 24:AZ:50:VAL:HG13  | 24:AZ:53:LEU:CG    | 2.32                     | 0.60              |
| 27:Ac:10:LEU:HD12  | 27:Ac:28:ARG:NH2   | 2.17                     | 0.60              |
| 28:Ad:34:ARG:HH22  | 28:Ad:42:LEU:HD23  | 1.67                     | 0.60              |
| 30:Af:9:ARG:HE     | 30:Af:16:VAL:HB    | 1.66                     | 0.60              |
| 32:AJ:27:LEU:CD2   | 32:AJ:58:THR:HA    | 2.31                     | 0.60              |
| 34:BA:169:C:O2'    | 34:BA:170:U:H5'    | 2.01                     | 0.60              |
| 34:BA:173:U:H4'    | 34:BA:197:A:H1'    | 1.83                     | 0.60              |
| 34:BA:357:G:H1'    | 34:BA:368:U:O2     | 2.02                     | 0.60              |
| 34:BA:510:A:H8     | 34:BA:510:A:O5'    | 1.85                     | 0.60              |
| 34:BA:678:U:C2     | 34:BA:679:C:C5     | 2.90                     | 0.60              |
| 34:BA:685:G:H2'    | 34:BA:686:U:C6     | 2.36                     | 0.60              |
| 34:BA:766:A:C2     | 34:BA:767:A:H1'    | 2.37                     | 0.60              |
| 34:BA:777:A:C4     | 34:BA:778:G:C8     | 2.89                     | 0.60              |
| 34:BA:796:C:C2     | 34:BA:797:C:C5     | 2.90                     | 0.60              |
| 34:BA:827:U:H4'    | 41:BL:19:VAL:CG2   | 2.26                     | 0.60              |
| 34:BA:854:G:P      | 34:BA:871:U:O2     | 2.59                     | 0.60              |
| 34:BA:921:U:C2     | 34:BA:922:G:C8     | 2.90                     | 0.60              |
| 34:BA:951:G:O4'    | 34:BA:971:G:H5'    | 2.02                     | 0.60              |
| 34:BA:1095:U:OP1   | 34:BA:1108:G:N2    | 2.34                     | 0.60              |
| 34:BA:1358:U:OP1   | 47:BR:34:TYR:HA    | 2.02                     | 0.60              |
| 35:BF:77:ALA:O     | 35:BF:80:ILE:N     | 2.34                     | 0.60              |
| 35:BF:112:VAL:HG13 | 35:BF:149:LEU:HD21 | 1.84                     | 0.60              |
| 36:BG:12:LEU:O     | 36:BG:17:ASP:OD2   | 2.19                     | 0.60              |
| 36:BG:42:LEU:HD12  | 36:BG:94:LEU:CD1   | 2.32                     | 0.60              |
| 37:BH:114:ARG:HG3  | 37:BH:114:ARG:HH11 | 1.66                     | 0.60              |
| 38:BI:94:ALA:CB    | 38:BI:119:LEU:HD21 | 2.31                     | 0.60              |
| 39:BJ:13:ASN:N     | 39:BJ:13:ASN:HD22  | 1.98                     | 0.60              |
| 39:BJ:41:GLU:H     | 39:BJ:63:TYR:HD1   | 1.49                     | 0.60              |
| 40:BK:12:LEU:HD22  | 40:BK:24:THR:HG22  | 1.83                     | 0.60              |
| 40:BK:38:LEU:CD1   | 40:BK:41:ARG:HD3   | 2.32                     | 0.60              |
| 40:BK:107:ALA:HB3  | 40:BK:123:GLU:OE1  | 2.02                     | 0.60              |
| 41:BL:1:MET:CG     | 41:BL:2:LEU:H      | 2.14                     | 0.60              |
| 41:BL:104:ARG:CB   | 41:BL:107:LEU:HG   | 2.32                     | 0.60              |
| 41:BL:114:THR:C    | 41:BL:116:LYS:H    | 2.09                     | 0.60              |
| 42:BM:27:THR:HG23  | 42:BM:30:GLY:O     | 2.02                     | 0.60              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 43:BN:84:GLN:C    | 43:BN:85:LEU:HD12  | 2.26                     | 0.60              |
| 44:BO:26:ASN:O    | 44:BO:27:ASN:HB2   | 2.02                     | 0.60              |
| 45:BP:86:ARG:HH22 | 45:BP:119:LYS:CG   | 2.15                     | 0.60              |
| 46:BQ:25:ILE:HG12 | 46:BQ:66:LEU:HD21  | 1.84                     | 0.60              |
| 46:BQ:85:GLY:O    | 52:BW:74:PHE:HB3   | 2.02                     | 0.60              |
| 48:BS:40:SER:O    | 48:BS:43:LEU:HB2   | 2.02                     | 0.60              |
| 51:BV:80:PRO:HB2  | 51:BV:82:THR:O     | 2.00                     | 0.60              |
| 52:BW:43:GLU:O    | 52:BW:47:HIS:NE2   | 2.30                     | 0.60              |
| 57:BZ:8:ILE:HD12  | 57:BZ:96:LEU:HD12  | 1.84                     | 0.60              |
| 57:BZ:82:GLY:N    | 57:BZ:361:ARG:CB   | 2.64                     | 0.60              |
| 57:BZ:101:ALA:O   | 57:BZ:135:ALA:CA   | 2.50                     | 0.60              |
| 57:BZ:173:GLY:HA3 | 57:BZ:174:LEU:C    | 2.26                     | 0.60              |
| 57:BZ:185:PRO:HD2 | 57:BZ:186:LEU:H    | 1.67                     | 0.60              |
| 57:BZ:470:SER:O   | 57:BZ:471:HIS:HB3  | 2.01                     | 0.60              |
| 1:AA:4:C:H2'      | 1:AA:5:A:H8        | 1.66                     | 0.60              |
| 1:AA:6:A:N3       | 1:AA:2898:U:N1     | 2.49                     | 0.60              |
| 1:AA:114:U:H2'    | 1:AA:115:C:H6      | 1.67                     | 0.60              |
| 1:AA:150:C:O2     | 1:AA:150:C:C2'     | 2.49                     | 0.60              |
| 1:AA:197:A:H3'    | 1:AA:198:C:H6      | 1.67                     | 0.60              |
| 1:AA:219:G:O6     | 1:AA:428:A:OP1     | 2.19                     | 0.60              |
| 1:AA:298:G:H1     | 1:AA:338:G:HO2'    | 1.43                     | 0.60              |
| 1:AA:653:A:C5'    | 1:AA:654:A:H4'     | 2.32                     | 0.60              |
| 1:AA:672:C:H3'    | 11:AM:38:GLN:NE2   | 2.12                     | 0.60              |
| 1:AA:728:G:O2'    | 1:AA:729:G:C5'     | 2.50                     | 0.60              |
| 1:AA:756:C:C2'    | 1:AA:757:U:H5'     | 2.30                     | 0.60              |
| 1:AA:838:C:H2'    | 1:AA:839:U:H6      | 1.67                     | 0.60              |
| 1:AA:937:U:O2'    | 1:AA:938:G:H5'     | 2.01                     | 0.60              |
| 1:AA:1242:A:OP1   | 1:AA:1242:A:C8     | 2.55                     | 0.60              |
| 1:AA:1246:A:N6    | 1:AA:1247:A:C6     | 2.70                     | 0.60              |
| 1:AA:1249:U:H3    | 11:AM:21:ARG:NH1   | 2.00                     | 0.60              |
| 1:AA:1435:G:O2'   | 1:AA:1436:G:H5'    | 2.02                     | 0.60              |
| 1:AA:1447:G:H1'   | 1:AA:1545(A):A:H1' | 1.82                     | 0.60              |
| 1:AA:1458:C:H4'   | 1:AA:1459:G:C5     | 2.35                     | 0.60              |
| 1:AA:1525:G:N2    | 1:AA:1526:G:H1'    | 2.17                     | 0.60              |
| 1:AA:1667:G:O6    | 1:AA:1992:G:P      | 2.60                     | 0.60              |
| 1:AA:1675:C:C2'   | 1:AA:1676:A:H5'    | 2.32                     | 0.60              |
| 1:AA:1769:G:C6    | 1:AA:1984:G:C6     | 2.89                     | 0.60              |
| 1:AA:1824:G:O2'   | 4:AD:246:PRO:CB    | 2.43                     | 0.60              |
| 1:AA:1905:C:H2'   | 1:AA:1930:G:C8     | 2.37                     | 0.60              |
| 1:AA:1906:G:C2    | 1:AA:1929:G:C6     | 2.88                     | 0.60              |
| 1:AA:2006:C:H5''  | 1:AA:2048:G:H5''   | 1.83                     | 0.60              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2052:G:C1'   | 5:AE:150:VAL:HG23 | 2.32                     | 0.60              |
| 1:AA:2075:U:H5    | 1:AA:2435:A:N1    | 2.00                     | 0.60              |
| 1:AA:2209:C:OP2   | 1:AA:2210:G:OP2   | 2.19                     | 0.60              |
| 1:AA:2230:G:H2'   | 1:AA:2231:C:H6    | 1.66                     | 0.60              |
| 1:AA:2283:C:C5    | 1:AA:2389:G:C2    | 2.90                     | 0.60              |
| 1:AA:2666:C:H41   | 1:AA:2667:C:H41   | 1.48                     | 0.60              |
| 3:AC:77:ILE:HB    | 3:AC:115:ALA:HB2  | 1.82                     | 0.60              |
| 4:AD:256:GLY:O    | 4:AD:257:LEU:HG   | 2.01                     | 0.60              |
| 4:AD:260:ARG:HG3  | 4:AD:260:ARG:NH1  | 2.17                     | 0.60              |
| 5:AE:37:ARG:HB2   | 5:AE:40:GLU:HB2   | 1.83                     | 0.60              |
| 5:AE:54:GLN:HG2   | 5:AE:57:LYS:HG3   | 1.82                     | 0.60              |
| 5:AE:105:THR:CB   | 5:AE:166:THR:CB   | 2.69                     | 0.60              |
| 6:AF:36:VAL:CG1   | 6:AF:37:VAL:N     | 2.64                     | 0.60              |
| 7:AG:44:GLY:N     | 7:AG:88:ILE:HG21  | 2.17                     | 0.60              |
| 7:AG:60:LEU:CD2   | 7:AG:90:LEU:HD11  | 2.22                     | 0.60              |
| 7:AG:110:ALA:HB1  | 7:AG:139:LEU:CD2  | 2.32                     | 0.60              |
| 8:AH:162:ILE:C    | 8:AH:163:TYR:CD1  | 2.80                     | 0.60              |
| 10:AL:70:LYS:NZ   | 10:AL:103:ALA:HB3 | 2.16                     | 0.60              |
| 11:AM:76:LYS:CE   | 11:AM:99:LEU:HD11 | 2.31                     | 0.60              |
| 12:AN:77:LYS:HB2  | 12:AN:78:PRO:CD   | 2.32                     | 0.60              |
| 12:AN:102:VAL:O   | 12:AN:102:VAL:CG1 | 2.50                     | 0.60              |
| 15:AQ:2:ASN:O     | 15:AQ:5:ALA:HB3   | 2.02                     | 0.60              |
| 15:AQ:4:GLY:CA    | 15:AQ:8:LYS:HE3   | 2.32                     | 0.60              |
| 16:AR:39:LEU:O    | 16:AR:40:PHE:C    | 2.41                     | 0.60              |
| 16:AR:61:TRP:HA   | 16:AR:65:ILE:HD11 | 1.83                     | 0.60              |
| 17:AS:21:ARG:HG3  | 17:AS:21:ARG:NH1  | 2.14                     | 0.60              |
| 17:AS:93:GLU:OE2  | 17:AS:95:LEU:HD22 | 2.01                     | 0.60              |
| 18:AT:14:PRO:O    | 18:AT:15:ARG:C    | 2.43                     | 0.60              |
| 18:AT:39:THR:OG1  | 26:Ab:28:PRO:CG   | 2.45                     | 0.60              |
| 19:AU:92:LEU:HA   | 19:AU:95:LEU:HD12 | 1.83                     | 0.60              |
| 20:AV:1:MET:HG2   | 20:AV:33:LYS:HG3  | 1.83                     | 0.60              |
| 21:AW:39:VAL:HG13 | 21:AW:44:PHE:CG   | 2.36                     | 0.60              |
| 23:AY:20:VAL:CG2  | 23:AY:24:LYS:HE3  | 2.32                     | 0.60              |
| 23:AY:38:GLN:N    | 23:AY:41:GLN:NE2  | 2.39                     | 0.60              |
| 24:AZ:16:PRO:HG2  | 24:AZ:19:GLN:CB   | 2.31                     | 0.60              |
| 24:AZ:23:LEU:CB   | 24:AZ:28:LEU:HD12 | 2.32                     | 0.60              |
| 32:AJ:62:ASP:H    | 32:AJ:63:ARG:HA   | 1.67                     | 0.60              |
| 34:BA:246:A:H4'   | 34:BA:247:G:H4'   | 1.84                     | 0.60              |
| 34:BA:323:U:C5    | 34:BA:324:G:H1'   | 2.37                     | 0.60              |
| 34:BA:376:G:H2'   | 34:BA:377:G:C8    | 2.26                     | 0.60              |
| 34:BA:483:C:N4    | 34:BA:484:G:C2    | 2.70                     | 0.60              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:562:C:C2'    | 45:BP:15:ARG:HB3   | 2.32                     | 0.60              |
| 34:BA:620:C:N3     | 37:BH:135:LEU:HD22 | 2.17                     | 0.60              |
| 34:BA:687:A:H2'    | 34:BA:701:C:H41    | 1.66                     | 0.60              |
| 34:BA:790:A:N6     | 34:BA:791:G:N1     | 2.49                     | 0.60              |
| 34:BA:791:G:OP2    | 34:BA:791:G:H3'    | 2.02                     | 0.60              |
| 34:BA:944:G:H8     | 34:BA:944:G:O5'    | 1.85                     | 0.60              |
| 34:BA:1300:G:C2    | 34:BA:1335:C:C2    | 2.90                     | 0.60              |
| 34:BA:1343:G:H2'   | 34:BA:1344:C:C6    | 2.37                     | 0.60              |
| 35:BF:115:LEU:HB2  | 35:BF:145:LEU:CG   | 2.31                     | 0.60              |
| 35:BF:181:PHE:HE1  | 41:BL:70:GLN:HE22  | 1.49                     | 0.60              |
| 36:BG:39:ILE:HG21  | 36:BG:57:ILE:HD13  | 1.84                     | 0.60              |
| 36:BG:43:LEU:CD1   | 36:BG:55:VAL:HG11  | 2.32                     | 0.60              |
| 37:BH:128:VAL:HG21 | 37:BH:133:VAL:CB   | 2.32                     | 0.60              |
| 38:BI:34:VAL:HG21  | 38:BI:62:ALA:CB    | 2.32                     | 0.60              |
| 39:BJ:4:TYR:HB3    | 39:BJ:91:VAL:O     | 2.01                     | 0.60              |
| 39:BJ:69:GLU:O     | 39:BJ:72:VAL:HG13  | 2.02                     | 0.60              |
| 41:BL:17:THR:HG21  | 41:BL:80:ILE:HG21  | 1.84                     | 0.60              |
| 41:BL:95:VAL:HG11  | 41:BL:133:LEU:HD11 | 1.84                     | 0.60              |
| 43:BN:26:ALA:C     | 43:BN:28:ARG:H     | 2.09                     | 0.60              |
| 43:BN:63:PHE:HA    | 47:BR:59:ALA:HB2   | 1.83                     | 0.60              |
| 44:BO:18:ARG:NH2   | 44:BO:36:ASP:O     | 2.35                     | 0.60              |
| 44:BO:87:THR:CG2   | 44:BO:91:ARG:HH22  | 2.14                     | 0.60              |
| 45:BP:85:ILE:HD12  | 45:BP:99:HIS:C     | 2.26                     | 0.60              |
| 49:BT:12:LYS:HZ2   | 49:BT:13:HIS:CD2   | 2.19                     | 0.60              |
| 49:BT:54:GLU:O     | 49:BT:55:ARG:C     | 2.45                     | 0.60              |
| 50:BU:81:ARG:CG    | 50:BU:84:LEU:HD21  | 2.32                     | 0.60              |
| 50:BU:95:TYR:O     | 50:BU:97:SER:N     | 2.35                     | 0.60              |
| 52:BW:37:ARG:O     | 52:BW:70:LYS:HE2   | 2.02                     | 0.60              |
| 57:BZ:200:ASP:CB   | 57:BZ:228:ARG:CD   | 2.80                     | 0.60              |
| 57:BZ:407:VAL:HA   | 57:BZ:408:GLU:C    | 2.27                     | 0.60              |
| 1:AA:76:C:H4'      | 23:AY:54:ARG:HG2   | 1.83                     | 0.59              |
| 1:AA:374:A:C2      | 1:AA:375:C:H1'     | 2.36                     | 0.59              |
| 1:AA:452:G:N7      | 1:AA:453:C:C5      | 2.70                     | 0.59              |
| 1:AA:731:C:H5'     | 1:AA:731:C:H6      | 1.66                     | 0.59              |
| 1:AA:961:C:O2'     | 1:AA:962:G:P       | 2.59                     | 0.59              |
| 1:AA:974:G:OP2     | 1:AA:974(A):C:OP2  | 2.19                     | 0.59              |
| 1:AA:974:G:C3'     | 1:AA:974(A):C:H5'' | 2.16                     | 0.59              |
| 1:AA:1078:U:OP1    | 32:AJ:137:GLU:CD   | 2.43                     | 0.59              |
| 1:AA:1214:A:H62    | 1:AA:1236:G:H21    | 1.50                     | 0.59              |
| 1:AA:1227:A:C2'    | 1:AA:1228:G:H5''   | 2.32                     | 0.59              |
| 1:AA:1322:A:H2'    | 1:AA:1323:U:H5'    | 1.84                     | 0.59              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1427:A:C8    | 1:AA:1427:A:OP1   | 2.55                     | 0.59              |
| 1:AA:1448:G:H2'   | 1:AA:1449:A:C8    | 2.37                     | 0.59              |
| 1:AA:1531:C:N3    | 1:AA:1532:C:N4    | 2.40                     | 0.59              |
| 1:AA:1560:G:H2'   | 1:AA:1561:G:H8    | 1.67                     | 0.59              |
| 1:AA:1618:A:OP1   | 1:AA:1618:A:C8    | 2.54                     | 0.59              |
| 1:AA:1667:G:N3    | 1:AA:1667:G:C2'   | 2.64                     | 0.59              |
| 1:AA:1796:U:C2    | 1:AA:1797:C:C5    | 2.89                     | 0.59              |
| 1:AA:1830:C:N3    | 1:AA:1831:G:N7    | 2.50                     | 0.59              |
| 1:AA:1830:C:C2    | 1:AA:1831:G:C8    | 2.90                     | 0.59              |
| 1:AA:1924:C:H5''  | 56:BE:12:U:O2'    | 2.02                     | 0.59              |
| 1:AA:2128:C:O5'   | 3:AC:35:ALA:HB1   | 2.02                     | 0.59              |
| 1:AA:2230:G:H2'   | 1:AA:2231:C:C6    | 2.37                     | 0.59              |
| 1:AA:2335:A:H2'   | 1:AA:2337:G:C8    | 2.37                     | 0.59              |
| 1:AA:2361:A:H3'   | 1:AA:2362:G:C8    | 2.28                     | 0.59              |
| 1:AA:2660:A:C4    | 57:BZ:457:THR:CA  | 2.85                     | 0.59              |
| 1:AA:2661:G:C4    | 1:AA:2662:A:N7    | 2.70                     | 0.59              |
| 1:AA:2821:A:H2'   | 1:AA:2822:G:O4'   | 2.01                     | 0.59              |
| 1:AA:2861:G:H2'   | 1:AA:2862:G:H8    | 1.67                     | 0.59              |
| 3:AC:75:LEU:HD13  | 3:AC:110:PHE:CE2  | 2.36                     | 0.59              |
| 4:AD:60:ARG:CD    | 4:AD:62:TYR:HE2   | 2.09                     | 0.59              |
| 4:AD:61:LEU:CD1   | 4:AD:86:PRO:HD3   | 2.32                     | 0.59              |
| 4:AD:105:ILE:O    | 4:AD:106:ILE:O    | 2.20                     | 0.59              |
| 4:AD:159:ALA:CB   | 4:AD:202:LYS:HZ1  | 2.15                     | 0.59              |
| 4:AD:214:TRP:O    | 4:AD:215:LEU:C    | 2.42                     | 0.59              |
| 4:AD:232:PRO:HG2  | 4:AD:247:ALA:C    | 2.26                     | 0.59              |
| 5:AE:51:PHE:HZ    | 5:AE:75:VAL:HG22  | 1.66                     | 0.59              |
| 6:AF:16:GLY:C     | 6:AF:17:ARG:HD3   | 2.27                     | 0.59              |
| 7:AG:4:ASP:HB3    | 7:AG:104:GLU:OE2  | 2.02                     | 0.59              |
| 7:AG:29:TRP:C     | 7:AG:31:VAL:HG23  | 2.27                     | 0.59              |
| 7:AG:57:ALA:CA    | 7:AG:68:PRO:HD2   | 2.29                     | 0.59              |
| 7:AG:82:LEU:HD21  | 56:BE:52:G:P      | 2.41                     | 0.59              |
| 7:AG:110:ALA:CB   | 7:AG:139:LEU:HG   | 2.31                     | 0.59              |
| 8:AH:76:VAL:O     | 8:AH:77:LYS:C     | 2.44                     | 0.59              |
| 8:AH:85:LYS:HD2   | 8:AH:145:ALA:HB2  | 1.83                     | 0.59              |
| 8:AH:120:GLY:HA3  | 8:AH:136:ILE:CG2  | 2.27                     | 0.59              |
| 8:AH:150:ALA:O    | 8:AH:152:ARG:N    | 2.34                     | 0.59              |
| 9:AK:31:ALA:O     | 9:AK:32:THR:C     | 2.43                     | 0.59              |
| 10:AL:97:ARG:NH1  | 10:AL:98:VAL:CA   | 2.64                     | 0.59              |
| 10:AL:97:ARG:CG   | 10:AL:117:LEU:CD2 | 2.79                     | 0.59              |
| 12:AN:6:ARG:O     | 12:AN:7:MET:HE2   | 2.01                     | 0.59              |
| 12:AN:111:GLU:OE1 | 12:AN:112:GLU:HG3 | 2.02                     | 0.59              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 13:AO:45:ARG:O    | 13:AO:46:GLY:C     | 2.42                     | 0.59              |
| 13:AO:52:ILE:HD12 | 13:AO:94:TYR:HD1   | 1.65                     | 0.59              |
| 13:AO:57:ARG:HB3  | 13:AO:57:ARG:CZ    | 2.31                     | 0.59              |
| 13:AO:103:ARG:HB2 | 13:AO:108:GLY:CA   | 2.32                     | 0.59              |
| 16:AR:113:ALA:O   | 16:AR:116:ALA:HB3  | 2.01                     | 0.59              |
| 17:AS:15:GLU:HB3  | 17:AS:16:PRO:CD    | 2.32                     | 0.59              |
| 19:AU:21:PHE:HE2  | 19:AU:27:THR:N     | 1.96                     | 0.59              |
| 19:AU:29:TRP:HA   | 19:AU:77:LYS:O     | 2.02                     | 0.59              |
| 19:AU:51:VAL:HG13 | 19:AU:81:VAL:HG21  | 1.83                     | 0.59              |
| 30:Af:3:VAL:O     | 30:Af:5:ALA:N      | 2.35                     | 0.59              |
| 32:AJ:71:THR:HB   | 32:AJ:72:PRO:CD    | 2.32                     | 0.59              |
| 34:BA:91:C:C2     | 34:BA:92:G:C8      | 2.89                     | 0.59              |
| 34:BA:130:A:OP2   | 50:BU:63:ARG:NH2   | 2.35                     | 0.59              |
| 34:BA:761:G:H5'   | 50:BU:102:GLY:C    | 2.27                     | 0.59              |
| 34:BA:927:G:P     | 34:BA:1503:A:N6    | 2.74                     | 0.59              |
| 34:BA:1242:C:C5'  | 54:BY:10:ARG:HH12  | 2.02                     | 0.59              |
| 34:BA:1315:U:H1'  | 34:BA:1360:A:H2'   | 1.82                     | 0.59              |
| 34:BA:1358:U:C5'  | 47:BR:34:TYR:HA    | 2.32                     | 0.59              |
| 35:BF:28:PHE:N    | 35:BF:194:PRO:HG2  | 2.16                     | 0.59              |
| 35:BF:64:ARG:HG2  | 35:BF:66:GLY:H     | 1.65                     | 0.59              |
| 36:BG:55:VAL:HG22 | 36:BG:68:VAL:HG22  | 1.83                     | 0.59              |
| 37:BH:30:LYS:NZ   | 37:BH:35:ARG:HD2   | 2.17                     | 0.59              |
| 38:BI:34:VAL:CG2  | 38:BI:62:ALA:HB1   | 2.32                     | 0.59              |
| 38:BI:80:ILE:HD11 | 38:BI:91:LEU:HB3   | 1.83                     | 0.59              |
| 40:BK:5:ARG:HD2   | 40:BK:7:ALA:N      | 2.09                     | 0.59              |
| 41:BL:1:MET:HG2   | 41:BL:2:LEU:H      | 1.66                     | 0.59              |
| 41:BL:17:THR:HG21 | 41:BL:80:ILE:CG2   | 2.32                     | 0.59              |
| 42:BM:45:ALA:HB3  | 42:BM:74:ILE:HG22  | 1.84                     | 0.59              |
| 42:BM:87:GLN:O    | 42:BM:90:PRO:HD3   | 2.02                     | 0.59              |
| 45:BP:35:GLY:O    | 45:BP:82:VAL:CG1   | 2.50                     | 0.59              |
| 45:BP:43:VAL:HG12 | 45:BP:44:THR:O     | 2.01                     | 0.59              |
| 47:BR:54:PRO:O    | 47:BR:56:VAL:N     | 2.35                     | 0.59              |
| 48:BS:27:VAL:O    | 48:BS:28:GLN:C     | 2.45                     | 0.59              |
| 50:BU:38:ARG:HG3  | 50:BU:39:SER:N     | 2.16                     | 0.59              |
| 50:BU:61:GLU:HA   | 50:BU:71:PHE:CD2   | 2.37                     | 0.59              |
| 57:BZ:117:PHE:C   | 57:BZ:119:TYR:H    | 2.10                     | 0.59              |
| 57:BZ:229:GLY:C   | 57:BZ:230:LYS:HG3  | 2.27                     | 0.59              |
| 57:BZ:310:PHE:N   | 57:BZ:383:SER:OG   | 2.35                     | 0.59              |
| 57:BZ:310:PHE:C   | 57:BZ:384:ARG:H    | 2.09                     | 0.59              |
| 57:BZ:397:GLN:O   | 57:BZ:472:TYR:CD1  | 2.33                     | 0.59              |
| 57:BZ:401:GLU:HG2 | 57:BZ:468:THR:HG22 | 1.84                     | 0.59              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:BZ:500:ALA:HB2 | 57:BZ:539:THR:C   | 2.27                     | 0.59              |
| 1:AA:199:A:N1     | 1:AA:2433:A:H2'   | 2.17                     | 0.59              |
| 1:AA:223:A:N7     | 1:AA:408:G:H1'    | 2.17                     | 0.59              |
| 1:AA:383:U:C2     | 1:AA:385:C:N4     | 2.70                     | 0.59              |
| 1:AA:450:G:H8     | 1:AA:450:G:O5'    | 1.85                     | 0.59              |
| 1:AA:465:G:O2'    | 1:AA:466:A:H5'    | 2.02                     | 0.59              |
| 1:AA:501:A:C5     | 1:AA:502:A:N1     | 2.70                     | 0.59              |
| 1:AA:535:C:C4'    | 16:AR:53:ARG:HD2  | 2.27                     | 0.59              |
| 1:AA:573:G:O2'    | 1:AA:574:C:P      | 2.59                     | 0.59              |
| 1:AA:586:A:C6     | 1:AA:810:U:H5'    | 2.37                     | 0.59              |
| 1:AA:729:G:N7     | 1:AA:730:C:C6     | 2.70                     | 0.59              |
| 1:AA:783:A:O2'    | 1:AA:784:A:P      | 2.60                     | 0.59              |
| 1:AA:1064:C:C4    | 1:AA:1065:U:C4    | 2.90                     | 0.59              |
| 1:AA:1275:A:N6    | 1:AA:1295:C:O2'   | 2.35                     | 0.59              |
| 1:AA:1295:C:H2'   | 1:AA:1296:G:C8    | 2.37                     | 0.59              |
| 1:AA:1313:U:O4    | 19:AU:62:LYS:HB2  | 2.01                     | 0.59              |
| 1:AA:1445:C:H2'   | 1:AA:1446:C:C6    | 2.37                     | 0.59              |
| 1:AA:1485:G:N2    | 1:AA:1505:C:C2    | 2.71                     | 0.59              |
| 1:AA:1764:G:N2    | 1:AA:1989:G:H1'   | 2.17                     | 0.59              |
| 1:AA:1806:C:N3    | 1:AA:1807:G:C8    | 2.70                     | 0.59              |
| 1:AA:1827:C:OP1   | 1:AA:1971:A:O2'   | 2.20                     | 0.59              |
| 1:AA:2081:C:C2    | 1:AA:2082:A:C8    | 2.90                     | 0.59              |
| 1:AA:2436:G:C6    | 1:AA:2437:U:N3    | 2.70                     | 0.59              |
| 1:AA:2495:G:H5''  | 12:AN:82:ARG:HA   | 1.84                     | 0.59              |
| 1:AA:2629:A:H2    | 1:AA:2801:A:N3    | 2.00                     | 0.59              |
| 1:AA:2691:C:O2'   | 1:AA:2692:C:H5'   | 2.02                     | 0.59              |
| 3:AC:82:LYS:HB3   | 3:AC:149:ILE:HG21 | 1.83                     | 0.59              |
| 3:AC:161:ILE:CG2  | 3:AC:188:ASN:ND2  | 2.64                     | 0.59              |
| 3:AC:180:PHE:CE2  | 3:AC:184:LYS:CB   | 2.35                     | 0.59              |
| 4:AD:34:VAL:O     | 4:AD:36:PRO:HD2   | 2.03                     | 0.59              |
| 4:AD:96:HIS:CD2   | 4:AD:102:LYS:HE2  | 2.36                     | 0.59              |
| 5:AE:91:VAL:HG21  | 5:AE:93:VAL:CG1   | 2.24                     | 0.59              |
| 5:AE:91:VAL:CG2   | 5:AE:180:ASN:HD21 | 2.15                     | 0.59              |
| 5:AE:111:ARG:HD3  | 5:AE:160:TYR:O    | 2.01                     | 0.59              |
| 6:AF:119:ARG:NH2  | 6:AF:120:GLU:OE1  | 2.34                     | 0.59              |
| 6:AF:146:ALA:HB3  | 6:AF:148:LEU:HD23 | 1.83                     | 0.59              |
| 8:AH:45:VAL:HG13  | 8:AH:50:VAL:CG2   | 2.32                     | 0.59              |
| 8:AH:171:LEU:HA   | 8:AH:172:LYS:NZ   | 2.17                     | 0.59              |
| 9:AK:74:ARG:CD    | 9:AK:82:LEU:HD13  | 2.31                     | 0.59              |
| 10:AL:9:GLU:HB2   | 10:AL:81:ASP:O    | 2.03                     | 0.59              |
| 10:AL:59:LYS:N    | 10:AL:59:LYS:CE   | 2.65                     | 0.59              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 10:AL:99:PHE:CD2  | 10:AL:100:GLY:N    | 2.70                     | 0.59              |
| 12:AN:16:ARG:CG   | 12:AN:72:LYS:HB3   | 2.32                     | 0.59              |
| 12:AN:37:LEU:C    | 12:AN:39:PRO:HD3   | 2.27                     | 0.59              |
| 12:AN:45:GLN:O    | 12:AN:47:ILE:N     | 2.35                     | 0.59              |
| 13:AO:53:HIS:O    | 13:AO:56:LYS:HE2   | 2.02                     | 0.59              |
| 13:AO:94:TYR:O    | 13:AO:117:VAL:HG12 | 2.02                     | 0.59              |
| 14:AP:17:ARG:O    | 14:AP:20:ARG:CG    | 2.49                     | 0.59              |
| 14:AP:76:LYS:O    | 14:AP:80:LEU:CB    | 2.48                     | 0.59              |
| 16:AR:53:ARG:O    | 16:AR:56:ASP:HB2   | 2.01                     | 0.59              |
| 16:AR:91:ASP:CG   | 17:AS:10:LYS:HD3   | 2.27                     | 0.59              |
| 18:AT:33:ARG:NH2  | 18:AT:37:ARG:HB3   | 2.17                     | 0.59              |
| 21:AW:41:LEU:O    | 21:AW:44:PHE:N     | 2.36                     | 0.59              |
| 21:AW:82:ARG:HG3  | 21:AW:83:PRO:N     | 2.17                     | 0.59              |
| 21:AW:96:VAL:CG1  | 21:AW:128:VAL:HG22 | 2.32                     | 0.59              |
| 23:AY:27:LEU:HG   | 23:AY:30:LEU:HD11  | 1.84                     | 0.59              |
| 28:Ad:5:TRP:HZ3   | 28:Ad:12:ARG:HH11  | 1.50                     | 0.59              |
| 28:Ad:34:ARG:HH22 | 28:Ad:42:LEU:HG    | 1.68                     | 0.59              |
| 34:BA:12:U:C2     | 34:BA:13:U:O4      | 2.55                     | 0.59              |
| 34:BA:20:U:C4     | 34:BA:21:G:C6      | 2.90                     | 0.59              |
| 34:BA:65:U:H4'    | 34:BA:66:G:O5'     | 2.01                     | 0.59              |
| 34:BA:121:C:H5'   | 34:BA:122:G:OP1    | 2.02                     | 0.59              |
| 34:BA:285:G:O2'   | 34:BA:286:G:H5'    | 2.02                     | 0.59              |
| 34:BA:306:G:O5'   | 34:BA:306:G:H8     | 1.84                     | 0.59              |
| 34:BA:801:U:H2'   | 34:BA:801:U:O2     | 2.00                     | 0.59              |
| 34:BA:859:A:N6    | 34:BA:860:A:C2     | 2.70                     | 0.59              |
| 34:BA:923:A:O4'   | 34:BA:1398:A:C2    | 2.54                     | 0.59              |
| 34:BA:979:C:P     | 34:BA:981:U:O4     | 2.60                     | 0.59              |
| 34:BA:985:C:O2    | 52:BW:55:LYS:HG3   | 2.02                     | 0.59              |
| 34:BA:1041:A:C6   | 34:BA:1042:G:N7    | 2.70                     | 0.59              |
| 34:BA:1054:C:H2'  | 34:BA:1055:A:C5'   | 2.30                     | 0.59              |
| 34:BA:1054:C:H3'  | 34:BA:1054:C:C6    | 2.36                     | 0.59              |
| 34:BA:1151:A:N7   | 34:BA:1152:A:C8    | 2.66                     | 0.59              |
| 34:BA:1395:C:H2'  | 34:BA:1396:A:H8    | 1.66                     | 0.59              |
| 35:BF:72:GLY:O    | 35:BF:74:LYS:N     | 2.36                     | 0.59              |
| 35:BF:97:TRP:CH2  | 35:BF:176:GLU:CG   | 2.83                     | 0.59              |
| 35:BF:131:PRO:O   | 35:BF:134:GLU:N    | 2.35                     | 0.59              |
| 35:BF:152:PHE:CD1 | 35:BF:152:PHE:C    | 2.80                     | 0.59              |
| 35:BF:156:LYS:O   | 35:BF:156:LYS:HG2  | 2.02                     | 0.59              |
| 35:BF:163:PHE:CZ  | 35:BF:186:ALA:HA   | 2.36                     | 0.59              |
| 35:BF:175:ARG:HD2 | 35:BF:179:LYS:NZ   | 2.16                     | 0.59              |
| 36:BG:47:LEU:HD12 | 36:BG:49:SER:HB3   | 1.82                     | 0.59              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 37:BH:52:SER:O     | 37:BH:53:ASP:C     | 2.45                     | 0.59              |
| 37:BH:166:LYS:CE   | 37:BH:178:VAL:HG12 | 2.31                     | 0.59              |
| 38:BI:41:VAL:HG21  | 38:BI:113:ALA:HB2  | 1.83                     | 0.59              |
| 38:BI:140:ARG:HB3  | 38:BI:140:ARG:HH11 | 1.67                     | 0.59              |
| 39:BJ:77:ARG:O     | 39:BJ:81:ILE:HG13  | 2.02                     | 0.59              |
| 42:BM:43:ALA:O     | 42:BM:45:ALA:N     | 2.35                     | 0.59              |
| 44:BO:92:GLU:HA    | 44:BO:92:GLU:OE1   | 2.01                     | 0.59              |
| 44:BO:111:ASP:O    | 44:BO:112:THR:C    | 2.43                     | 0.59              |
| 45:BP:110:VAL:O    | 45:BP:113:ARG:HB2  | 2.02                     | 0.59              |
| 46:BQ:15:VAL:C     | 46:BQ:34:LEU:HG    | 2.25                     | 0.59              |
| 47:BR:39:LEU:HD12  | 47:BR:44:LEU:HD12  | 1.84                     | 0.59              |
| 51:BV:22:VAL:HG23  | 51:BV:56:THR:HA    | 1.84                     | 0.59              |
| 51:BV:47:THR:N     | 51:BV:49:LYS:HZ3   | 1.99                     | 0.59              |
| 52:BW:11:VAL:HB    | 52:BW:16:LEU:CA    | 2.32                     | 0.59              |
| 52:BW:36:ARG:HB2   | 52:BW:71:LEU:HB3   | 1.85                     | 0.59              |
| 52:BW:40:ILE:CD1   | 52:BW:71:LEU:HD23  | 2.32                     | 0.59              |
| 53:BX:76:ALA:O     | 53:BX:79:ARG:HG2   | 2.02                     | 0.59              |
| 54:BY:13:ILE:CG2   | 54:BY:14:TRP:N     | 2.65                     | 0.59              |
| 56:BE:12:U:H6      | 56:BE:12:U:O5'     | 1.84                     | 0.59              |
| 57:BZ:67:ASP:N     | 57:BZ:67:ASP:OD1   | 2.35                     | 0.59              |
| 57:BZ:151:LEU:O    | 57:BZ:152:ASP:HB2  | 2.01                     | 0.59              |
| 57:BZ:215:ASN:C    | 57:BZ:217:TYR:H    | 2.09                     | 0.59              |
| 57:BZ:258:LEU:HD22 | 57:BZ:260:LEU:CD1  | 2.29                     | 0.59              |
| 57:BZ:267:LEU:CD2  | 57:BZ:268:ALA:H    | 2.15                     | 0.59              |
| 57:BZ:408:GLU:CG   | 57:BZ:436:ARG:HH12 | 1.98                     | 0.59              |
| 1:AA:60:G:O2'      | 1:AA:61:G:OP1      | 2.19                     | 0.59              |
| 1:AA:75:G:C4'      | 23:AY:50:ARG:HH11  | 2.14                     | 0.59              |
| 1:AA:407:G:H2'     | 1:AA:408:G:N7      | 2.17                     | 0.59              |
| 1:AA:610:C:H2'     | 1:AA:611:C:C6      | 2.38                     | 0.59              |
| 1:AA:649:G:H5''    | 1:AA:650:C:OP2     | 2.02                     | 0.59              |
| 1:AA:689:A:H2'     | 1:AA:690:G:O4'     | 2.02                     | 0.59              |
| 1:AA:816:C:O2'     | 1:AA:817:C:H5'     | 2.02                     | 0.59              |
| 1:AA:923:C:H5'     | 22:AX:26:TYR:CD1   | 2.38                     | 0.59              |
| 1:AA:976:C:H4'     | 1:AA:1156:A:N7     | 2.17                     | 0.59              |
| 1:AA:1107:G:H8     | 1:AA:1107:G:O5'    | 1.84                     | 0.59              |
| 1:AA:1174:A:N6     | 1:AA:1177:A:N1     | 2.49                     | 0.59              |
| 1:AA:1240:U:O2     | 1:AA:1240:U:H2'    | 2.02                     | 0.59              |
| 1:AA:1264:G:C6     | 1:AA:1265:A:C5     | 2.90                     | 0.59              |
| 1:AA:1366:A:C8     | 1:AA:1366:A:OP2    | 2.56                     | 0.59              |
| 1:AA:1410:G:H2'    | 1:AA:1411:C:O4'    | 2.02                     | 0.59              |
| 1:AA:1443:G:C2     | 1:AA:1444:G:C1'    | 2.85                     | 0.59              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1604:C:O2    | 1:AA:1605:C:C5    | 2.55                     | 0.59              |
| 1:AA:1638:C:H5''  | 1:AA:2710:C:C1'   | 2.30                     | 0.59              |
| 1:AA:1688:U:O2'   | 1:AA:1689:A:OP2   | 2.20                     | 0.59              |
| 1:AA:1771:C:C2    | 1:AA:1772:G:C8    | 2.90                     | 0.59              |
| 1:AA:2284:C:P     | 27:Ac:9:LEU:HG    | 2.42                     | 0.59              |
| 1:AA:2417:C:C2    | 1:AA:2418:A:C8    | 2.90                     | 0.59              |
| 1:AA:2532:G:H4'   | 1:AA:2657:A:C6    | 2.34                     | 0.59              |
| 1:AA:2674:G:C4'   | 10:AL:26:LYS:HZ3  | 2.08                     | 0.59              |
| 2:AB:99:A:C4      | 2:AB:100:G:C8     | 2.91                     | 0.59              |
| 3:AC:6:ARG:C      | 3:AC:8:ARG:N      | 2.57                     | 0.59              |
| 3:AC:30:LYS:HD2   | 3:AC:182:PRO:HB3  | 1.83                     | 0.59              |
| 3:AC:97:GLU:OE2   | 3:AC:119:VAL:HG12 | 2.02                     | 0.59              |
| 3:AC:163:PHE:HD2  | 3:AC:163:PHE:N    | 2.00                     | 0.59              |
| 3:AC:177:LYS:HB2  | 3:AC:180:PHE:CB   | 2.31                     | 0.59              |
| 4:AD:133:LEU:HD12 | 4:AD:187:GLY:HA2  | 1.83                     | 0.59              |
| 4:AD:186:HIS:O    | 4:AD:189:CYS:SG   | 2.59                     | 0.59              |
| 4:AD:201:HIS:HD2  | 4:AD:202:LYS:CE   | 2.15                     | 0.59              |
| 4:AD:228:PRO:HD3  | 4:AD:235:GLY:HA3  | 1.83                     | 0.59              |
| 4:AD:258:LYS:HG2  | 4:AD:259:THR:N    | 2.17                     | 0.59              |
| 5:AE:100:GLU:H    | 5:AE:172:VAL:HG22 | 1.65                     | 0.59              |
| 5:AE:133:LYS:CE   | 5:AE:137:HIS:HB3  | 2.32                     | 0.59              |
| 6:AF:69:HIS:ND1   | 6:AF:69:HIS:C     | 2.59                     | 0.59              |
| 7:AG:33:ARG:NH2   | 7:AG:34:LEU:N     | 2.50                     | 0.59              |
| 7:AG:40:ASN:HD22  | 7:AG:41:GLN:N     | 2.00                     | 0.59              |
| 7:AG:80:PHE:HD1   | 7:AG:81:LYS:H     | 1.44                     | 0.59              |
| 7:AG:116:ASP:CB   | 7:AG:118:ARG:HH21 | 2.12                     | 0.59              |
| 7:AG:130:ASN:HA   | 7:AG:161:THR:OG1  | 2.02                     | 0.59              |
| 9:AK:56:ASN:O     | 9:AK:57:ALA:C     | 2.46                     | 0.59              |
| 10:AL:109:LYS:O   | 10:AL:111:PHE:N   | 2.35                     | 0.59              |
| 11:AM:16:ARG:HD3  | 11:AM:19:VAL:H    | 1.66                     | 0.59              |
| 15:AQ:26:ASP:HA   | 15:AQ:100:TYR:HH  | 1.66                     | 0.59              |
| 15:AQ:37:GLY:HA3  | 15:AQ:43:GLN:HA   | 1.85                     | 0.59              |
| 15:AQ:112:ARG:NH2 | 34:BA:1464:G:O5'  | 2.35                     | 0.59              |
| 18:AT:5:ALA:HB2   | 18:AT:54:ALA:CB   | 2.22                     | 0.59              |
| 18:AT:29:LEU:O    | 18:AT:33:ARG:CB   | 2.44                     | 0.59              |
| 20:AV:2:ARG:HD2   | 20:AV:3:VAL:HG23  | 1.84                     | 0.59              |
| 21:AW:151:HIS:CG  | 21:AW:168:GLU:HG2 | 2.37                     | 0.59              |
| 22:AX:12:ASN:CA   | 22:AX:14:ARG:CZ   | 2.68                     | 0.59              |
| 23:AY:1:MET:HE3   | 23:AY:4:GLN:OE1   | 2.02                     | 0.59              |
| 24:AZ:45:GLY:C    | 24:AZ:48:GLU:HG2  | 2.26                     | 0.59              |
| 25:Aa:18:CYS:SG   | 25:Aa:33:VAL:HG21 | 2.42                     | 0.59              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 27:Ac:17:LYS:NZ    | 27:Ac:50:ARG:CB    | 2.64                     | 0.59              |
| 27:Ac:19:ARG:CB    | 27:Ac:43:CYS:SG    | 2.90                     | 0.59              |
| 34:BA:302:G:O2'    | 34:BA:556:C:H5''   | 2.01                     | 0.59              |
| 34:BA:305:G:O2'    | 34:BA:306:G:P      | 2.60                     | 0.59              |
| 34:BA:394:G:H2'    | 34:BA:395:C:C6     | 2.36                     | 0.59              |
| 34:BA:571:U:C3'    | 34:BA:572:A:C5'    | 2.72                     | 0.59              |
| 34:BA:866:C:H3'    | 34:BA:867:G:C8     | 2.37                     | 0.59              |
| 34:BA:1097:C:H2'   | 34:BA:1098:C:C6    | 2.37                     | 0.59              |
| 34:BA:1105:A:C2    | 34:BA:1106:G:N7    | 2.70                     | 0.59              |
| 34:BA:1112:C:C1'   | 36:BG:179:ARG:CZ   | 2.79                     | 0.59              |
| 34:BA:1117:G:O6    | 34:BA:1184:G:O6    | 2.19                     | 0.59              |
| 34:BA:1129:C:C1'   | 34:BA:1130:A:N7    | 2.65                     | 0.59              |
| 34:BA:1161:C:H2'   | 34:BA:1162:C:C6    | 2.37                     | 0.59              |
| 34:BA:1187:G:H2'   | 34:BA:1188:A:H8    | 1.65                     | 0.59              |
| 34:BA:1232:U:OP1   | 42:BM:125:TYR:O    | 2.19                     | 0.59              |
| 34:BA:1451:A:H5''  | 34:BA:1452:C:H5    | 1.67                     | 0.59              |
| 34:BA:1499:A:N7    | 34:BA:1500:A:C5    | 2.70                     | 0.59              |
| 37:BH:20:TYR:CB    | 37:BH:26:CYS:O     | 2.49                     | 0.59              |
| 37:BH:63:LYS:HD2   | 37:BH:63:LYS:H     | 1.67                     | 0.59              |
| 37:BH:102:ASP:HB2  | 37:BH:136:PRO:O    | 2.01                     | 0.59              |
| 37:BH:151:LYS:CD   | 37:BH:151:LYS:H    | 2.14                     | 0.59              |
| 37:BH:177:ASP:HB3  | 37:BH:182:LYS:O    | 2.02                     | 0.59              |
| 39:BJ:3:ARG:HG3    | 39:BJ:65:VAL:C     | 2.28                     | 0.59              |
| 44:BO:84:VAL:HB    | 51:BV:88:LYS:HZ3   | 1.66                     | 0.59              |
| 44:BO:87:THR:HG22  | 44:BO:91:ARG:NH2   | 2.16                     | 0.59              |
| 44:BO:92:GLU:C     | 44:BO:94:ALA:N     | 2.57                     | 0.59              |
| 47:BR:29:ARG:HH11  | 47:BR:29:ARG:CB    | 2.06                     | 0.59              |
| 47:BR:34:TYR:OH    | 47:BR:41:ARG:HA    | 2.02                     | 0.59              |
| 47:BR:42:ILE:C     | 47:BR:44:LEU:N     | 2.56                     | 0.59              |
| 48:BS:71:GLN:HG3   | 48:BS:75:PRO:CB    | 2.20                     | 0.59              |
| 49:BT:28:ARG:NH1   | 49:BT:29:ASP:OD2   | 2.35                     | 0.59              |
| 50:BU:25:ARG:HG2   | 50:BU:26:GLN:N     | 2.15                     | 0.59              |
| 50:BU:59:ILE:CD1   | 50:BU:60:ILE:N     | 2.65                     | 0.59              |
| 53:BX:55:ILE:C     | 53:BX:57:ARG:N     | 2.60                     | 0.59              |
| 56:BE:21:A:C4      | 56:BE:46:G:N1      | 2.71                     | 0.59              |
| 57:BZ:380:LEU:HD11 | 57:BZ:580:VAL:HG21 | 1.81                     | 0.59              |
| 57:BZ:502:PHE:CD2  | 57:BZ:555:VAL:HG11 | 2.37                     | 0.59              |
| 1:AA:85:G:H1'      | 1:AA:103:A:C2      | 2.37                     | 0.59              |
| 1:AA:187:G:OP1     | 25:Aa:13:ARG:NH2   | 2.35                     | 0.59              |
| 1:AA:198:C:O2'     | 1:AA:199:A:C8      | 2.44                     | 0.59              |
| 1:AA:294:A:C2      | 1:AA:346:A:C2      | 2.91                     | 0.59              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:408:G:O2'   | 1:AA:409:C:H5'    | 2.02                     | 0.59              |
| 1:AA:612:G:C4'   | 1:AA:616:A:N6     | 2.53                     | 0.59              |
| 1:AA:613:U:C5'   | 1:AA:614:U:C5     | 2.84                     | 0.59              |
| 1:AA:637:A:N3    | 1:AA:651:G:H4'    | 2.17                     | 0.59              |
| 1:AA:669:G:H5''  | 1:AA:670:A:OP2    | 2.01                     | 0.59              |
| 1:AA:686:G:C4'   | 1:AA:687:C:OP2    | 2.50                     | 0.59              |
| 1:AA:733:G:N7    | 1:AA:761:A:C6     | 2.70                     | 0.59              |
| 1:AA:880:G:H3'   | 1:AA:881:G:C4'    | 2.31                     | 0.59              |
| 1:AA:943:U:OP1   | 1:AA:943:U:C4'    | 2.51                     | 0.59              |
| 1:AA:1000:A:C2   | 1:AA:1155:A:C4    | 2.91                     | 0.59              |
| 1:AA:1105:U:C5   | 1:AA:1107:G:C6    | 2.79                     | 0.59              |
| 1:AA:1184:G:O2'  | 1:AA:1185:C:H5'   | 2.02                     | 0.59              |
| 1:AA:1205:U:O2'  | 1:AA:1206:G:O6    | 2.20                     | 0.59              |
| 1:AA:1272:A:HO2' | 1:AA:1273:U:P     | 2.25                     | 0.59              |
| 1:AA:1357:U:C4   | 1:AA:1358:G:C2    | 2.91                     | 0.59              |
| 1:AA:1363:C:O3'  | 1:AA:1809:A:C5    | 2.56                     | 0.59              |
| 1:AA:1363:C:H1'  | 1:AA:1810:A:H1'   | 1.83                     | 0.59              |
| 1:AA:1398:C:C2   | 1:AA:1399:C:C5    | 2.91                     | 0.59              |
| 1:AA:1422:G:N3   | 1:AA:1423:G:C8    | 2.70                     | 0.59              |
| 1:AA:1449:A:N1   | 1:AA:1449(A):G:C4 | 2.70                     | 0.59              |
| 1:AA:1471:A:C8   | 1:AA:1521:G:N2    | 2.70                     | 0.59              |
| 1:AA:1472:A:N7   | 1:AA:1474:C:C4    | 2.70                     | 0.59              |
| 1:AA:1525:G:O2'  | 1:AA:1526:G:H5'   | 2.02                     | 0.59              |
| 1:AA:1709:U:H2'  | 1:AA:1710:C:C6    | 2.37                     | 0.59              |
| 1:AA:1792:G:O2'  | 1:AA:1830:C:OP1   | 2.18                     | 0.59              |
| 1:AA:1819:A:OP1  | 4:AD:157:ARG:HA   | 2.01                     | 0.59              |
| 1:AA:2058:A:C2   | 1:AA:2059:A:N7    | 2.70                     | 0.59              |
| 1:AA:2075:U:N3   | 1:AA:2238:G:N1    | 2.47                     | 0.59              |
| 1:AA:2112:G:H5'' | 1:AA:2113:U:OP2   | 2.02                     | 0.59              |
| 1:AA:2144:U:OP2  | 1:AA:2144:U:C6    | 2.56                     | 0.59              |
| 1:AA:2227:A:C5'  | 4:AD:260:ARG:HD2  | 2.33                     | 0.59              |
| 1:AA:2228:G:C8   | 1:AA:2229:C:C5    | 2.90                     | 0.59              |
| 1:AA:2358:G:N3   | 1:AA:2358:G:H2'   | 2.16                     | 0.59              |
| 1:AA:2586:C:N4   | 1:AA:2587:A:N6    | 2.50                     | 0.59              |
| 1:AA:2587:A:HO2' | 1:AA:2588:G:H5'   | 1.67                     | 0.59              |
| 1:AA:2866:U:H5'' | 1:AA:2867:G:OP1   | 2.01                     | 0.59              |
| 1:AA:2879:C:H5'  | 1:AA:2880:C:OP1   | 2.02                     | 0.59              |
| 2:AB:116:G:N3    | 2:AB:117:G:H1'    | 2.17                     | 0.59              |
| 3:AC:8:ARG:HH11  | 3:AC:11:LEU:CD2   | 2.16                     | 0.59              |
| 3:AC:10:LEU:HD11 | 3:AC:32:LEU:CD2   | 2.33                     | 0.59              |
| 3:AC:43:VAL:CG1  | 3:AC:224:ILE:CG1  | 2.81                     | 0.59              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 3:AC:46:LYS:C     | 3:AC:210:ARG:HB2   | 2.28                     | 0.59              |
| 4:AD:152:GLY:O    | 4:AD:154:LYS:N     | 2.36                     | 0.59              |
| 4:AD:175:LEU:HD11 | 4:AD:177:LEU:HB3   | 1.83                     | 0.59              |
| 7:AG:6:ALA:CA     | 7:AG:9:ARG:NH2     | 2.63                     | 0.59              |
| 7:AG:97:ASP:O     | 7:AG:100:TRP:N     | 2.35                     | 0.59              |
| 7:AG:125:PHE:CZ   | 7:AG:130:ASN:HB2   | 2.37                     | 0.59              |
| 7:AG:135:LEU:CD1  | 7:AG:155:MET:HB2   | 2.32                     | 0.59              |
| 8:AH:23:ARG:CZ    | 8:AH:34:GLU:HB3    | 2.32                     | 0.59              |
| 8:AH:90:LYS:HE2   | 8:AH:159:GLU:CD    | 2.28                     | 0.59              |
| 8:AH:161:GLY:C    | 8:AH:163:TYR:CE1   | 2.81                     | 0.59              |
| 9:AK:34:LEU:HA    | 9:AK:49:GLY:C      | 2.28                     | 0.59              |
| 9:AK:36:GLY:O     | 9:AK:43:THR:N      | 2.36                     | 0.59              |
| 10:AL:21:CYS:HA   | 10:AL:40:VAL:O     | 2.02                     | 0.59              |
| 10:AL:122:LEU:C   | 15:AQ:74:ARG:HH22  | 2.10                     | 0.59              |
| 11:AM:65:ARG:HH11 | 11:AM:67:MET:H     | 1.49                     | 0.59              |
| 11:AM:81:GLN:HE22 | 11:AM:123:LEU:HD21 | 1.66                     | 0.59              |
| 11:AM:122:PRO:HD3 | 11:AM:137:LYS:CB   | 2.32                     | 0.59              |
| 11:AM:122:PRO:HB3 | 11:AM:138:LEU:N    | 2.16                     | 0.59              |
| 12:AN:64:ILE:HG23 | 12:AN:106:VAL:O    | 2.01                     | 0.59              |
| 12:AN:75:THR:CG2  | 12:AN:77:LYS:HD2   | 2.29                     | 0.59              |
| 12:AN:126:PRO:O   | 12:AN:127:ILE:HG23 | 2.01                     | 0.59              |
| 13:AO:87:TYR:HE2  | 13:AO:118:GLU:OE1  | 1.85                     | 0.59              |
| 17:AS:89:GLN:HG2  | 17:AS:91:TYR:CD1   | 2.37                     | 0.59              |
| 18:AT:14:PRO:N    | 18:AT:78:GLU:OE1   | 2.35                     | 0.59              |
| 18:AT:19:LEU:CB   | 26:Ab:25:LEU:HD13  | 2.14                     | 0.59              |
| 18:AT:31:GLU:N    | 18:AT:31:GLU:OE1   | 2.35                     | 0.59              |
| 19:AU:63:LYS:CE   | 19:AU:63:LYS:CA    | 2.81                     | 0.59              |
| 19:AU:91:ALA:O    | 19:AU:95:LEU:HG    | 2.02                     | 0.59              |
| 21:AW:91:LEU:HB2  | 21:AW:131:ARG:NH1  | 2.17                     | 0.59              |
| 22:AX:53:MET:SD   | 22:AX:59:LEU:HD23  | 2.42                     | 0.59              |
| 24:AZ:52:HIS:C    | 24:AZ:54:VAL:N     | 2.58                     | 0.59              |
| 26:Ab:4:HIS:CG    | 26:Ab:5:PRO:HD3    | 2.36                     | 0.59              |
| 28:Ad:14:LYS:O    | 28:Ad:15:THR:C     | 2.45                     | 0.59              |
| 29:Ae:5:LYS:HE2   | 29:Ae:7:HIS:HA     | 1.84                     | 0.59              |
| 34:BA:21:G:N2     | 34:BA:916:G:C5     | 2.71                     | 0.59              |
| 34:BA:251:G:H5'   | 34:BA:252:U:OP1    | 2.01                     | 0.59              |
| 34:BA:296:U:O2    | 34:BA:302:G:C2     | 2.55                     | 0.59              |
| 34:BA:414:A:C2'   | 34:BA:415:A:H8     | 2.13                     | 0.59              |
| 34:BA:427:U:OP1   | 37:BH:41:GLY:N     | 2.36                     | 0.59              |
| 34:BA:667:G:H2'   | 34:BA:668:G:C8     | 2.37                     | 0.59              |
| 34:BA:955:U:C2    | 34:BA:956:U:H5     | 2.20                     | 0.59              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1011:G:C2'   | 34:BA:1012:U:H5'   | 2.32                     | 0.59              |
| 34:BA:1125:U:H5'   | 43:BN:38:ILE:CG2   | 2.31                     | 0.59              |
| 34:BA:1178:G:N2    | 34:BA:1180:A:H5''  | 2.18                     | 0.59              |
| 34:BA:1258:G:H2'   | 34:BA:1259:C:C5    | 2.37                     | 0.59              |
| 34:BA:1330:U:H5''  | 46:BQ:70:LEU:CD2   | 2.25                     | 0.59              |
| 35:BF:20:GLU:HA    | 35:BF:21:ARG:NH2   | 2.08                     | 0.59              |
| 35:BF:107:THR:O    | 35:BF:108:ILE:C    | 2.43                     | 0.59              |
| 36:BG:124:ILE:HD11 | 36:BG:130:VAL:HG13 | 1.83                     | 0.59              |
| 36:BG:177:THR:O    | 36:BG:178:LEU:C    | 2.45                     | 0.59              |
| 37:BH:118:ARG:HG3  | 37:BH:136:PRO:HB2  | 1.84                     | 0.59              |
| 37:BH:128:VAL:HG12 | 37:BH:129:ASN:N    | 2.17                     | 0.59              |
| 37:BH:133:VAL:CG1  | 37:BH:138:TYR:HD1  | 2.07                     | 0.59              |
| 37:BH:162:LEU:CD1  | 37:BH:181:MET:HG2  | 2.25                     | 0.59              |
| 37:BH:200:GLU:HG3  | 37:BH:201:GLN:H    | 1.67                     | 0.59              |
| 37:BH:206:PHE:HD2  | 37:BH:207:TYR:CD1  | 2.20                     | 0.59              |
| 38:BI:72:GLN:NE2   | 38:BI:144:THR:HA   | 2.17                     | 0.59              |
| 39:BJ:79:LEU:N     | 39:BJ:79:LEU:HD23  | 2.17                     | 0.59              |
| 40:BK:102:ARG:O    | 40:BK:103:TRP:C    | 2.45                     | 0.59              |
| 41:BL:54:ASP:C     | 41:BL:56:LYS:H     | 2.09                     | 0.59              |
| 44:BO:73:MET:SD    | 44:BO:103:LEU:HD22 | 2.43                     | 0.59              |
| 44:BO:111:ASP:OD2  | 44:BO:113:PRO:CD   | 2.46                     | 0.59              |
| 51:BV:62:GLU:O     | 51:BV:66:LEU:CG    | 2.42                     | 0.59              |
| 52:BW:19:VAL:HG22  | 52:BW:43:GLU:CD    | 2.28                     | 0.59              |
| 54:BY:14:TRP:CZ3   | 54:BY:15:ARG:NE    | 2.70                     | 0.59              |
| 56:BD:42:C:H3'     | 56:BD:43:C:H5''    | 1.84                     | 0.59              |
| 57:BZ:42:VAL:HG23  | 57:BZ:43:MET:H     | 1.67                     | 0.59              |
| 57:BZ:312:CYS:HB2  | 57:BZ:354:ASP:O    | 1.88                     | 0.59              |
| 57:BZ:395:ARG:CD   | 57:BZ:474:ASP:HB2  | 2.21                     | 0.59              |
| 57:BZ:398:GLU:OE2  | 57:BZ:444:PRO:HB3  | 2.00                     | 0.59              |
| 1:AA:5:A:C4        | 1:AA:2899:G:C2     | 2.91                     | 0.59              |
| 1:AA:66:C:H2'      | 1:AA:67:U:H5'      | 1.83                     | 0.59              |
| 1:AA:187:G:P       | 25:Aa:13:ARG:HH22  | 2.25                     | 0.59              |
| 1:AA:245:G:H1      | 1:AA:253:C:N4      | 2.00                     | 0.59              |
| 1:AA:281:G:H8      | 1:AA:427:U:O2      | 1.85                     | 0.59              |
| 1:AA:351:G:O2'     | 1:AA:352:G:N7      | 2.35                     | 0.59              |
| 1:AA:422:A:C2      | 1:AA:423:A:C4      | 2.91                     | 0.59              |
| 1:AA:513:A:C2      | 1:AA:514:A:C8      | 2.90                     | 0.59              |
| 1:AA:557:U:O3'     | 9:AK:112:LEU:CG    | 2.50                     | 0.59              |
| 1:AA:751:A:H5'     | 18:AT:90:ARG:CZ    | 2.31                     | 0.59              |
| 1:AA:806:C:O2'     | 1:AA:2445:G:O4'    | 2.21                     | 0.59              |
| 1:AA:859:G:H3'     | 1:AA:859:G:C8      | 2.37                     | 0.59              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:933:A:C2      | 1:AA:934:G:C8      | 2.90                     | 0.59              |
| 1:AA:980:A:C6      | 1:AA:1135:C:C4'    | 2.86                     | 0.59              |
| 1:AA:1199:U:O2     | 1:AA:1200:C:C6     | 2.55                     | 0.59              |
| 1:AA:1222:C:H2'    | 1:AA:1223:C:H5'    | 1.84                     | 0.59              |
| 1:AA:1267:U:O2'    | 1:AA:1268:A:OP1    | 2.19                     | 0.59              |
| 1:AA:1268:A:H2'    | 1:AA:1269:A:C8     | 2.38                     | 0.59              |
| 1:AA:1295:C:H2'    | 1:AA:1296:G:H8     | 1.67                     | 0.59              |
| 1:AA:1336:A:H2'    | 1:AA:1337:G:H8     | 1.66                     | 0.59              |
| 1:AA:1341:U:C2'    | 1:AA:1342:A:OP1    | 2.50                     | 0.59              |
| 1:AA:1364:G:O5'    | 1:AA:1809:A:C6     | 2.56                     | 0.59              |
| 1:AA:1906:G:C2     | 1:AA:1907:G:C8     | 2.91                     | 0.59              |
| 1:AA:2323:G:H2'    | 1:AA:2324:C:H6     | 1.68                     | 0.59              |
| 1:AA:2524:G:C6     | 1:AA:2525:G:C4     | 2.91                     | 0.59              |
| 1:AA:2859:G:H2'    | 1:AA:2860:A:H8     | 1.67                     | 0.59              |
| 1:AA:2865:U:O4     | 1:AA:2866:U:H5     | 1.85                     | 0.59              |
| 2:AB:75:G:H2'      | 21:AW:85:HIS:CE1   | 2.31                     | 0.59              |
| 2:AB:99:A:O2'      | 2:AB:100:G:H5'     | 2.03                     | 0.59              |
| 2:AB:105:G:O2'     | 2:AB:106:G:H5'     | 2.02                     | 0.59              |
| 4:AD:7:LYS:HE2     | 4:AD:25:THR:CG2    | 2.31                     | 0.59              |
| 4:AD:23:GLU:CD     | 4:AD:24:ILE:N      | 2.61                     | 0.59              |
| 4:AD:234:GLY:N     | 4:AD:241:PRO:CG    | 2.60                     | 0.59              |
| 6:AF:20:LEU:HD23   | 6:AF:20:LEU:N      | 2.11                     | 0.59              |
| 6:AF:106:ARG:HG3   | 6:AF:107:LYS:HG3   | 1.85                     | 0.59              |
| 7:AG:47:LYS:HB3    | 7:AG:72:ARG:O      | 2.02                     | 0.59              |
| 7:AG:166:ASP:O     | 7:AG:168:GLU:N     | 2.36                     | 0.59              |
| 8:AH:7:LEU:N       | 8:AH:8:PRO:CD      | 2.57                     | 0.59              |
| 9:AK:134:ARG:O     | 9:AK:137:LYS:HE3   | 2.03                     | 0.59              |
| 10:AL:8:LEU:HD21   | 10:AL:81:ASP:C     | 2.26                     | 0.59              |
| 10:AL:9:GLU:O      | 10:AL:82:ASN:HA    | 2.02                     | 0.59              |
| 10:AL:58:VAL:O     | 10:AL:59:LYS:HB3   | 2.01                     | 0.59              |
| 10:AL:106:LEU:HD21 | 15:AQ:38:ASN:HD21  | 1.68                     | 0.59              |
| 11:AM:112:LEU:C    | 11:AM:129:ALA:HB3  | 2.28                     | 0.59              |
| 11:AM:130:PHE:HD2  | 11:AM:130:PHE:N    | 2.00                     | 0.59              |
| 12:AN:80:GLU:N     | 12:AN:80:GLU:OE1   | 2.36                     | 0.59              |
| 13:AO:52:ILE:HD13  | 13:AO:56:LYS:HG2   | 1.84                     | 0.59              |
| 13:AO:97:VAL:HG13  | 13:AO:114:VAL:CG2  | 2.30                     | 0.59              |
| 14:AP:60:GLY:C     | 14:AP:62:LYS:N     | 2.59                     | 0.59              |
| 14:AP:105:ALA:O    | 14:AP:108:GLY:N    | 2.36                     | 0.59              |
| 15:AQ:95:ARG:HD2   | 15:AQ:96:ARG:CZ    | 2.33                     | 0.59              |
| 15:AQ:105:LEU:O    | 15:AQ:107:ASP:N    | 2.36                     | 0.59              |
| 15:AQ:109:GLU:CB   | 15:AQ:114:LEU:HD21 | 2.32                     | 0.59              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 16:AR:61:TRP:HZ3  | 16:AR:93:LYS:C    | 2.09                     | 0.59              |
| 16:AR:99:ALA:HA   | 16:AR:106:PHE:CD1 | 2.37                     | 0.59              |
| 18:AT:19:LEU:HB3  | 26:Ab:25:LEU:CD1  | 2.13                     | 0.59              |
| 19:AU:85:PRO:HB2  | 19:AU:87:GLN:HE21 | 1.68                     | 0.59              |
| 20:AV:12:THR:HG23 | 20:AV:73:ARG:CG   | 2.32                     | 0.59              |
| 21:AW:50:GLN:C    | 21:AW:52:SER:H    | 2.10                     | 0.59              |
| 24:AZ:4:LEU:CB    | 24:AZ:37:LEU:HD23 | 2.19                     | 0.59              |
| 25:Aa:53:GLU:CG   | 25:Aa:54:GLY:N    | 2.66                     | 0.59              |
| 28:Ad:43:THR:HG23 | 28:Ad:46:VAL:HB   | 1.85                     | 0.59              |
| 30:Af:10:ILE:HD12 | 30:Af:14:CYS:CB   | 2.33                     | 0.59              |
| 32:AJ:93:ARG:O    | 32:AJ:94:GLU:HG3  | 2.02                     | 0.59              |
| 34:BA:19:C:H1'    | 34:BA:864:A:N3    | 2.18                     | 0.59              |
| 34:BA:123:C:OP1   | 34:BA:311:C:O2'   | 2.20                     | 0.59              |
| 34:BA:167:G:H2'   | 34:BA:168:G:H8    | 1.67                     | 0.59              |
| 34:BA:191:G:O2'   | 53:BX:102:GLY:O   | 2.21                     | 0.59              |
| 34:BA:355:C:N3    | 34:BA:356:A:N7    | 2.50                     | 0.59              |
| 34:BA:362:G:H3'   | 45:BP:34:ARG:NH2  | 2.18                     | 0.59              |
| 34:BA:557:G:H2'   | 34:BA:558:G:C1'   | 2.33                     | 0.59              |
| 34:BA:866:C:C6    | 34:BA:867:G:C1'   | 2.86                     | 0.59              |
| 34:BA:892:A:O2'   | 34:BA:893:C:H5'   | 2.02                     | 0.59              |
| 34:BA:1066:C:C5   | 34:BA:1067:A:N7   | 2.70                     | 0.59              |
| 34:BA:1117:G:N2   | 34:BA:1184:G:C8   | 2.70                     | 0.59              |
| 34:BA:1177:G:OP2  | 42:BM:93:ARG:NH2  | 2.34                     | 0.59              |
| 34:BA:1507:A:C2'  | 34:BA:1508:G:H5'  | 2.32                     | 0.59              |
| 35:BF:17:PHE:C    | 35:BF:42:ILE:HG22 | 2.27                     | 0.59              |
| 35:BF:25:ASN:HD21 | 35:BF:27:LYS:HG3  | 1.68                     | 0.59              |
| 35:BF:189:ASP:OD2 | 35:BF:205:ASP:OD1 | 2.20                     | 0.59              |
| 36:BG:11:ARG:O    | 36:BG:14:ILE:HB   | 2.02                     | 0.59              |
| 36:BG:22:TRP:HB2  | 36:BG:59:ARG:HB3  | 1.83                     | 0.59              |
| 36:BG:110:ASN:CB  | 36:BG:144:SER:OG  | 2.50                     | 0.59              |
| 36:BG:122:GLU:O   | 36:BG:125:GLU:HB2 | 2.02                     | 0.59              |
| 38:BI:70:PRO:HG2  | 38:BI:143:ARG:HB3 | 1.84                     | 0.59              |
| 40:BK:47:CYS:HA   | 40:BK:50:ILE:HD12 | 1.84                     | 0.59              |
| 40:BK:89:MET:HE2  | 40:BK:156:TRP:CD1 | 2.37                     | 0.59              |
| 42:BM:69:GLY:C    | 42:BM:73:GLN:OE1  | 2.46                     | 0.59              |
| 44:BO:29:ILE:HA   | 44:BO:44:SER:OG   | 2.03                     | 0.59              |
| 45:BP:33:ARG:HG2  | 45:BP:60:LEU:HD23 | 1.83                     | 0.59              |
| 46:BQ:15:VAL:CG1  | 46:BQ:37:THR:HG21 | 2.23                     | 0.59              |
| 48:BS:52:SER:O    | 48:BS:53:HIS:C    | 2.46                     | 0.59              |
| 48:BS:71:GLN:HB2  | 48:BS:78:TYR:HE1  | 1.63                     | 0.59              |
| 49:BT:31:LYS:HG2  | 49:BT:32:TYR:H    | 1.68                     | 0.59              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 50:BU:31:LEU:C    | 50:BU:32:TYR:CD2  | 2.80                     | 0.59              |
| 52:BW:31:ILE:H    | 52:BW:49:ILE:HA   | 1.67                     | 0.59              |
| 53:BX:49:ALA:CB   | 53:BX:99:LEU:HG   | 2.32                     | 0.59              |
| 53:BX:63:ILE:HD13 | 53:BX:80:ARG:CB   | 2.29                     | 0.59              |
| 54:BY:4:GLY:C     | 54:BY:6:ARG:N     | 2.57                     | 0.59              |
| 57:BZ:64:ILE:N    | 57:BZ:65:LYS:HA   | 2.16                     | 0.59              |
| 57:BZ:87:ARG:NH2  | 57:BZ:87:ARG:HB3  | 2.18                     | 0.59              |
| 57:BZ:87:ARG:NH2  | 57:BZ:210:SER:CB  | 2.65                     | 0.59              |
| 57:BZ:170:GLY:CA  | 57:BZ:179:MET:HG3 | 2.31                     | 0.59              |
| 57:BZ:200:ASP:CG  | 57:BZ:228:ARG:CD  | 2.59                     | 0.59              |
| 57:BZ:221:ILE:HA  | 57:BZ:274:VAL:CG1 | 2.32                     | 0.59              |
| 57:BZ:342:ASN:OD1 | 57:BZ:345:LEU:HB2 | 2.01                     | 0.59              |
| 1:AA:386:G:H4'    | 1:AA:387:U:C6     | 2.38                     | 0.59              |
| 1:AA:444:C:O3'    | 16:AR:2:PRO:HG2   | 2.02                     | 0.59              |
| 1:AA:475:U:N3     | 1:AA:479:A:N6     | 2.50                     | 0.59              |
| 1:AA:602:G:O5'    | 1:AA:602:G:C8     | 2.54                     | 0.59              |
| 1:AA:714:U:OP2    | 1:AA:714:U:C6     | 2.56                     | 0.59              |
| 1:AA:748:G:O6     | 18:AT:90:ARG:NH1  | 2.36                     | 0.59              |
| 1:AA:822:U:OP2    | 1:AA:945:A:H5'    | 2.01                     | 0.59              |
| 1:AA:831:G:N1     | 1:AA:832:G:C4     | 2.70                     | 0.59              |
| 1:AA:873:G:C2     | 1:AA:874:G:H1'    | 2.37                     | 0.59              |
| 1:AA:997:G:N3     | 1:AA:998:C:C5     | 2.71                     | 0.59              |
| 1:AA:1060:U:OP1   | 32:AJ:52:ILE:CD1  | 2.50                     | 0.59              |
| 1:AA:1067:A:C5'   | 32:AJ:21:PRO:CG   | 2.53                     | 0.59              |
| 1:AA:1077:A:N7    | 1:AA:1088:A:O2'   | 2.36                     | 0.59              |
| 1:AA:1138:G:N2    | 1:AA:1139:G:N3    | 2.49                     | 0.59              |
| 1:AA:1155:A:O2'   | 1:AA:1156:A:H5''  | 2.03                     | 0.59              |
| 1:AA:1257:C:O2'   | 6:AF:84:VAL:CG2   | 2.46                     | 0.59              |
| 1:AA:1264:G:O6    | 1:AA:1265:A:C5    | 2.56                     | 0.59              |
| 1:AA:1457:A:O2'   | 1:AA:1458:C:H5'   | 2.03                     | 0.59              |
| 1:AA:1625:C:O2    | 1:AA:1626:G:O2'   | 2.15                     | 0.59              |
| 1:AA:1669:A:H5''  | 1:AA:2550:G:P     | 2.42                     | 0.59              |
| 1:AA:1841:U:C2    | 1:AA:1842:G:N7    | 2.71                     | 0.59              |
| 1:AA:2018:G:O6    | 1:AA:2035:G:O6    | 2.21                     | 0.59              |
| 1:AA:2020:A:H4'   | 1:AA:2020:A:OP1   | 2.01                     | 0.59              |
| 1:AA:2286:A:N6    | 27:Ac:29:ASN:C    | 2.59                     | 0.59              |
| 1:AA:2346:A:N3    | 1:AA:2383:G:C5    | 2.71                     | 0.59              |
| 1:AA:2387:U:O2    | 22:AX:41:ARG:NH2  | 2.35                     | 0.59              |
| 1:AA:2396:G:O2'   | 1:AA:2397:G:H5'   | 2.02                     | 0.59              |
| 1:AA:2403:C:O2'   | 1:AA:2404:C:H5'   | 2.02                     | 0.59              |
| 1:AA:2424:C:H2'   | 1:AA:2424:C:O2    | 2.01                     | 0.59              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2466:C:O2'   | 12:AN:123:HIS:NE2  | 2.35                     | 0.59              |
| 1:AA:2469:A:H4'   | 12:AN:56:ARG:HD3   | 1.83                     | 0.59              |
| 1:AA:2541:A:H2    | 1:AA:2765:A:N6     | 2.00                     | 0.59              |
| 1:AA:2567:G:C5    | 1:AA:2568:C:N4     | 2.71                     | 0.59              |
| 1:AA:2818:G:H4'   | 1:AA:2837:G:H4'    | 1.85                     | 0.59              |
| 2:AB:33:G:H2'     | 2:AB:34:U:C5       | 2.38                     | 0.59              |
| 2:AB:73:A:O2'     | 2:AB:74:U:O5'      | 2.21                     | 0.59              |
| 3:AC:22:ILE:CD1   | 3:AC:190:ARG:NH2   | 2.60                     | 0.59              |
| 3:AC:39:GLU:O     | 3:AC:178:ALA:HB2   | 2.02                     | 0.59              |
| 3:AC:89:ALA:CA    | 3:AC:154:ARG:HG3   | 2.32                     | 0.59              |
| 3:AC:210:ARG:HB3  | 3:AC:210:ARG:CZ    | 2.33                     | 0.59              |
| 4:AD:23:GLU:OE2   | 4:AD:24:ILE:O      | 2.20                     | 0.59              |
| 4:AD:183:ARG:HA   | 4:AD:268:ARG:HA    | 1.83                     | 0.59              |
| 4:AD:226:MET:HA   | 4:AD:226:MET:HE2   | 1.84                     | 0.59              |
| 6:AF:122:LYS:CE   | 6:AF:192:LEU:HB3   | 2.33                     | 0.59              |
| 6:AF:183:VAL:C    | 6:AF:186:ILE:HB    | 2.27                     | 0.59              |
| 6:AF:199:TRP:C    | 6:AF:203:GLN:OE1   | 2.46                     | 0.59              |
| 7:AG:36:LYS:HZ3   | 7:AG:38:VAL:H      | 1.50                     | 0.59              |
| 7:AG:49:ASP:O     | 7:AG:53:LEU:HD13   | 2.03                     | 0.59              |
| 7:AG:135:LEU:O    | 7:AG:155:MET:O     | 2.21                     | 0.59              |
| 8:AH:107:VAL:HG13 | 8:AH:152:ARG:HD2   | 1.83                     | 0.59              |
| 9:AK:4:TYR:OH     | 16:AR:101:ARG:NH1  | 2.36                     | 0.59              |
| 9:AK:24:GLY:O     | 9:AK:27:ALA:HB3    | 2.02                     | 0.59              |
| 9:AK:67:LEU:HA    | 9:AK:70:LYS:HZ1    | 1.66                     | 0.59              |
| 10:AL:18:LYS:CB   | 10:AL:45:GLU:HG3   | 2.24                     | 0.59              |
| 11:AM:8:PRO:O     | 11:AM:9:ASN:C      | 2.44                     | 0.59              |
| 11:AM:76:LYS:HE3  | 11:AM:99:LEU:HD11  | 1.85                     | 0.59              |
| 11:AM:113:LYS:HZ3 | 11:AM:115:LEU:HD12 | 1.67                     | 0.59              |
| 13:AO:61:HIS:C    | 13:AO:64:ARG:HH11  | 2.10                     | 0.59              |
| 17:AS:11:GLN:CD   | 17:AS:22:VAL:HB    | 2.27                     | 0.59              |
| 18:AT:28:SER:HA   | 18:AT:70:TYR:CA    | 2.27                     | 0.59              |
| 19:AU:50:LYS:HG3  | 19:AU:84:ALA:CB    | 2.33                     | 0.59              |
| 20:AV:84:ARG:HG2  | 20:AV:86:ARG:N     | 2.17                     | 0.59              |
| 21:AW:76:LEU:HA   | 21:AW:83:PRO:HA    | 1.85                     | 0.59              |
| 21:AW:96:VAL:CA   | 21:AW:128:VAL:HG13 | 2.30                     | 0.59              |
| 24:AZ:6:VAL:HG12  | 24:AZ:55:ARG:C     | 2.27                     | 0.59              |
| 29:Ae:15:LYS:O    | 29:Ae:22:VAL:CA    | 2.50                     | 0.59              |
| 32:AJ:78:ILE:CG2  | 32:AJ:127:ILE:CG1  | 2.79                     | 0.59              |
| 34:BA:190:G:O2'   | 34:BA:191(A):G:P   | 2.60                     | 0.59              |
| 34:BA:267:C:OP2   | 50:BU:67:LYS:NZ    | 2.34                     | 0.59              |
| 34:BA:300:A:H2'   | 34:BA:301:G:C5'    | 2.33                     | 0.59              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:357:G:OP1   | 34:BA:367:U:H3'    | 2.01                     | 0.59              |
| 34:BA:357:G:P     | 34:BA:367:U:H2'    | 2.42                     | 0.59              |
| 34:BA:522:C:H1'   | 34:BA:536:C:H5''   | 1.85                     | 0.59              |
| 34:BA:753:A:H5'   | 34:BA:754:C:C5     | 2.37                     | 0.59              |
| 34:BA:875:C:O2'   | 34:BA:876:G:O5'    | 2.18                     | 0.59              |
| 34:BA:1010:G:C2   | 34:BA:1020:U:H1'   | 2.37                     | 0.59              |
| 34:BA:1065:U:OP2  | 34:BA:1190:G:N2    | 2.35                     | 0.59              |
| 34:BA:1109:C:OP1  | 36:BG:176:HIS:CD2  | 2.55                     | 0.59              |
| 34:BA:1143:G:N2   | 34:BA:1144:G:C4    | 2.71                     | 0.59              |
| 34:BA:1202:G:H1'  | 47:BR:29:ARG:CD    | 2.31                     | 0.59              |
| 34:BA:1285:A:C4'  | 34:BA:1286:A:N7    | 2.65                     | 0.59              |
| 34:BA:1376:U:OP1  | 40:BK:98:SER:HB3   | 2.03                     | 0.59              |
| 35:BF:10:LEU:O    | 35:BF:11:LEU:O     | 2.21                     | 0.59              |
| 35:BF:31:TYR:HE2  | 35:BF:200:ILE:CG2  | 2.15                     | 0.59              |
| 35:BF:46:LYS:HA   | 35:BF:49:GLU:OE1   | 2.03                     | 0.59              |
| 35:BF:91:PRO:HG3  | 35:BF:155:LEU:H    | 1.66                     | 0.59              |
| 35:BF:189:ASP:O   | 35:BF:191:ASP:N    | 2.36                     | 0.59              |
| 35:BF:208:ILE:HA  | 35:BF:211:ILE:HD12 | 1.83                     | 0.59              |
| 40:BK:72:ARG:HG2  | 40:BK:142:GLU:OE1  | 2.02                     | 0.59              |
| 40:BK:122:HIS:HA  | 40:BK:125:MET:SD   | 2.43                     | 0.59              |
| 41:BL:6:ILE:CD1   | 41:BL:7:ALA:N      | 2.66                     | 0.59              |
| 41:BL:9:MET:O     | 41:BL:13:ILE:CG1   | 2.50                     | 0.59              |
| 41:BL:70:GLN:CB   | 41:BL:73:ASP:O     | 2.50                     | 0.59              |
| 42:BM:26:VAL:HA   | 42:BM:61:ALA:O     | 2.01                     | 0.59              |
| 43:BN:60:ARG:HH11 | 43:BN:60:ARG:CA    | 2.15                     | 0.59              |
| 44:BO:33:THR:HG22 | 44:BO:39:PRO:HB3   | 1.82                     | 0.59              |
| 44:BO:48:ILE:HD11 | 44:BO:64:ALA:CA    | 2.32                     | 0.59              |
| 44:BO:73:MET:SD   | 44:BO:78:GLN:HB3   | 2.42                     | 0.59              |
| 48:BS:70:LEU:HG   | 48:BS:78:TYR:HB2   | 1.85                     | 0.59              |
| 50:BU:3:LYS:O     | 50:BU:4:LYS:O      | 2.20                     | 0.59              |
| 51:BV:26:LEU:HD22 | 51:BV:39:VAL:CG2   | 2.33                     | 0.59              |
| 51:BV:53:ARG:NH1  | 51:BV:58:LEU:O     | 2.36                     | 0.59              |
| 52:BW:36:ARG:HG3  | 52:BW:72:GLY:CA    | 2.27                     | 0.59              |
| 53:BX:51:GLU:HA   | 53:BX:54:LYS:CG    | 2.32                     | 0.59              |
| 57:BZ:85:VAL:HG13 | 57:BZ:88:VAL:HG21  | 1.84                     | 0.59              |
| 57:BZ:166:SER:H   | 57:BZ:171:ILE:HG23 | 1.67                     | 0.59              |
| 57:BZ:325:PHE:CD1 | 57:BZ:378:PHE:CE2  | 2.87                     | 0.59              |
| 57:BZ:560:PRO:CB  | 57:BZ:562:ARG:CA   | 2.59                     | 0.59              |
| 1:AA:82:G:N2      | 1:AA:83:G:H22      | 2.01                     | 0.59              |
| 1:AA:185:U:C2     | 1:AA:212:G:N2      | 2.71                     | 0.59              |
| 1:AA:241:A:O4'    | 1:AA:241:A:OP1     | 2.20                     | 0.59              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:270(J):G:H2' | 1:AA:270(J):G:N3   | 2.18                     | 0.59              |
| 1:AA:295:G:C1'    | 1:AA:345:A:C2      | 2.86                     | 0.59              |
| 1:AA:304:G:H2'    | 1:AA:305:U:H6      | 1.68                     | 0.59              |
| 1:AA:410:G:H5''   | 1:AA:411:G:OP2     | 2.02                     | 0.59              |
| 1:AA:566:U:C6     | 17:AS:82:ARG:NH2   | 2.70                     | 0.59              |
| 1:AA:569:U:H4'    | 1:AA:946:G:N3      | 2.18                     | 0.59              |
| 1:AA:723:G:H21    | 1:AA:724:U:H1'     | 1.67                     | 0.59              |
| 1:AA:738:G:H2'    | 1:AA:739:G:H1'     | 1.84                     | 0.59              |
| 1:AA:763:G:O2'    | 1:AA:765:G:H5'     | 2.03                     | 0.59              |
| 1:AA:763:G:H5'    | 4:AD:211:ARG:NH1   | 2.18                     | 0.59              |
| 1:AA:783:A:C2     | 1:AA:785:G:O4'     | 2.56                     | 0.59              |
| 1:AA:827:U:OP1    | 1:AA:2429:G:OP2    | 2.20                     | 0.59              |
| 1:AA:1034:G:C2    | 1:AA:1122:G:C4     | 2.90                     | 0.59              |
| 1:AA:1155:A:OP2   | 1:AA:1155:A:H3'    | 2.02                     | 0.59              |
| 1:AA:1264:G:OP2   | 1:AA:1265:A:H2     | 1.86                     | 0.59              |
| 1:AA:1439:A:C2    | 1:AA:1553:A:C6     | 2.91                     | 0.59              |
| 1:AA:1992:G:C8    | 1:AA:1997:G:C6     | 2.91                     | 0.59              |
| 1:AA:1999:C:H5''  | 1:AA:2723:C:O2'    | 2.02                     | 0.59              |
| 1:AA:2091:U:O4    | 1:AA:2092:U:C4     | 2.55                     | 0.59              |
| 1:AA:2496:C:N1    | 1:AA:2497:A:H2     | 2.00                     | 0.59              |
| 1:AA:2755:C:H4'   | 1:AA:2756:U:C5     | 2.37                     | 0.59              |
| 1:AA:2876:G:H2'   | 1:AA:2877:G:C8     | 2.37                     | 0.59              |
| 2:AB:68:C:C3'     | 2:AB:69:G:H8       | 2.15                     | 0.59              |
| 2:AB:71:C:H2'     | 2:AB:71:C:O2       | 2.03                     | 0.59              |
| 3:AC:70:LYS:HZ1   | 3:AC:177:LYS:HG2   | 1.66                     | 0.59              |
| 3:AC:212:VAL:O    | 3:AC:212:VAL:HG12  | 2.01                     | 0.59              |
| 3:AC:225:ASN:C    | 3:AC:227:HIS:H     | 2.11                     | 0.59              |
| 5:AE:37:ARG:O     | 5:AE:38:THR:CB     | 2.47                     | 0.59              |
| 5:AE:53:PRO:HG3   | 5:AE:75:VAL:HG21   | 1.81                     | 0.59              |
| 5:AE:159:HIS:O    | 5:AE:160:TYR:CD1   | 2.55                     | 0.59              |
| 6:AF:18:ARG:HG2   | 6:AF:18:ARG:NH1    | 2.08                     | 0.59              |
| 6:AF:34:TRP:HD1   | 6:AF:38:ARG:NH1    | 1.98                     | 0.59              |
| 6:AF:71:GLY:C     | 6:AF:73:ALA:H      | 2.11                     | 0.59              |
| 7:AG:34:LEU:HD13  | 7:AG:100:TRP:NE1   | 2.18                     | 0.59              |
| 8:AH:37:VAL:O     | 8:AH:37:VAL:HG22   | 2.01                     | 0.59              |
| 8:AH:67:LEU:O     | 8:AH:68:THR:C      | 2.46                     | 0.59              |
| 12:AN:12:GLN:NE2  | 12:AN:13:GLN:CG    | 2.62                     | 0.59              |
| 12:AN:39:PRO:HG3  | 12:AN:127:ILE:CG1  | 2.31                     | 0.59              |
| 13:AO:26:LYS:HE2  | 13:AO:70:LEU:CA    | 2.32                     | 0.59              |
| 13:AO:53:HIS:C    | 13:AO:56:LYS:HG3   | 2.27                     | 0.59              |
| 13:AO:98:LEU:H    | 13:AO:114:VAL:HG22 | 1.67                     | 0.59              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 14:AP:71:ARG:N    | 14:AP:104:GLY:HA2  | 2.17                     | 0.59              |
| 14:AP:96:GLY:O    | 14:AP:97:ARG:C     | 2.43                     | 0.59              |
| 15:AQ:24:PRO:HG2  | 15:AQ:25:GLY:N     | 2.12                     | 0.59              |
| 15:AQ:103:ARG:O   | 15:AQ:107:ASP:CG   | 2.46                     | 0.59              |
| 16:AR:14:HIS:CD2  | 16:AR:36:ARG:HH12  | 2.20                     | 0.59              |
| 17:AS:17:GLY:O    | 17:AS:98:GLU:HG3   | 2.03                     | 0.59              |
| 17:AS:68:LYS:HG2  | 17:AS:95:LEU:CD2   | 2.31                     | 0.59              |
| 17:AS:69:LYS:HA   | 17:AS:92:THR:HB    | 1.84                     | 0.59              |
| 19:AU:92:LEU:HD12 | 19:AU:92:LEU:N     | 2.10                     | 0.59              |
| 20:AV:2:ARG:CD    | 20:AV:3:VAL:N      | 2.56                     | 0.59              |
| 22:AX:56:ASP:O    | 22:AX:57:PHE:HB2   | 2.03                     | 0.59              |
| 24:AZ:17:LYS:HA   | 24:AZ:20:LYS:HE2   | 1.85                     | 0.59              |
| 24:AZ:55:ARG:HG3  | 24:AZ:55:ARG:HH21  | 1.67                     | 0.59              |
| 25:Aa:26:SER:O    | 25:Aa:27:THR:HG23  | 2.02                     | 0.59              |
| 29:Ae:44:LYS:O    | 29:Ae:44:LYS:HG3   | 2.03                     | 0.59              |
| 32:AJ:35:MET:CG   | 32:AJ:36:GLU:H     | 2.15                     | 0.59              |
| 34:BA:5:U:C5      | 37:BH:86:LYS:HD3   | 2.38                     | 0.59              |
| 34:BA:44:G:H2'    | 34:BA:45:U:C5'     | 2.32                     | 0.59              |
| 34:BA:46:G:H1'    | 34:BA:396:G:H22    | 1.68                     | 0.59              |
| 34:BA:197:A:N6    | 34:BA:221:C:C5'    | 2.65                     | 0.59              |
| 34:BA:232:G:C5    | 34:BA:233:C:N4     | 2.71                     | 0.59              |
| 34:BA:267:C:N4    | 34:BA:268:C:H41    | 1.99                     | 0.59              |
| 34:BA:296:U:H2'   | 34:BA:297:G:H8     | 1.66                     | 0.59              |
| 34:BA:338:A:O2'   | 34:BA:339:C:H5'    | 2.03                     | 0.59              |
| 34:BA:366:C:O2'   | 34:BA:367:U:P      | 2.60                     | 0.59              |
| 34:BA:501:C:H2'   | 34:BA:502:G:H8     | 1.66                     | 0.59              |
| 34:BA:579:G:C5    | 34:BA:580:U:C5     | 2.90                     | 0.59              |
| 34:BA:619:U:N3    | 37:BH:135:LEU:HD21 | 2.16                     | 0.59              |
| 34:BA:692:U:O4    | 44:BO:53:SER:N     | 2.36                     | 0.59              |
| 34:BA:859:A:O2'   | 34:BA:860:A:C5'    | 2.50                     | 0.59              |
| 34:BA:1053:G:H4'  | 34:BA:1054:C:O3'   | 2.02                     | 0.59              |
| 34:BA:1069:C:N4   | 34:BA:1094:G:O6    | 2.35                     | 0.59              |
| 34:BA:1202:G:H1'  | 47:BR:29:ARG:NE    | 2.18                     | 0.59              |
| 34:BA:1209:C:C2'  | 34:BA:1210:C:H5'   | 2.32                     | 0.59              |
| 34:BA:1229:A:C4'  | 56:BE:29:G:O3'     | 2.49                     | 0.59              |
| 34:BA:1240:U:C6   | 40:BK:32:ARG:NH2   | 2.71                     | 0.59              |
| 34:BA:1269:A:C1'  | 34:BA:1312:G:N3    | 2.65                     | 0.59              |
| 34:BA:1274:G:H2'  | 34:BA:1275:A:C8    | 2.38                     | 0.59              |
| 34:BA:1430:C:C2'  | 34:BA:1431:C:O5'   | 2.51                     | 0.59              |
| 34:BA:1483:A:H2'  | 34:BA:1484:C:C5'   | 2.33                     | 0.59              |
| 34:BA:1508:G:H2'  | 34:BA:1509:C:H6    | 1.68                     | 0.59              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BF:33:TYR:HB2   | 35:BF:43:ASP:HB2   | 1.84                     | 0.59              |
| 35:BF:124:SER:OG   | 35:BF:125:PRO:HD2  | 2.02                     | 0.59              |
| 36:BG:10:PHE:C     | 36:BG:11:ARG:HE    | 2.09                     | 0.59              |
| 36:BG:157:ILE:HG21 | 36:BG:164:ARG:HE   | 1.67                     | 0.59              |
| 37:BH:85:LYS:NZ    | 37:BH:85:LYS:HB3   | 2.18                     | 0.59              |
| 37:BH:185:PHE:CD2  | 37:BH:186:LEU:N    | 2.71                     | 0.59              |
| 38:BI:40:ARG:N     | 38:BI:68:GLU:OE1   | 2.35                     | 0.59              |
| 38:BI:80:ILE:CD1   | 38:BI:91:LEU:HB3   | 2.33                     | 0.59              |
| 38:BI:141:GLN:N    | 38:BI:141:GLN:OE1  | 2.35                     | 0.59              |
| 39:BJ:95:GLU:HA    | 51:BV:32:ARG:HB3   | 1.85                     | 0.59              |
| 40:BK:127:ALA:O    | 40:BK:128:ALA:C    | 2.46                     | 0.59              |
| 41:BL:14:ARG:O     | 41:BL:17:THR:CB    | 2.48                     | 0.59              |
| 41:BL:30:ARG:O     | 41:BL:33:GLU:HB2   | 2.03                     | 0.59              |
| 41:BL:35:ILE:HD13  | 41:BL:118:VAL:HG21 | 1.85                     | 0.59              |
| 41:BL:36:LEU:CA    | 41:BL:39:LEU:HB2   | 2.32                     | 0.59              |
| 42:BM:34:ASN:OD1   | 42:BM:43:ALA:CB    | 2.51                     | 0.59              |
| 44:BO:15:ALA:O     | 44:BO:78:GLN:NE2   | 2.35                     | 0.59              |
| 44:BO:19:ALA:N     | 44:BO:80:VAL:CG2   | 2.65                     | 0.59              |
| 44:BO:23:ALA:CB    | 44:BO:88:GLY:HA3   | 2.32                     | 0.59              |
| 53:BX:20:LEU:O     | 53:BX:23:ARG:HD3   | 2.03                     | 0.59              |
| 57:BZ:230:LYS:HB2  | 57:BZ:231:VAL:CG1  | 2.29                     | 0.59              |
| 57:BZ:310:PHE:N    | 57:BZ:385:PRO:CG   | 2.65                     | 0.59              |
| 57:BZ:395:ARG:CD   | 57:BZ:474:ASP:OD1  | 2.49                     | 0.59              |
| 57:BZ:580:VAL:CG1  | 57:BZ:585:ILE:CD1  | 2.80                     | 0.59              |
| 1:AA:140:A:H1'     | 1:AA:1409:C:H5'    | 1.84                     | 0.59              |
| 1:AA:141:A:H2'     | 1:AA:141:A:N3      | 2.18                     | 0.59              |
| 1:AA:143:C:H2'     | 1:AA:144:C:C6      | 2.37                     | 0.59              |
| 1:AA:270(X):G:H4'  | 1:AA:273:G:H5'     | 1.85                     | 0.59              |
| 1:AA:366:C:C6      | 1:AA:366:C:O5'     | 2.56                     | 0.59              |
| 1:AA:442:G:H4'     | 6:AF:46:ARG:CG     | 2.26                     | 0.59              |
| 1:AA:736:C:O2'     | 1:AA:737:C:H5'     | 2.03                     | 0.59              |
| 1:AA:775:G:C4'     | 1:AA:777:A:C4      | 2.84                     | 0.59              |
| 1:AA:832:G:OP1     | 11:AM:35:HIS:HB2   | 2.02                     | 0.59              |
| 1:AA:906:G:OP1     | 1:AA:906:G:H4'     | 2.03                     | 0.59              |
| 1:AA:1021:A:C2     | 1:AA:1122:G:H4'    | 2.38                     | 0.59              |
| 1:AA:1056:G:H5'    | 1:AA:1057:A:OP1    | 2.03                     | 0.59              |
| 1:AA:1223:C:C6     | 1:AA:1227:A:N1     | 2.70                     | 0.59              |
| 1:AA:1227:A:H3'    | 1:AA:1227:A:C8     | 2.37                     | 0.59              |
| 1:AA:1309:G:N1     | 1:AA:1310:G:N7     | 2.50                     | 0.59              |
| 1:AA:1314:C:P      | 1:AA:1332:G:H5'    | 2.41                     | 0.59              |
| 1:AA:1397:U:O2'    | 1:AA:1398:C:OP1    | 2.21                     | 0.59              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1422:G:H2'   | 1:AA:1423:G:C8    | 2.37                     | 0.59              |
| 1:AA:1444(A):A:C8 | 1:AA:1460:A:H2'   | 2.38                     | 0.59              |
| 1:AA:1448:G:H2'   | 1:AA:1449:A:H8    | 1.68                     | 0.59              |
| 1:AA:1491:G:H3'   | 1:AA:1492:G:H4'   | 1.84                     | 0.59              |
| 1:AA:1620:G:O2'   | 1:AA:1621:U:H5'   | 2.01                     | 0.59              |
| 1:AA:1654:A:N3    | 1:AA:1654:A:H2'   | 2.18                     | 0.59              |
| 1:AA:1802:A:N6    | 1:AA:1822:G:H1'   | 2.08                     | 0.59              |
| 1:AA:1826:G:C2'   | 1:AA:1827:C:H5'   | 2.33                     | 0.59              |
| 1:AA:2047:U:O2'   | 1:AA:2048:G:C5'   | 2.51                     | 0.59              |
| 1:AA:2100:G:H1'   | 1:AA:2190:G:N2    | 2.17                     | 0.59              |
| 1:AA:2187:G:O2'   | 1:AA:2188:C:H5'   | 2.02                     | 0.59              |
| 1:AA:2193:G:C2    | 1:AA:2194:G:C8    | 2.90                     | 0.59              |
| 1:AA:2291:U:H5'   | 1:AA:2380:C:O2    | 2.02                     | 0.59              |
| 1:AA:2603:G:H2'   | 1:AA:2604:U:O4'   | 2.03                     | 0.59              |
| 3:AC:195:ALA:O    | 3:AC:199:HIS:ND1  | 2.30                     | 0.59              |
| 4:AD:52:ARG:HD3   | 4:AD:52:ARG:N     | 2.18                     | 0.59              |
| 4:AD:60:ARG:HB3   | 4:AD:62:TYR:CE2   | 2.38                     | 0.59              |
| 4:AD:73:VAL:HG12  | 4:AD:120:GLY:HA3  | 1.85                     | 0.59              |
| 4:AD:226:MET:CE   | 4:AD:237:GLU:H    | 2.11                     | 0.59              |
| 5:AE:164:ARG:C    | 5:AE:165:VAL:HG22 | 2.26                     | 0.59              |
| 6:AF:181:LEU:HD13 | 6:AF:181:LEU:H    | 1.67                     | 0.59              |
| 6:AF:192:LEU:HD22 | 6:AF:193:VAL:H    | 1.68                     | 0.59              |
| 7:AG:26:GLN:HG2   | 7:AG:29:TRP:CE3   | 2.38                     | 0.59              |
| 7:AG:75:LYS:HD3   | 7:AG:85:GLY:CA    | 2.33                     | 0.59              |
| 7:AG:119:GLY:HA3  | 7:AG:180:PHE:CD2  | 2.37                     | 0.59              |
| 8:AH:33:LEU:CD2   | 8:AH:35:VAL:HG13  | 2.32                     | 0.59              |
| 8:AH:76:VAL:CG2   | 8:AH:77:LYS:N     | 2.66                     | 0.59              |
| 8:AH:156:ALA:HB1  | 8:AH:172:LYS:NZ   | 2.17                     | 0.59              |
| 11:AM:126:VAL:O   | 11:AM:127:ALA:HB2 | 2.02                     | 0.59              |
| 12:AN:104:PHE:O   | 12:AN:105:GLU:OE2 | 2.20                     | 0.59              |
| 12:AN:116:GLU:O   | 12:AN:117:ALA:C   | 2.45                     | 0.59              |
| 13:AO:11:ASN:CG   | 13:AO:12:ARG:H    | 2.07                     | 0.59              |
| 16:AR:55:ARG:CB   | 16:AR:58:ARG:HE   | 2.14                     | 0.59              |
| 17:AS:68:LYS:HZ3  | 17:AS:95:LEU:CD1  | 2.16                     | 0.59              |
| 18:AT:48:ALA:HA   | 18:AT:51:LEU:CD2  | 2.26                     | 0.59              |
| 19:AU:84:ALA:H    | 19:AU:85:PRO:HD2  | 1.65                     | 0.59              |
| 20:AV:21:LYS:HB2  | 20:AV:23:ARG:NH1  | 2.17                     | 0.59              |
| 21:AW:18:LEU:HD22 | 21:AW:23:LYS:HD3  | 1.84                     | 0.59              |
| 24:AZ:5:LYS:NZ    | 24:AZ:59:VAL:HG22 | 2.17                     | 0.59              |
| 25:Aa:47:GLN:CA   | 25:Aa:52:THR:OG1  | 2.51                     | 0.59              |
| 26:Ab:37:LYS:HD2  | 26:Ab:37:LYS:N    | 2.18                     | 0.59              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:7:G:H1'      | 34:BA:298:A:N9     | 2.18                     | 0.59              |
| 34:BA:224:C:H2'    | 34:BA:225:C:H6     | 1.66                     | 0.59              |
| 34:BA:429:U:H5'    | 34:BA:430:A:OP1    | 2.03                     | 0.59              |
| 34:BA:552:U:C2'    | 34:BA:553:A:H5'    | 2.33                     | 0.59              |
| 34:BA:676:A:H5''   | 44:BO:113:PRO:HB2  | 1.84                     | 0.59              |
| 34:BA:745:C:H1'    | 34:BA:836:G:O2'    | 2.02                     | 0.59              |
| 34:BA:891:U:H5     | 34:BA:906:G:C2     | 2.21                     | 0.59              |
| 34:BA:1361:G:N7    | 34:BA:1362:C:H5    | 2.00                     | 0.59              |
| 34:BA:1440:C:C2'   | 34:BA:1441:G:H5'   | 2.33                     | 0.59              |
| 34:BA:1465:C:O5'   | 34:BA:1465:C:H6    | 1.85                     | 0.59              |
| 35:BF:75:LYS:HZ2   | 35:BF:75:LYS:C     | 2.08                     | 0.59              |
| 36:BG:22:TRP:HH2   | 36:BG:33:LEU:N     | 2.01                     | 0.59              |
| 36:BG:157:ILE:HG13 | 36:BG:164:ARG:CB   | 2.33                     | 0.59              |
| 38:BI:18:ARG:O     | 38:BI:25:ARG:O     | 2.21                     | 0.59              |
| 39:BJ:14:LEU:CD1   | 39:BJ:15:ASP:N     | 2.57                     | 0.59              |
| 39:BJ:64:GLN:C     | 39:BJ:65:VAL:HG12  | 2.27                     | 0.59              |
| 40:BK:149:ARG:O    | 40:BK:150:ALA:C    | 2.45                     | 0.59              |
| 41:BL:10:LEU:O     | 41:BL:14:ARG:NH1   | 2.30                     | 0.59              |
| 42:BM:116:LYS:O    | 42:BM:121:ARG:HB3  | 2.02                     | 0.59              |
| 43:BN:65:LEU:HD13  | 47:BR:36:PHE:CZ    | 2.37                     | 0.59              |
| 48:BS:36:ILE:HD11  | 48:BS:60:VAL:CG2   | 2.32                     | 0.59              |
| 50:BU:104:LYS:CD   | 50:BU:105:ALA:H    | 2.15                     | 0.59              |
| 51:BV:17:SER:HB3   | 51:BV:54:ARG:NH1   | 2.18                     | 0.59              |
| 51:BV:58:LEU:CB    | 51:BV:62:GLU:HB3   | 2.18                     | 0.59              |
| 54:BY:9:ARG:NH1    | 54:BY:21:TYR:HD2   | 1.96                     | 0.59              |
| 55:BC:16:U:H5      | 55:BC:18:G:C5'     | 2.15                     | 0.59              |
| 57:BZ:21:LEU:HD11  | 57:BZ:98:VAL:HG23  | 1.85                     | 0.59              |
| 57:BZ:250:LYS:C    | 57:BZ:273:ILE:HD11 | 2.27                     | 0.59              |
| 57:BZ:443:ILE:HD13 | 57:BZ:447:GLY:O    | 2.03                     | 0.59              |
| 57:BZ:497:VAL:CA   | 57:BZ:514:HIS:ND1  | 2.59                     | 0.59              |
| 1:AA:25:U:H2'      | 1:AA:25:U:O2       | 2.03                     | 0.59              |
| 1:AA:36:G:H4'      | 1:AA:451:C:O2      | 2.03                     | 0.59              |
| 1:AA:126:A:H2'     | 1:AA:127:A:C5'     | 2.32                     | 0.59              |
| 1:AA:130:C:OP1     | 1:AA:1348:G:N2     | 2.36                     | 0.59              |
| 1:AA:150:C:O2      | 1:AA:151:C:C5      | 2.56                     | 0.59              |
| 1:AA:191:A:C2      | 1:AA:192:C:C6      | 2.90                     | 0.59              |
| 1:AA:236:C:H4'     | 1:AA:431:U:H1'     | 1.85                     | 0.59              |
| 1:AA:429:A:H2'     | 1:AA:430:G:N7      | 2.18                     | 0.59              |
| 1:AA:476:G:N1      | 1:AA:479:A:OP2     | 2.30                     | 0.59              |
| 1:AA:548:A:N6      | 1:AA:549:G:N2      | 2.49                     | 0.59              |
| 1:AA:612:G:H21     | 1:AA:617:G:H1      | 1.50                     | 0.59              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:669:G:N3    | 1:AA:669:G:C2'    | 2.59                     | 0.59              |
| 1:AA:893:C:H2'   | 1:AA:894:C:H5'    | 1.83                     | 0.59              |
| 1:AA:928:G:O2'   | 24:AZ:43:ILE:HG12 | 2.03                     | 0.59              |
| 1:AA:942:G:O3'   | 11:AM:32:THR:HG22 | 2.02                     | 0.59              |
| 1:AA:957:A:O3'   | 1:AA:958:U:C4'    | 2.50                     | 0.59              |
| 1:AA:1068:G:O4'  | 1:AA:1096:A:C4'   | 2.50                     | 0.59              |
| 1:AA:1131:G:O2'  | 1:AA:1132:A:O5'   | 2.10                     | 0.59              |
| 1:AA:1343:G:N2   | 1:AA:1405:U:C1'   | 2.66                     | 0.59              |
| 1:AA:1417:C:N4   | 1:AA:1581:G:H1    | 1.85                     | 0.59              |
| 1:AA:1499:C:H2'  | 1:AA:1499:C:O2    | 2.02                     | 0.59              |
| 1:AA:1516:U:H2'  | 1:AA:1517:G:C8    | 2.37                     | 0.59              |
| 1:AA:1521:G:C3'  | 1:AA:1522:G:H5'   | 2.33                     | 0.59              |
| 1:AA:1609:A:C8   | 1:AA:1616:A:C1'   | 2.86                     | 0.59              |
| 1:AA:1612:C:C2   | 1:AA:1620:G:N2    | 2.71                     | 0.59              |
| 1:AA:1630:G:C5   | 1:AA:1630(A):C:C5 | 2.90                     | 0.59              |
| 1:AA:1667:G:O6   | 1:AA:1992:G:OP1   | 2.20                     | 0.59              |
| 1:AA:1742:C:N4   | 1:AA:1743:G:H8    | 2.00                     | 0.59              |
| 1:AA:1944:U:H2'  | 1:AA:1945:G:OP1   | 2.02                     | 0.59              |
| 1:AA:1955:U:O3'  | 1:AA:1956:U:H5    | 1.85                     | 0.59              |
| 1:AA:1992:G:C4'  | 1:AA:1993:U:C4    | 2.85                     | 0.59              |
| 1:AA:2071:A:H2   | 1:AA:2441:C:N3    | 1.99                     | 0.59              |
| 1:AA:2107:C:H4'  | 1:AA:2108:C:O5'   | 2.02                     | 0.59              |
| 1:AA:2355:C:C4   | 1:AA:2356:C:C4    | 2.91                     | 0.59              |
| 1:AA:2466:C:N4   | 1:AA:2485:G:C6    | 2.71                     | 0.59              |
| 1:AA:2469:A:C5   | 1:AA:2470:G:C8    | 2.91                     | 0.59              |
| 1:AA:2493:U:O4   | 1:AA:2494:G:C8    | 2.56                     | 0.59              |
| 1:AA:2530:A:H3'  | 1:AA:2531:A:H5''  | 1.85                     | 0.59              |
| 1:AA:2543:G:C5   | 1:AA:2544:G:C6    | 2.90                     | 0.59              |
| 1:AA:2642:G:H2'  | 1:AA:2643:G:H8    | 1.67                     | 0.59              |
| 1:AA:2716:U:H2'  | 1:AA:2717:G:C8    | 2.38                     | 0.59              |
| 1:AA:2849:U:C6   | 1:AA:2849:U:C3'   | 2.82                     | 0.59              |
| 1:AA:2884:U:H2'  | 1:AA:2885:C:O4'   | 2.03                     | 0.59              |
| 2:AB:83:G:C2     | 2:AB:84:C:C6      | 2.91                     | 0.59              |
| 3:AC:46:LYS:CD   | 3:AC:210:ARG:HB3  | 2.32                     | 0.59              |
| 4:AD:31:LYS:HD2  | 4:AD:31:LYS:H     | 1.67                     | 0.59              |
| 4:AD:80:ALA:O    | 4:AD:81:ALA:HB2   | 2.01                     | 0.59              |
| 4:AD:206:LEU:O   | 4:AD:206:LEU:CD2  | 2.51                     | 0.59              |
| 5:AE:8:LYS:HZ2   | 5:AE:9:VAL:CG1    | 2.09                     | 0.59              |
| 5:AE:53:PRO:CG   | 5:AE:75:VAL:HG22  | 2.31                     | 0.59              |
| 7:AG:19:LEU:HA   | 7:AG:22:ARG:HB3   | 1.85                     | 0.59              |
| 7:AG:107:LEU:CD2 | 7:AG:177:GLY:HA3  | 2.33                     | 0.59              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AH:85:LYS:NZ    | 8:AH:85:LYS:HB2    | 2.16                     | 0.59              |
| 10:AL:106:LEU:O   | 10:AL:109:LYS:CA   | 2.51                     | 0.59              |
| 11:AM:49:ARG:HG3  | 29:Ae:52:LYS:HG3   | 1.85                     | 0.59              |
| 11:AM:126:VAL:CG2 | 11:AM:127:ALA:N    | 2.66                     | 0.59              |
| 13:AO:7:GLY:O     | 13:AO:8:ARG:C      | 2.45                     | 0.59              |
| 15:AQ:7:ILE:CG1   | 15:AQ:8:LYS:H      | 2.16                     | 0.59              |
| 15:AQ:107:ASP:HB2 | 15:AQ:108:ARG:HD3  | 1.84                     | 0.59              |
| 16:AR:76:TYR:CD2  | 16:AR:80:ILE:CD1   | 2.78                     | 0.59              |
| 20:AV:1:MET:HA    | 20:AV:33:LYS:HG3   | 1.84                     | 0.59              |
| 24:AZ:28:LEU:HD23 | 24:AZ:28:LEU:H     | 1.64                     | 0.59              |
| 25:Aa:59:PHE:C    | 25:Aa:61:ARG:N     | 2.56                     | 0.59              |
| 25:Aa:65:ASP:HA   | 25:Aa:68:ARG:CZ    | 2.32                     | 0.59              |
| 26:Ab:9:LYS:O     | 26:Ab:10:LYS:HG2   | 2.02                     | 0.59              |
| 31:AI:33:PRO:O    | 31:AI:37:THR:N     | 2.34                     | 0.59              |
| 32:AJ:103:GLN:HA  | 32:AJ:106:GLU:HG2  | 1.82                     | 0.59              |
| 34:BA:55:A:C2     | 34:BA:56:U:H1'     | 2.37                     | 0.59              |
| 34:BA:345:C:H5'   | 34:BA:346:G:C5     | 2.38                     | 0.59              |
| 34:BA:503:C:N3    | 34:BA:504:C:C5     | 2.70                     | 0.59              |
| 34:BA:676:A:H4'   | 44:BO:114:VAL:O    | 2.03                     | 0.59              |
| 34:BA:812:C:O4'   | 34:BA:813:U:C5     | 2.55                     | 0.59              |
| 34:BA:890:G:O2'   | 34:BA:891:U:C6     | 2.53                     | 0.59              |
| 34:BA:923:A:C5'   | 38:BI:21:ALA:HB2   | 2.32                     | 0.59              |
| 34:BA:934:C:O2    | 34:BA:937:A:N6     | 2.36                     | 0.59              |
| 34:BA:951:G:N2    | 34:BA:952:U:C2     | 2.70                     | 0.59              |
| 34:BA:1010:G:N2   | 34:BA:1020:U:C1'   | 2.61                     | 0.59              |
| 34:BA:1049:U:C4   | 47:BR:3:ARG:HB2    | 2.37                     | 0.59              |
| 34:BA:1117:G:H5'  | 34:BA:1118:C:OP2   | 2.03                     | 0.59              |
| 34:BA:1157:A:N3   | 34:BA:1157:A:H2'   | 2.17                     | 0.59              |
| 34:BA:1212:U:O2'  | 34:BA:1213:A:O5'   | 2.20                     | 0.59              |
| 34:BA:1253:G:H2'  | 34:BA:1254:C:O4'   | 2.03                     | 0.59              |
| 34:BA:1433:A:C8   | 34:BA:1468:A:N6    | 2.71                     | 0.59              |
| 35:BF:141:GLU:CD  | 35:BF:141:GLU:C    | 2.69                     | 0.59              |
| 35:BF:142:LEU:O   | 35:BF:142:LEU:HD23 | 2.02                     | 0.59              |
| 35:BF:199:TYR:O   | 35:BF:201:ILE:HD12 | 2.03                     | 0.59              |
| 37:BH:52:SER:O    | 37:BH:55:ALA:N     | 2.36                     | 0.59              |
| 37:BH:98:GLU:CD   | 37:BH:107:ARG:HG3  | 2.28                     | 0.59              |
| 38:BI:10:MET:HA   | 38:BI:32:VAL:HG22  | 1.84                     | 0.59              |
| 38:BI:62:ALA:HB3  | 38:BI:63:ARG:HE    | 1.68                     | 0.59              |
| 38:BI:78:HIS:HB2  | 41:BL:104:ARG:HD3  | 1.84                     | 0.59              |
| 39:BJ:30:LEU:HB3  | 39:BJ:35:ALA:CB    | 2.33                     | 0.59              |
| 40:BK:31:MET:CG   | 40:BK:32:ARG:H     | 2.14                     | 0.59              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 40:BK:50:ILE:O    | 40:BK:54:THR:O    | 2.20                     | 0.59              |
| 43:BN:75:ILE:HG22 | 43:BN:76:ASN:N    | 2.16                     | 0.59              |
| 46:BQ:11:ARG:O    | 46:BQ:45:VAL:CB   | 2.29                     | 0.59              |
| 46:BQ:15:VAL:CG2  | 46:BQ:34:LEU:CD2  | 2.73                     | 0.59              |
| 46:BQ:19:LEU:HD12 | 46:BQ:20:THR:N    | 2.18                     | 0.59              |
| 46:BQ:56:LEU:CD1  | 46:BQ:60:VAL:HG21 | 2.33                     | 0.59              |
| 47:BR:23:ARG:C    | 47:BR:33:VAL:HG11 | 2.28                     | 0.59              |
| 48:BS:11:VAL:O    | 48:BS:12:ILE:C    | 2.45                     | 0.59              |
| 49:BT:56:ALA:O    | 49:BT:60:LEU:CG   | 2.50                     | 0.59              |
| 51:BV:61:LYS:CD   | 51:BV:64:ARG:HH22 | 2.07                     | 0.59              |
| 56:BD:25:C:H2'    | 56:BD:26:A:C8     | 2.31                     | 0.59              |
| 56:BE:11:C:O5'    | 56:BE:11:C:H6     | 1.85                     | 0.59              |
| 57:BZ:10:ILE:H    | 57:BZ:74:ASP:H    | 0.60                     | 0.59              |
| 57:BZ:10:ILE:HD12 | 57:BZ:21:LEU:HB2  | 1.85                     | 0.59              |
| 57:BZ:13:HIS:HB3  | 57:BZ:109:THR:CA  | 2.32                     | 0.59              |
| 57:BZ:18:LYS:CA   | 60:BZ:701:GCP:O2B | 2.46                     | 0.59              |
| 57:BZ:67:ASP:H    | 57:BZ:68:TYR:HA   | 1.68                     | 0.59              |
| 57:BZ:154:THR:C   | 57:BZ:156:GLU:H   | 2.11                     | 0.59              |
| 57:BZ:181:GLU:CD  | 57:BZ:182:ASP:H   | 2.06                     | 0.59              |
| 57:BZ:468:THR:O   | 57:BZ:469:PHE:HB3 | 2.03                     | 0.59              |
| 57:BZ:483:ARG:HG3 | 57:BZ:573:ASP:CB  | 2.33                     | 0.59              |
| 1:AA:70:G:OP1     | 1:AA:112:U:O4     | 2.20                     | 0.59              |
| 1:AA:247:G:O6     | 29:Ae:11:LYS:NZ   | 2.35                     | 0.59              |
| 1:AA:360:G:C2'    | 1:AA:361:G:C5'    | 2.81                     | 0.59              |
| 1:AA:414:C:H1'    | 1:AA:1864:U:O2'   | 2.03                     | 0.59              |
| 1:AA:424:G:H21    | 1:AA:425:G:H1'    | 1.67                     | 0.59              |
| 1:AA:459:U:H3'    | 28:Ad:40:TRP:HH2  | 1.61                     | 0.59              |
| 1:AA:612:G:O2'    | 1:AA:615:G:H2'    | 2.03                     | 0.59              |
| 1:AA:637:A:H4'    | 1:AA:638:G:O4'    | 2.03                     | 0.59              |
| 1:AA:650:C:OP1    | 29:Ae:19:SER:OG   | 2.21                     | 0.59              |
| 1:AA:666:G:H3'    | 1:AA:666:G:OP2    | 2.03                     | 0.59              |
| 1:AA:728:G:C1'    | 1:AA:729:G:C8     | 2.86                     | 0.59              |
| 1:AA:779:U:H3'    | 1:AA:780:G:C8     | 2.37                     | 0.59              |
| 1:AA:909:A:N3     | 1:AA:912:C:C6     | 2.71                     | 0.59              |
| 1:AA:914:C:C5     | 1:AA:915:C:C5     | 2.91                     | 0.59              |
| 1:AA:972:G:N7     | 1:AA:973:A:C8     | 2.71                     | 0.59              |
| 1:AA:973:A:H4'    | 1:AA:974:G:OP1    | 2.02                     | 0.59              |
| 1:AA:975:G:N1     | 1:AA:976:C:H6     | 2.01                     | 0.59              |
| 1:AA:988:A:O3'    | 24:AZ:10:LYS:NZ   | 2.36                     | 0.59              |
| 1:AA:1036:G:N3    | 1:AA:1120:G:N1    | 2.50                     | 0.59              |
| 1:AA:1111:A:H8    | 1:AA:1111:A:O5'   | 1.85                     | 0.59              |

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| Atom-1              | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|-------------------|--------------------------|-------------------|
| 1:AA:1188:U:O2      | 1:AA:1189:A:O4'   | 2.19                     | 0.59              |
| 1:AA:1202:C:N3      | 1:AA:1203:G:O2'   | 2.32                     | 0.59              |
| 1:AA:1459:G:O6      | 1:AA:1461:G:N1    | 2.36                     | 0.59              |
| 1:AA:1471:A:C8      | 1:AA:1521:G:C2    | 2.91                     | 0.59              |
| 1:AA:1498:C:C1'     | 1:AA:1576:U:H4'   | 2.33                     | 0.59              |
| 1:AA:1695:G:C3'     | 1:AA:1696:G:H5'   | 2.32                     | 0.59              |
| 1:AA:1789:A:C2'     | 4:AD:213:ARG:HH12 | 2.16                     | 0.59              |
| 1:AA:1790:C:O2'     | 4:AD:209:ALA:CB   | 2.49                     | 0.59              |
| 1:AA:1906:G:OP2     | 1:AA:1930:G:C8    | 2.56                     | 0.59              |
| 1:AA:2093:G:H2'     | 1:AA:2094:G:C5'   | 2.32                     | 0.59              |
| 1:AA:2106:G:O2'     | 1:AA:2107:C:H5'   | 2.03                     | 0.59              |
| 1:AA:2135:A:C5'     | 1:AA:2136:C:C5    | 2.86                     | 0.59              |
| 1:AA:2165:G:C8      | 1:AA:2165:G:OP2   | 2.56                     | 0.59              |
| 1:AA:2173:A:H2'     | 1:AA:2174:C:O4'   | 2.02                     | 0.59              |
| 1:AA:2306:C:H5      | 1:AA:2311:A:N6    | 2.00                     | 0.59              |
| 1:AA:2309:A:C2      | 1:AA:2310:A:O4'   | 2.56                     | 0.59              |
| 1:AA:2312:U:OP2     | 7:AG:86:MET:HE2   | 2.03                     | 0.59              |
| 1:AA:2318:G:H8      | 1:AA:2318:G:P     | 2.25                     | 0.59              |
| 1:AA:2484:G:O2'     | 12:AN:46:GLN:HG3  | 2.03                     | 0.59              |
| 1:AA:2626:C:H6      | 1:AA:2626:C:O5'   | 1.85                     | 0.59              |
| 1:AA:2743:C:C2      | 1:AA:2762:G:C2    | 2.90                     | 0.59              |
| 59:AA:3003:8AN:H5'A | 56:BE:75:C:C3'    | 2.33                     | 0.59              |
| 2:AB:37:C:N4        | 2:AB:44:G:N1      | 2.50                     | 0.59              |
| 3:AC:21:THR:HA      | 3:AC:225:ASN:HD22 | 1.68                     | 0.59              |
| 3:AC:28:LEU:O       | 3:AC:32:LEU:HG    | 2.02                     | 0.59              |
| 3:AC:89:ALA:C       | 3:AC:154:ARG:HA   | 2.28                     | 0.59              |
| 4:AD:29:PRO:HB2     | 4:AD:31:LYS:CD    | 2.33                     | 0.59              |
| 4:AD:84:TYR:CB      | 4:AD:91:ARG:HG3   | 2.32                     | 0.59              |
| 4:AD:147:LEU:HD23   | 4:AD:154:LYS:HG3  | 1.83                     | 0.59              |
| 4:AD:157:ARG:O      | 4:AD:158:ALA:C    | 2.45                     | 0.59              |
| 4:AD:209:ALA:C      | 4:AD:213:ARG:HG2  | 2.28                     | 0.59              |
| 5:AE:4:ILE:O        | 5:AE:27:LEU:HB2   | 2.02                     | 0.59              |
| 5:AE:128:SER:OG     | 5:AE:129:HIS:HD2  | 1.86                     | 0.59              |
| 6:AF:184:TYR:C      | 6:AF:186:ILE:N    | 2.60                     | 0.59              |
| 6:AF:192:LEU:HD11   | 6:AF:194:MET:CG   | 2.26                     | 0.59              |
| 9:AK:4:TYR:CE1      | 16:AR:101:ARG:NH2 | 2.70                     | 0.59              |
| 9:AK:95:PRO:HG2     | 9:AK:124:ALA:CB   | 2.33                     | 0.59              |
| 10:AL:19:ILE:HD12   | 10:AL:19:ILE:C    | 2.28                     | 0.59              |
| 10:AL:68:GLU:CA     | 10:AL:104:ARG:CZ  | 2.80                     | 0.59              |
| 11:AM:113:LYS:CA    | 11:AM:129:ALA:CB  | 2.80                     | 0.59              |
| 13:AO:61:HIS:ND1    | 13:AO:64:ARG:NE   | 2.51                     | 0.59              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 16:AR:9:VAL:O      | 16:AR:12:ARG:HB2   | 2.02                     | 0.59              |
| 16:AR:76:TYR:HD2   | 16:AR:80:ILE:HD11  | 1.63                     | 0.59              |
| 18:AT:18:ARG:HD2   | 18:AT:75:TYR:HB3   | 1.85                     | 0.59              |
| 18:AT:33:ARG:O     | 18:AT:37:ARG:HG2   | 2.01                     | 0.59              |
| 19:AU:26:TYR:CB    | 19:AU:28:PHE:HZ    | 2.16                     | 0.59              |
| 19:AU:85:PRO:C     | 19:AU:87:GLN:HE21  | 2.11                     | 0.59              |
| 21:AW:120:ILE:HB   | 21:AW:123:ASP:OD2  | 2.03                     | 0.59              |
| 25:Aa:6:HIS:HB2    | 25:Aa:56:VAL:HG13  | 1.85                     | 0.59              |
| 26:Ab:13:LYS:HB3   | 26:Ab:16:ARG:HH11  | 1.66                     | 0.59              |
| 26:Ab:36:CYS:HB2   | 26:Ab:37:LYS:CD    | 2.32                     | 0.59              |
| 26:Ab:48:GLU:HA    | 26:Ab:58:LEU:HG    | 1.84                     | 0.59              |
| 27:Ac:22:ALA:O     | 27:Ac:23:THR:HG23  | 2.02                     | 0.59              |
| 29:Ae:27:THR:H     | 29:Ae:44:LYS:NZ    | 2.01                     | 0.59              |
| 32:AJ:27:LEU:HD11  | 32:AJ:57:ILE:CG2   | 2.33                     | 0.59              |
| 33:Ag:290:UNK:CA   | 33:Ag:343:UNK:N    | 2.49                     | 0.59              |
| 34:BA:12:U:N3      | 34:BA:13:U:O4      | 2.36                     | 0.59              |
| 34:BA:135:C:O5'    | 34:BA:135:C:H6     | 1.85                     | 0.59              |
| 34:BA:306:G:C4     | 34:BA:307:C:C5     | 2.91                     | 0.59              |
| 34:BA:336:C:H2'    | 34:BA:337:C:C6     | 2.38                     | 0.59              |
| 34:BA:656:C:H2'    | 34:BA:657:G:H5'    | 1.85                     | 0.59              |
| 34:BA:666:G:C2     | 34:BA:741:G:N3     | 2.71                     | 0.59              |
| 34:BA:750:G:H1'    | 48:BS:23:GLY:N     | 2.18                     | 0.59              |
| 34:BA:781:A:C2'    | 34:BA:782:A:C5'    | 2.67                     | 0.59              |
| 34:BA:875:C:C2     | 34:BA:876:G:C8     | 2.91                     | 0.59              |
| 34:BA:878:G:H5''   | 41:BL:89:PRO:O     | 2.03                     | 0.59              |
| 34:BA:890:G:O2'    | 34:BA:891:U:P      | 2.60                     | 0.59              |
| 34:BA:896:C:C2     | 34:BA:897:C:C5     | 2.90                     | 0.59              |
| 34:BA:908:A:N3     | 34:BA:909:A:C8     | 2.71                     | 0.59              |
| 34:BA:970:C:H4'    | 34:BA:972:C:C6     | 2.38                     | 0.59              |
| 34:BA:1173:G:H2'   | 34:BA:1174:G:H5''  | 1.85                     | 0.59              |
| 34:BA:1269:A:H8    | 34:BA:1270:C:H1'   | 1.68                     | 0.59              |
| 34:BA:1399:C:H4'   | 34:BA:1400:C:O5'   | 2.03                     | 0.59              |
| 35:BF:48:MET:HE3   | 35:BF:51:LEU:HD11  | 1.85                     | 0.59              |
| 35:BF:61:LEU:N     | 35:BF:64:ARG:HH11  | 2.01                     | 0.59              |
| 35:BF:91:PRO:HG2   | 35:BF:155:LEU:HB2  | 1.85                     | 0.59              |
| 36:BG:114:PRO:HD3  | 36:BG:183:ASP:OD1  | 2.03                     | 0.59              |
| 36:BG:120:VAL:HG21 | 36:BG:137:ALA:HB1  | 1.82                     | 0.59              |
| 36:BG:131:ARG:NH1  | 38:BI:50:GLU:OE1   | 2.36                     | 0.59              |
| 37:BH:194:LEU:CB   | 37:BH:196:LEU:HD11 | 2.31                     | 0.59              |
| 38:BI:43:LEU:O     | 38:BI:65:ASN:ND2   | 2.36                     | 0.59              |
| 38:BI:88:LYS:CB    | 38:BI:123:LEU:O    | 2.50                     | 0.59              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 38:BI:100:VAL:C   | 38:BI:101:ILE:HD13 | 2.27                     | 0.59              |
| 38:BI:118:ILE:C   | 38:BI:119:LEU:CD2  | 2.74                     | 0.59              |
| 44:BO:86:GLY:CA   | 44:BO:112:THR:HG23 | 2.33                     | 0.59              |
| 46:BQ:27:LYS:HB2  | 54:BY:7:ARG:HH11   | 1.43                     | 0.59              |
| 47:BR:24:CYS:N    | 47:BR:33:VAL:HG11  | 2.18                     | 0.59              |
| 48:BS:79:ARG:CG   | 48:BS:82:ILE:HD12  | 2.33                     | 0.59              |
| 50:BU:7:THR:HG22  | 50:BU:8:GLY:N      | 2.18                     | 0.59              |
| 50:BU:22:LEU:HD12 | 50:BU:40:LYS:O     | 2.02                     | 0.59              |
| 50:BU:66:SER:OG   | 50:BU:67:LYS:N     | 2.36                     | 0.59              |
| 53:BX:23:ARG:NH1  | 53:BX:24:LEU:HG    | 2.18                     | 0.59              |
| 53:BX:91:LEU:N    | 53:BX:91:LEU:HD23  | 2.18                     | 0.59              |
| 55:BC:58:A:H1'    | 55:BC:60:U:C5      | 2.37                     | 0.59              |
| 57:BZ:23:ASP:O    | 57:BZ:24:LYS:CG    | 2.51                     | 0.59              |
| 57:BZ:206:GLN:HB2 | 57:BZ:228:ARG:HB2  | 1.84                     | 0.59              |
| 57:BZ:305:PRO:HG3 | 57:BZ:344:ALA:O    | 2.03                     | 0.59              |
| 57:BZ:481:GLY:CA  | 57:BZ:482:GLN:O    | 2.51                     | 0.59              |
| 57:BZ:537:CYS:O   | 57:BZ:538:LEU:HD22 | 2.03                     | 0.59              |
| 57:BZ:563:MET:HB3 | 57:BZ:564:THR:CA   | 2.33                     | 0.59              |
| 1:AA:98:G:N2      | 1:AA:103:A:C2      | 2.70                     | 0.58              |
| 1:AA:123:G:N2     | 1:AA:124:G:H1'     | 2.18                     | 0.58              |
| 1:AA:145:G:C6     | 1:AA:146:G:C6      | 2.90                     | 0.58              |
| 1:AA:233:A:H2'    | 1:AA:234:C:O5'     | 2.03                     | 0.58              |
| 1:AA:270(A):A:H8  | 1:AA:370:G:O4'     | 1.85                     | 0.58              |
| 1:AA:270(C):C:N4  | 1:AA:270(D):C:N4   | 2.51                     | 0.58              |
| 1:AA:283:A:C2'    | 1:AA:284:U:H5'     | 2.32                     | 0.58              |
| 1:AA:481:G:H2'    | 1:AA:507:A:N6      | 2.18                     | 0.58              |
| 1:AA:515:A:C8     | 1:AA:515:A:C3'     | 2.86                     | 0.58              |
| 1:AA:565:C:O2     | 1:AA:565:C:C2'     | 2.50                     | 0.58              |
| 1:AA:573:G:H2'    | 1:AA:574:C:H5''    | 1.85                     | 0.58              |
| 1:AA:605:C:H2'    | 1:AA:606:U:C6      | 2.38                     | 0.58              |
| 1:AA:625:G:O6     | 11:AM:100:LEU:HB3  | 2.02                     | 0.58              |
| 1:AA:724:U:H2'    | 1:AA:725:G:C5'     | 2.33                     | 0.58              |
| 1:AA:900:A:N7     | 1:AA:901:A:H1'     | 2.18                     | 0.58              |
| 1:AA:931:G:C4     | 24:AZ:24:LYS:HE3   | 2.38                     | 0.58              |
| 1:AA:966:G:C6     | 1:AA:967:C:N4      | 2.71                     | 0.58              |
| 1:AA:1046:A:N7    | 31:AI:6:ASN:HA     | 2.18                     | 0.58              |
| 1:AA:1054:A:H2'   | 1:AA:1055:G:H8     | 1.59                     | 0.58              |
| 1:AA:1069:A:C5'   | 1:AA:1070:A:C8     | 2.86                     | 0.58              |
| 1:AA:1149:G:O2'   | 1:AA:1150:C:H5'    | 2.03                     | 0.58              |
| 1:AA:1154:G:O2'   | 1:AA:1155:A:H5'    | 2.02                     | 0.58              |
| 1:AA:1248:G:N1    | 6:AF:52:LYS:NZ     | 2.50                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1274:A:C2    | 1:AA:1302:A:C2    | 2.91                     | 0.58              |
| 1:AA:1433:U:H3'   | 1:AA:1433:U:H6    | 1.68                     | 0.58              |
| 1:AA:1492:G:H5'   | 1:AA:1493:C:OP2   | 2.03                     | 0.58              |
| 1:AA:1514:U:H2'   | 1:AA:1514:U:O2    | 2.03                     | 0.58              |
| 1:AA:1646:C:C3'   | 1:AA:1647:G:C5'   | 2.68                     | 0.58              |
| 1:AA:1688:U:C2    | 1:AA:1700:A:H5''  | 2.38                     | 0.58              |
| 1:AA:1789:A:C3'   | 4:AD:213:ARG:HH12 | 2.15                     | 0.58              |
| 1:AA:1934:C:H5'   | 1:AA:1974:C:C4'   | 2.30                     | 0.58              |
| 1:AA:1953:A:N6    | 1:AA:2550:G:H5'   | 2.18                     | 0.58              |
| 1:AA:2022:U:O2'   | 1:AA:2034:U:C2    | 2.51                     | 0.58              |
| 1:AA:2029:G:H8    | 1:AA:2029:G:O5'   | 1.86                     | 0.58              |
| 1:AA:2049:G:N2    | 1:AA:2620:C:N1    | 2.51                     | 0.58              |
| 1:AA:2144:U:OP2   | 1:AA:2144:U:H6    | 1.85                     | 0.58              |
| 1:AA:2147:G:H2'   | 1:AA:2147:G:N3    | 2.18                     | 0.58              |
| 1:AA:2194:G:H2'   | 1:AA:2195:C:H5    | 1.68                     | 0.58              |
| 1:AA:2216:G:H8    | 1:AA:2216:G:O5'   | 1.85                     | 0.58              |
| 1:AA:2263:C:C2'   | 1:AA:2264:C:H5'   | 2.33                     | 0.58              |
| 1:AA:2349:G:H3'   | 1:AA:2350:C:C5'   | 2.24                     | 0.58              |
| 1:AA:2520:C:O2'   | 1:AA:2521:C:C5'   | 2.50                     | 0.58              |
| 1:AA:2553:G:O6    | 1:AA:2583:G:O2'   | 2.21                     | 0.58              |
| 1:AA:2577:A:O2'   | 1:AA:2612:C:C4    | 2.55                     | 0.58              |
| 1:AA:2619:C:O2'   | 1:AA:2620:C:C5'   | 2.51                     | 0.58              |
| 1:AA:2637:U:OP2   | 1:AA:2637:U:O4'   | 2.20                     | 0.58              |
| 1:AA:2652:C:C4    | 1:AA:2669:G:N3    | 2.71                     | 0.58              |
| 1:AA:2742:C:H2'   | 1:AA:2742:C:O2    | 2.02                     | 0.58              |
| 1:AA:2773:C:H2'   | 1:AA:2774:C:H6    | 1.67                     | 0.58              |
| 1:AA:2785:C:H2'   | 1:AA:2786:U:C6    | 2.38                     | 0.58              |
| 1:AA:2845:G:H2'   | 1:AA:2846:G:H8    | 1.68                     | 0.58              |
| 1:AA:2853:C:O2'   | 1:AA:2854:G:H5'   | 2.03                     | 0.58              |
| 2:AB:35:U:O2      | 2:AB:35:U:C2'     | 2.48                     | 0.58              |
| 3:AC:43:VAL:CG1   | 3:AC:213:TYR:O    | 2.46                     | 0.58              |
| 3:AC:180:PHE:CE2  | 3:AC:184:LYS:CD   | 2.83                     | 0.58              |
| 4:AD:105:ILE:CD1  | 4:AD:106:ILE:H    | 2.06                     | 0.58              |
| 5:AE:59:VAL:C     | 5:AE:62:PRO:HD2   | 2.28                     | 0.58              |
| 5:AE:104:VAL:HG21 | 5:AE:198:VAL:HG22 | 1.85                     | 0.58              |
| 6:AF:56:GLU:C     | 6:AF:60:SER:OG    | 2.46                     | 0.58              |
| 7:AG:12:TYR:CZ    | 7:AG:13:GLU:HG3   | 2.38                     | 0.58              |
| 7:AG:54:GLU:OE1   | 7:AG:69:ALA:O     | 2.20                     | 0.58              |
| 7:AG:119:GLY:HA3  | 7:AG:180:PHE:CD1  | 2.38                     | 0.58              |
| 8:AH:88:LEU:HD23  | 8:AH:89:ILE:C     | 2.27                     | 0.58              |
| 8:AH:103:LEU:O    | 8:AH:113:VAL:O    | 2.21                     | 0.58              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AH:110:SER:O    | 8:AH:112:PRO:CD    | 2.46                     | 0.58              |
| 10:AL:16:ALA:CB   | 10:AL:45:GLU:CB    | 2.81                     | 0.58              |
| 10:AL:39:ILE:HD13 | 10:AL:39:ILE:H     | 1.67                     | 0.58              |
| 10:AL:97:ARG:HE   | 10:AL:99:PHE:N     | 2.00                     | 0.58              |
| 10:AL:121:VAL:O   | 10:AL:122:LEU:HB2  | 2.03                     | 0.58              |
| 11:AM:58:THR:OG1  | 29:Ae:13:ARG:NH1   | 2.35                     | 0.58              |
| 11:AM:90:ARG:HA   | 11:AM:125:VAL:HG22 | 1.85                     | 0.58              |
| 14:AP:4:LEU:O     | 14:AP:8:GLU:HG3    | 2.02                     | 0.58              |
| 16:AR:35:ALA:O    | 16:AR:36:ARG:C     | 2.44                     | 0.58              |
| 17:AS:67:GLY:CA   | 17:AS:94:LEU:HD23  | 2.33                     | 0.58              |
| 19:AU:35:THR:N    | 19:AU:38:GLU:HB2   | 2.17                     | 0.58              |
| 19:AU:63:LYS:NZ   | 19:AU:72:LYS:HE2   | 2.18                     | 0.58              |
| 20:AV:17:SER:OG   | 20:AV:18:GLY:N     | 2.26                     | 0.58              |
| 20:AV:45:VAL:C    | 20:AV:57:GLN:HG2   | 2.28                     | 0.58              |
| 20:AV:74:PRO:HB3  | 20:AV:101:LYS:CA   | 2.32                     | 0.58              |
| 20:AV:93:GLY:C    | 20:AV:95:LYS:H     | 2.11                     | 0.58              |
| 21:AW:7:ALA:HB1   | 21:AW:9:TYR:O      | 2.02                     | 0.58              |
| 22:AX:72:ARG:CD   | 22:AX:75:LEU:HD22  | 2.33                     | 0.58              |
| 25:Aa:58:ARG:HB3  | 25:Aa:62:ARG:NH2   | 2.18                     | 0.58              |
| 27:Ac:30:THR:HB   | 27:Ac:31:PRO:HD2   | 1.83                     | 0.58              |
| 30:Af:19:ARG:HD2  | 30:Af:24:TYR:CG    | 2.37                     | 0.58              |
| 32:AJ:83:GLY:O    | 32:AJ:84:LEU:C     | 2.45                     | 0.58              |
| 34:BA:90:C:O2'    | 34:BA:91:C:C5'     | 2.50                     | 0.58              |
| 34:BA:173:U:H4'   | 34:BA:197:A:C4     | 2.38                     | 0.58              |
| 34:BA:263:A:C3'   | 34:BA:264:U:H5''   | 2.33                     | 0.58              |
| 34:BA:278:G:H1'   | 34:BA:282:A:H1'    | 1.85                     | 0.58              |
| 34:BA:283:C:O2    | 34:BA:283:C:C2'    | 2.51                     | 0.58              |
| 34:BA:346:G:N2    | 34:BA:347:G:C4     | 2.71                     | 0.58              |
| 34:BA:369:C:OP2   | 34:BA:388:G:N1     | 2.35                     | 0.58              |
| 34:BA:449:C:C4    | 34:BA:450:G:H1'    | 2.38                     | 0.58              |
| 34:BA:597:G:C5    | 34:BA:644:G:N1     | 2.71                     | 0.58              |
| 34:BA:611:A:H2'   | 34:BA:612:C:H6     | 1.68                     | 0.58              |
| 34:BA:719:C:H2'   | 34:BA:720:C:O4'    | 2.02                     | 0.58              |
| 34:BA:792:A:O2'   | 34:BA:794:A:N7     | 2.28                     | 0.58              |
| 34:BA:812:C:O2'   | 34:BA:813:U:OP2    | 2.20                     | 0.58              |
| 34:BA:944:G:C2'   | 34:BA:945:G:H5''   | 2.34                     | 0.58              |
| 34:BA:992:U:H5'   | 34:BA:993:G:C8     | 2.37                     | 0.58              |
| 34:BA:1031:G:H2'  | 34:BA:1032:A:C8    | 2.37                     | 0.58              |
| 34:BA:1089:G:C2'  | 34:BA:1090:U:H5'   | 2.33                     | 0.58              |
| 34:BA:1203:C:H2'  | 34:BA:1204:A:H8    | 1.68                     | 0.58              |
| 34:BA:1217:C:OP1  | 47:BR:8:GLU:OE2    | 2.21                     | 0.58              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1291:G:N2   | 34:BA:1292:U:C2    | 2.71                     | 0.58              |
| 35:BF:15:VAL:HG11 | 35:BF:209:ARG:CB   | 2.31                     | 0.58              |
| 35:BF:173:ALA:O   | 35:BF:174:VAL:C    | 2.46                     | 0.58              |
| 35:BF:193:ASP:O   | 35:BF:194:PRO:C    | 2.46                     | 0.58              |
| 36:BG:17:ASP:OD2  | 36:BG:18:TRP:CZ3   | 2.56                     | 0.58              |
| 38:BI:122:GLU:HG2 | 38:BI:126:ARG:HG3  | 1.85                     | 0.58              |
| 39:BJ:98:LEU:CD2  | 51:BV:28:GLU:HA    | 2.33                     | 0.58              |
| 40:BK:41:ARG:HG2  | 40:BK:41:ARG:HH11  | 1.66                     | 0.58              |
| 40:BK:89:MET:N    | 40:BK:89:MET:SD    | 2.76                     | 0.58              |
| 41:BL:17:THR:HB   | 41:BL:18:ARG:CZ    | 2.33                     | 0.58              |
| 41:BL:126:LYS:NZ  | 41:BL:127:LEU:HB2  | 2.18                     | 0.58              |
| 42:BM:89:ASN:ND2  | 42:BM:92:TYR:CE1   | 2.71                     | 0.58              |
| 44:BO:20:TYR:O    | 44:BO:30:VAL:HA    | 2.03                     | 0.58              |
| 47:BR:23:ARG:NE   | 47:BR:30:ALA:HB2   | 2.17                     | 0.58              |
| 48:BS:54:ARG:NE   | 48:BS:58:MET:HE2   | 2.18                     | 0.58              |
| 49:BT:26:ARG:O    | 49:BT:27:LYS:C     | 2.46                     | 0.58              |
| 49:BT:49:LEU:CD2  | 49:BT:73:LEU:HD21  | 2.32                     | 0.58              |
| 51:BV:47:THR:O    | 51:BV:47:THR:HG22  | 2.03                     | 0.58              |
| 51:BV:75:ILE:CG2  | 51:BV:76:LEU:HD22  | 2.33                     | 0.58              |
| 51:BV:76:LEU:H    | 51:BV:76:LEU:CD2   | 2.15                     | 0.58              |
| 52:BW:29:ARG:HG2  | 52:BW:48:THR:HB    | 1.85                     | 0.58              |
| 53:BX:23:ARG:O    | 53:BX:24:LEU:C     | 2.46                     | 0.58              |
| 56:BD:67:C:C5     | 56:BD:68:C:N3      | 2.68                     | 0.58              |
| 56:BE:67:C:H2'    | 56:BE:68:C:C6      | 2.38                     | 0.58              |
| 57:BZ:5:LEU:C     | 57:BZ:68:TYR:O     | 2.44                     | 0.58              |
| 57:BZ:64:ILE:H    | 57:BZ:65:LYS:CG    | 2.16                     | 0.58              |
| 57:BZ:98:VAL:HA   | 57:BZ:126:VAL:O    | 2.03                     | 0.58              |
| 57:BZ:107:PRO:HG2 | 57:BZ:460:SER:O    | 2.03                     | 0.58              |
| 57:BZ:159:ASP:O   | 57:BZ:162:ILE:HG13 | 2.03                     | 0.58              |
| 1:AA:71:A:O2'     | 1:AA:72:U:C5'      | 2.52                     | 0.58              |
| 1:AA:126:A:H5''   | 28:Ad:18:PHE:CD1   | 2.37                     | 0.58              |
| 1:AA:263:C:O2     | 1:AA:263:C:C2'     | 2.48                     | 0.58              |
| 1:AA:281:G:C8     | 1:AA:427:U:O2      | 2.56                     | 0.58              |
| 1:AA:443:A:O4'    | 1:AA:1201:C:O4'    | 2.21                     | 0.58              |
| 1:AA:500:G:H2'    | 1:AA:501:A:C5'     | 2.33                     | 0.58              |
| 1:AA:502:A:C2'    | 1:AA:503:A:H5'     | 2.33                     | 0.58              |
| 1:AA:510:C:O5'    | 1:AA:512:G:C6      | 2.57                     | 0.58              |
| 1:AA:529:A:N6     | 1:AA:2023:G:C4     | 2.71                     | 0.58              |
| 1:AA:547:A:H2'    | 1:AA:548:A:O4'     | 2.03                     | 0.58              |
| 1:AA:692:C:H4'    | 4:AD:42:GLY:HA3    | 1.85                     | 0.58              |
| 1:AA:775:G:H21    | 1:AA:787:U:C2'     | 2.08                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:784:A:O2'    | 1:AA:785:G:H5'    | 2.03                     | 0.58              |
| 1:AA:811:U:C6     | 1:AA:811:U:H3'    | 2.39                     | 0.58              |
| 1:AA:832:G:OP2    | 11:AM:35:HIS:CG   | 2.56                     | 0.58              |
| 1:AA:942:G:C6     | 1:AA:943:U:O4     | 2.57                     | 0.58              |
| 1:AA:974:G:C4     | 1:AA:1186:G:C6    | 2.90                     | 0.58              |
| 1:AA:1000:A:C8    | 1:AA:1154:G:N2    | 2.71                     | 0.58              |
| 1:AA:1115:G:H2'   | 1:AA:1115:G:N3    | 2.16                     | 0.58              |
| 1:AA:1203:G:C2    | 1:AA:1241:A:C8    | 2.91                     | 0.58              |
| 1:AA:1264:G:N7    | 1:AA:1265:A:C8    | 2.71                     | 0.58              |
| 1:AA:1427:A:OP1   | 1:AA:1427:A:H8    | 1.85                     | 0.58              |
| 1:AA:1471:A:N6    | 1:AA:1519:G:N2    | 2.48                     | 0.58              |
| 1:AA:1531:C:O2    | 1:AA:1532:C:C5    | 2.57                     | 0.58              |
| 1:AA:1675:C:O2    | 1:AA:1675:C:H2'   | 2.02                     | 0.58              |
| 1:AA:1747:G:O2'   | 1:AA:1748:G:H5'   | 2.02                     | 0.58              |
| 1:AA:1832:C:N4    | 1:AA:1833:U:C4    | 2.72                     | 0.58              |
| 1:AA:1857:G:N7    | 1:AA:1883:G:O6    | 2.37                     | 0.58              |
| 1:AA:1861:G:C2'   | 1:AA:1862:G:H5'   | 2.32                     | 0.58              |
| 1:AA:1906:G:OP2   | 1:AA:1930:G:N7    | 2.36                     | 0.58              |
| 1:AA:1944:U:O2    | 1:AA:1955:U:C6    | 2.56                     | 0.58              |
| 1:AA:2018:G:H3'   | 1:AA:2018:G:P     | 2.43                     | 0.58              |
| 1:AA:2125:G:H1'   | 3:AC:218:MET:H    | 0.68                     | 0.58              |
| 1:AA:2278:A:N7    | 22:AX:14:ARG:CG   | 2.66                     | 0.58              |
| 1:AA:2401:U:OP2   | 1:AA:2402:C:N4    | 2.35                     | 0.58              |
| 1:AA:2500:U:H4'   | 1:AA:2501:C:OP2   | 2.02                     | 0.58              |
| 1:AA:2570:G:C2    | 1:AA:2571:C:C2    | 2.91                     | 0.58              |
| 1:AA:2572:A:H5''  | 1:AA:2573:C:OP1   | 2.04                     | 0.58              |
| 1:AA:2618:G:O2'   | 5:AE:150:VAL:HG12 | 2.03                     | 0.58              |
| 1:AA:2619:C:H5''  | 5:AE:152:LYS:CB   | 2.33                     | 0.58              |
| 1:AA:2629:A:C5'   | 1:AA:2895:U:N1    | 2.56                     | 0.58              |
| 1:AA:2629:A:C2    | 1:AA:2801:A:C2    | 2.91                     | 0.58              |
| 1:AA:2629:A:C2    | 1:AA:2801:A:N3    | 2.71                     | 0.58              |
| 1:AA:2631:G:N2    | 5:AE:61:ARG:NH1   | 2.50                     | 0.58              |
| 1:AA:2777:G:C8    | 1:AA:2777:G:C3'   | 2.86                     | 0.58              |
| 1:AA:2791:C:H3'   | 1:AA:2791:C:OP2   | 2.02                     | 0.58              |
| 1:AA:2810:A:H2'   | 1:AA:2811:G:C5'   | 2.33                     | 0.58              |
| 2:AB:60:C:O2      | 2:AB:60:C:C2'     | 2.51                     | 0.58              |
| 3:AC:75:LEU:CD1   | 3:AC:99:ILE:HD13  | 2.29                     | 0.58              |
| 3:AC:171:ILE:HG12 | 3:AC:172:HIS:H    | 1.67                     | 0.58              |
| 4:AD:54:ARG:C     | 4:AD:219:PRO:CD   | 2.74                     | 0.58              |
| 4:AD:143:HIS:O    | 4:AD:144:ALA:HB3  | 2.02                     | 0.58              |
| 5:AE:41:LYS:C     | 5:AE:43:GLY:N     | 2.52                     | 0.58              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 5:AE:103:ASP:N     | 5:AE:200:GLU:OE1  | 2.34                     | 0.58              |
| 6:AF:39:TRP:CZ3    | 6:AF:43:LYS:HB2   | 2.38                     | 0.58              |
| 6:AF:194:MET:HE3   | 6:AF:200:GLU:HG2  | 1.85                     | 0.58              |
| 7:AG:12:TYR:CD1    | 7:AG:12:TYR:C     | 2.80                     | 0.58              |
| 7:AG:125:PHE:CD2   | 7:AG:129:GLY:N    | 2.72                     | 0.58              |
| 9:AK:23:LEU:HD12   | 9:AK:63:THR:CB    | 2.32                     | 0.58              |
| 9:AK:51:PHE:CD2    | 9:AK:119:ARG:HB2  | 2.38                     | 0.58              |
| 9:AK:93:THR:C      | 9:AK:94:HIS:CD2   | 2.81                     | 0.58              |
| 10:AL:10:VAL:N     | 10:AL:17:ARG:O    | 2.36                     | 0.58              |
| 10:AL:63:VAL:CG2   | 10:AL:82:ASN:H    | 2.15                     | 0.58              |
| 15:AQ:112:ARG:HH22 | 34:BA:1464:G:C3'  | 2.16                     | 0.58              |
| 18:AT:22:ASP:HA    | 18:AT:75:TYR:CZ   | 2.38                     | 0.58              |
| 19:AU:5:TYR:HB3    | 23:AY:24:LYS:NZ   | 2.18                     | 0.58              |
| 20:AV:45:VAL:CA    | 20:AV:57:GLN:HG2  | 2.32                     | 0.58              |
| 23:AY:23:LYS:CE    | 23:AY:55:LEU:HD21 | 2.33                     | 0.58              |
| 27:Ac:8:LYS:C      | 27:Ac:28:ARG:HB3  | 2.28                     | 0.58              |
| 32:AJ:54:PRO:O     | 32:AJ:70:LYS:HB3  | 1.97                     | 0.58              |
| 32:AJ:108:ALA:HB1  | 32:AJ:111:LYS:O   | 2.03                     | 0.58              |
| 32:AJ:121:GLU:OE1  | 32:AJ:121:GLU:HA  | 2.01                     | 0.58              |
| 34:BA:21:G:C8      | 34:BA:22:G:N7     | 2.71                     | 0.58              |
| 34:BA:87:A:H62     | 34:BA:88:C:N4     | 2.00                     | 0.58              |
| 34:BA:130:A:H5''   | 34:BA:190:G:H2'   | 1.85                     | 0.58              |
| 34:BA:244:U:O4     | 34:BA:893:C:N3    | 2.36                     | 0.58              |
| 34:BA:375:U:C4'    | 49:BT:17:TYR:HE2  | 2.15                     | 0.58              |
| 34:BA:572:A:C4'    | 34:BA:917:G:H5'   | 2.26                     | 0.58              |
| 34:BA:624:C:H2'    | 34:BA:625:G:C8    | 2.38                     | 0.58              |
| 34:BA:659:U:OP1    | 48:BS:9:GLN:CD    | 2.46                     | 0.58              |
| 34:BA:818:G:H3'    | 34:BA:819:A:H5''  | 1.84                     | 0.58              |
| 34:BA:908:A:H2'    | 34:BA:909:A:H8    | 1.68                     | 0.58              |
| 34:BA:969:A:OP1    | 34:BA:969:A:O4'   | 2.20                     | 0.58              |
| 34:BA:1068:G:HO2'  | 34:BA:1069:C:H5'  | 1.67                     | 0.58              |
| 34:BA:1120:G:C8    | 34:BA:1120:G:O5'  | 2.55                     | 0.58              |
| 34:BA:1181:G:O3'   | 34:BA:1184:G:H5'  | 2.03                     | 0.58              |
| 34:BA:1216:G:H2'   | 34:BA:1217:C:C6   | 2.38                     | 0.58              |
| 34:BA:1224:G:C3'   | 52:BW:78:ARG:NH1  | 2.65                     | 0.58              |
| 34:BA:1269:A:C1'   | 34:BA:1312:G:C2   | 2.86                     | 0.58              |
| 34:BA:1320:C:C2    | 52:BW:75:ALA:O    | 2.56                     | 0.58              |
| 34:BA:1389:C:H2'   | 34:BA:1390:U:O4'  | 2.03                     | 0.58              |
| 34:BA:1411:C:H2'   | 34:BA:1412:C:H6   | 1.68                     | 0.58              |
| 35:BF:149:LEU:HD22 | 35:BF:153:ARG:HG2 | 1.85                     | 0.58              |
| 35:BF:185:ILE:HB   | 35:BF:199:TYR:HB2 | 1.85                     | 0.58              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BF:192:SER:O    | 35:BF:194:PRO:CD   | 2.51                     | 0.58              |
| 35:BF:212:GLN:O    | 35:BF:213:LEU:C    | 2.43                     | 0.58              |
| 35:BF:215:LEU:O    | 35:BF:215:LEU:HD13 | 2.03                     | 0.58              |
| 36:BG:35:GLU:CA    | 36:BG:38:ARG:HG2   | 2.34                     | 0.58              |
| 36:BG:178:LEU:O    | 36:BG:179:ARG:CB   | 2.51                     | 0.58              |
| 37:BH:58:LEU:CD1   | 37:BH:59:ARG:NH1   | 2.64                     | 0.58              |
| 39:BJ:67:MET:SD    | 39:BJ:67:MET:N     | 2.76                     | 0.58              |
| 40:BK:75:VAL:CG1   | 40:BK:76:ARG:N     | 2.66                     | 0.58              |
| 41:BL:4:ASP:O      | 41:BL:5:PRO:C      | 2.45                     | 0.58              |
| 42:BM:127:LYS:HZ2  | 56:BE:30:G:H4'     | 1.66                     | 0.58              |
| 43:BN:12:ASP:HB3   | 43:BN:15:THR:HG22  | 1.85                     | 0.58              |
| 44:BO:32:ILE:CG2   | 44:BO:40:ILE:HD11  | 2.22                     | 0.58              |
| 48:BS:77:ARG:NH1   | 48:BS:77:ARG:O     | 2.36                     | 0.58              |
| 52:BW:15:LEU:HD13  | 52:BW:71:LEU:HD13  | 1.82                     | 0.58              |
| 52:BW:18:LYS:HG2   | 52:BW:31:ILE:HG21  | 1.85                     | 0.58              |
| 53:BX:49:ALA:HB3   | 53:BX:99:LEU:HD11  | 1.85                     | 0.58              |
| 54:BY:6:ARG:NH1    | 54:BY:15:ARG:CZ    | 2.66                     | 0.58              |
| 57:BZ:119:TYR:CD2  | 57:BZ:121:LEU:CD1  | 2.86                     | 0.58              |
| 57:BZ:447:GLY:HA2  | 57:BZ:480:VAL:HG21 | 1.85                     | 0.58              |
| 1:AA:6:A:N3        | 1:AA:2897:U:C2     | 2.64                     | 0.58              |
| 1:AA:83:G:N1       | 1:AA:102:G:O2'     | 2.35                     | 0.58              |
| 1:AA:120:U:H1'     | 1:AA:149:A:H1'     | 1.85                     | 0.58              |
| 1:AA:204:A:O2'     | 1:AA:205:G:P       | 2.60                     | 0.58              |
| 1:AA:224:G:H2'     | 1:AA:225:A:O4'     | 2.04                     | 0.58              |
| 1:AA:366:C:H5''    | 1:AA:403:U:H3      | 1.68                     | 0.58              |
| 1:AA:502:A:O2'     | 1:AA:503:A:H5'     | 2.04                     | 0.58              |
| 1:AA:522:G:H2'     | 1:AA:523:C:H6      | 1.67                     | 0.58              |
| 1:AA:569:U:P       | 1:AA:945:A:H61     | 2.26                     | 0.58              |
| 1:AA:573:G:H2'     | 1:AA:574:C:C5'     | 2.33                     | 0.58              |
| 1:AA:653:A:H5'     | 1:AA:654:A:HO2'    | 1.68                     | 0.58              |
| 1:AA:671:C:C2      | 1:AA:672:C:C5      | 2.92                     | 0.58              |
| 1:AA:680:G:O2'     | 1:AA:681:G:H5'     | 2.02                     | 0.58              |
| 1:AA:714:U:H2'     | 1:AA:715:G:H3'     | 1.85                     | 0.58              |
| 1:AA:754:C:H2'     | 1:AA:755:C:H5'     | 1.85                     | 0.58              |
| 1:AA:909:A:H2'     | 1:AA:912:C:H5      | 1.67                     | 0.58              |
| 1:AA:961:C:C4      | 1:AA:2031:A:C2     | 2.91                     | 0.58              |
| 1:AA:1005:C:H1'    | 1:AA:1012:U:O2     | 2.04                     | 0.58              |
| 1:AA:1057:A:H2'    | 1:AA:1058:G:H8     | 1.67                     | 0.58              |
| 1:AA:1104:C:H2'    | 1:AA:1105:U:C6     | 2.38                     | 0.58              |
| 1:AA:1142(A):A:H3' | 1:AA:1143:A:H5''   | 1.83                     | 0.58              |
| 1:AA:1267:U:OP2    | 1:AA:2012:G:O6     | 2.21                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1334:G:C5'   | 19:AU:65:ARG:HH12 | 2.15                     | 0.58              |
| 1:AA:1389:G:H5'   | 1:AA:1525:G:C5'   | 2.31                     | 0.58              |
| 1:AA:1439:A:N7    | 1:AA:1440:G:C4    | 2.71                     | 0.58              |
| 1:AA:1484:G:H2'   | 1:AA:1485:G:H5''  | 1.85                     | 0.58              |
| 1:AA:1973:G:C6    | 1:AA:1974:C:N4    | 2.71                     | 0.58              |
| 1:AA:2118:U:C5    | 1:AA:2147:G:N7    | 2.72                     | 0.58              |
| 1:AA:2161:C:C2'   | 1:AA:2162:G:H8    | 2.13                     | 0.58              |
| 1:AA:2696:U:H2'   | 1:AA:2697:G:O5'   | 2.02                     | 0.58              |
| 1:AA:2721:A:C2    | 1:AA:2873:A:C6    | 2.92                     | 0.58              |
| 1:AA:2768:C:O2'   | 1:AA:2769:C:H5'   | 2.04                     | 0.58              |
| 1:AA:2787:C:O2    | 5:AE:61:ARG:CZ    | 2.51                     | 0.58              |
| 1:AA:2886:G:O2'   | 26:Ab:31:VAL:CB   | 2.51                     | 0.58              |
| 2:AB:67:G:C4      | 2:AB:68:C:C5      | 2.92                     | 0.58              |
| 2:AB:74:U:O2      | 21:AW:34:ASN:ND2  | 2.35                     | 0.58              |
| 3:AC:22:ILE:CD1   | 3:AC:226:PRO:HA   | 2.25                     | 0.58              |
| 3:AC:59:ARG:HD2   | 3:AC:162:GLU:CD   | 2.28                     | 0.58              |
| 6:AF:124:LEU:HD11 | 6:AF:200:GLU:OE2  | 2.03                     | 0.58              |
| 7:AG:26:GLN:OE1   | 7:AG:29:TRP:HE3   | 1.87                     | 0.58              |
| 8:AH:24:VAL:HG13  | 8:AH:37:VAL:CG1   | 2.33                     | 0.58              |
| 8:AH:26:VAL:CB    | 8:AH:75:ALA:HB1   | 2.33                     | 0.58              |
| 8:AH:69:ARG:HH21  | 8:AH:69:ARG:CG    | 2.16                     | 0.58              |
| 8:AH:85:LYS:HZ3   | 8:AH:142:GLY:HA2  | 1.67                     | 0.58              |
| 8:AH:103:LEU:CB   | 8:AH:105:LEU:HD11 | 2.33                     | 0.58              |
| 8:AH:139:GLN:O    | 8:AH:143:GLN:HG3  | 2.03                     | 0.58              |
| 9:AK:70:LYS:HD2   | 9:AK:86:PRO:CG    | 2.33                     | 0.58              |
| 9:AK:82:LEU:O     | 9:AK:83:LYS:O     | 2.21                     | 0.58              |
| 10:AL:37:ASP:O    | 10:AL:61:VAL:HG23 | 2.04                     | 0.58              |
| 11:AM:130:PHE:N   | 11:AM:130:PHE:CD2 | 2.71                     | 0.58              |
| 12:AN:37:LEU:CA   | 12:AN:100:GLY:HA2 | 2.34                     | 0.58              |
| 12:AN:43:THR:HG1  | 12:AN:45:GLN:HB2  | 1.68                     | 0.58              |
| 13:AO:52:ILE:O    | 13:AO:55:ALA:HB3  | 2.03                     | 0.58              |
| 14:AP:8:GLU:O     | 14:AP:10:ARG:N    | 2.36                     | 0.58              |
| 14:AP:9:ARG:O     | 14:AP:12:PHE:CD2  | 2.56                     | 0.58              |
| 15:AQ:31:SER:C    | 15:AQ:32:TYR:CG   | 2.81                     | 0.58              |
| 15:AQ:33:LYS:HD3  | 15:AQ:47:GLY:CA   | 2.32                     | 0.58              |
| 15:AQ:64:ARG:CZ   | 15:AQ:77:PRO:CB   | 2.80                     | 0.58              |
| 16:AR:27:LEU:C    | 16:AR:29:SER:N    | 2.62                     | 0.58              |
| 18:AT:40:ASN:O    | 18:AT:41:LYS:HB2  | 2.02                     | 0.58              |
| 20:AV:70:SER:OG   | 20:AV:78:ALA:HA   | 2.02                     | 0.58              |
| 21:AW:95:PRO:CD   | 21:AW:130:PRO:HA  | 2.33                     | 0.58              |
| 21:AW:166:SER:OG  | 21:AW:167:PRO:CD  | 2.49                     | 0.58              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:AX:28:GLY:O     | 22:AX:29:GLN:C     | 2.46                     | 0.58              |
| 24:AZ:6:VAL:HB     | 24:AZ:35:ARG:HH21  | 1.68                     | 0.58              |
| 27:Ac:27:LYS:HE3   | 27:Ac:29:ASN:ND2   | 2.18                     | 0.58              |
| 27:Ac:36:LEU:O     | 27:Ac:51:GLU:CB    | 2.36                     | 0.58              |
| 28:Ad:42:LEU:HD22  | 28:Ad:44:PRO:HG3   | 1.86                     | 0.58              |
| 30:Af:1:MET:O      | 30:Af:33:LYS:O     | 2.22                     | 0.58              |
| 32:AJ:55:VAL:H     | 32:AJ:56:GLU:HB3   | 1.68                     | 0.58              |
| 34:BA:35:G:O2'     | 34:BA:36:C:H5'     | 2.03                     | 0.58              |
| 34:BA:67:C:O2      | 34:BA:171:A:H2     | 1.87                     | 0.58              |
| 34:BA:89:U:H2'     | 34:BA:90:C:O4'     | 2.03                     | 0.58              |
| 34:BA:148:G:N2     | 34:BA:175:C:C4     | 2.71                     | 0.58              |
| 34:BA:307:C:C4     | 34:BA:308:C:C5     | 2.82                     | 0.58              |
| 34:BA:370:C:H2'    | 34:BA:371:G:H8     | 1.67                     | 0.58              |
| 34:BA:453:A:H8     | 34:BA:453:A:OP2    | 1.86                     | 0.58              |
| 34:BA:562:C:O2'    | 45:BP:15:ARG:CD    | 2.49                     | 0.58              |
| 34:BA:619:U:H3     | 37:BH:135:LEU:HD21 | 1.68                     | 0.58              |
| 34:BA:676:A:H2'    | 34:BA:677:U:H6     | 1.68                     | 0.58              |
| 34:BA:764:C:C4     | 34:BA:765:G:O6     | 2.56                     | 0.58              |
| 34:BA:914:A:H2'    | 34:BA:915:A:C8     | 2.38                     | 0.58              |
| 34:BA:932:C:H3'    | 40:BK:3:ARG:CG     | 2.21                     | 0.58              |
| 34:BA:1253:G:N3    | 34:BA:1355:G:O2'   | 2.36                     | 0.58              |
| 34:BA:1297:C:P     | 46:BQ:44:ARG:HH21  | 2.25                     | 0.58              |
| 34:BA:1305:G:H5''  | 54:BY:5:ASP:N      | 2.18                     | 0.58              |
| 34:BA:1514:C:H2'   | 34:BA:1515:C:C5    | 2.38                     | 0.58              |
| 35:BF:71:VAL:HG13  | 35:BF:73:THR:HG23  | 1.85                     | 0.58              |
| 35:BF:97:TRP:CZ2   | 35:BF:102:LEU:CD1  | 2.82                     | 0.58              |
| 35:BF:124:SER:HB3  | 35:BF:126:GLU:CD   | 2.28                     | 0.58              |
| 35:BF:139:LYS:CG   | 35:BF:140:HIS:N    | 2.64                     | 0.58              |
| 36:BG:30:ARG:HD3   | 36:BG:30:ARG:N     | 2.18                     | 0.58              |
| 41:BL:22:GLU:HA    | 41:BL:63:LEU:CD2   | 2.22                     | 0.58              |
| 41:BL:70:GLN:NE2   | 41:BL:71:GLY:N     | 2.47                     | 0.58              |
| 41:BL:119:LEU:HD12 | 41:BL:123:GLU:OE2  | 2.03                     | 0.58              |
| 42:BM:103:THR:CG2  | 42:BM:104:ARG:H    | 2.12                     | 0.58              |
| 44:BO:23:ALA:HB2   | 44:BO:28:THR:CG2   | 2.32                     | 0.58              |
| 44:BO:128:ALA:O    | 44:BO:129:SER:C    | 2.47                     | 0.58              |
| 45:BP:85:ILE:O     | 45:BP:85:ILE:CG2   | 2.51                     | 0.58              |
| 46:BQ:63:THR:HG23  | 46:BQ:63:THR:O     | 2.02                     | 0.58              |
| 48:BS:6:GLU:CG     | 48:BS:7:GLU:H      | 1.95                     | 0.58              |
| 48:BS:26:GLU:OE2   | 48:BS:26:GLU:HA    | 2.04                     | 0.58              |
| 48:BS:42:HIS:O     | 48:BS:43:LEU:C     | 2.45                     | 0.58              |
| 48:BS:71:GLN:N     | 48:BS:78:TYR:CD1   | 2.72                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 49:BT:52:ASP:C    | 49:BT:52:ASP:OD2  | 2.45                     | 0.58              |
| 49:BT:56:ALA:C    | 49:BT:60:LEU:HD12 | 2.29                     | 0.58              |
| 52:BW:22:LEU:HG   | 52:BW:25:LYS:NZ   | 2.11                     | 0.58              |
| 56:BD:54:U:O5'    | 56:BD:54:U:H6     | 1.86                     | 0.58              |
| 57:BZ:13:HIS:CD2  | 57:BZ:106:MET:C   | 2.81                     | 0.58              |
| 57:BZ:132:ARG:HB3 | 57:BZ:133:PRO:HD3 | 1.85                     | 0.58              |
| 57:BZ:538:LEU:H   | 57:BZ:539:THR:CA  | 2.16                     | 0.58              |
| 57:BZ:564:THR:CB  | 57:BZ:567:GLN:CB  | 2.81                     | 0.58              |
| 1:AA:250:G:H5'    | 29:Ae:8:LYS:HG2   | 1.84                     | 0.58              |
| 1:AA:320:A:O2'    | 6:AF:168:ARG:NH1  | 2.36                     | 0.58              |
| 1:AA:460:A:C3'    | 1:AA:461:C:H6     | 2.16                     | 0.58              |
| 1:AA:502:A:H3'    | 1:AA:502:A:H8     | 1.66                     | 0.58              |
| 1:AA:531:C:C2     | 1:AA:532:A:H1'    | 2.38                     | 0.58              |
| 1:AA:638:G:N2     | 1:AA:650:C:O2'    | 2.35                     | 0.58              |
| 1:AA:670:A:H5''   | 1:AA:671:C:OP1    | 2.03                     | 0.58              |
| 1:AA:895:U:H5''   | 1:AA:896:A:C5'    | 2.32                     | 0.58              |
| 1:AA:903:C:H2'    | 1:AA:904:C:C5     | 2.37                     | 0.58              |
| 1:AA:947:G:O5'    | 1:AA:947:G:C8     | 2.54                     | 0.58              |
| 1:AA:980:A:N6     | 1:AA:1135:C:H5''  | 2.17                     | 0.58              |
| 1:AA:1000:A:C8    | 1:AA:1001:A:C5    | 2.91                     | 0.58              |
| 1:AA:1021:A:C2'   | 1:AA:1022:G:OP1   | 2.49                     | 0.58              |
| 1:AA:1057:A:N6    | 1:AA:1086:A:H2'   | 2.18                     | 0.58              |
| 1:AA:1095:A:O2'   | 1:AA:1096:A:O4'   | 2.21                     | 0.58              |
| 1:AA:1248:G:OP1   | 16:AR:2:PRO:N     | 2.35                     | 0.58              |
| 1:AA:1291:C:O2'   | 1:AA:1292:U:H5'   | 2.02                     | 0.58              |
| 1:AA:1389:G:H2'   | 1:AA:1390:U:C6    | 2.39                     | 0.58              |
| 1:AA:1423:G:N3    | 1:AA:1424:G:C8    | 2.71                     | 0.58              |
| 1:AA:1515:C:H6    | 1:AA:1515:C:OP1   | 1.86                     | 0.58              |
| 1:AA:1667:G:N2    | 1:AA:1991:U:N3    | 2.51                     | 0.58              |
| 1:AA:1671:U:O2'   | 5:AE:129:HIS:CE1  | 2.57                     | 0.58              |
| 1:AA:1703:G:O2'   | 34:BA:1429:C:H4'  | 2.03                     | 0.58              |
| 1:AA:1799:G:C3'   | 4:AD:183:ARG:NH2  | 2.63                     | 0.58              |
| 1:AA:1818:U:C5'   | 4:AD:158:ALA:HB2  | 2.29                     | 0.58              |
| 1:AA:2278:A:N1    | 1:AA:2279:G:C5    | 2.71                     | 0.58              |
| 1:AA:2377:A:H2'   | 1:AA:2378:A:C8    | 2.39                     | 0.58              |
| 1:AA:2466:C:C4    | 1:AA:2485:G:N1    | 2.71                     | 0.58              |
| 1:AA:2638:G:C8    | 1:AA:2775:A:N1    | 2.72                     | 0.58              |
| 1:AA:2740:A:N6    | 1:AA:2741:A:N6    | 2.52                     | 0.58              |
| 1:AA:2754:U:H5'   | 30:Af:15:LYS:NZ   | 2.19                     | 0.58              |
| 1:AA:2764:A:OP1   | 1:AA:2764:A:C4'   | 2.48                     | 0.58              |
| 1:AA:2839:G:C2    | 1:AA:2880:C:C4    | 2.91                     | 0.58              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 2:AB:69:G:C8      | 2:AB:69:G:OP2      | 2.56                     | 0.58              |
| 4:AD:151:LYS:HB2  | 4:AD:154:LYS:CE    | 2.33                     | 0.58              |
| 4:AD:175:LEU:HD22 | 4:AD:176:ARG:H     | 1.66                     | 0.58              |
| 4:AD:228:PRO:C    | 4:AD:230:ASP:N     | 2.57                     | 0.58              |
| 5:AE:200:GLU:CB   | 5:AE:202:LYS:HZ3   | 2.16                     | 0.58              |
| 7:AG:44:GLY:N     | 7:AG:88:ILE:CG2    | 2.67                     | 0.58              |
| 8:AH:6:ARG:O      | 8:AH:6:ARG:HG3     | 2.02                     | 0.58              |
| 8:AH:11:VAL:HG11  | 8:AH:17:VAL:HG21   | 1.86                     | 0.58              |
| 9:AK:27:ALA:O     | 9:AK:29:LYS:N      | 2.36                     | 0.58              |
| 9:AK:43:THR:CB    | 9:AK:44:PRO:CD     | 2.59                     | 0.58              |
| 10:AL:35:VAL:HG21 | 10:AL:104:ARG:NH1  | 2.18                     | 0.58              |
| 10:AL:68:GLU:HB2  | 10:AL:104:ARG:HD2  | 1.86                     | 0.58              |
| 11:AM:77:ARG:NH2  | 11:AM:117:GLU:HG3  | 2.17                     | 0.58              |
| 13:AO:80:PHE:O    | 13:AO:84:ALA:HB3   | 2.03                     | 0.58              |
| 13:AO:100:LEU:CD1 | 13:AO:101:ALA:H    | 2.16                     | 0.58              |
| 15:AQ:26:ASP:O    | 15:AQ:52:ILE:CG2   | 2.52                     | 0.58              |
| 15:AQ:82:LEU:HD22 | 15:AQ:84:GLN:H     | 1.68                     | 0.58              |
| 16:AR:94:ASN:ND2  | 17:AS:6:LYS:CE     | 2.61                     | 0.58              |
| 18:AT:43:GLY:O    | 18:AT:47:VAL:CG2   | 2.52                     | 0.58              |
| 18:AT:89:ALA:O    | 18:AT:90:ARG:C     | 2.46                     | 0.58              |
| 21:AW:4:ARG:NE    | 21:AW:44:PHE:HZ    | 1.80                     | 0.58              |
| 21:AW:29:TYR:HD2  | 21:AW:89:PHE:CE2   | 2.20                     | 0.58              |
| 22:AX:46:LYS:HG3  | 22:AX:78:TYR:CD2   | 2.39                     | 0.58              |
| 23:AY:3:LYS:O     | 23:AY:6:GLU:HB2    | 2.04                     | 0.58              |
| 32:AJ:55:VAL:CG2  | 32:AJ:69:THR:HG22  | 2.33                     | 0.58              |
| 32:AJ:99:ILE:C    | 32:AJ:100:THR:HG1  | 2.03                     | 0.58              |
| 34:BA:132:C:HO2'  | 34:BA:133:U:H6     | 1.49                     | 0.58              |
| 34:BA:135:C:C2    | 49:BT:1:MET:HG2    | 2.38                     | 0.58              |
| 34:BA:237:C:OP1   | 50:BU:40:LYS:NZ    | 2.32                     | 0.58              |
| 34:BA:375:U:C4'   | 49:BT:17:TYR:CE2   | 2.87                     | 0.58              |
| 34:BA:486:U:H2'   | 34:BA:487:A:C5'    | 2.34                     | 0.58              |
| 34:BA:619:U:O2    | 37:BH:133:VAL:HG13 | 2.03                     | 0.58              |
| 34:BA:644:G:C2'   | 34:BA:645:C:H5'    | 2.33                     | 0.58              |
| 34:BA:708:C:C4'   | 44:BO:37:GLY:HA3   | 2.33                     | 0.58              |
| 34:BA:859:A:H2'   | 34:BA:860:A:C5'    | 2.33                     | 0.58              |
| 34:BA:940:C:H2'   | 34:BA:941:G:C8     | 2.37                     | 0.58              |
| 34:BA:946:A:H2'   | 34:BA:947:G:H8     | 1.64                     | 0.58              |
| 34:BA:1118:C:C4   | 34:BA:1156:G:N2    | 2.72                     | 0.58              |
| 34:BA:1143:G:N3   | 34:BA:1144:G:C8    | 2.71                     | 0.58              |
| 34:BA:1234:C:C4'  | 34:BA:1364:U:H1'   | 2.34                     | 0.58              |
| 34:BA:1431:C:O2'  | 34:BA:1432:G:H5'   | 2.02                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 34:BA:1494:G:C6   | 58:BA:1601:NMY:N7 | 2.71                     | 0.58              |
| 34:BA:1506:U:C6   | 34:BA:1506:U:P    | 2.96                     | 0.58              |
| 35:BF:15:VAL:HG22 | 35:BF:209:ARG:CZ  | 2.34                     | 0.58              |
| 35:BF:33:TYR:CG   | 35:BF:43:ASP:HB2  | 2.38                     | 0.58              |
| 35:BF:58:ILE:O    | 35:BF:61:LEU:N    | 2.36                     | 0.58              |
| 35:BF:136:VAL:N   | 35:BF:139:LYS:NZ  | 2.51                     | 0.58              |
| 35:BF:150:SER:O   | 35:BF:151:GLY:O   | 2.22                     | 0.58              |
| 36:BG:3:ASN:CG    | 36:BG:4:LYS:N     | 2.59                     | 0.58              |
| 36:BG:22:TRP:CH2  | 36:BG:32:LEU:HB3  | 2.39                     | 0.58              |
| 37:BH:19:LEU:O    | 37:BH:26:CYS:SG   | 2.62                     | 0.58              |
| 37:BH:146:ILE:O   | 37:BH:147:ALA:HB2 | 2.03                     | 0.58              |
| 37:BH:200:GLU:O   | 37:BH:201:GLN:C   | 2.45                     | 0.58              |
| 38:BI:107:ARG:CZ  | 38:BI:107:ARG:HB2 | 2.33                     | 0.58              |
| 39:BJ:16:GLN:HG3  | 39:BJ:17:SER:H    | 1.67                     | 0.58              |
| 39:BJ:62:TRP:CB   | 51:BV:35:ARG:HH12 | 2.15                     | 0.58              |
| 40:BK:100:ALA:HA  | 40:BK:103:TRP:HE3 | 1.69                     | 0.58              |
| 42:BM:37:PHE:HA   | 42:BM:40:LEU:HD12 | 1.84                     | 0.58              |
| 45:BP:41:ARG:CG   | 45:BP:42:THR:N    | 2.61                     | 0.58              |
| 46:BQ:84:ILE:C    | 46:BQ:86:CYS:H    | 2.12                     | 0.58              |
| 52:BW:3:ARG:CZ    | 52:BW:45:VAL:CG1  | 2.78                     | 0.58              |
| 57:BZ:9:ALA:HB1   | 57:BZ:73:VAL:HG23 | 0.61                     | 0.58              |
| 57:BZ:28:GLN:O    | 57:BZ:60:ASN:HB3  | 2.03                     | 0.58              |
| 57:BZ:150:ASN:ND2 | 57:BZ:150:ASN:H   | 2.01                     | 0.58              |
| 57:BZ:250:LYS:CD  | 57:BZ:275:ALA:HB2 | 2.30                     | 0.58              |
| 1:AA:31:C:H5''    | 1:AA:1239:G:OP1   | 2.02                     | 0.58              |
| 1:AA:120:U:O2     | 1:AA:120:U:C2'    | 2.51                     | 0.58              |
| 1:AA:249:C:H5'    | 1:AA:2394:C:O2'   | 2.04                     | 0.58              |
| 1:AA:253:C:C2'    | 1:AA:254:G:H5'    | 2.34                     | 0.58              |
| 1:AA:266:G:H5'    | 1:AA:271(A):C:H42 | 1.68                     | 0.58              |
| 1:AA:470:A:C2'    | 1:AA:471:A:O5'    | 2.52                     | 0.58              |
| 1:AA:616:A:H2'    | 1:AA:616:A:N3     | 2.17                     | 0.58              |
| 1:AA:641:C:H5     | 1:AA:642:G:N3     | 2.02                     | 0.58              |
| 1:AA:666:G:H5'    | 29:Ae:59:LYS:HZ1  | 1.69                     | 0.58              |
| 1:AA:714:U:OP2    | 1:AA:714:U:H6     | 1.86                     | 0.58              |
| 1:AA:740:U:O2'    | 1:AA:741:G:O5'    | 2.21                     | 0.58              |
| 1:AA:816:C:C2'    | 1:AA:817:C:H5'    | 2.33                     | 0.58              |
| 1:AA:1181:C:H2'   | 1:AA:1182:A:C8    | 2.38                     | 0.58              |
| 1:AA:1264:G:OP1   | 26:Ab:15:ARG:NH1  | 2.35                     | 0.58              |
| 1:AA:1313:U:C5    | 1:AA:1313:U:OP2   | 2.57                     | 0.58              |
| 1:AA:1343:G:N2    | 1:AA:1405:U:N1    | 2.51                     | 0.58              |
| 1:AA:1388:G:H2'   | 1:AA:1389:G:C8    | 2.34                     | 0.58              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1429:G:N2    | 1:AA:1565:C:O2     | 2.37                     | 0.58              |
| 1:AA:1526:G:N2    | 1:AA:1545(A):A:H62 | 2.00                     | 0.58              |
| 1:AA:1602:U:C2'   | 1:AA:1603:A:O5'    | 2.49                     | 0.58              |
| 1:AA:1637:A:H2'   | 1:AA:1638:C:C6     | 2.38                     | 0.58              |
| 1:AA:1684:C:C4    | 1:AA:1705:G:N2     | 2.71                     | 0.58              |
| 1:AA:1703:G:C2    | 1:AA:1704:G:N9     | 2.71                     | 0.58              |
| 1:AA:1804:C:OP1   | 4:AD:257:LEU:HD22  | 2.04                     | 0.58              |
| 1:AA:1912:A:N6    | 1:AA:1919:A:C5     | 2.72                     | 0.58              |
| 1:AA:1966:A:O2'   | 1:AA:1967:C:OP2    | 2.20                     | 0.58              |
| 1:AA:1980:G:C4    | 1:AA:1982:C:C5     | 2.91                     | 0.58              |
| 1:AA:1992:G:C6    | 1:AA:1997:G:C4     | 2.91                     | 0.58              |
| 1:AA:2134:A:N1    | 1:AA:2135:A:N1     | 2.51                     | 0.58              |
| 1:AA:2707:G:O2'   | 1:AA:2708:G:H5'    | 2.04                     | 0.58              |
| 1:AA:2821:A:OP1   | 5:AE:110:GLY:N     | 2.36                     | 0.58              |
| 3:AC:161:ILE:HD13 | 3:AC:173:ALA:HB1   | 1.85                     | 0.58              |
| 4:AD:63:ARG:HH11  | 4:AD:63:ARG:HB2    | 1.67                     | 0.58              |
| 4:AD:73:VAL:HG12  | 4:AD:120:GLY:CA    | 2.33                     | 0.58              |
| 4:AD:132:PRO:HD3  | 4:AD:190:TYR:CZ    | 2.38                     | 0.58              |
| 4:AD:174:ILE:HD12 | 4:AD:184:LYS:HE3   | 1.84                     | 0.58              |
| 4:AD:199:ALA:HA   | 4:AD:202:LYS:HD3   | 1.85                     | 0.58              |
| 4:AD:223:GLY:O    | 4:AD:225:ALA:N     | 2.36                     | 0.58              |
| 5:AE:111:ARG:HB2  | 5:AE:160:TYR:O     | 2.03                     | 0.58              |
| 6:AF:7:TYR:H      | 6:AF:20:LEU:CD2    | 2.15                     | 0.58              |
| 6:AF:11:VAL:HG22  | 6:AF:125:LEU:O     | 2.03                     | 0.58              |
| 6:AF:116:ASP:HA   | 6:AF:119:ARG:CG    | 2.33                     | 0.58              |
| 7:AG:8:LYS:HZ1    | 7:AG:103:LEU:HG    | 1.65                     | 0.58              |
| 10:AL:101:PRO:O   | 10:AL:102:VAL:HB   | 2.02                     | 0.58              |
| 10:AL:116:SER:O   | 10:AL:119:PRO:HG3  | 2.03                     | 0.58              |
| 12:AN:12:GLN:NE2  | 12:AN:12:GLN:C     | 2.61                     | 0.58              |
| 12:AN:85:LYS:HZ2  | 22:AX:10:THR:CG2   | 2.16                     | 0.58              |
| 13:AO:99:LYS:HE2  | 26:Ab:43:HIS:CE1   | 2.39                     | 0.58              |
| 14:AP:66:ALA:O    | 14:AP:68:GLN:N     | 2.36                     | 0.58              |
| 14:AP:74:ALA:HB1  | 14:AP:108:GLY:HA2  | 1.80                     | 0.58              |
| 18:AT:25:ARG:O    | 18:AT:26:GLY:C     | 2.45                     | 0.58              |
| 18:AT:82:LEU:HD13 | 18:AT:83:LYS:N     | 2.17                     | 0.58              |
| 19:AU:3:THR:O     | 19:AU:4:ALA:CB     | 2.50                     | 0.58              |
| 19:AU:15:GLU:CB   | 19:AU:16:LYS:HE2   | 2.33                     | 0.58              |
| 19:AU:90:GLU:O    | 19:AU:93:GLU:HG3   | 2.02                     | 0.58              |
| 21:AW:169:GLU:O   | 21:AW:169:GLU:HG2  | 2.02                     | 0.58              |
| 22:AX:25:ARG:HG2  | 22:AX:37:LEU:HA    | 1.84                     | 0.58              |
| 22:AX:63:VAL:O    | 22:AX:81:VAL:HG11  | 2.04                     | 0.58              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 23:AY:36:ILE:HG23  | 23:AY:41:GLN:HE22  | 1.67                     | 0.58              |
| 25:Aa:7:PRO:O      | 25:Aa:60:GLN:OE1   | 2.21                     | 0.58              |
| 26:Ab:19:ARG:NH1   | 26:Ab:20:ARG:HH11  | 2.01                     | 0.58              |
| 28:Ad:8:ASN:C      | 28:Ad:8:ASN:ND2    | 2.60                     | 0.58              |
| 33:Ag:3:UNK:CB     | 33:Ag:140:UNK:CB   | 2.81                     | 0.58              |
| 34:BA:221:C:H2'    | 34:BA:222:U:C6     | 2.37                     | 0.58              |
| 34:BA:321:A:H5''   | 34:BA:1436:U:O4'   | 2.02                     | 0.58              |
| 34:BA:341:C:O2'    | 34:BA:342:C:C5'    | 2.52                     | 0.58              |
| 34:BA:439:A:H1'    | 34:BA:496:A:N1     | 2.18                     | 0.58              |
| 34:BA:445:G:O2'    | 34:BA:446:G:H5'    | 2.03                     | 0.58              |
| 34:BA:474:G:OP1    | 49:BT:80:PHE:O     | 2.21                     | 0.58              |
| 34:BA:539:A:OP1    | 45:BP:114:LYS:HE2  | 2.03                     | 0.58              |
| 34:BA:559:A:O2'    | 34:BA:560:U:P      | 2.61                     | 0.58              |
| 34:BA:954:G:H2'    | 34:BA:955:U:O4'    | 2.04                     | 0.58              |
| 34:BA:1085:U:O2    | 34:BA:1094:G:O6    | 2.21                     | 0.58              |
| 34:BA:1116:C:C2    | 34:BA:1117:G:C8    | 2.92                     | 0.58              |
| 34:BA:1126:U:H2'   | 34:BA:1127:G:C8    | 2.36                     | 0.58              |
| 34:BA:1129:C:C5    | 34:BA:1139:G:N7    | 2.71                     | 0.58              |
| 34:BA:1193:G:C6    | 34:BA:1194:U:C4    | 2.91                     | 0.58              |
| 34:BA:1405:G:C4'   | 34:BA:1519:A:H4'   | 2.33                     | 0.58              |
| 35:BF:55:PHE:CE2   | 35:BF:218:ALA:HA   | 2.39                     | 0.58              |
| 35:BF:196:LEU:C    | 35:BF:196:LEU:CD1  | 2.77                     | 0.58              |
| 36:BG:49:SER:C     | 36:BG:51:GLY:H     | 2.11                     | 0.58              |
| 37:BH:60:GLU:OE2   | 37:BH:202:LEU:HD12 | 2.02                     | 0.58              |
| 37:BH:79:PHE:O     | 37:BH:80:GLU:C     | 2.45                     | 0.58              |
| 37:BH:170:VAL:HG12 | 37:BH:171:GLY:H    | 1.68                     | 0.58              |
| 39:BJ:50:TYR:CZ    | 51:BV:77:GLY:HA2   | 2.39                     | 0.58              |
| 41:BL:29:SER:CB    | 41:BL:32:LYS:NZ    | 2.65                     | 0.58              |
| 42:BM:47:LEU:CD1   | 42:BM:51:ARG:HH22  | 2.05                     | 0.58              |
| 42:BM:67:GLY:C     | 42:BM:73:GLN:HE21  | 2.11                     | 0.58              |
| 43:BN:89:ASP:C     | 43:BN:90:LEU:HG    | 2.28                     | 0.58              |
| 44:BO:66:LEU:C     | 44:BO:70:LYS:HZ2   | 2.11                     | 0.58              |
| 46:BQ:16:ASP:H     | 46:BQ:34:LEU:HD21  | 1.67                     | 0.58              |
| 46:BQ:70:LEU:HD11  | 46:BQ:74:VAL:HG21  | 1.86                     | 0.58              |
| 51:BV:39:VAL:O     | 51:BV:42:ARG:HB2   | 2.03                     | 0.58              |
| 52:BW:16:LEU:HD12  | 52:BW:19:VAL:HG11  | 1.84                     | 0.58              |
| 53:BX:65:LYS:O     | 53:BX:68:LYS:CG    | 2.52                     | 0.58              |
| 56:BE:25:C:O2'     | 56:BE:26:A:H5'     | 2.03                     | 0.58              |
| 57:BZ:21:LEU:CD1   | 57:BZ:98:VAL:CG2   | 2.78                     | 0.58              |
| 57:BZ:26:LEU:H     | 57:BZ:26:LEU:HD22  | 1.69                     | 0.58              |
| 57:BZ:119:TYR:HD2  | 57:BZ:121:LEU:CG   | 2.15                     | 0.58              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 57:BZ:160:PHE:H  | 57:BZ:161:ALA:HB3 | 1.69                     | 0.58              |
| 57:BZ:236:GLN:CG | 57:BZ:237:VAL:N   | 2.52                     | 0.58              |
| 57:BZ:372:ASN:O  | 57:BZ:376:GLU:HG3 | 2.04                     | 0.58              |
| 1:AA:4:C:H2'     | 1:AA:5:A:C8       | 2.38                     | 0.58              |
| 1:AA:72:U:C1'    | 23:AY:56:LEU:HD23 | 2.29                     | 0.58              |
| 1:AA:197:A:C2    | 1:AA:198:C:O4'    | 2.56                     | 0.58              |
| 1:AA:270(E):G:H8 | 1:AA:270(E):G:OP2 | 1.87                     | 0.58              |
| 1:AA:292:C:C2'   | 1:AA:293:U:N3     | 2.66                     | 0.58              |
| 1:AA:431:U:H2'   | 1:AA:432:A:H5'    | 1.86                     | 0.58              |
| 1:AA:546:C:C4    | 1:AA:547:A:N6     | 2.71                     | 0.58              |
| 1:AA:558:G:P     | 9:AK:111:PRO:HG2  | 2.44                     | 0.58              |
| 1:AA:565:C:OP2   | 17:AS:80:GLN:O    | 2.22                     | 0.58              |
| 1:AA:611:C:O2    | 1:AA:616:A:H2     | 1.87                     | 0.58              |
| 1:AA:716:A:C4    | 48:BS:44:LYS:HD3  | 2.38                     | 0.58              |
| 1:AA:781:A:O2'   | 1:AA:1788:C:O2    | 2.21                     | 0.58              |
| 1:AA:784:A:H62   | 1:AA:792:G:N2     | 2.01                     | 0.58              |
| 1:AA:879:G:C4    | 1:AA:898:C:O2     | 2.24                     | 0.58              |
| 1:AA:1050:A:C4   | 1:AA:2751:G:H3'   | 2.39                     | 0.58              |
| 1:AA:1051:G:C1'  | 1:AA:2752:C:O5'   | 2.51                     | 0.58              |
| 1:AA:1101:U:H2'  | 1:AA:1102:C:C6    | 2.38                     | 0.58              |
| 1:AA:1127:A:H3'  | 1:AA:1127:A:C8    | 2.39                     | 0.58              |
| 1:AA:1488:G:O6   | 1:AA:1489:U:C2    | 2.55                     | 0.58              |
| 1:AA:1494:A:C2   | 1:AA:1495:A:O4'   | 2.57                     | 0.58              |
| 1:AA:1531:C:C2   | 1:AA:1532:C:H5    | 2.21                     | 0.58              |
| 1:AA:1620:G:C5   | 1:AA:1621:U:C4    | 2.92                     | 0.58              |
| 1:AA:1791:A:OP1  | 4:AD:213:ARG:HD3  | 2.04                     | 0.58              |
| 1:AA:1975:G:C2'  | 1:AA:1976:U:O5'   | 2.52                     | 0.58              |
| 1:AA:1977:A:N3   | 1:AA:1978:A:C8    | 2.72                     | 0.58              |
| 1:AA:2029:G:H1   | 1:AA:2033:A:P     | 2.25                     | 0.58              |
| 1:AA:2046:G:H2'  | 1:AA:2047:U:C5    | 2.38                     | 0.58              |
| 1:AA:2097:C:H2'  | 1:AA:2098:U:O4'   | 2.04                     | 0.58              |
| 1:AA:2134:A:H2'  | 1:AA:2135:A:H5''  | 1.85                     | 0.58              |
| 1:AA:2311:A:C2   | 7:AG:45:GLU:CD    | 2.82                     | 0.58              |
| 1:AA:2323:G:C2   | 1:AA:2324:C:N3    | 2.72                     | 0.58              |
| 1:AA:2463:C:H2'  | 1:AA:2464:C:H5'   | 1.84                     | 0.58              |
| 1:AA:2519:U:H1'  | 1:AA:2542:A:N1    | 2.18                     | 0.58              |
| 1:AA:2805:G:N7   | 1:AA:2807:G:H8    | 2.01                     | 0.58              |
| 2:AB:4:C:N4      | 2:AB:5:C:C4       | 2.71                     | 0.58              |
| 2:AB:82:G:H2'    | 2:AB:83:G:C8      | 2.32                     | 0.58              |
| 2:AB:87:G:C2     | 2:AB:90:C:N3      | 2.72                     | 0.58              |
| 3:AC:45:ALA:CA   | 3:AC:213:TYR:HE1  | 2.15                     | 0.58              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 3:AC:122:ALA:HB1  | 3:AC:126:LYS:CD    | 2.27                     | 0.58              |
| 4:AD:12:SER:HB2   | 4:AD:14:ARG:HH21   | 1.68                     | 0.58              |
| 4:AD:108:PRO:CA   | 4:AD:195:ALA:O     | 2.51                     | 0.58              |
| 4:AD:244:ARG:O    | 4:AD:252:TRP:CD1   | 2.57                     | 0.58              |
| 5:AE:129:HIS:H    | 5:AE:129:HIS:HD2   | 1.50                     | 0.58              |
| 6:AF:34:TRP:O     | 6:AF:37:VAL:N      | 2.36                     | 0.58              |
| 6:AF:84:VAL:O     | 6:AF:86:GLY:N      | 2.36                     | 0.58              |
| 8:AH:6:ARG:HD3    | 8:AH:69:ARG:CD     | 2.33                     | 0.58              |
| 8:AH:7:LEU:H      | 8:AH:8:PRO:HD3     | 1.64                     | 0.58              |
| 8:AH:95:ARG:HB2   | 8:AH:106:THR:HB    | 1.85                     | 0.58              |
| 10:AL:7:TYR:HB3   | 10:AL:18:LYS:HE3   | 1.84                     | 0.58              |
| 10:AL:10:VAL:HG13 | 10:AL:17:ARG:HA    | 1.84                     | 0.58              |
| 10:AL:68:GLU:OE1  | 10:AL:104:ARG:HD2  | 2.04                     | 0.58              |
| 11:AM:47:ASP:HB3  | 11:AM:48:PRO:HD3   | 1.86                     | 0.58              |
| 11:AM:49:ARG:CA   | 11:AM:52:GLU:HG2   | 2.33                     | 0.58              |
| 11:AM:89:ALA:O    | 11:AM:125:VAL:HG22 | 2.02                     | 0.58              |
| 12:AN:27:VAL:CG2  | 12:AN:28:ALA:H     | 1.94                     | 0.58              |
| 15:AQ:85:LYS:HZ3  | 15:AQ:85:LYS:N     | 2.01                     | 0.58              |
| 16:AR:30:LYS:O    | 16:AR:32:PHE:CD1   | 2.56                     | 0.58              |
| 16:AR:54:LYS:HE2  | 16:AR:54:LYS:CA    | 2.32                     | 0.58              |
| 17:AS:14:VAL:CG1  | 17:AS:15:GLU:H     | 2.08                     | 0.58              |
| 20:AV:12:THR:HA   | 20:AV:73:ARG:CZ    | 2.33                     | 0.58              |
| 20:AV:14:LEU:HD22 | 20:AV:20:TYR:H     | 1.68                     | 0.58              |
| 20:AV:46:LYS:N    | 20:AV:57:GLN:HA    | 2.18                     | 0.58              |
| 20:AV:74:PRO:HB2  | 20:AV:100:ALA:HB1  | 1.84                     | 0.58              |
| 20:AV:74:PRO:HB2  | 20:AV:100:ALA:CB   | 2.34                     | 0.58              |
| 22:AX:37:LEU:HD21 | 22:AX:60:PHE:C     | 2.28                     | 0.58              |
| 22:AX:37:LEU:CG   | 22:AX:59:LEU:O     | 2.48                     | 0.58              |
| 22:AX:46:LYS:CG   | 22:AX:78:TYR:CE2   | 2.78                     | 0.58              |
| 22:AX:76:GLY:N    | 22:AX:78:TYR:HE1   | 2.01                     | 0.58              |
| 24:AZ:10:LYS:HG3  | 24:AZ:31:LEU:HD21  | 1.85                     | 0.58              |
| 25:Aa:8:LYS:HG2   | 25:Aa:9:LEU:N      | 2.12                     | 0.58              |
| 31:AI:153:LEU:C   | 31:AI:155:GLY:N    | 2.57                     | 0.58              |
| 34:BA:101:A:C4    | 34:BA:102:G:N7     | 2.72                     | 0.58              |
| 34:BA:372:C:O2'   | 34:BA:373:A:OP2    | 2.14                     | 0.58              |
| 34:BA:555:C:H5''  | 34:BA:556:C:OP2    | 2.02                     | 0.58              |
| 34:BA:748:C:H3'   | 34:BA:748:C:H6     | 1.67                     | 0.58              |
| 34:BA:778:G:C4    | 34:BA:779:C:C5     | 2.92                     | 0.58              |
| 34:BA:873:A:OP1   | 34:BA:873:A:O4'    | 2.22                     | 0.58              |
| 34:BA:965:A:H1'   | 34:BA:969:A:C8     | 2.39                     | 0.58              |
| 34:BA:968:A:C5'   | 34:BA:969:A:O5'    | 2.51                     | 0.58              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1089:G:H2'  | 34:BA:1090:U:C5'   | 2.32                     | 0.58              |
| 34:BA:1270:C:OP1  | 54:BY:24:ARG:NH2   | 2.37                     | 0.58              |
| 34:BA:1371:G:OP2  | 42:BM:11:LYS:NZ    | 2.34                     | 0.58              |
| 34:BA:1390:U:C2   | 34:BA:1391:U:C4    | 2.92                     | 0.58              |
| 34:BA:1454:G:N1   | 34:BA:1455:G:C6    | 2.71                     | 0.58              |
| 34:BA:1466:C:C3'  | 34:BA:1467:G:C8    | 2.86                     | 0.58              |
| 35:BF:58:ILE:HG22 | 35:BF:221:LEU:HD12 | 1.85                     | 0.58              |
| 35:BF:155:LEU:HB3 | 35:BF:159:PRO:HG3  | 1.79                     | 0.58              |
| 36:BG:55:VAL:HG22 | 36:BG:68:VAL:CG1   | 2.32                     | 0.58              |
| 36:BG:142:MET:HA  | 36:BG:146:ALA:CB   | 2.34                     | 0.58              |
| 38:BI:56:GLN:H    | 38:BI:56:GLN:CD    | 2.12                     | 0.58              |
| 39:BJ:89:MET:HG2  | 51:BV:76:LEU:HD21  | 1.84                     | 0.58              |
| 40:BK:71:PRO:HA   | 40:BK:138:LYS:HE3  | 1.83                     | 0.58              |
| 40:BK:86:GLN:HB2  | 40:BK:148:ASN:CG   | 2.28                     | 0.58              |
| 40:BK:133:GLY:O   | 40:BK:137:LYS:HG3  | 2.03                     | 0.58              |
| 41:BL:51:VAL:CG1  | 41:BL:52:ASP:N     | 2.66                     | 0.58              |
| 45:BP:60:LEU:C    | 45:BP:60:LEU:CD2   | 2.77                     | 0.58              |
| 46:BQ:33:ALA:O    | 46:BQ:37:THR:HG22  | 2.03                     | 0.58              |
| 50:BU:6:LEU:C     | 50:BU:6:LEU:CD1    | 2.76                     | 0.58              |
| 50:BU:68:ARG:H    | 50:BU:70:ARG:CZ    | 2.16                     | 0.58              |
| 51:BV:46:GLU:N    | 51:BV:46:GLU:OE2   | 2.37                     | 0.58              |
| 52:BW:3:ARG:O     | 52:BW:5:LEU:HD22   | 2.03                     | 0.58              |
| 54:BY:14:TRP:HZ3  | 54:BY:15:ARG:NE    | 2.02                     | 0.58              |
| 57:BZ:4:LYS:C     | 57:BZ:68:TYR:CD1   | 2.78                     | 0.58              |
| 57:BZ:16:HIS:O    | 60:BZ:701:GCP:H5'2 | 2.03                     | 0.58              |
| 57:BZ:62:ALA:HB3  | 57:BZ:63:ALA:O     | 2.03                     | 0.58              |
| 57:BZ:169:ASN:HA  | 57:BZ:171:ILE:CD1  | 2.34                     | 0.58              |
| 57:BZ:170:GLY:C   | 57:BZ:179:MET:HB2  | 2.25                     | 0.58              |
| 57:BZ:171:ILE:N   | 57:BZ:179:MET:CG   | 2.57                     | 0.58              |
| 57:BZ:239:ILE:CD1 | 57:BZ:288:VAL:HG22 | 2.33                     | 0.58              |
| 57:BZ:390:ARG:CG  | 57:BZ:391:GLU:HA   | 2.33                     | 0.58              |
| 57:BZ:483:ARG:CG  | 57:BZ:573:ASP:CB   | 2.80                     | 0.58              |
| 57:BZ:499:PHE:HB3 | 57:BZ:540:GLY:HA2  | 1.71                     | 0.58              |
| 1:AA:65:C:C2      | 1:AA:66:C:C5       | 2.92                     | 0.58              |
| 1:AA:221:A:O2'    | 1:AA:222:A:P       | 2.62                     | 0.58              |
| 1:AA:223:A:C5     | 1:AA:408:G:C1'     | 2.87                     | 0.58              |
| 1:AA:252:G:C2     | 1:AA:253:C:C6      | 2.92                     | 0.58              |
| 1:AA:457:A:C2     | 1:AA:470:A:H5'     | 2.39                     | 0.58              |
| 1:AA:492:A:OP2    | 1:AA:492:A:H8      | 1.86                     | 0.58              |
| 1:AA:513:A:O2'    | 1:AA:514:A:H5'     | 2.04                     | 0.58              |
| 1:AA:515:A:C5'    | 16:AR:32:PHE:CZ    | 2.87                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:581:C:H5''   | 16:AR:32:PHE:CG   | 2.39                     | 0.58              |
| 1:AA:612:G:C2'    | 1:AA:615:G:H2'    | 2.34                     | 0.58              |
| 1:AA:650:C:O2     | 1:AA:650:C:H2'    | 2.03                     | 0.58              |
| 1:AA:689:A:H2'    | 1:AA:690:G:C5'    | 2.34                     | 0.58              |
| 1:AA:733:G:OP2    | 1:AA:761:A:N6     | 2.37                     | 0.58              |
| 1:AA:811:U:C4     | 11:AM:23:PRO:CD   | 2.87                     | 0.58              |
| 1:AA:969:U:C2     | 1:AA:970:C:C6     | 2.92                     | 0.58              |
| 1:AA:1024:G:C4    | 1:AA:1025:G:C8    | 2.91                     | 0.58              |
| 1:AA:1124:C:H3'   | 1:AA:1125:G:C8    | 2.39                     | 0.58              |
| 1:AA:1199:U:OP2   | 1:AA:1199:U:H6    | 1.86                     | 0.58              |
| 1:AA:1205:U:N3    | 1:AA:1207:C:N4    | 2.52                     | 0.58              |
| 1:AA:1477:A:H3'   | 1:AA:1478:G:O4'   | 2.04                     | 0.58              |
| 1:AA:1530:G:H22   | 1:AA:1541:U:C2'   | 2.16                     | 0.58              |
| 1:AA:1630(A):C:O2 | 1:AA:1633:G:O6    | 2.22                     | 0.58              |
| 1:AA:1655:A:C2'   | 1:AA:1656:C:C6    | 2.86                     | 0.58              |
| 1:AA:1681:G:H2'   | 1:AA:1682:G:OP1   | 2.03                     | 0.58              |
| 1:AA:1759:A:P     | 1:AA:1759:A:H8    | 2.26                     | 0.58              |
| 1:AA:1775:U:C6    | 4:AD:208:LYS:CD   | 2.85                     | 0.58              |
| 1:AA:1912:A:N9    | 34:BA:1495:U:C2   | 2.69                     | 0.58              |
| 1:AA:1914:C:C4    | 1:AA:1915:U:H5    | 2.17                     | 0.58              |
| 1:AA:1924:C:C5    | 1:AA:1925:C:H5    | 2.22                     | 0.58              |
| 1:AA:1999:C:C2'   | 1:AA:2000:G:O5'   | 2.51                     | 0.58              |
| 1:AA:2051:A:H3'   | 1:AA:2578:G:H5''  | 1.86                     | 0.58              |
| 1:AA:2134:A:C6    | 1:AA:2135:A:C2    | 2.92                     | 0.58              |
| 1:AA:2380:C:C4    | 1:AA:2381:C:C5    | 2.92                     | 0.58              |
| 1:AA:2512:C:OP1   | 5:AE:120:TRP:CH2  | 2.56                     | 0.58              |
| 1:AA:2520:C:H5    | 1:AA:2567:G:C4    | 2.20                     | 0.58              |
| 1:AA:2539:C:H2'   | 1:AA:2540:C:H6    | 1.67                     | 0.58              |
| 1:AA:2539:C:H1'   | 30:Af:2:LYS:NZ    | 2.19                     | 0.58              |
| 1:AA:2543:G:C6    | 1:AA:2544:G:C6    | 2.91                     | 0.58              |
| 1:AA:2556:C:H4'   | 57:BZ:550:GLY:HA2 | 1.86                     | 0.58              |
| 1:AA:2631:G:C8    | 1:AA:2894:G:N7    | 2.71                     | 0.58              |
| 1:AA:2645:G:C4'   | 1:AA:2732:G:O2'   | 2.40                     | 0.58              |
| 1:AA:2747:G:N2    | 1:AA:2748:A:H62   | 2.01                     | 0.58              |
| 1:AA:2749:A:H4'   | 8:AH:62:LYS:HB2   | 1.85                     | 0.58              |
| 3:AC:33:ALA:HB1   | 3:AC:39:GLU:OE1   | 2.04                     | 0.58              |
| 4:AD:50:THR:C     | 4:AD:51:VAL:CG2   | 2.76                     | 0.58              |
| 4:AD:225:ALA:O    | 4:AD:226:MET:C    | 2.45                     | 0.58              |
| 5:AE:8:LYS:HD2    | 15:AQ:3:ARG:HA    | 1.85                     | 0.58              |
| 5:AE:167:VAL:HG21 | 5:AE:187:ALA:HB3  | 1.85                     | 0.58              |
| 6:AF:82:ILE:O     | 6:AF:83:PHE:HB3   | 2.04                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:AF:118:ALA:HA   | 6:AF:122:LYS:HZ3  | 1.69                     | 0.58              |
| 7:AG:16:ARG:HG3   | 7:AG:16:ARG:NH2   | 2.08                     | 0.58              |
| 9:AK:133:GLN:N    | 9:AK:133:GLN:CD   | 2.60                     | 0.58              |
| 10:AL:39:ILE:O    | 10:AL:58:VAL:HA   | 2.03                     | 0.58              |
| 11:AM:92:GLU:O    | 11:AM:93:GLY:C    | 2.47                     | 0.58              |
| 11:AM:96:THR:CG2  | 11:AM:99:LEU:HD12 | 2.33                     | 0.58              |
| 13:AO:69:ASP:C    | 13:AO:70:LEU:HD23 | 2.29                     | 0.58              |
| 13:AO:87:TYR:CE2  | 13:AO:118:GLU:OE1 | 2.57                     | 0.58              |
| 13:AO:98:LEU:C    | 13:AO:112:ALA:HB1 | 2.28                     | 0.58              |
| 14:AP:29:PHE:CE1  | 14:AP:34:HIS:NE2  | 2.71                     | 0.58              |
| 14:AP:57:LYS:HZ3  | 14:AP:62:LYS:CG   | 2.15                     | 0.58              |
| 15:AQ:85:LYS:H    | 15:AQ:85:LYS:HZ3  | 1.52                     | 0.58              |
| 15:AQ:95:ARG:HB3  | 15:AQ:96:ARG:HD2  | 1.84                     | 0.58              |
| 16:AR:89:GLU:O    | 16:AR:90:VAL:CG2  | 2.52                     | 0.58              |
| 19:AU:18:TYR:OH   | 19:AU:96:ILE:HG12 | 2.03                     | 0.58              |
| 20:AV:12:THR:HA   | 20:AV:73:ARG:NE   | 2.19                     | 0.58              |
| 21:AW:11:GLU:HG3  | 21:AW:36:LYS:HZ2  | 1.68                     | 0.58              |
| 21:AW:116:VAL:CG2 | 21:AW:144:LEU:O   | 2.52                     | 0.58              |
| 24:AZ:5:LYS:HE2   | 24:AZ:57:GLU:OE1  | 2.04                     | 0.58              |
| 24:AZ:40:THR:HB   | 24:AZ:43:ILE:HB   | 1.86                     | 0.58              |
| 26:Ab:46:CYS:HB2  | 26:Ab:47:PRO:CD   | 2.29                     | 0.58              |
| 32:AJ:62:ASP:HB3  | 32:AJ:63:ARG:O    | 2.03                     | 0.58              |
| 33:Ag:4:UNK:C     | 33:Ag:143:UNK:O   | 2.52                     | 0.58              |
| 34:BA:64:G:H5'    | 34:BA:66:G:OP1    | 2.02                     | 0.58              |
| 34:BA:191:G:H1'   | 53:BX:105:SER:CA  | 2.27                     | 0.58              |
| 34:BA:246:A:O2'   | 34:BA:247:G:P     | 2.61                     | 0.58              |
| 34:BA:372:C:N3    | 34:BA:376:G:O6    | 2.37                     | 0.58              |
| 34:BA:591:U:OP1   | 41:BL:30:ARG:NH2  | 2.37                     | 0.58              |
| 34:BA:684:A:H1'   | 44:BO:39:PRO:HD2  | 1.86                     | 0.58              |
| 34:BA:731:G:O2'   | 34:BA:732:C:C5'   | 2.52                     | 0.58              |
| 34:BA:894:G:H2'   | 34:BA:895:G:H8    | 1.68                     | 0.58              |
| 34:BA:950:U:O2'   | 34:BA:951:G:H5'   | 2.03                     | 0.58              |
| 34:BA:953:G:C6    | 34:BA:1229:A:C6   | 2.91                     | 0.58              |
| 34:BA:1026:G:O6   | 34:BA:1036:G:C2   | 2.57                     | 0.58              |
| 34:BA:1034:G:H2'  | 34:BA:1035:A:C8   | 2.38                     | 0.58              |
| 34:BA:1047:G:C5'  | 47:BR:4:LYS:HD3   | 2.32                     | 0.58              |
| 34:BA:1049:U:C1'  | 34:BA:1201:A:O4'  | 2.52                     | 0.58              |
| 34:BA:1057:G:C4'  | 36:BG:197:GLY:H   | 2.16                     | 0.58              |
| 34:BA:1068:G:C6   | 34:BA:1108:G:N3   | 2.72                     | 0.58              |
| 34:BA:1117:G:C2   | 34:BA:1184:G:C1'  | 2.80                     | 0.58              |
| 34:BA:1164:G:C6   | 34:BA:1173:G:C6   | 2.91                     | 0.58              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1349:A:OP1   | 42:BM:120:ARG:HB2  | 2.02                     | 0.58              |
| 34:BA:1394:A:O2'   | 34:BA:1395:C:P     | 2.61                     | 0.58              |
| 34:BA:1431:C:O2    | 34:BA:1432:G:O4'   | 2.22                     | 0.58              |
| 35:BF:25:ASN:OD1   | 35:BF:192:SER:O    | 2.22                     | 0.58              |
| 35:BF:69:LEU:HD23  | 35:BF:91:PRO:HB3   | 1.86                     | 0.58              |
| 35:BF:72:GLY:O     | 35:BF:73:THR:C     | 2.47                     | 0.58              |
| 35:BF:75:LYS:O     | 35:BF:77:ALA:N     | 2.34                     | 0.58              |
| 35:BF:78:GLN:O     | 35:BF:94:ASN:ND2   | 2.37                     | 0.58              |
| 35:BF:178:ARG:NH2  | 35:BF:196:LEU:O    | 2.37                     | 0.58              |
| 35:BF:200:ILE:O    | 35:BF:200:ILE:HG22 | 2.02                     | 0.58              |
| 36:BG:91:LEU:CD1   | 36:BG:99:VAL:H     | 2.14                     | 0.58              |
| 37:BH:57:ARG:HH22  | 38:BI:107:ARG:NE   | 2.01                     | 0.58              |
| 38:BI:12:LEU:HD13  | 38:BI:12:LEU:O     | 2.03                     | 0.58              |
| 38:BI:76:ILE:HG21  | 38:BI:142:LEU:CD1  | 2.33                     | 0.58              |
| 38:BI:79:GLU:CD    | 38:BI:79:GLU:N     | 2.62                     | 0.58              |
| 40:BK:143:ARG:HH11 | 40:BK:144:MET:CB   | 2.06                     | 0.58              |
| 41:BL:45:ILE:HG13  | 41:BL:61:VAL:HG13  | 1.85                     | 0.58              |
| 44:BO:28:THR:CG2   | 44:BO:29:ILE:N     | 2.67                     | 0.58              |
| 49:BT:76:GLN:O     | 49:BT:77:ALA:C     | 2.46                     | 0.58              |
| 50:BU:10:VAL:HB    | 50:BU:54:GLY:C     | 2.29                     | 0.58              |
| 52:BW:9:VAL:HG12   | 52:BW:44:MET:SD    | 2.43                     | 0.58              |
| 55:BC:26:A:H2'     | 55:BC:27:G:H5'     | 1.84                     | 0.58              |
| 55:BC:56:C:C3'     | 55:BC:57:G:H5''    | 2.32                     | 0.58              |
| 57:BZ:31:THR:HB    | 57:BZ:32:PHE:HD1   | 1.68                     | 0.58              |
| 57:BZ:81:PHE:O     | 57:BZ:344:ALA:CB   | 2.51                     | 0.58              |
| 57:BZ:383:SER:HB3  | 57:BZ:384:ARG:NE   | 2.18                     | 0.58              |
| 1:AA:50:U:H3'      | 1:AA:50:U:H6       | 1.68                     | 0.58              |
| 1:AA:71:A:N6       | 1:AA:114:U:H1'     | 2.19                     | 0.58              |
| 1:AA:77:C:H2'      | 1:AA:78:A:H8       | 1.68                     | 0.58              |
| 1:AA:94:G:N2       | 1:AA:95:G:N3       | 2.51                     | 0.58              |
| 1:AA:105:C:C2      | 1:AA:106:C:C5      | 2.92                     | 0.58              |
| 1:AA:182:A:OP2     | 1:AA:182:A:H8      | 1.87                     | 0.58              |
| 1:AA:270(B):A:O2'  | 1:AA:270(C):C:H6   | 1.86                     | 0.58              |
| 1:AA:270(R):G:N2   | 1:AA:270(S):G:N3   | 2.52                     | 0.58              |
| 1:AA:270(V):G:H2'  | 1:AA:270(W):G:C8   | 2.38                     | 0.58              |
| 1:AA:374:A:N6      | 1:AA:401:A:C1'     | 2.67                     | 0.58              |
| 1:AA:568:U:H2'     | 1:AA:570:G:N7      | 2.18                     | 0.58              |
| 1:AA:712:G:C4      | 1:AA:713:G:N7      | 2.72                     | 0.58              |
| 1:AA:783:A:N6      | 1:AA:785:G:C8      | 2.72                     | 0.58              |
| 1:AA:881:G:H5'     | 1:AA:882:G:OP2     | 2.04                     | 0.58              |
| 1:AA:892:G:N3      | 1:AA:893:C:C4      | 2.72                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1062:G:N3    | 1:AA:1063:G:H5'   | 2.19                     | 0.58              |
| 1:AA:1104:C:O2'   | 1:AA:1106:G:P     | 2.61                     | 0.58              |
| 1:AA:1453:A:OP2   | 1:AA:1453:A:O4'   | 2.21                     | 0.58              |
| 1:AA:1698:A:O2'   | 1:AA:1699:G:C3'   | 2.52                     | 0.58              |
| 1:AA:1944:U:C2'   | 1:AA:1945:G:OP1   | 2.52                     | 0.58              |
| 1:AA:1980:G:O2'   | 1:AA:1981:A:H5''  | 2.04                     | 0.58              |
| 1:AA:1996:C:H2'   | 1:AA:1997:G:H5'   | 1.84                     | 0.58              |
| 1:AA:2169:A:N3    | 55:BC:56:C:C5     | 2.67                     | 0.58              |
| 1:AA:2278:A:N6    | 22:AX:14:ARG:HB3  | 2.18                     | 0.58              |
| 1:AA:2283:C:H2'   | 1:AA:2284:C:H4'   | 1.85                     | 0.58              |
| 1:AA:2463:C:O2'   | 1:AA:2464:C:H5'   | 2.04                     | 0.58              |
| 1:AA:2484:G:N3    | 12:AN:124:LYS:NZ  | 2.52                     | 0.58              |
| 1:AA:2547:U:H2'   | 1:AA:2548:G:C5'   | 2.34                     | 0.58              |
| 1:AA:2733:A:N7    | 1:AA:2734:A:C8    | 2.72                     | 0.58              |
| 1:AA:2782:G:O4'   | 1:AA:2782:G:OP2   | 2.22                     | 0.58              |
| 1:AA:2831:G:H1'   | 1:AA:2883:A:H2'   | 1.86                     | 0.58              |
| 2:AB:52:A:C2'     | 2:AB:53:A:H5'     | 2.33                     | 0.58              |
| 2:AB:61:G:H2'     | 2:AB:62:C:C6      | 2.38                     | 0.58              |
| 3:AC:56:GLN:HA    | 3:AC:201:PRO:HG3  | 1.84                     | 0.58              |
| 4:AD:16:MET:O     | 4:AD:19:ALA:HB3   | 2.03                     | 0.58              |
| 4:AD:227:ASN:C    | 4:AD:229:VAL:H    | 2.10                     | 0.58              |
| 6:AF:46:ARG:CA    | 6:AF:46:ARG:NE    | 2.66                     | 0.58              |
| 6:AF:125:LEU:O    | 6:AF:127:GLU:N    | 2.32                     | 0.58              |
| 6:AF:141:ALA:O    | 6:AF:142:TRP:C    | 2.47                     | 0.58              |
| 7:AG:132:ASN:O    | 7:AG:133:LEU:HB2  | 2.03                     | 0.58              |
| 9:AK:3:THR:O      | 9:AK:4:TYR:CB     | 2.49                     | 0.58              |
| 9:AK:66:LYS:CA    | 9:AK:69:GLN:OE1   | 2.52                     | 0.58              |
| 10:AL:10:VAL:HG22 | 10:AL:11:ALA:N    | 2.18                     | 0.58              |
| 10:AL:77:ILE:HG12 | 15:AQ:75:ILE:CD1  | 2.34                     | 0.58              |
| 10:AL:97:ARG:HE   | 10:AL:98:VAL:C    | 2.12                     | 0.58              |
| 12:AN:64:ILE:O    | 12:AN:65:PHE:HD2  | 1.87                     | 0.58              |
| 13:AO:65:LEU:O    | 13:AO:68:ARG:CB   | 2.52                     | 0.58              |
| 14:AP:17:ARG:O    | 14:AP:20:ARG:HB2  | 2.04                     | 0.58              |
| 15:AQ:22:PHE:O    | 15:AQ:24:PRO:HD3  | 2.04                     | 0.58              |
| 15:AQ:68:TYR:CE1  | 15:AQ:69:GLY:O    | 2.57                     | 0.58              |
| 16:AR:3:ARG:O     | 16:AR:4:ALA:HB2   | 2.02                     | 0.58              |
| 17:AS:14:VAL:HG12 | 17:AS:15:GLU:N    | 2.09                     | 0.58              |
| 17:AS:69:LYS:CG   | 17:AS:70:ILE:HG13 | 2.31                     | 0.58              |
| 19:AU:50:LYS:HZ3  | 19:AU:85:PRO:HG2  | 1.67                     | 0.58              |
| 20:AV:45:VAL:HA   | 20:AV:57:GLN:HG2  | 1.86                     | 0.58              |
| 21:AW:24:LEU:CD2  | 21:AW:25:PRO:HD2  | 2.34                     | 0.58              |

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| Atom-1              | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 21:AW:116:VAL:HG21  | 21:AW:145:GLU:HA   | 1.86                     | 0.58              |
| 21:AW:144:LEU:CA    | 21:AW:174:VAL:HG11 | 2.33                     | 0.58              |
| 21:AW:159:PRO:O     | 21:AW:161:VAL:N    | 2.34                     | 0.58              |
| 22:AX:44:ARG:CG     | 22:AX:77:ARG:HG3   | 2.33                     | 0.58              |
| 26:Ab:35:GLU:CG     | 26:Ab:49:CYS:HB3   | 2.34                     | 0.58              |
| 26:Ab:44:THR:O      | 26:Ab:52:TYR:OH    | 2.18                     | 0.58              |
| 27:Ac:19:ARG:NH1    | 27:Ac:19:ARG:CG    | 2.58                     | 0.58              |
| 28:Ad:1:MET:O       | 28:Ad:1:MET:HG3    | 2.03                     | 0.58              |
| 28:Ad:25:PRO:HD3    | 28:Ad:28:ARG:HH21  | 1.69                     | 0.58              |
| 30:Af:1:MET:N       | 30:Af:33:LYS:HB2   | 2.17                     | 0.58              |
| 30:Af:10:ILE:C      | 30:Af:12:ASP:H     | 2.08                     | 0.58              |
| 30:Af:28:GLU:O      | 30:Af:29:ASN:HB2   | 2.03                     | 0.58              |
| 34:BA:22:G:C2'      | 34:BA:23:C:O4'     | 2.52                     | 0.58              |
| 34:BA:199:G:O2'     | 34:BA:200:G:H5'    | 2.04                     | 0.58              |
| 34:BA:241:C:O2'     | 34:BA:242:C:H5'    | 2.04                     | 0.58              |
| 34:BA:505:G:C6      | 34:BA:535:A:C2     | 2.92                     | 0.58              |
| 34:BA:523:A:O5'     | 34:BA:523:A:C8     | 2.57                     | 0.58              |
| 34:BA:568:G:N2      | 34:BA:574:A:C2     | 2.62                     | 0.58              |
| 34:BA:598:U:C4'     | 41:BL:94:TYR:CD2   | 2.86                     | 0.58              |
| 34:BA:673:G:N2      | 34:BA:674:G:C2     | 2.72                     | 0.58              |
| 34:BA:719:C:H3'     | 34:BA:720:C:C5     | 2.39                     | 0.58              |
| 34:BA:924:C:C2      | 34:BA:925:G:N7     | 2.72                     | 0.58              |
| 34:BA:969:A:O2'     | 43:BN:55:LYS:NZ    | 2.25                     | 0.58              |
| 34:BA:1005:A:H2'    | 34:BA:1006:C:C5'   | 2.34                     | 0.58              |
| 34:BA:1038:C:H2'    | 34:BA:1039:C:C5    | 2.39                     | 0.58              |
| 34:BA:1129:C:C4     | 34:BA:1139:G:O6    | 2.56                     | 0.58              |
| 34:BA:1443:G:H5'    | 34:BA:1446:A:OP1   | 2.04                     | 0.58              |
| 34:BA:1454:G:O3'    | 53:BX:32:ALA:O     | 2.21                     | 0.58              |
| 34:BA:1516:G:H22    | 34:BA:1518:A:C3'   | 2.15                     | 0.58              |
| 58:BA:1601:NMY:HN21 | 58:BA:1601:NMY:C13 | 2.15                     | 0.58              |
| 35:BF:19:HIS:ND1    | 35:BF:204:ASN:ND2  | 2.52                     | 0.58              |
| 35:BF:118:LEU:HD11  | 35:BF:141:GLU:OE1  | 2.04                     | 0.58              |
| 35:BF:150:SER:HA    | 35:BF:153:ARG:CG   | 2.33                     | 0.58              |
| 36:BG:37:GLN:O      | 36:BG:38:ARG:C     | 2.47                     | 0.58              |
| 36:BG:38:ARG:HG3    | 36:BG:94:LEU:HD21  | 1.86                     | 0.58              |
| 36:BG:187:ALA:N     | 36:BG:198:VAL:HG22 | 2.19                     | 0.58              |
| 37:BH:82:ALA:HB1    | 37:BH:89:THR:HA    | 1.84                     | 0.58              |
| 37:BH:98:GLU:OE2    | 37:BH:103:ASN:OD1  | 2.22                     | 0.58              |
| 38:BI:78:HIS:CG     | 41:BL:107:LEU:HD21 | 2.39                     | 0.58              |
| 38:BI:136:MET:HA    | 38:BI:139:LEU:HD12 | 1.84                     | 0.58              |
| 40:BK:34:GLY:O      | 40:BK:36:LYS:N     | 2.37                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 41:BL:37:ARG:CD   | 41:BL:41:ARG:HG3  | 2.18                     | 0.58              |
| 44:BO:20:TYR:CZ   | 44:BO:83:ILE:HG12 | 2.39                     | 0.58              |
| 44:BO:84:VAL:CG2  | 44:BO:111:ASP:H   | 2.17                     | 0.58              |
| 45:BP:5:PRO:O     | 45:BP:6:THR:CG2   | 2.52                     | 0.58              |
| 45:BP:41:ARG:HH12 | 45:BP:55:VAL:HG11 | 1.67                     | 0.58              |
| 45:BP:126:LYS:HZ3 | 45:BP:128:ALA:H   | 1.52                     | 0.58              |
| 46:BQ:84:ILE:CG1  | 46:BQ:86:CYS:HB3  | 2.34                     | 0.58              |
| 49:BT:59:TRP:O    | 49:BT:60:LEU:C    | 2.47                     | 0.58              |
| 51:BV:26:LEU:HD22 | 51:BV:39:VAL:HG22 | 1.86                     | 0.58              |
| 52:BW:74:PHE:N    | 52:BW:74:PHE:HD1  | 2.00                     | 0.58              |
| 53:BX:49:ALA:O    | 53:BX:52:ALA:HB3  | 2.04                     | 0.58              |
| 57:BZ:309:MET:C   | 57:BZ:383:SER:OG  | 2.46                     | 0.58              |
| 57:BZ:407:VAL:C   | 57:BZ:436:ARG:HA  | 2.29                     | 0.58              |
| 57:BZ:485:ASN:CA  | 57:BZ:529:ARG:O   | 2.43                     | 0.58              |
| 57:BZ:495:LYS:H   | 57:BZ:538:LEU:CD1 | 2.17                     | 0.58              |
| 1:AA:175:G:O2'    | 1:AA:176:G:C5'    | 2.47                     | 0.58              |
| 1:AA:285:C:H2'    | 1:AA:286:C:C6     | 2.39                     | 0.58              |
| 1:AA:449:A:H4'    | 6:AF:52:LYS:NZ    | 2.19                     | 0.58              |
| 1:AA:458:G:C8     | 28:Ad:38:GLY:O    | 2.57                     | 0.58              |
| 1:AA:481:G:H22    | 1:AA:509:C:N4     | 2.01                     | 0.58              |
| 1:AA:723:G:H2'    | 1:AA:724:U:H6     | 1.69                     | 0.58              |
| 1:AA:742:G:H5'    | 1:AA:1675:C:O2'   | 2.04                     | 0.58              |
| 1:AA:751:A:H4'    | 18:AT:90:ARG:CZ   | 2.34                     | 0.58              |
| 1:AA:763:G:N3     | 1:AA:765:G:H1'    | 2.19                     | 0.58              |
| 1:AA:771:G:H2'    | 1:AA:772:C:C6     | 2.38                     | 0.58              |
| 1:AA:955:C:H5''   | 12:AN:87:LYS:HE2  | 1.86                     | 0.58              |
| 1:AA:1042:G:C2    | 1:AA:1114:G:O6    | 2.57                     | 0.58              |
| 1:AA:1139:G:O5'   | 9:AK:63:THR:HG21  | 2.04                     | 0.58              |
| 1:AA:1323:U:O2'   | 1:AA:1324:G:OP1   | 2.15                     | 0.58              |
| 1:AA:1366:A:C2    | 1:AA:1367:A:C4    | 2.91                     | 0.58              |
| 1:AA:1394:U:H5''  | 1:AA:1604:C:OP1   | 2.04                     | 0.58              |
| 1:AA:1467:C:N4    | 1:AA:1468:C:N4    | 2.52                     | 0.58              |
| 1:AA:1603:A:H3'   | 1:AA:1603:A:P     | 2.44                     | 0.58              |
| 1:AA:1695:G:N2    | 1:AA:1696:G:C8    | 2.72                     | 0.58              |
| 1:AA:1799:G:H5''  | 4:AD:264:LYS:HZ3  | 1.69                     | 0.58              |
| 1:AA:2018:G:H1'   | 16:AR:34:LYS:HZ1  | 1.69                     | 0.58              |
| 1:AA:2020:A:N6    | 1:AA:2034:U:O4    | 2.34                     | 0.58              |
| 1:AA:2575:C:OP1   | 5:AE:144:ARG:NH2  | 2.37                     | 0.58              |
| 1:AA:2627:G:C6    | 1:AA:2777:G:O6    | 2.57                     | 0.58              |
| 1:AA:2694:G:C6    | 1:AA:2695:C:C4    | 2.92                     | 0.58              |
| 1:AA:2736:G:N2    | 1:AA:2769:C:H1'   | 2.18                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2741:A:O3'   | 30:Af:2:LYS:NZ    | 2.36                     | 0.58              |
| 1:AA:2828:C:N4    | 1:AA:2829:C:H41   | 2.01                     | 0.58              |
| 2:AB:32:C:H3'     | 2:AB:33:G:H8      | 1.68                     | 0.58              |
| 2:AB:62:C:H2'     | 2:AB:63:G:C8      | 2.26                     | 0.58              |
| 2:AB:64:C:O2'     | 2:AB:65:C:H5'     | 2.04                     | 0.58              |
| 2:AB:65:C:H2'     | 2:AB:66:A:H5'     | 1.84                     | 0.58              |
| 3:AC:93:TYR:CE2   | 3:AC:109:ASP:O    | 2.57                     | 0.58              |
| 4:AD:8:PRO:HD2    | 4:AD:26:LYS:N     | 2.19                     | 0.58              |
| 4:AD:46:GLN:NE2   | 4:AD:51:VAL:HG23  | 2.19                     | 0.58              |
| 4:AD:56:GLY:N     | 4:AD:217:ARG:HD2  | 2.08                     | 0.58              |
| 4:AD:80:ALA:CB    | 4:AD:94:LEU:O     | 2.47                     | 0.58              |
| 4:AD:117:VAL:O    | 4:AD:118:VAL:HG22 | 2.03                     | 0.58              |
| 5:AE:5:LEU:HD13   | 5:AE:196:VAL:C    | 2.28                     | 0.58              |
| 5:AE:13:ARG:NE    | 5:AE:20:ALA:C     | 2.62                     | 0.58              |
| 5:AE:105:THR:CG2  | 5:AE:197:ILE:HD13 | 2.33                     | 0.58              |
| 6:AF:154:VAL:HB   | 6:AF:193:VAL:CG2  | 2.31                     | 0.58              |
| 6:AF:155:LEU:HD22 | 6:AF:157:VAL:HG12 | 1.84                     | 0.58              |
| 7:AG:39:ILE:HA    | 7:AG:157:ILE:HG13 | 1.85                     | 0.58              |
| 8:AH:124:GLU:HB2  | 8:AH:132:ARG:NE   | 2.19                     | 0.58              |
| 8:AH:125:VAL:O    | 8:AH:127:GLU:N    | 2.34                     | 0.58              |
| 8:AH:170:ARG:O    | 8:AH:171:LEU:HD23 | 2.04                     | 0.58              |
| 9:AK:7:LYS:HZ2    | 9:AK:10:GLU:H     | 1.49                     | 0.58              |
| 9:AK:13:TRP:HB2   | 9:AK:136:GLU:CD   | 2.28                     | 0.58              |
| 9:AK:74:ARG:C     | 9:AK:76:SER:N     | 2.54                     | 0.58              |
| 10:AL:42:SER:HA   | 10:AL:55:GLY:O    | 2.04                     | 0.58              |
| 10:AL:47:ILE:O    | 10:AL:48:PRO:C    | 2.45                     | 0.58              |
| 10:AL:62:VAL:HG23 | 10:AL:83:ALA:CA   | 2.17                     | 0.58              |
| 10:AL:63:VAL:O    | 10:AL:64:ARG:CB   | 2.51                     | 0.58              |
| 10:AL:86:ILE:HD13 | 10:AL:90:GLN:HG3  | 1.86                     | 0.58              |
| 11:AM:46:LYS:NZ   | 11:AM:50:ARG:NH1  | 2.52                     | 0.58              |
| 11:AM:81:GLN:HA   | 11:AM:86:LYS:CE   | 2.30                     | 0.58              |
| 11:AM:124:LYS:CA  | 11:AM:143:GLY:HA3 | 2.34                     | 0.58              |
| 12:AN:116:GLU:HA  | 12:AN:119:ARG:CG  | 2.33                     | 0.58              |
| 14:AP:24:LEU:HD11 | 14:AP:41:ASP:HB3  | 1.86                     | 0.58              |
| 16:AR:85:LYS:NZ   | 16:AR:117:GLN:O   | 2.22                     | 0.58              |
| 20:AV:7:VAL:O     | 20:AV:8:LYS:HD2   | 2.03                     | 0.58              |
| 20:AV:37:VAL:HG13 | 20:AV:39:VAL:CB   | 2.33                     | 0.58              |
| 21:AW:1:MET:HE1   | 21:AW:59:LEU:HD22 | 1.84                     | 0.58              |
| 24:AZ:23:LEU:HA   | 24:AZ:28:LEU:HD12 | 1.83                     | 0.58              |
| 24:AZ:44:ARG:O    | 24:AZ:45:GLY:C    | 2.45                     | 0.58              |
| 25:Aa:64:GLY:O    | 25:Aa:67:TYR:N    | 2.37                     | 0.58              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 27:Ac:39:TYR:O     | 27:Ac:40:CYS:HB3   | 2.03                     | 0.58              |
| 32:Aj:112:MET:SD   | 32:Aj:126:MET:SD   | 3.02                     | 0.58              |
| 34:BA:46:G:H22     | 34:BA:366:C:H1'    | 1.68                     | 0.58              |
| 34:BA:61:G:C6      | 34:BA:107:G:C6     | 2.92                     | 0.58              |
| 34:BA:148:G:H2'    | 34:BA:149:A:H8     | 1.68                     | 0.58              |
| 34:BA:175:C:O2'    | 34:BA:176:C:H5'    | 2.04                     | 0.58              |
| 34:BA:186(A):C:O2' | 53:BX:89:ARG:NH2   | 2.36                     | 0.58              |
| 34:BA:230:G:N2     | 34:BA:231:G:N3     | 2.51                     | 0.58              |
| 34:BA:391:G:C6     | 34:BA:392:G:C5     | 2.92                     | 0.58              |
| 34:BA:565:U:H2'    | 34:BA:566:G:N7     | 2.19                     | 0.58              |
| 34:BA:594:G:N2     | 34:BA:596:C:N4     | 2.52                     | 0.58              |
| 34:BA:656:C:O2'    | 34:BA:657:G:H5'    | 2.03                     | 0.58              |
| 34:BA:668:G:O2'    | 34:BA:669:U:H5'    | 2.03                     | 0.58              |
| 34:BA:689:C:C4     | 34:BA:690:G:N7     | 2.72                     | 0.58              |
| 34:BA:789:U:O2'    | 34:BA:791:G:N7     | 2.32                     | 0.58              |
| 34:BA:1074:G:H2'   | 34:BA:1075:C:O4'   | 2.03                     | 0.58              |
| 34:BA:1104:G:H2'   | 34:BA:1105:A:C8    | 2.39                     | 0.58              |
| 34:BA:1268:A:H4'   | 54:BY:20:LYS:HB2   | 1.85                     | 0.58              |
| 34:BA:1275:A:C2'   | 34:BA:1276:G:H5'   | 2.34                     | 0.58              |
| 35:BF:179:LYS:O    | 35:BF:181:PHE:N    | 2.37                     | 0.58              |
| 36:BG:64:VAL:O     | 36:BG:66:VAL:HG23  | 2.02                     | 0.58              |
| 37:BH:79:PHE:CE1   | 37:BH:204:ILE:HG23 | 2.38                     | 0.58              |
| 37:BH:121:VAL:HB   | 37:BH:136:PRO:CG   | 2.18                     | 0.58              |
| 37:BH:170:VAL:HG11 | 37:BH:174:LEU:CB   | 2.34                     | 0.58              |
| 38:BI:9:LYS:CB     | 38:BI:33:VAL:HB    | 2.30                     | 0.58              |
| 38:BI:12:LEU:HG    | 38:BI:129:ILE:HD11 | 1.83                     | 0.58              |
| 38:BI:80:ILE:HG21  | 38:BI:142:LEU:HD21 | 1.86                     | 0.58              |
| 39:BJ:29:ALA:O     | 39:BJ:30:LEU:C     | 2.47                     | 0.58              |
| 39:BJ:67:MET:SD    | 39:BJ:67:MET:O     | 2.62                     | 0.58              |
| 41:BL:79:VAL:O     | 41:BL:81:HIS:N     | 2.36                     | 0.58              |
| 43:BN:54:PHE:H     | 47:BR:41:ARG:NH2   | 2.01                     | 0.58              |
| 44:BO:63:LEU:HD23  | 44:BO:63:LEU:O     | 2.02                     | 0.58              |
| 45:BP:60:LEU:HD11  | 45:BP:64:TYR:HB3   | 1.85                     | 0.58              |
| 49:BT:20:VAL:HA    | 49:BT:36:ILE:HG13  | 1.85                     | 0.58              |
| 49:BT:49:LEU:HD12  | 49:BT:50:LYS:N     | 2.19                     | 0.58              |
| 52:BW:30:LEU:CG    | 52:BW:50:ALA:HB2   | 2.34                     | 0.58              |
| 53:BX:54:LYS:H     | 53:BX:100:ILE:HD11 | 1.69                     | 0.58              |
| 57:BZ:17:GLY:CA    | 60:BZ:701:GCP:O1A  | 2.49                     | 0.58              |
| 57:BZ:27:GLN:CG    | 57:BZ:28:GLN:HB2   | 2.29                     | 0.58              |
| 57:BZ:119:TYR:HD2  | 57:BZ:121:LEU:CD1  | 2.16                     | 0.58              |
| 57:BZ:227:LYS:CA   | 57:BZ:267:LEU:CD1  | 2.81                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:BZ:495:LYS:HB3 | 57:BZ:515:GLY:O   | 2.03                     | 0.58              |
| 1:AA:13:A:O2'     | 1:AA:14:A:O5'     | 2.20                     | 0.58              |
| 1:AA:76:C:H2'     | 1:AA:76:C:O2      | 2.04                     | 0.58              |
| 1:AA:221:A:N7     | 1:AA:266:G:N7     | 2.52                     | 0.58              |
| 1:AA:323:G:H4'    | 1:AA:324:A:O5'    | 2.04                     | 0.58              |
| 1:AA:510:C:OP1    | 1:AA:512:G:N2     | 2.36                     | 0.58              |
| 1:AA:674:G:C2     | 1:AA:807:U:O4     | 2.57                     | 0.58              |
| 1:AA:684:G:N2     | 1:AA:794:G:C2     | 2.72                     | 0.58              |
| 1:AA:695:G:O2'    | 1:AA:696:G:H5'    | 2.03                     | 0.58              |
| 1:AA:718:A:H5''   | 1:AA:719:C:H5     | 1.67                     | 0.58              |
| 1:AA:921:G:H4'    | 1:AA:2269:A:C8    | 2.38                     | 0.58              |
| 1:AA:957:A:N1     | 1:AA:2459:A:H5'   | 2.19                     | 0.58              |
| 1:AA:1029:A:O2'   | 1:AA:1030:G:H5'   | 2.04                     | 0.58              |
| 1:AA:1137:G:N7    | 1:AA:1138:G:C8    | 2.72                     | 0.58              |
| 1:AA:1464:C:C5'   | 1:AA:1528:A:O2'   | 2.50                     | 0.58              |
| 1:AA:1472:A:N6    | 1:AA:1518:C:N4    | 2.51                     | 0.58              |
| 1:AA:1697:G:C8    | 1:AA:1698:A:C5'   | 2.86                     | 0.58              |
| 1:AA:1717:G:H21   | 1:AA:1718:G:H1'   | 1.69                     | 0.58              |
| 1:AA:1785:A:P     | 1:AA:1982:C:H4'   | 2.44                     | 0.58              |
| 1:AA:1792:G:P     | 4:AD:206:LEU:HD21 | 2.44                     | 0.58              |
| 1:AA:1813:G:O2'   | 4:AD:46:GLN:CD    | 2.47                     | 0.58              |
| 1:AA:1853:A:C4    | 1:AA:1854:A:C8    | 2.91                     | 0.58              |
| 1:AA:1955:U:OP2   | 1:AA:1956:U:O4    | 2.22                     | 0.58              |
| 1:AA:2008:C:O2'   | 1:AA:2009:G:H5'   | 2.04                     | 0.58              |
| 1:AA:2075:U:O2    | 1:AA:2076:U:H5'   | 2.04                     | 0.58              |
| 1:AA:2124:G:H5''  | 3:AC:71:GLN:CD    | 2.29                     | 0.58              |
| 1:AA:2177:C:H5'   | 3:AC:223:ARG:CB   | 2.29                     | 0.58              |
| 1:AA:2467:C:P     | 30:Af:8:LYS:HZ2   | 2.25                     | 0.58              |
| 1:AA:2508:G:C2'   | 1:AA:2509:G:H5'   | 2.33                     | 0.58              |
| 1:AA:2755:C:O5'   | 1:AA:2755:C:H6    | 1.87                     | 0.58              |
| 1:AA:2815:C:C2'   | 26:Ab:42:PRO:HG3  | 2.34                     | 0.58              |
| 1:AA:2844:G:H3'   | 1:AA:2845:G:C8    | 2.38                     | 0.58              |
| 1:AA:2875:C:O3'   | 15:AQ:2:ASN:HB3   | 2.03                     | 0.58              |
| 2:AB:52:A:H2'     | 2:AB:53:A:H5'     | 1.85                     | 0.58              |
| 3:AC:44:HIS:ND1   | 3:AC:215:THR:N    | 2.50                     | 0.58              |
| 3:AC:58:VAL:HG11  | 3:AC:199:HIS:HB3  | 1.85                     | 0.58              |
| 3:AC:60:GLY:O     | 3:AC:61:THR:CB    | 2.52                     | 0.58              |
| 4:AD:7:LYS:HD3    | 4:AD:9:TYR:CZ     | 2.38                     | 0.58              |
| 4:AD:55:GLY:CA    | 4:AD:217:ARG:CZ   | 2.81                     | 0.58              |
| 4:AD:85:ASP:O     | 4:AD:87:ASN:N     | 2.31                     | 0.58              |
| 4:AD:146:GLU:CA   | 4:AD:154:LYS:HG2  | 2.34                     | 0.58              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 5:AE:23:VAL:O    | 5:AE:183:LEU:HA   | 2.03                     | 0.58              |
| 5:AE:98:PRO:HB3  | 5:AE:175:VAL:HG13 | 1.84                     | 0.58              |
| 5:AE:131:ALA:CB  | 5:AE:134:ILE:HG13 | 2.32                     | 0.58              |
| 5:AE:166:THR:OG1 | 5:AE:167:VAL:N    | 2.36                     | 0.58              |
| 6:AF:74:ARG:CZ   | 6:AF:75:HIS:CA    | 2.81                     | 0.58              |
| 6:AF:77:ASP:CG   | 6:AF:80:ALA:HB2   | 2.29                     | 0.58              |
| 6:AF:97:TYR:C    | 6:AF:98:SER:O     | 2.44                     | 0.58              |
| 7:AG:30:GLU:HG2  | 7:AG:33:ARG:CD    | 2.34                     | 0.58              |
| 7:AG:30:GLU:OE2  | 7:AG:33:ARG:NE    | 2.36                     | 0.58              |
| 7:AG:39:ILE:HG13 | 7:AG:157:ILE:CG1  | 2.34                     | 0.58              |
| 7:AG:56:ALA:CB   | 7:AG:68:PRO:HG2   | 2.33                     | 0.58              |
| 7:AG:170:ARG:O   | 7:AG:171:ALA:C    | 2.46                     | 0.58              |
| 8:AH:137:ASP:HB3 | 8:AH:140:LYS:HE2  | 1.86                     | 0.58              |
| 8:AH:163:TYR:O   | 8:AH:164:TYR:O    | 2.21                     | 0.58              |
| 9:AK:23:LEU:HD23 | 9:AK:60:ILE:HG22  | 1.85                     | 0.58              |
| 10:AL:21:CYS:SG  | 10:AL:40:VAL:O    | 2.62                     | 0.58              |
| 10:AL:24:VAL:HA  | 10:AL:39:ILE:HG21 | 1.81                     | 0.58              |
| 10:AL:77:ILE:O   | 15:AQ:75:ILE:CG1  | 2.51                     | 0.58              |
| 12:AN:11:LYS:HZ3 | 12:AN:73:PRO:HG3  | 1.67                     | 0.58              |
| 13:AO:31:HIS:CD2 | 13:AO:34:ILE:HD11 | 2.39                     | 0.58              |
| 17:AS:79:VAL:HB  | 17:AS:81:TYR:HD1  | 1.68                     | 0.58              |
| 19:AU:21:PHE:HD2 | 19:AU:26:TYR:HA   | 1.69                     | 0.58              |
| 20:AV:72:VAL:O   | 20:AV:73:ARG:HG3  | 2.03                     | 0.58              |
| 21:AW:167:PRO:O  | 21:AW:168:GLU:HB3 | 2.03                     | 0.58              |
| 22:AX:40:GLN:HG2 | 22:AX:45:PHE:HD1  | 1.69                     | 0.58              |
| 29:Ae:20:GLY:C   | 29:Ae:21:LYS:HG3  | 2.29                     | 0.58              |
| 29:Ae:36:LYS:HG3 | 29:Ae:40:GLU:OE1  | 2.03                     | 0.58              |
| 34:BA:5:U:O2'    | 34:BA:6:G:OP2     | 2.22                     | 0.58              |
| 34:BA:91:C:C2    | 34:BA:92:G:N7     | 2.72                     | 0.58              |
| 34:BA:225:C:C2'  | 34:BA:226:G:C5'   | 2.79                     | 0.58              |
| 34:BA:274:A:HO2' | 34:BA:275:G:C1'   | 2.17                     | 0.58              |
| 34:BA:278:G:C4   | 50:BU:95:TYR:HE2  | 2.21                     | 0.58              |
| 34:BA:346:G:N2   | 34:BA:347:G:C5    | 2.72                     | 0.58              |
| 34:BA:547:A:H5'  | 34:BA:548:G:OP1   | 2.04                     | 0.58              |
| 34:BA:689:C:H2'  | 34:BA:690:G:C1'   | 2.34                     | 0.58              |
| 34:BA:696:A:H2'  | 34:BA:697:U:H5'   | 1.86                     | 0.58              |
| 34:BA:730:G:C5   | 34:BA:731:G:H1'   | 2.39                     | 0.58              |
| 34:BA:757:U:H1'  | 34:BA:879:C:O2'   | 2.03                     | 0.58              |
| 34:BA:922:G:O2'  | 34:BA:1398:A:N1   | 2.27                     | 0.58              |
| 34:BA:964:A:OP1  | 34:BA:1199:U:OP1  | 2.21                     | 0.58              |
| 34:BA:1133:G:N1  | 34:BA:1142:G:C6   | 2.72                     | 0.58              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1147:C:N3   | 34:BA:1148:U:C5    | 2.72                     | 0.58              |
| 34:BA:1342:C:C1'  | 42:BM:124:GLN:OE1  | 2.49                     | 0.58              |
| 34:BA:1350:A:N6   | 34:BA:1373:G:C2    | 2.71                     | 0.58              |
| 34:BA:1367:C:OP1  | 42:BM:115:GLY:CA   | 2.51                     | 0.58              |
| 34:BA:1376:U:O5'  | 34:BA:1376:U:H6    | 1.85                     | 0.58              |
| 34:BA:1400:C:C4'  | 34:BA:1401:G:OP2   | 2.49                     | 0.58              |
| 37:BH:67:ILE:HD12 | 37:BH:68:TYR:N     | 2.19                     | 0.58              |
| 37:BH:139:ARG:HG2 | 37:BH:140:VAL:H    | 1.66                     | 0.58              |
| 37:BH:188:LEU:C   | 37:BH:189:PRO:O    | 2.46                     | 0.58              |
| 38:BI:7:GLU:O     | 38:BI:34:VAL:HA    | 2.03                     | 0.58              |
| 38:BI:70:PRO:CB   | 38:BI:143:ARG:HA   | 2.31                     | 0.58              |
| 38:BI:105:VAL:O   | 38:BI:109:ILE:HG22 | 2.04                     | 0.58              |
| 38:BI:132:ALA:O   | 38:BI:135:THR:HB   | 2.04                     | 0.58              |
| 39:BJ:60:PHE:N    | 39:BJ:60:PHE:HD1   | 2.01                     | 0.58              |
| 39:BJ:95:GLU:H    | 39:BJ:96:PRO:HD3   | 1.67                     | 0.58              |
| 40:BK:50:ILE:CD1  | 40:BK:58:PRO:HB3   | 2.34                     | 0.58              |
| 40:BK:56:GLN:CD   | 40:BK:56:GLN:H     | 2.12                     | 0.58              |
| 40:BK:71:PRO:CG   | 40:BK:96:GLN:HA    | 2.34                     | 0.58              |
| 41:BL:18:ARG:NH1  | 41:BL:18:ARG:N     | 2.52                     | 0.58              |
| 41:BL:94:TYR:CE1  | 41:BL:132:GLU:OE1  | 2.57                     | 0.58              |
| 44:BO:11:LYS:HB3  | 44:BO:13:GLN:CD    | 2.28                     | 0.58              |
| 45:BP:91:LYS:O    | 45:BP:92:ASP:HB3   | 2.03                     | 0.58              |
| 46:BQ:36:LYS:HZ1  | 46:BQ:59:TYR:HB3   | 1.68                     | 0.58              |
| 51:BV:58:LEU:HB2  | 51:BV:63:GLN:OE1   | 2.04                     | 0.58              |
| 52:BW:40:ILE:CG1  | 52:BW:71:LEU:HD23  | 2.34                     | 0.58              |
| 57:BZ:6:ARG:HH12  | 57:BZ:196:ALA:CB   | 2.15                     | 0.58              |
| 57:BZ:8:ILE:CA    | 57:BZ:72:ILE:CG2   | 2.65                     | 0.58              |
| 57:BZ:15:ASP:HB3  | 57:BZ:16:HIS:HD1   | 1.63                     | 0.58              |
| 57:BZ:82:GLY:CA   | 57:BZ:361:ARG:CB   | 2.77                     | 0.58              |
| 57:BZ:155:ASP:C   | 57:BZ:157:GLN:HB3  | 2.29                     | 0.58              |
| 57:BZ:156:GLU:HA  | 57:BZ:157:GLN:C    | 2.27                     | 0.58              |
| 57:BZ:169:ASN:OD1 | 57:BZ:171:ILE:HD11 | 2.03                     | 0.58              |
| 57:BZ:228:ARG:HA  | 57:BZ:267:LEU:CD1  | 2.34                     | 0.58              |
| 57:BZ:383:SER:H   | 57:BZ:384:ARG:CG   | 2.14                     | 0.58              |
| 57:BZ:398:GLU:CD  | 57:BZ:444:PRO:HB3  | 2.27                     | 0.58              |
| 1:AA:14:A:N7      | 1:AA:15:G:C8       | 2.72                     | 0.57              |
| 1:AA:228:A:H2'    | 1:AA:230:U:OP1     | 2.04                     | 0.57              |
| 1:AA:239:U:C1'    | 1:AA:259:G:H22     | 2.17                     | 0.57              |
| 1:AA:246:C:N4     | 1:AA:252:G:H1      | 2.01                     | 0.57              |
| 1:AA:270(J):G:H3' | 1:AA:270(K):C:H6   | 1.68                     | 0.57              |
| 1:AA:344:G:H2'    | 1:AA:345:A:O4'     | 2.04                     | 0.57              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:464:U:O2    | 1:AA:788:A:N7     | 2.37                     | 0.57              |
| 1:AA:468:G:N7    | 1:AA:469:G:C4     | 2.72                     | 0.57              |
| 1:AA:484:C:OP1   | 20:AV:48:ALA:HB1  | 2.04                     | 0.57              |
| 1:AA:569:U:O4    | 1:AA:570:G:C6     | 2.57                     | 0.57              |
| 1:AA:602:G:H2'   | 1:AA:655:A:N1     | 2.18                     | 0.57              |
| 1:AA:623:G:H8    | 11:AM:105:LEU:CB  | 2.15                     | 0.57              |
| 1:AA:649:G:N3    | 1:AA:649:G:H2'    | 2.18                     | 0.57              |
| 1:AA:650:C:P     | 29:Ae:21:LYS:NZ   | 2.77                     | 0.57              |
| 1:AA:673:C:O2'   | 1:AA:674:G:H5'    | 2.03                     | 0.57              |
| 1:AA:673:C:C5'   | 6:AF:82:ILE:HD12  | 2.34                     | 0.57              |
| 1:AA:807:U:O2    | 1:AA:808:G:C8     | 2.57                     | 0.57              |
| 1:AA:1061:U:O2   | 32:AJ:11:GLN:OE1  | 2.21                     | 0.57              |
| 1:AA:1064:C:H3'  | 1:AA:1065:U:C6    | 2.39                     | 0.57              |
| 1:AA:1064:C:H2'  | 1:AA:1065:U:C5'   | 2.34                     | 0.57              |
| 1:AA:1085:A:H1'  | 1:AA:1086:A:P     | 2.44                     | 0.57              |
| 1:AA:1324:G:O2'  | 1:AA:1325:G:OP1   | 2.22                     | 0.57              |
| 1:AA:1435:G:C2   | 1:AA:1558:A:N6    | 2.72                     | 0.57              |
| 1:AA:1447:G:H21  | 1:AA:1545:A:H2    | 1.51                     | 0.57              |
| 1:AA:1486:A:H2'  | 1:AA:1487:G:O4'   | 2.04                     | 0.57              |
| 1:AA:1534:G:N2   | 1:AA:1537:C:C5    | 2.61                     | 0.57              |
| 1:AA:1538:G:C2   | 1:AA:1539:G:N3    | 2.72                     | 0.57              |
| 1:AA:1576:U:H2'  | 1:AA:1577:C:C6    | 2.39                     | 0.57              |
| 1:AA:1629:U:H1'  | 1:AA:2699:C:OP1   | 2.04                     | 0.57              |
| 1:AA:1770:G:O2'  | 1:AA:1771:C:C5'   | 2.52                     | 0.57              |
| 1:AA:1784:A:H4'  | 1:AA:1785:A:O4'   | 2.04                     | 0.57              |
| 1:AA:1784:A:HO2' | 1:AA:1785:A:H8    | 1.52                     | 0.57              |
| 1:AA:1903:G:OP1  | 4:AD:242:ARG:HB3  | 2.04                     | 0.57              |
| 1:AA:1999:C:H2'  | 1:AA:2000:G:C5'   | 2.34                     | 0.57              |
| 1:AA:2135:A:N7   | 1:AA:2160:G:C1'   | 2.66                     | 0.57              |
| 1:AA:2310:A:C2   | 7:AG:83:ARG:NH2   | 2.72                     | 0.57              |
| 1:AA:2432:A:N1   | 25:Aa:31:ILE:HD13 | 2.19                     | 0.57              |
| 1:AA:2470:G:N2   | 1:AA:2471:C:C2    | 2.72                     | 0.57              |
| 1:AA:2521:C:C2'  | 1:AA:2522:U:O5'   | 2.51                     | 0.57              |
| 1:AA:2815:C:O2   | 1:AA:2816:C:C6    | 2.57                     | 0.57              |
| 1:AA:2866:U:H4'  | 1:AA:2867:G:O5'   | 2.03                     | 0.57              |
| 3:AC:48:GLY:CA   | 3:AC:210:ARG:HD3  | 2.34                     | 0.57              |
| 3:AC:223:ARG:NH1 | 3:AC:223:ARG:HB2  | 2.19                     | 0.57              |
| 4:AD:75:ILE:O    | 4:AD:76:PRO:C     | 2.42                     | 0.57              |
| 4:AD:95:LEU:HD13 | 4:AD:96:HIS:N     | 2.18                     | 0.57              |
| 4:AD:206:LEU:N   | 4:AD:206:LEU:CD1  | 2.59                     | 0.57              |
| 5:AE:16:ARG:HB3  | 5:AE:17:ASP:OD2   | 2.04                     | 0.57              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 6:AF:109:GLY:O    | 6:AF:111:ALA:N     | 2.36                     | 0.57              |
| 8:AH:11:VAL:HG21  | 8:AH:17:VAL:HG21   | 1.86                     | 0.57              |
| 9:AK:34:LEU:CD2   | 9:AK:120:LEU:HB2   | 2.33                     | 0.57              |
| 9:AK:74:ARG:HD2   | 9:AK:82:LEU:HD13   | 1.86                     | 0.57              |
| 9:AK:97:ARG:O     | 9:AK:100:GLU:CB    | 2.51                     | 0.57              |
| 10:AL:23:ARG:HD3  | 10:AL:23:ARG:N     | 2.18                     | 0.57              |
| 10:AL:101:PRO:HG3 | 34:BA:346:G:H5'    | 1.86                     | 0.57              |
| 12:AN:29:PHE:O    | 12:AN:29:PHE:CD1   | 2.56                     | 0.57              |
| 12:AN:54:MET:HB2  | 12:AN:64:ILE:HD13  | 1.86                     | 0.57              |
| 13:AO:38:VAL:HG23 | 13:AO:110:PRO:O    | 2.03                     | 0.57              |
| 14:AP:7:TYR:HB3   | 14:AP:11:LYS:HZ1   | 1.69                     | 0.57              |
| 14:AP:88:ASP:CG   | 14:AP:89:ARG:N     | 2.62                     | 0.57              |
| 15:AQ:38:ASN:C    | 15:AQ:39:ARG:HG2   | 2.28                     | 0.57              |
| 15:AQ:72:VAL:N    | 15:AQ:74:ARG:NH1   | 2.52                     | 0.57              |
| 15:AQ:101:PHE:C   | 15:AQ:103:ARG:H    | 2.12                     | 0.57              |
| 16:AR:40:PHE:CD2  | 17:AS:78:LYS:HE2   | 2.39                     | 0.57              |
| 16:AR:59:ARG:O    | 16:AR:60:LEU:C     | 2.47                     | 0.57              |
| 16:AR:105:VAL:O   | 16:AR:108:GLU:CD   | 2.47                     | 0.57              |
| 18:AT:33:ARG:HA   | 18:AT:33:ARG:NE    | 2.14                     | 0.57              |
| 19:AU:26:TYR:HB3  | 19:AU:28:PHE:CZ    | 2.39                     | 0.57              |
| 19:AU:36:LYS:HE3  | 19:AU:56:THR:HG23  | 1.84                     | 0.57              |
| 20:AV:8:LYS:HA    | 20:AV:28:LYS:CD    | 2.31                     | 0.57              |
| 20:AV:75:ILE:N    | 20:AV:100:ALA:HB1  | 2.18                     | 0.57              |
| 20:AV:96:ILE:HD12 | 20:AV:96:ILE:H     | 1.69                     | 0.57              |
| 23:AY:26:GLU:O    | 23:AY:29:GLU:HB2   | 2.03                     | 0.57              |
| 23:AY:32:PHE:HD1  | 23:AY:32:PHE:N     | 2.01                     | 0.57              |
| 24:AZ:3:ARG:HH11  | 24:AZ:3:ARG:CB     | 2.14                     | 0.57              |
| 27:Ac:32:ASN:ND2  | 27:Ac:33:LYS:N     | 2.52                     | 0.57              |
| 30:Af:9:ARG:NE    | 30:Af:16:VAL:HB    | 2.18                     | 0.57              |
| 32:AJ:40:ALA:C    | 32:AJ:66:THR:CG2   | 2.72                     | 0.57              |
| 32:AJ:47:ASN:C    | 32:AJ:48:MET:HG3   | 2.27                     | 0.57              |
| 32:AJ:52:ILE:CG1  | 32:AJ:76:TYR:HD1   | 2.16                     | 0.57              |
| 32:AJ:64:SER:C    | 32:AJ:65:PHE:HD1   | 2.12                     | 0.57              |
| 32:AJ:104:VAL:CG1 | 32:AJ:127:ILE:HG21 | 2.09                     | 0.57              |
| 34:BA:123:C:OP1   | 34:BA:312:C:H5'    | 2.03                     | 0.57              |
| 34:BA:675:A:H2'   | 34:BA:676:A:H8     | 1.69                     | 0.57              |
| 34:BA:686:U:HO2'  | 34:BA:687:A:P      | 2.27                     | 0.57              |
| 34:BA:815:A:C2    | 34:BA:1527:C:O2    | 2.57                     | 0.57              |
| 34:BA:862:C:C4    | 34:BA:863:U:H5     | 2.21                     | 0.57              |
| 34:BA:872:A:C2'   | 34:BA:873:A:C5'    | 2.82                     | 0.57              |
| 34:BA:981:U:H3'   | 34:BA:981:U:C6     | 2.39                     | 0.57              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1006:C:O2    | 34:BA:1006:C:H2'   | 2.03                     | 0.57              |
| 34:BA:1167:A:C2    | 34:BA:1169:A:C2    | 2.92                     | 0.57              |
| 34:BA:1220:G:O2'   | 52:BW:52:TYR:C     | 2.47                     | 0.57              |
| 34:BA:1253:G:O2'   | 34:BA:1254:C:H5'   | 2.03                     | 0.57              |
| 34:BA:1316:G:H5'   | 34:BA:1360:A:C8    | 2.39                     | 0.57              |
| 34:BA:1417:G:H22   | 34:BA:1482:G:H2'   | 1.67                     | 0.57              |
| 35:BF:84:GLU:HG3   | 35:BF:212:GLN:OE1  | 2.03                     | 0.57              |
| 35:BF:100:GLY:HA2  | 35:BF:176:GLU:OE2  | 2.03                     | 0.57              |
| 36:BG:5:ILE:CG2    | 43:BN:51:ARG:HH12  | 2.16                     | 0.57              |
| 36:BG:44:GLU:HA    | 36:BG:52:LEU:CD1   | 2.33                     | 0.57              |
| 37:BH:8:VAL:HG13   | 37:BH:11:LEU:HD12  | 1.85                     | 0.57              |
| 37:BH:17:VAL:O     | 37:BH:19:LEU:HD23  | 2.04                     | 0.57              |
| 37:BH:124:GLY:O    | 37:BH:125:HIS:C    | 2.47                     | 0.57              |
| 37:BH:150:GLU:C    | 37:BH:152:SER:H    | 2.12                     | 0.57              |
| 38:BI:69:VAL:O     | 38:BI:70:PRO:C     | 2.47                     | 0.57              |
| 39:BJ:57:GLN:N     | 39:BJ:57:GLN:OE1   | 2.37                     | 0.57              |
| 39:BJ:77:ARG:N     | 39:BJ:80:ARG:NH2   | 2.52                     | 0.57              |
| 40:BK:26:PHE:HD2   | 40:BK:43:PHE:HE1   | 1.52                     | 0.57              |
| 41:BL:39:LEU:O     | 41:BL:43:GLY:O     | 2.22                     | 0.57              |
| 41:BL:82:HIS:C     | 41:BL:137:VAL:HG13 | 2.28                     | 0.57              |
| 42:BM:49:PRO:CG    | 42:BM:81:ILE:HB    | 2.34                     | 0.57              |
| 42:BM:67:GLY:O     | 42:BM:73:GLN:NE2   | 2.37                     | 0.57              |
| 42:BM:82:ALA:HB2   | 42:BM:101:PHE:CZ   | 2.39                     | 0.57              |
| 42:BM:106:ALA:C    | 42:BM:107:ARG:HG3  | 2.29                     | 0.57              |
| 43:BN:48:THR:HA    | 43:BN:62:HIS:HB3   | 1.84                     | 0.57              |
| 44:BO:41:THR:HB    | 44:BO:71:LYS:CE    | 2.34                     | 0.57              |
| 46:BQ:16:ASP:CA    | 46:BQ:34:LEU:CG    | 2.69                     | 0.57              |
| 46:BQ:84:ILE:HD11  | 46:BQ:86:CYS:HB3   | 1.85                     | 0.57              |
| 51:BV:83:GLU:O     | 51:BV:84:LYS:C     | 2.47                     | 0.57              |
| 53:BX:104:LEU:O    | 53:BX:105:SER:O    | 2.21                     | 0.57              |
| 56:BD:6:G:O2'      | 56:BD:7:A:H5'      | 2.03                     | 0.57              |
| 56:BD:48:C:H3'     | 56:BD:48:C:P       | 2.44                     | 0.57              |
| 56:BE:6:G:N7       | 56:BE:69:G:C2      | 2.68                     | 0.57              |
| 57:BZ:171:ILE:HD13 | 57:BZ:182:ASP:OD1  | 2.04                     | 0.57              |
| 57:BZ:206:GLN:HG2  | 57:BZ:227:LYS:HG3  | 1.82                     | 0.57              |
| 57:BZ:206:GLN:CB   | 57:BZ:228:ARG:N    | 2.52                     | 0.57              |
| 57:BZ:493:GLN:HG2  | 57:BZ:519:TYR:HB3  | 1.86                     | 0.57              |
| 57:BZ:539:THR:CA   | 57:BZ:541:LYS:H    | 2.16                     | 0.57              |
| 1:AA:141:A:N1      | 1:AA:141(A):C:O4'  | 2.37                     | 0.57              |
| 1:AA:161:U:H3      | 1:AA:164:U:H3      | 1.50                     | 0.57              |
| 1:AA:209:C:H2'     | 1:AA:210:C:C5'     | 2.33                     | 0.57              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 1:AA:217:G:H2'    | 1:AA:218:A:O5'   | 2.04                     | 0.57              |
| 1:AA:338:G:OP1    | 20:AV:2:ARG:NH2  | 2.37                     | 0.57              |
| 1:AA:344:G:H2'    | 1:AA:345:A:C1'   | 2.33                     | 0.57              |
| 1:AA:361:G:C2'    | 1:AA:362:U:O4'   | 2.52                     | 0.57              |
| 1:AA:739:G:C2'    | 1:AA:1784:A:H61  | 2.17                     | 0.57              |
| 1:AA:952:G:C6     | 1:AA:966:G:C6    | 2.92                     | 0.57              |
| 1:AA:1051:G:C6    | 1:AA:2751:G:N1   | 2.67                     | 0.57              |
| 1:AA:1051:G:H3'   | 1:AA:1052:C:C5'  | 2.34                     | 0.57              |
| 1:AA:1341:U:H2'   | 1:AA:1342:A:OP1  | 2.04                     | 0.57              |
| 1:AA:1387:C:C2    | 1:AA:1388:G:N7   | 2.72                     | 0.57              |
| 1:AA:1392:A:C6    | 1:AA:1393:A:C6   | 2.92                     | 0.57              |
| 1:AA:1458:C:O2    | 1:AA:1461:G:N2   | 2.37                     | 0.57              |
| 1:AA:1602:U:OP2   | 1:AA:1602:U:C4   | 2.57                     | 0.57              |
| 1:AA:1671:U:O2    | 1:AA:1673:U:H5'  | 2.03                     | 0.57              |
| 1:AA:1794:U:H2'   | 1:AA:1795:C:C6   | 2.39                     | 0.57              |
| 1:AA:1825:A:O2'   | 4:AD:252:TRP:CH2 | 2.55                     | 0.57              |
| 1:AA:1834:U:H1'   | 1:AA:1969:A:H2   | 1.63                     | 0.57              |
| 1:AA:1902:C:H5'   | 4:AD:244:ARG:CZ  | 2.34                     | 0.57              |
| 1:AA:1987:G:C2    | 1:AA:1988:C:C4   | 2.92                     | 0.57              |
| 1:AA:2003:G:C6    | 1:AA:2004:G:C6   | 2.92                     | 0.57              |
| 1:AA:2135:A:C4'   | 1:AA:2136:C:C5   | 2.76                     | 0.57              |
| 1:AA:2243:U:O2    | 1:AA:2244:U:C6   | 2.57                     | 0.57              |
| 1:AA:2298:A:N1    | 1:AA:2321:G:C6   | 2.73                     | 0.57              |
| 1:AA:2406:U:OP2   | 1:AA:2411:A:N6   | 2.34                     | 0.57              |
| 1:AA:2630:G:N2    | 1:AA:2789:C:N3   | 2.52                     | 0.57              |
| 1:AA:2679:A:C2'   | 1:AA:2680:C:H5'  | 2.34                     | 0.57              |
| 3:AC:58:VAL:CG1   | 3:AC:199:HIS:HB3 | 2.34                     | 0.57              |
| 3:AC:78:ALA:C     | 3:AC:79:LYS:HG3  | 2.29                     | 0.57              |
| 3:AC:131:LEU:HB3  | 3:AC:136:LEU:HB2 | 1.85                     | 0.57              |
| 4:AD:10:THR:N     | 4:AD:11:PRO:CD   | 2.67                     | 0.57              |
| 4:AD:172:TYR:HD2  | 4:AD:185:VAL:C   | 2.13                     | 0.57              |
| 5:AE:51:PHE:CE1   | 5:AE:75:VAL:HG22 | 2.39                     | 0.57              |
| 5:AE:51:PHE:CD1   | 5:AE:52:LEU:N    | 2.72                     | 0.57              |
| 5:AE:104:VAL:HG12 | 5:AE:105:THR:H   | 1.67                     | 0.57              |
| 5:AE:116:VAL:O    | 5:AE:117:MET:O   | 2.22                     | 0.57              |
| 6:AF:5:ALA:O      | 6:AF:20:LEU:HD22 | 2.04                     | 0.57              |
| 6:AF:39:TRP:HE3   | 6:AF:99:TYR:HB3  | 1.67                     | 0.57              |
| 6:AF:53:THR:C     | 6:AF:55:GLY:H    | 2.12                     | 0.57              |
| 7:AG:33:ARG:HH21  | 7:AG:34:LEU:N    | 2.02                     | 0.57              |
| 7:AG:44:GLY:O     | 7:AG:47:LYS:N    | 2.36                     | 0.57              |
| 7:AG:131:TYR:CZ   | 7:AG:132:ASN:HA  | 2.38                     | 0.57              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AH:76:VAL:CG2   | 8:AH:77:LYS:H      | 2.16                     | 0.57              |
| 9:AK:100:GLU:O    | 9:AK:104:LYS:HG2   | 2.04                     | 0.57              |
| 11:AM:15:ARG:NH2  | 11:AM:16:ARG:H     | 2.01                     | 0.57              |
| 11:AM:45:LEU:HD22 | 29:Ae:59:LYS:CD    | 2.32                     | 0.57              |
| 11:AM:81:GLN:O    | 11:AM:86:LYS:HG2   | 2.04                     | 0.57              |
| 11:AM:117:GLU:OE2 | 11:AM:117:GLU:N    | 2.34                     | 0.57              |
| 11:AM:123:LEU:O   | 11:AM:138:LEU:HD23 | 2.03                     | 0.57              |
| 12:AN:56:ARG:O    | 12:AN:60:ARG:HG3   | 2.04                     | 0.57              |
| 12:AN:68:ILE:HG21 | 12:AN:95:ALA:CB    | 2.34                     | 0.57              |
| 12:AN:112:GLU:CA  | 12:AN:115:MET:HB2  | 2.34                     | 0.57              |
| 18:AT:59:VAL:HG21 | 18:AT:66:GLU:CB    | 2.34                     | 0.57              |
| 21:AW:95:PRO:CD   | 21:AW:131:ARG:HG2  | 2.34                     | 0.57              |
| 22:AX:59:LEU:CD1  | 22:AX:79:VAL:HG11  | 2.34                     | 0.57              |
| 26:Ab:19:ARG:C    | 26:Ab:21:SER:N     | 2.61                     | 0.57              |
| 27:Ac:41:PRO:HG2  | 27:Ac:43:CYS:HB2   | 1.86                     | 0.57              |
| 29:Ae:29:LYS:NZ   | 29:Ae:36:LYS:NZ    | 2.52                     | 0.57              |
| 32:AJ:23:VAL:C    | 32:AJ:35:MET:SD    | 2.75                     | 0.57              |
| 32:AJ:76:TYR:CE2  | 32:AJ:80:LYS:HE2   | 2.39                     | 0.57              |
| 32:AJ:98:ARG:HG2  | 32:AJ:99:ILE:N     | 2.18                     | 0.57              |
| 34:BA:244:U:O2'   | 34:BA:245:C:OP2    | 2.22                     | 0.57              |
| 34:BA:287:U:H2'   | 34:BA:288:A:C5'    | 2.34                     | 0.57              |
| 34:BA:434:U:C2    | 34:BA:435:C:C5     | 2.93                     | 0.57              |
| 34:BA:448:A:O2'   | 34:BA:449:C:H5'    | 2.04                     | 0.57              |
| 34:BA:534:U:H5''  | 34:BA:535:A:OP2    | 2.03                     | 0.57              |
| 34:BA:721:G:O6    | 51:BV:71:LYS:NZ    | 2.27                     | 0.57              |
| 34:BA:799:G:H3'   | 34:BA:800:G:C8     | 2.39                     | 0.57              |
| 34:BA:877:C:OP1   | 41:BL:88:LYS:HD3   | 2.03                     | 0.57              |
| 34:BA:922:G:N3    | 34:BA:1398:A:H2    | 2.02                     | 0.57              |
| 34:BA:939:G:C2    | 34:BA:940:C:C4     | 2.91                     | 0.57              |
| 34:BA:951:G:O2'   | 34:BA:972:C:H5     | 1.87                     | 0.57              |
| 34:BA:986:A:C8    | 52:BW:55:LYS:HE3   | 2.39                     | 0.57              |
| 34:BA:1134:G:C6   | 34:BA:1135:U:H1'   | 2.39                     | 0.57              |
| 34:BA:1194:U:C5   | 34:BA:1195:C:C5    | 2.92                     | 0.57              |
| 34:BA:1319:A:N6   | 34:BA:1323:G:N3    | 2.52                     | 0.57              |
| 34:BA:1441:G:O6   | 53:BX:35:THR:CG2   | 2.52                     | 0.57              |
| 34:BA:1486:G:H2'  | 34:BA:1487:G:O4'   | 2.04                     | 0.57              |
| 34:BA:1515:C:O2'  | 34:BA:1516:G:H5'   | 2.05                     | 0.57              |
| 35:BF:19:HIS:CA   | 35:BF:39:ILE:HD11  | 2.34                     | 0.57              |
| 35:BF:105:PHE:C   | 35:BF:107:THR:N    | 2.62                     | 0.57              |
| 36:BG:26:LYS:O    | 36:BG:28:GLN:HG3   | 2.04                     | 0.57              |
| 36:BG:46:GLU:O    | 36:BG:47:LEU:HD13  | 2.03                     | 0.57              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 36:BG:181:ASN:HD22 | 36:BG:206:GLU:HA   | 1.69                     | 0.57              |
| 36:BG:201:TYR:N    | 36:BG:201:TYR:HD1  | 2.02                     | 0.57              |
| 37:BH:20:TYR:HB2   | 37:BH:27:TYR:HA    | 1.86                     | 0.57              |
| 37:BH:98:GLU:O     | 37:BH:100:ARG:N    | 2.37                     | 0.57              |
| 37:BH:193:ASP:OD2  | 37:BH:194:LEU:HD21 | 2.04                     | 0.57              |
| 38:BI:61:TYR:HA    | 38:BI:64:ARG:HG2   | 1.85                     | 0.57              |
| 40:BK:37:ASN:OD1   | 40:BK:38:LEU:N     | 2.24                     | 0.57              |
| 40:BK:69:VAL:HG21  | 40:BK:104:LEU:CG   | 2.34                     | 0.57              |
| 41:BL:39:LEU:HD12  | 41:BL:45:ILE:HG22  | 1.85                     | 0.57              |
| 42:BM:15:ALA:HB3   | 42:BM:77:ILE:N     | 2.19                     | 0.57              |
| 43:BN:9:ARG:CB     | 43:BN:9:ARG:HH11   | 2.17                     | 0.57              |
| 43:BN:10:GLY:N     | 43:BN:16:LEU:HD11  | 2.19                     | 0.57              |
| 44:BO:59:TYR:O     | 44:BO:60:ALA:C     | 2.47                     | 0.57              |
| 44:BO:85:ARG:HG3   | 44:BO:85:ARG:NH1   | 2.18                     | 0.57              |
| 46:BQ:15:VAL:CG2   | 46:BQ:39:ILE:CG1   | 2.04                     | 0.57              |
| 46:BQ:64:TRP:O     | 46:BQ:65:LYS:HB3   | 2.03                     | 0.57              |
| 49:BT:15:PRO:HD2   | 49:BT:42:ARG:NE    | 2.19                     | 0.57              |
| 50:BU:98:LEU:HD13  | 50:BU:102:GLY:O    | 2.04                     | 0.57              |
| 53:BX:57:ARG:C     | 53:BX:59:ALA:N     | 2.56                     | 0.57              |
| 56:BD:51:U:N3      | 56:BD:64:A:C5      | 2.72                     | 0.57              |
| 57:BZ:6:ARG:C      | 57:BZ:69:ARG:CB    | 2.74                     | 0.57              |
| 57:BZ:24:LYS:N     | 57:BZ:26:LEU:HD22  | 2.19                     | 0.57              |
| 57:BZ:52:ARG:HH12  | 57:BZ:54:ILE:HG12  | 1.69                     | 0.57              |
| 57:BZ:206:GLN:CG   | 57:BZ:227:LYS:CG   | 2.73                     | 0.57              |
| 57:BZ:310:PHE:CA   | 57:BZ:385:PRO:HG3  | 2.33                     | 0.57              |
| 57:BZ:468:THR:HG23 | 57:BZ:469:PHE:N    | 2.10                     | 0.57              |
| 1:AA:243:U:O2      | 1:AA:243:U:C2'     | 2.53                     | 0.57              |
| 1:AA:540:G:C6      | 1:AA:541:C:C4      | 2.93                     | 0.57              |
| 1:AA:669:G:N3      | 1:AA:801:G:N2      | 2.52                     | 0.57              |
| 1:AA:809:G:O2'     | 1:AA:1254:A:N3     | 2.35                     | 0.57              |
| 1:AA:814:C:C2      | 1:AA:815:C:C5      | 2.92                     | 0.57              |
| 1:AA:988:A:H62     | 24:AZ:13:ILE:CD1   | 2.18                     | 0.57              |
| 1:AA:1081:U:C4     | 1:AA:1086:A:C2     | 2.89                     | 0.57              |
| 1:AA:1471:A:C8     | 1:AA:1521:G:N1     | 2.72                     | 0.57              |
| 1:AA:1473:G:O2'    | 1:AA:1474:C:H5'    | 2.04                     | 0.57              |
| 1:AA:1477:A:H2'    | 1:AA:1478:G:C1'    | 2.34                     | 0.57              |
| 1:AA:1520:U:H3'    | 1:AA:1520:U:C6     | 2.35                     | 0.57              |
| 1:AA:1535:U:H3'    | 1:AA:1536:A:C8     | 2.38                     | 0.57              |
| 1:AA:1656:C:OP1    | 5:AE:117:MET:HB2   | 2.04                     | 0.57              |
| 1:AA:1798:U:H5'    | 4:AD:257:LEU:HB2   | 1.85                     | 0.57              |
| 1:AA:1810:A:C2'    | 1:AA:1811:G:H5'    | 2.32                     | 0.57              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1950:G:C5    | 1:AA:1951:U:C5    | 2.92                     | 0.57              |
| 1:AA:1956:U:C2    | 1:AA:1957:C:C5    | 2.92                     | 0.57              |
| 1:AA:2122:U:C1'   | 3:AC:166:ASP:CG   | 2.78                     | 0.57              |
| 1:AA:2307:G:C8    | 1:AA:2308:G:H1'   | 2.39                     | 0.57              |
| 1:AA:2517:C:C5    | 1:AA:2542:A:N7    | 2.73                     | 0.57              |
| 1:AA:2519:U:C2    | 1:AA:2542:A:C2    | 2.92                     | 0.57              |
| 1:AA:2580:U:OP2   | 1:AA:2580:U:H6    | 1.87                     | 0.57              |
| 1:AA:2629:A:C5    | 1:AA:2896:C:O5'   | 2.44                     | 0.57              |
| 1:AA:2637:U:OP2   | 1:AA:2637:U:H6    | 1.87                     | 0.57              |
| 1:AA:2749:A:H4'   | 8:AH:62:LYS:CB    | 2.34                     | 0.57              |
| 1:AA:2749:A:C6    | 1:AA:2750:A:N7    | 2.71                     | 0.57              |
| 1:AA:2847:U:C3'   | 15:AQ:99:LEU:HD12 | 2.31                     | 0.57              |
| 2:AB:9:G:C5       | 2:AB:112:G:C6     | 2.91                     | 0.57              |
| 2:AB:12:C:O4'     | 22:AX:74:ARG:HG2  | 2.04                     | 0.57              |
| 2:AB:32:C:C2'     | 2:AB:33:G:C8      | 2.87                     | 0.57              |
| 2:AB:73:A:N6      | 2:AB:104:A:C1'    | 2.67                     | 0.57              |
| 3:AC:45:ALA:C     | 3:AC:213:TYR:HE1  | 2.12                     | 0.57              |
| 3:AC:116:THR:HG22 | 3:AC:149:ILE:HB   | 1.86                     | 0.57              |
| 3:AC:181:PRO:O    | 3:AC:185:LEU:HG   | 2.04                     | 0.57              |
| 4:AD:171:ASP:O    | 4:AD:186:HIS:HB3  | 2.04                     | 0.57              |
| 4:AD:198:ASN:ND2  | 4:AD:201:HIS:HB2  | 2.19                     | 0.57              |
| 4:AD:258:LYS:HA   | 4:AD:261:LYS:CD   | 2.34                     | 0.57              |
| 4:AD:259:THR:HG21 | 4:AD:260:ARG:HH12 | 1.67                     | 0.57              |
| 5:AE:178:GLU:O    | 5:AE:180:ASN:N    | 2.37                     | 0.57              |
| 6:AF:52:LYS:HD2   | 6:AF:88:VAL:HG23  | 1.86                     | 0.57              |
| 6:AF:123:LEU:HG   | 6:AF:191:ARG:HD3  | 1.86                     | 0.57              |
| 6:AF:204:ASN:N    | 6:AF:204:ASN:OD1  | 2.37                     | 0.57              |
| 7:AG:6:ALA:O      | 7:AG:10:LYS:HG2   | 2.04                     | 0.57              |
| 7:AG:119:GLY:O    | 7:AG:120:LEU:HD23 | 2.04                     | 0.57              |
| 8:AH:71:LEU:O     | 8:AH:74:ASN:ND2   | 2.30                     | 0.57              |
| 8:AH:87:LEU:HD21  | 8:AH:162:ILE:CG1  | 2.35                     | 0.57              |
| 9:AK:36:GLY:C     | 9:AK:47:ALA:HB3   | 2.29                     | 0.57              |
| 10:AL:8:LEU:O     | 10:AL:18:LYS:HG3  | 2.04                     | 0.57              |
| 10:AL:16:ALA:HB2  | 10:AL:46:ALA:O    | 2.04                     | 0.57              |
| 10:AL:67:LYS:N    | 10:AL:67:LYS:HE2  | 2.20                     | 0.57              |
| 11:AM:49:ARG:NH2  | 29:Ae:55:ALA:HB2  | 2.19                     | 0.57              |
| 11:AM:54:GLY:O    | 11:AM:56:SER:N    | 2.37                     | 0.57              |
| 11:AM:65:ARG:NH1  | 11:AM:68:GLN:CD   | 2.62                     | 0.57              |
| 11:AM:81:GLN:CA   | 11:AM:86:LYS:CG   | 2.83                     | 0.57              |
| 12:AN:14:ARG:O    | 12:AN:73:PRO:HG2  | 2.04                     | 0.57              |
| 12:AN:16:ARG:O    | 12:AN:17:LEU:HG   | 2.03                     | 0.57              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AS:72:VAL:O     | 17:AS:73:SER:O     | 2.23                     | 0.57              |
| 18:AT:16:LYS:HZ2   | 18:AT:16:LYS:H     | 1.43                     | 0.57              |
| 18:AT:36:LEU:CD2   | 18:AT:51:LEU:HD21  | 2.25                     | 0.57              |
| 18:AT:78:GLU:HG2   | 18:AT:99:ARG:HD2   | 1.86                     | 0.57              |
| 18:AT:95:ILE:H     | 18:AT:95:ILE:CD1   | 2.06                     | 0.57              |
| 19:AU:12:VAL:HB    | 19:AU:27:THR:C     | 2.29                     | 0.57              |
| 20:AV:6:HIS:CG     | 20:AV:33:LYS:HZ3   | 2.23                     | 0.57              |
| 21:AW:29:TYR:CG    | 21:AW:72:ARG:NH2   | 2.72                     | 0.57              |
| 22:AX:82:ARG:HG2   | 22:AX:83:PRO:N     | 2.18                     | 0.57              |
| 23:AY:26:GLU:HA    | 23:AY:29:GLU:HG3   | 1.86                     | 0.57              |
| 24:AZ:8:LEU:HB2    | 24:AZ:33:GLN:HB3   | 1.86                     | 0.57              |
| 24:AZ:40:THR:HG21  | 24:AZ:42:ALA:HB3   | 1.85                     | 0.57              |
| 28:Ad:9:ARG:O      | 28:Ad:13:ALA:HB2   | 2.03                     | 0.57              |
| 28:Ad:46:VAL:HG12  | 28:Ad:47:ARG:N     | 2.19                     | 0.57              |
| 30:Af:25:VAL:HG21  | 30:Af:34:GLN:OE1   | 2.04                     | 0.57              |
| 31:AI:52:PHE:C     | 31:AI:54:ALA:H     | 2.12                     | 0.57              |
| 32:AJ:33:ASN:HD22  | 32:AJ:62:ASP:N     | 2.02                     | 0.57              |
| 32:AJ:52:ILE:CD1   | 32:AJ:76:TYR:HD1   | 2.17                     | 0.57              |
| 32:AJ:62:ASP:N     | 32:AJ:63:ARG:HA    | 2.19                     | 0.57              |
| 32:AJ:74:ALA:HB1   | 32:AJ:126:MET:CE   | 2.34                     | 0.57              |
| 34:BA:34:C:O2'     | 34:BA:35:G:C5'     | 2.50                     | 0.57              |
| 34:BA:106:C:O2     | 34:BA:379:C:H4'    | 2.04                     | 0.57              |
| 34:BA:129(A):G:H4' | 34:BA:130:A:H5''   | 1.85                     | 0.57              |
| 34:BA:136:C:H4'    | 49:BT:65:GLN:HE22  | 1.69                     | 0.57              |
| 34:BA:230:G:N2     | 34:BA:231:G:H1'    | 2.18                     | 0.57              |
| 34:BA:262:A:C6     | 34:BA:263:A:N6     | 2.72                     | 0.57              |
| 34:BA:340:U:C2     | 34:BA:341:C:C5     | 2.92                     | 0.57              |
| 34:BA:341:C:O2'    | 34:BA:342:C:H5'    | 2.04                     | 0.57              |
| 34:BA:430:A:OP1    | 37:BH:9:CYS:CB     | 2.51                     | 0.57              |
| 34:BA:543:C:N3     | 34:BA:544:G:N7     | 2.52                     | 0.57              |
| 34:BA:752:G:OP2    | 34:BA:752:G:C8     | 2.58                     | 0.57              |
| 34:BA:816:A:H2'    | 34:BA:817:C:OP2    | 2.04                     | 0.57              |
| 34:BA:878:G:H5'    | 41:BL:89:PRO:HG2   | 1.85                     | 0.57              |
| 34:BA:881:G:C6     | 34:BA:882:C:C4     | 2.92                     | 0.57              |
| 34:BA:949:A:C3'    | 46:BQ:102:ARG:HH11 | 2.07                     | 0.57              |
| 34:BA:961:U:O2'    | 34:BA:962:C:C5'    | 2.48                     | 0.57              |
| 34:BA:986:A:C2     | 52:BW:52:TYR:OH    | 2.58                     | 0.57              |
| 34:BA:1085:U:C5'   | 34:BA:1094:G:N2    | 2.65                     | 0.57              |
| 34:BA:1275:A:H2'   | 34:BA:1276:G:H5'   | 1.86                     | 0.57              |
| 34:BA:1315:U:O4'   | 34:BA:1361:G:C5'   | 2.48                     | 0.57              |
| 34:BA:1330:U:H5''  | 46:BQ:70:LEU:HD23  | 1.85                     | 0.57              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1419:G:C2'  | 34:BA:1420:C:H6    | 2.16                     | 0.57              |
| 35:BF:14:GLY:CA   | 35:BF:209:ARG:HH21 | 2.13                     | 0.57              |
| 35:BF:80:ILE:HD12 | 35:BF:208:ILE:CG2  | 2.34                     | 0.57              |
| 36:BG:29:TYR:OH   | 47:BR:54:PRO:HB2   | 2.02                     | 0.57              |
| 36:BG:71:ALA:HB2  | 36:BG:106:VAL:CG2  | 2.34                     | 0.57              |
| 37:BH:31:CYS:C    | 37:BH:33:MET:H     | 2.13                     | 0.57              |
| 37:BH:125:HIS:HA  | 37:BH:149:ALA:HB3  | 1.85                     | 0.57              |
| 37:BH:168:ARG:H   | 37:BH:168:ARG:HD2  | 1.66                     | 0.57              |
| 37:BH:173:TRP:CA  | 37:BH:186:LEU:HD12 | 2.34                     | 0.57              |
| 38:BI:37:ARG:NH1  | 38:BI:111:GLU:HB2  | 2.20                     | 0.57              |
| 38:BI:84:PHE:CD1  | 38:BI:134:ALA:HA   | 2.39                     | 0.57              |
| 39:BJ:48:LEU:HB3  | 51:BV:78:LEU:CD2   | 2.28                     | 0.57              |
| 39:BJ:80:ARG:O    | 39:BJ:81:ILE:C     | 2.46                     | 0.57              |
| 40:BK:64:GLN:O    | 40:BK:68:ASN:ND2   | 2.37                     | 0.57              |
| 40:BK:77:SER:CA   | 40:BK:156:TRP:HZ2  | 2.16                     | 0.57              |
| 41:BL:7:ALA:O     | 41:BL:10:LEU:HB2   | 2.04                     | 0.57              |
| 41:BL:32:LYS:HG3  | 41:BL:59:LEU:CD1   | 2.34                     | 0.57              |
| 44:BO:13:GLN:HA   | 44:BO:76:GLY:HA3   | 1.85                     | 0.57              |
| 44:BO:112:THR:N   | 44:BO:113:PRO:CD   | 2.64                     | 0.57              |
| 45:BP:29:GLY:O    | 45:BP:30:ALA:O     | 2.21                     | 0.57              |
| 46:BQ:91:ARG:O    | 46:BQ:96:LEU:CD2   | 2.53                     | 0.57              |
| 48:BS:41:GLU:HA   | 48:BS:44:LYS:HE3   | 1.85                     | 0.57              |
| 49:BT:6:LEU:N     | 49:BT:6:LEU:CD1    | 2.67                     | 0.57              |
| 49:BT:30:GLY:C    | 49:BT:31:LYS:O     | 2.45                     | 0.57              |
| 51:BV:80:PRO:O    | 51:BV:82:THR:O     | 2.22                     | 0.57              |
| 52:BW:51:VAL:CG2  | 52:BW:60:VAL:CG2   | 2.83                     | 0.57              |
| 53:BX:34:LYS:O    | 53:BX:38:LYS:HG3   | 2.04                     | 0.57              |
| 55:BC:4:C:N3      | 55:BC:5:G:N7       | 2.51                     | 0.57              |
| 55:BC:37:A:H2'    | 55:BC:38:A:O4'     | 2.04                     | 0.57              |
| 56:BD:9:A:H2      | 56:BD:45:U:H3      | 1.51                     | 0.57              |
| 57:BZ:55:THR:HG1  | 57:BZ:254:VAL:CG1  | 1.92                     | 0.57              |
| 57:BZ:137:PRO:HD2 | 57:BZ:138:ASP:H    | 1.68                     | 0.57              |
| 1:AA:28:A:C8      | 1:AA:513:A:C6      | 2.93                     | 0.57              |
| 1:AA:251:A:H2'    | 1:AA:252:G:O5'     | 2.05                     | 0.57              |
| 1:AA:360:G:H2'    | 1:AA:361:G:O5'     | 2.03                     | 0.57              |
| 1:AA:360:G:O5'    | 1:AA:360:G:H8      | 1.87                     | 0.57              |
| 1:AA:387:U:H4'    | 1:AA:388:G:C1'     | 2.33                     | 0.57              |
| 1:AA:396:G:H5''   | 25:Aa:10:VAL:HG13  | 1.87                     | 0.57              |
| 1:AA:506:G:HO2'   | 1:AA:507:A:H8      | 1.51                     | 0.57              |
| 1:AA:558:G:O5'    | 9:AK:109:LYS:HD3   | 2.04                     | 0.57              |
| 1:AA:586:A:N6     | 1:AA:810:U:H5'     | 2.19                     | 0.57              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:594:U:C2'   | 1:AA:595:C:C6     | 2.80                     | 0.57              |
| 1:AA:594:U:C5'   | 29:Ae:61:LEU:HD13 | 2.33                     | 0.57              |
| 1:AA:729:G:C5    | 1:AA:730:C:C6     | 2.91                     | 0.57              |
| 1:AA:823:G:C2    | 1:AA:824:A:C5     | 2.93                     | 0.57              |
| 1:AA:977:G:C2    | 1:AA:978:G:H1'    | 2.39                     | 0.57              |
| 1:AA:988:A:H5''  | 24:AZ:10:LYS:HE3  | 1.87                     | 0.57              |
| 1:AA:1223:C:O2   | 1:AA:1225:C:H5''  | 2.04                     | 0.57              |
| 1:AA:1314:C:O2'  | 1:AA:1315:C:H5'   | 2.05                     | 0.57              |
| 1:AA:1429:G:C4   | 1:AA:1568:G:C6    | 2.92                     | 0.57              |
| 1:AA:1439:A:H2'  | 1:AA:1440:G:C5'   | 2.34                     | 0.57              |
| 1:AA:1669:A:C5'  | 1:AA:2550:G:OP1   | 2.46                     | 0.57              |
| 1:AA:1670:C:C6   | 1:AA:1671:U:C6    | 2.92                     | 0.57              |
| 1:AA:1707:G:C4   | 1:AA:1708:C:C5    | 2.92                     | 0.57              |
| 1:AA:1708:C:C2'  | 1:AA:1709:U:C5'   | 2.79                     | 0.57              |
| 1:AA:1753:G:H2'  | 1:AA:1755:A:N7    | 2.19                     | 0.57              |
| 1:AA:1804:C:P    | 4:AD:257:LEU:HD22 | 2.44                     | 0.57              |
| 1:AA:1882:C:H2'  | 1:AA:1883:G:C4'   | 2.35                     | 0.57              |
| 1:AA:1960:A:O4'  | 34:BA:1418:A:H2   | 1.88                     | 0.57              |
| 1:AA:1981:A:C5'  | 1:AA:1982:C:OP2   | 2.50                     | 0.57              |
| 1:AA:2014:A:O2'  | 1:AA:2015:A:N3    | 2.37                     | 0.57              |
| 1:AA:2055:C:H4'  | 1:AA:2056:G:O5'   | 2.04                     | 0.57              |
| 1:AA:2269:A:H2'  | 1:AA:2270:G:O4'   | 2.03                     | 0.57              |
| 1:AA:2278:A:N7   | 22:AX:14:ARG:CB   | 2.67                     | 0.57              |
| 1:AA:2281:C:O2'  | 1:AA:2282:G:O5'   | 2.22                     | 0.57              |
| 1:AA:2574:G:O2'  | 5:AE:143:ASN:HB3  | 2.03                     | 0.57              |
| 1:AA:2630:G:H1   | 1:AA:2789:C:N4    | 2.03                     | 0.57              |
| 1:AA:2777:G:O5'  | 1:AA:2777:G:C8    | 2.57                     | 0.57              |
| 1:AA:2778:A:H4'  | 1:AA:2779:U:OP2   | 2.02                     | 0.57              |
| 1:AA:2859:G:O2'  | 1:AA:2860:A:H5'   | 2.04                     | 0.57              |
| 2:AB:66:A:C2     | 2:AB:108:C:C6     | 2.92                     | 0.57              |
| 2:AB:68:C:H2'    | 2:AB:69:G:O4'     | 2.04                     | 0.57              |
| 3:AC:108:MET:SD  | 3:AC:131:LEU:CD2  | 2.87                     | 0.57              |
| 4:AD:126:GLN:O   | 4:AD:127:VAL:C    | 2.45                     | 0.57              |
| 4:AD:135:PHE:N   | 4:AD:135:PHE:CD1  | 2.73                     | 0.57              |
| 4:AD:208:LYS:HE2 | 4:AD:211:ARG:CG   | 2.35                     | 0.57              |
| 5:AE:31:CYS:O    | 5:AE:33:VAL:HG13  | 2.04                     | 0.57              |
| 5:AE:55:ASN:C    | 5:AE:57:LYS:N     | 2.61                     | 0.57              |
| 5:AE:113:PHE:O   | 5:AE:158:GLY:HA2  | 2.04                     | 0.57              |
| 6:AF:29:ASN:ND2  | 6:AF:29:ASN:C     | 2.62                     | 0.57              |
| 6:AF:40:GLN:N    | 6:AF:184:TYR:OH   | 2.37                     | 0.57              |
| 7:AG:153:ARG:O   | 7:AG:155:MET:SD   | 2.63                     | 0.57              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AH:153:LYS:H    | 8:AH:154:PRO:CD    | 2.15                     | 0.57              |
| 9:AK:7:LYS:HZ3    | 9:AK:39:ARG:HH12   | 1.53                     | 0.57              |
| 11:AM:55:ARG:HH21 | 11:AM:55:ARG:CA    | 2.16                     | 0.57              |
| 12:AN:43:THR:HG23 | 12:AN:46:GLN:HE21  | 1.69                     | 0.57              |
| 12:AN:47:ILE:O    | 12:AN:48:GLU:C     | 2.47                     | 0.57              |
| 12:AN:111:GLU:HB2 | 12:AN:113:GLN:NE2  | 2.18                     | 0.57              |
| 15:AQ:104:ASN:O   | 15:AQ:108:ARG:NH1  | 2.38                     | 0.57              |
| 16:AR:10:ARG:O    | 16:AR:11:ARG:C     | 2.46                     | 0.57              |
| 16:AR:30:LYS:O    | 16:AR:32:PHE:N     | 2.32                     | 0.57              |
| 16:AR:81:HIS:CG   | 16:AR:117:GLN:HE22 | 2.22                     | 0.57              |
| 17:AS:1:MET:O     | 17:AS:3:ALA:N      | 2.36                     | 0.57              |
| 17:AS:7:THR:C     | 17:AS:9:GLY:H      | 2.12                     | 0.57              |
| 17:AS:27:ALA:O    | 17:AS:33:VAL:CG2   | 2.52                     | 0.57              |
| 17:AS:67:GLY:C    | 17:AS:93:GLU:O     | 2.47                     | 0.57              |
| 19:AU:93:GLU:O    | 19:AU:94:GLY:C     | 2.46                     | 0.57              |
| 20:AV:49:VAL:HB   | 20:AV:51:VAL:HG23  | 1.86                     | 0.57              |
| 21:AW:44:PHE:CD2  | 21:AW:48:PHE:CE1   | 2.91                     | 0.57              |
| 22:AX:21:LEU:HG   | 22:AX:22:GLY:N     | 2.17                     | 0.57              |
| 23:AY:20:VAL:CG2  | 23:AY:55:LEU:HD23  | 2.34                     | 0.57              |
| 23:AY:29:GLU:O    | 23:AY:32:PHE:HB2   | 2.04                     | 0.57              |
| 24:AZ:37:LEU:HG   | 24:AZ:38:GLU:C     | 2.30                     | 0.57              |
| 25:Aa:10:VAL:O    | 25:Aa:40:HIS:HD2   | 1.87                     | 0.57              |
| 34:BA:16:A:H1'    | 38:BI:17:ALA:HB3   | 1.84                     | 0.57              |
| 34:BA:35:G:O2'    | 45:BP:118:SER:HA   | 2.04                     | 0.57              |
| 34:BA:62:U:H1'    | 34:BA:379:C:H1'    | 1.86                     | 0.57              |
| 34:BA:109:A:N6    | 34:BA:326:G:C6     | 2.73                     | 0.57              |
| 34:BA:133:U:H5'   | 34:BA:134:A:P      | 2.44                     | 0.57              |
| 34:BA:259:G:H5''  | 53:BX:83:ARG:NH2   | 2.19                     | 0.57              |
| 34:BA:322:C:O2'   | 53:BX:23:ARG:HB2   | 2.04                     | 0.57              |
| 34:BA:587:G:N2    | 34:BA:755:G:C5     | 2.72                     | 0.57              |
| 34:BA:900:A:H2'   | 34:BA:901:A:O5'    | 2.05                     | 0.57              |
| 34:BA:935:A:H2'   | 34:BA:936:C:H6     | 1.69                     | 0.57              |
| 34:BA:978:A:N1    | 34:BA:1318:A:N6    | 2.52                     | 0.57              |
| 34:BA:1178:G:N2   | 34:BA:1180:A:C5'   | 2.67                     | 0.57              |
| 34:BA:1315:U:O5'  | 34:BA:1315:U:H6    | 1.87                     | 0.57              |
| 34:BA:1449:C:H2'  | 34:BA:1450:U:C5'   | 2.32                     | 0.57              |
| 35:BF:17:PHE:HA   | 35:BF:42:ILE:CG2   | 2.34                     | 0.57              |
| 35:BF:67:THR:HB   | 35:BF:90:MET:SD    | 2.43                     | 0.57              |
| 35:BF:79:ASP:O    | 35:BF:82:ARG:HB3   | 2.03                     | 0.57              |
| 35:BF:80:ILE:HG23 | 35:BF:212:GLN:HE21 | 1.68                     | 0.57              |
| 35:BF:107:THR:C   | 35:BF:109:SER:N    | 2.56                     | 0.57              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 37:BH:180:GLY:O    | 37:BH:181:MET:C    | 2.47                     | 0.57              |
| 38:BI:15:ARG:HG3   | 38:BI:15:ARG:HH11  | 1.68                     | 0.57              |
| 38:BI:106:PRO:HB3  | 38:BI:120:THR:HG21 | 1.86                     | 0.57              |
| 41:BL:123:GLU:O    | 41:BL:126:LYS:HE3  | 2.04                     | 0.57              |
| 43:BN:27:ALA:HB2   | 43:BN:85:LEU:CD2   | 2.34                     | 0.57              |
| 43:BN:29:ARG:HB2   | 43:BN:84:GLN:HE21  | 1.69                     | 0.57              |
| 43:BN:39:PRO:CA    | 43:BN:70:ARG:HH11  | 2.17                     | 0.57              |
| 45:BP:96:VAL:O     | 45:BP:96:VAL:HG12  | 2.04                     | 0.57              |
| 45:BP:117:ARG:HH11 | 45:BP:117:ARG:CG   | 2.12                     | 0.57              |
| 45:BP:119:LYS:HB3  | 45:BP:120:TYR:HD1  | 1.69                     | 0.57              |
| 46:BQ:10:PRO:HB2   | 46:BQ:45:VAL:HG21  | 1.86                     | 0.57              |
| 48:BS:69:TYR:O     | 48:BS:70:LEU:C     | 2.48                     | 0.57              |
| 50:BU:43:LEU:CD2   | 50:BU:44:ALA:O     | 2.53                     | 0.57              |
| 53:BX:78:ALA:O     | 53:BX:79:ARG:C     | 2.45                     | 0.57              |
| 55:BC:7:A:O2'      | 55:BC:49:C:OP2     | 2.21                     | 0.57              |
| 56:BD:1:G:N2       | 56:BD:72:C:N1      | 2.52                     | 0.57              |
| 56:BD:75:C:OP1     | 56:BD:75:C:H2'     | 2.04                     | 0.57              |
| 56:BE:71:G:N2      | 56:BE:72:C:O2      | 2.38                     | 0.57              |
| 57:BZ:7:ASN:CG     | 57:BZ:71:ASN:HB3   | 2.25                     | 0.57              |
| 57:BZ:18:LYS:CA    | 60:BZ:701:GCP:O1B  | 2.51                     | 0.57              |
| 57:BZ:40:GLU:H     | 57:BZ:41:ARG:CA    | 2.16                     | 0.57              |
| 57:BZ:43:MET:O     | 57:BZ:44:ASP:HB2   | 2.03                     | 0.57              |
| 1:AA:1:G:C4        | 1:AA:2902:C:N3     | 2.27                     | 0.57              |
| 1:AA:2:G:C1'       | 1:AA:2902:C:O2     | 2.53                     | 0.57              |
| 1:AA:134:C:C2      | 1:AA:146:G:N2      | 2.73                     | 0.57              |
| 1:AA:197:A:C5      | 1:AA:2430:A:N7     | 2.73                     | 0.57              |
| 1:AA:221:A:N7      | 1:AA:266:G:C5      | 2.73                     | 0.57              |
| 1:AA:250:G:H5'     | 29:Ae:8:LYS:CG     | 2.35                     | 0.57              |
| 1:AA:270(X):G:N2   | 1:AA:270(Y):G:O2'  | 2.38                     | 0.57              |
| 1:AA:289:A:C2'     | 1:AA:351:G:N1      | 2.63                     | 0.57              |
| 1:AA:308:G:N1      | 1:AA:309:G:N3      | 2.53                     | 0.57              |
| 1:AA:500:G:H1'     | 1:AA:502:A:OP2     | 2.04                     | 0.57              |
| 1:AA:592:G:HO2'    | 29:Ae:2:PRO:HA     | 1.69                     | 0.57              |
| 1:AA:942:G:N1      | 1:AA:943:U:C4      | 2.73                     | 0.57              |
| 1:AA:954:G:O6      | 1:AA:964:C:N4      | 2.37                     | 0.57              |
| 1:AA:973:A:O4'     | 1:AA:1188:U:C5     | 2.57                     | 0.57              |
| 1:AA:1061:U:H3'    | 32:AJ:52:ILE:HG12  | 1.86                     | 0.57              |
| 1:AA:1153:C:C2     | 1:AA:1154:G:C8     | 2.93                     | 0.57              |
| 1:AA:1248:G:C8     | 16:AR:2:PRO:CA     | 2.81                     | 0.57              |
| 1:AA:1255:U:N3     | 6:AF:72:ARG:O      | 2.37                     | 0.57              |
| 1:AA:1472:A:N9     | 1:AA:1473:G:N7     | 2.52                     | 0.57              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1563:G:H2'   | 1:AA:1564:C:C6     | 2.39                     | 0.57              |
| 1:AA:1568:G:HO2'  | 1:AA:1569:A:P      | 2.27                     | 0.57              |
| 1:AA:1980:G:O2'   | 1:AA:1981:A:OP1    | 2.21                     | 0.57              |
| 1:AA:2075:U:O2    | 1:AA:2076:U:C5'    | 2.52                     | 0.57              |
| 1:AA:2126:A:N7    | 1:AA:2163:C:H4'    | 2.19                     | 0.57              |
| 1:AA:2146:C:N3    | 1:AA:2147:G:H1'    | 2.20                     | 0.57              |
| 1:AA:2158:A:O2'   | 1:AA:2159:G:OP2    | 2.21                     | 0.57              |
| 1:AA:2210:G:C6    | 4:AD:150:LYS:CA    | 2.82                     | 0.57              |
| 1:AA:2216:G:H21   | 4:AD:150:LYS:NZ    | 2.02                     | 0.57              |
| 1:AA:2453:A:N6    | 1:AA:2500:U:H3     | 2.01                     | 0.57              |
| 1:AA:2545:G:C2'   | 1:AA:2546:U:H5'    | 2.33                     | 0.57              |
| 1:AA:2657:A:N6    | 1:AA:2664:G:O2'    | 2.38                     | 0.57              |
| 1:AA:2685:G:H4'   | 10:AL:66:LYS:CE    | 2.33                     | 0.57              |
| 1:AA:2784:C:H2'   | 1:AA:2785:C:H6     | 1.69                     | 0.57              |
| 1:AA:2886:G:C2    | 1:AA:2887:U:C6     | 2.92                     | 0.57              |
| 2:AB:81:G:C6      | 2:AB:82:G:N7       | 2.72                     | 0.57              |
| 4:AD:169:GLU:O    | 4:AD:172:TYR:O     | 2.22                     | 0.57              |
| 5:AE:8:LYS:CD     | 5:AE:9:VAL:N       | 2.65                     | 0.57              |
| 5:AE:44:TYR:O     | 5:AE:81:ILE:HG23   | 2.04                     | 0.57              |
| 6:AF:189:THR:O    | 6:AF:190:GLU:C     | 2.46                     | 0.57              |
| 8:AH:15:VAL:HG22  | 8:AH:16:SER:N      | 2.19                     | 0.57              |
| 8:AH:89:ILE:HG12  | 8:AH:94:TYR:CE2    | 2.39                     | 0.57              |
| 8:AH:111:HIS:O    | 8:AH:112:PRO:C     | 2.43                     | 0.57              |
| 9:AK:57:ALA:CB    | 9:AK:124:ALA:HA    | 2.29                     | 0.57              |
| 9:AK:107:LEU:HD21 | 9:AK:113:GLY:CA    | 2.31                     | 0.57              |
| 10:AL:8:LEU:CD2   | 10:AL:9:GLU:H      | 2.11                     | 0.57              |
| 10:AL:15:GLY:HA2  | 10:AL:47:ILE:HG13  | 1.86                     | 0.57              |
| 10:AL:64:ARG:HH11 | 10:AL:67:LYS:CA    | 2.16                     | 0.57              |
| 10:AL:116:SER:HB2 | 34:BA:345:C:C2     | 2.39                     | 0.57              |
| 11:AM:47:ASP:CB   | 11:AM:48:PRO:CD    | 2.82                     | 0.57              |
| 12:AN:36:ALA:HA   | 12:AN:129:THR:HG22 | 1.86                     | 0.57              |
| 13:AO:38:VAL:CG1  | 13:AO:39:PRO:HD3   | 2.33                     | 0.57              |
| 13:AO:73:VAL:HB   | 13:AO:77:ARG:NH2   | 2.19                     | 0.57              |
| 14:AP:13:ARG:NH1  | 14:AP:94:TYR:OH    | 2.37                     | 0.57              |
| 16:AR:46:ALA:O    | 16:AR:49:HIS:HB2   | 2.04                     | 0.57              |
| 18:AT:88:ARG:NE   | 18:AT:88:ARG:CA    | 2.65                     | 0.57              |
| 19:AU:39:ILE:HD12 | 19:AU:54:VAL:CG1   | 2.34                     | 0.57              |
| 21:AW:10:ARG:O    | 21:AW:11:GLU:HB2   | 2.05                     | 0.57              |
| 21:AW:43:GLU:CD   | 21:AW:43:GLU:N     | 2.51                     | 0.57              |
| 21:AW:78:LYS:O    | 21:AW:80:ARG:N     | 2.37                     | 0.57              |
| 22:AX:1:MET:O     | 22:AX:2:ALA:HB3    | 2.05                     | 0.57              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:Aa:11:PRO:O     | 25:Aa:12:ALA:HB2  | 2.03                     | 0.57              |
| 32:Aj:16:LYS:H     | 32:Aj:16:LYS:HD2  | 1.70                     | 0.57              |
| 32:Aj:17:ALA:CB    | 32:Aj:41:PHE:CB   | 2.80                     | 0.57              |
| 34:Ba:187:C:C4     | 34:Ba:188:U:O2    | 2.58                     | 0.57              |
| 34:Ba:540:G:H21    | 37:Bh:42:GLN:HE22 | 1.52                     | 0.57              |
| 34:Ba:591:U:H2'    | 34:Ba:592:G:C8    | 2.39                     | 0.57              |
| 34:Ba:766:A:H2'    | 34:Ba:767:A:H8    | 1.69                     | 0.57              |
| 34:Ba:1067:A:O2'   | 34:Ba:1068:G:P    | 2.62                     | 0.57              |
| 34:Ba:1253:G:N2    | 34:Ba:1254:C:H1'  | 2.17                     | 0.57              |
| 34:Ba:1269:A:H1'   | 34:Ba:1312:G:N2   | 2.17                     | 0.57              |
| 34:Ba:1269:A:H5'   | 34:Ba:1326:C:C4'  | 2.35                     | 0.57              |
| 34:Ba:1317:C:C4    | 34:Ba:1318:A:C6   | 2.89                     | 0.57              |
| 34:Ba:1329:A:OP1   | 46:Bq:29:ARG:NE   | 2.37                     | 0.57              |
| 34:Ba:1495:U:H6    | 34:Ba:1495:U:OP1  | 1.87                     | 0.57              |
| 35:Bf:142:LEU:O    | 35:Bf:143:GLU:C   | 2.47                     | 0.57              |
| 36:Bg:8:ILE:HG22   | 36:Bg:9:GLY:N     | 2.19                     | 0.57              |
| 37:Bh:15:GLU:OE2   | 37:Bh:66:ARG:NH1  | 2.37                     | 0.57              |
| 37:Bh:114:ARG:HH11 | 37:Bh:114:ARG:CG  | 2.17                     | 0.57              |
| 39:Bj:75:LEU:O     | 39:Bj:78:GLU:HB3  | 2.04                     | 0.57              |
| 39:Bj:76:ALA:C     | 39:Bj:79:LEU:HG   | 2.28                     | 0.57              |
| 40:Bk:77:SER:C     | 40:Bk:156:TRP:HZ2 | 2.13                     | 0.57              |
| 40:Bk:78:ARG:O     | 40:Bk:84:ASN:CA   | 2.29                     | 0.57              |
| 41:Bl:38:ILE:HA    | 41:Bl:41:ARG:HB2  | 1.85                     | 0.57              |
| 41:Bl:88:LYS:HB2   | 41:Bl:88:LYS:HZ3  | 1.70                     | 0.57              |
| 43:Bn:27:ALA:CB    | 43:Bn:85:LEU:HD21 | 2.35                     | 0.57              |
| 45:Bp:84:LEU:O     | 45:Bp:100:ILE:HA  | 2.04                     | 0.57              |
| 46:Bq:91:ARG:HD3   | 46:Bq:98:VAL:CA   | 2.34                     | 0.57              |
| 48:Bs:79:ARG:HA    | 48:Bs:82:ILE:HG13 | 1.86                     | 0.57              |
| 49:Bt:39:TYR:CE1   | 49:Bt:41:PRO:HG3  | 2.40                     | 0.57              |
| 50:Bu:8:GLY:C      | 50:Bu:56:VAL:HG13 | 2.29                     | 0.57              |
| 51:Bv:21:LYS:HD2   | 51:Bv:22:VAL:N    | 2.17                     | 0.57              |
| 52:Bw:55:LYS:HG2   | 52:Bw:55:LYS:O    | 2.03                     | 0.57              |
| 53:Bx:25:ARG:O     | 53:Bx:28:ALA:HB3  | 2.04                     | 0.57              |
| 53:Bx:43:LEU:HD22  | 53:Bx:48:LYS:CB   | 2.31                     | 0.57              |
| 56:Bd:50:U:C4      | 56:Bd:65:G:N1     | 2.72                     | 0.57              |
| 56:Be:15:G:C2'     | 56:Be:16:U:H5''   | 2.34                     | 0.57              |
| 56:Be:21:A:C2'     | 56:Be:22:G:C4'    | 2.82                     | 0.57              |
| 57:Bz:93:ASP:OD2   | 57:Bz:197:PRO:HB3 | 2.03                     | 0.57              |
| 57:Bz:131:ASP:OD1  | 57:Bz:131:ASP:N   | 2.36                     | 0.57              |
| 57:Bz:204:PRO:HB2  | 57:Bz:290:ASP:CB  | 2.31                     | 0.57              |
| 57:Bz:247:ARG:O    | 57:Bz:276:ILE:CB  | 2.44                     | 0.57              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:BZ:377:GLY:HA2 | 57:BZ:582:PRO:HB3 | 1.83                     | 0.57              |
| 57:BZ:390:ARG:HG2 | 57:BZ:391:GLU:CB  | 2.33                     | 0.57              |
| 57:BZ:395:ARG:CD  | 57:BZ:474:ASP:CB  | 2.52                     | 0.57              |
| 57:BZ:465:LEU:HG  | 57:BZ:465:LEU:O   | 2.03                     | 0.57              |
| 1:AA:124:G:OP1    | 1:AA:1376:C:C1'   | 2.53                     | 0.57              |
| 1:AA:124:G:N1     | 28:Ad:19:ARG:NH2  | 2.53                     | 0.57              |
| 1:AA:190:A:N6     | 1:AA:207:A:C8     | 2.73                     | 0.57              |
| 1:AA:584:C:H2'    | 1:AA:585:G:H5'    | 1.87                     | 0.57              |
| 1:AA:637:A:C2     | 1:AA:651:G:C5'    | 2.82                     | 0.57              |
| 1:AA:716:A:C2     | 48:BS:44:LYS:HA   | 2.39                     | 0.57              |
| 1:AA:740:U:O5'    | 1:AA:1784:A:N1    | 2.38                     | 0.57              |
| 1:AA:758:C:H2'    | 1:AA:759:G:C8     | 2.40                     | 0.57              |
| 1:AA:931:G:H21    | 24:AZ:24:LYS:C    | 2.13                     | 0.57              |
| 1:AA:1060:U:OP1   | 32:AJ:52:ILE:HD13 | 2.04                     | 0.57              |
| 1:AA:1131:G:N7    | 1:AA:2025:C:H4'   | 2.19                     | 0.57              |
| 1:AA:1151:G:H4'   | 16:AR:81:HIS:CD2  | 2.40                     | 0.57              |
| 1:AA:1199:U:C2    | 1:AA:1200:C:C5    | 2.92                     | 0.57              |
| 1:AA:1221:C:H2'   | 1:AA:1221:C:O2    | 2.04                     | 0.57              |
| 1:AA:1453:A:OP2   | 1:AA:1453:A:C4'   | 2.53                     | 0.57              |
| 1:AA:1463:C:H2'   | 1:AA:1464:C:O5'   | 2.04                     | 0.57              |
| 1:AA:1570:A:C2    | 1:AA:1571:A:N7    | 2.72                     | 0.57              |
| 1:AA:1656:C:H5''  | 5:AE:136:ARG:CZ   | 2.35                     | 0.57              |
| 1:AA:1717:G:N2    | 1:AA:1718:G:H1'   | 2.19                     | 0.57              |
| 1:AA:1729:A:H3'   | 1:AA:1730:U:C6    | 2.40                     | 0.57              |
| 1:AA:1771:C:H2'   | 1:AA:1772:G:C8    | 2.39                     | 0.57              |
| 1:AA:1857:G:O2'   | 1:AA:1885:A:N6    | 2.38                     | 0.57              |
| 1:AA:1909:C:N3    | 1:AA:1922:G:C6    | 2.73                     | 0.57              |
| 1:AA:1909:C:H6    | 1:AA:1909:C:O5'   | 1.88                     | 0.57              |
| 1:AA:1920:C:H1'   | 1:AA:1921:G:P     | 2.44                     | 0.57              |
| 1:AA:1926:U:H3    | 1:AA:1929:G:N2    | 2.01                     | 0.57              |
| 1:AA:1943:U:O2'   | 1:AA:1944:U:P     | 2.63                     | 0.57              |
| 1:AA:1982:C:N4    | 1:AA:1983:C:N4    | 2.53                     | 0.57              |
| 1:AA:2017:U:H1'   | 26:Ab:8:LYS:O     | 2.04                     | 0.57              |
| 1:AA:2018:G:H8    | 1:AA:2018:G:OP2   | 1.87                     | 0.57              |
| 1:AA:2180:U:H2'   | 1:AA:2181:G:H8    | 1.70                     | 0.57              |
| 1:AA:2266:A:C5'   | 1:AA:2267:A:N3    | 2.66                     | 0.57              |
| 1:AA:2269:A:C2    | 1:AA:2270:G:C1'   | 2.88                     | 0.57              |
| 1:AA:2272:U:OP1   | 22:AX:18:ALA:HB2  | 2.04                     | 0.57              |
| 1:AA:2283:C:C6    | 1:AA:2389:G:N3    | 2.73                     | 0.57              |
| 1:AA:2472:G:C2'   | 1:AA:2475:C:H42   | 2.17                     | 0.57              |
| 1:AA:2472:G:H3'   | 1:AA:2475:C:H42   | 1.69                     | 0.57              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2781:A:C2'    | 1:AA:2782:G:H4'   | 2.34                     | 0.57              |
| 1:AA:2801:A:OP1    | 1:AA:2801:A:O3'   | 2.21                     | 0.57              |
| 1:AA:2859:G:H2'    | 1:AA:2860:A:C8    | 2.40                     | 0.57              |
| 2:AB:76:G:H1'      | 21:AW:75:ASN:ND2  | 2.20                     | 0.57              |
| 3:AC:124:GLY:HA2   | 3:AC:137:LEU:HD21 | 1.86                     | 0.57              |
| 3:AC:156:ILE:CG1   | 3:AC:160:ARG:HB2  | 2.23                     | 0.57              |
| 4:AD:127:VAL:HA    | 4:AD:193:VAL:CG1  | 2.16                     | 0.57              |
| 4:AD:254:THR:C     | 4:AD:255:LYS:HG3  | 2.29                     | 0.57              |
| 5:AE:105:THR:CG2   | 5:AE:199:ARG:NH2  | 2.67                     | 0.57              |
| 5:AE:156:MET:O     | 5:AE:160:TYR:CE1  | 2.57                     | 0.57              |
| 6:AF:27:GLU:HG3    | 6:AF:116:ASP:HB2  | 1.86                     | 0.57              |
| 7:AG:12:TYR:CA     | 7:AG:15:VAL:HG22  | 2.33                     | 0.57              |
| 7:AG:47:LYS:HE2    | 7:AG:73:ALA:CB    | 2.31                     | 0.57              |
| 7:AG:134:GLY:O     | 7:AG:135:LEU:HB3  | 2.03                     | 0.57              |
| 7:AG:170:ARG:HD3   | 7:AG:174:GLU:HB2  | 1.86                     | 0.57              |
| 8:AH:45:VAL:CG2    | 8:AH:50:VAL:HG13  | 2.31                     | 0.57              |
| 8:AH:61:HIS:O      | 8:AH:64:LEU:HB2   | 2.05                     | 0.57              |
| 8:AH:156:ALA:HA    | 8:AH:171:LEU:HD23 | 1.85                     | 0.57              |
| 9:AK:65:LYS:O      | 9:AK:66:LYS:O     | 2.22                     | 0.57              |
| 11:AM:47:ASP:HB3   | 11:AM:48:PRO:HD2  | 1.86                     | 0.57              |
| 12:AN:109:VAL:HG21 | 12:AN:114:ALA:N   | 2.19                     | 0.57              |
| 13:AO:6:SER:OG     | 13:AO:9:LYS:CE    | 2.53                     | 0.57              |
| 14:AP:26:LEU:HD21  | 14:AP:37:ALA:C    | 2.30                     | 0.57              |
| 14:AP:103:GLU:HA   | 14:AP:106:ARG:HB3 | 1.85                     | 0.57              |
| 18:AT:14:PRO:CD    | 18:AT:99:ARG:HG3  | 2.35                     | 0.57              |
| 19:AU:31:HIS:CE1   | 19:AU:33:LYS:HD2  | 2.39                     | 0.57              |
| 21:AW:100:VAL:HG12 | 21:AW:133:ILE:HB  | 1.86                     | 0.57              |
| 22:AX:11:ARG:HG2   | 22:AX:11:ARG:HH11 | 1.69                     | 0.57              |
| 23:AY:24:LYS:HG2   | 23:AY:52:ILE:HG21 | 1.85                     | 0.57              |
| 23:AY:32:PHE:N     | 23:AY:32:PHE:CD1  | 2.72                     | 0.57              |
| 24:AZ:14:GLY:C     | 24:AZ:15:TYR:CD1  | 2.83                     | 0.57              |
| 27:Ac:17:LYS:C     | 27:Ac:19:ARG:HD2  | 2.28                     | 0.57              |
| 32:AJ:76:TYR:O     | 32:AJ:80:LYS:HB2  | 2.05                     | 0.57              |
| 33:Ag:289:UNK:C    | 33:Ag:343:UNK:CB  | 2.83                     | 0.57              |
| 34:BA:171:A:O2'    | 34:BA:172:A:H5'   | 2.05                     | 0.57              |
| 34:BA:241:C:H2'    | 34:BA:242:C:O5'   | 2.04                     | 0.57              |
| 34:BA:247:G:C6     | 34:BA:278:G:N1    | 2.73                     | 0.57              |
| 34:BA:254:G:OP1    | 50:BU:67:LYS:O    | 2.23                     | 0.57              |
| 34:BA:375:U:O2'    | 49:BT:6:LEU:HD21  | 2.04                     | 0.57              |
| 34:BA:402:G:P      | 37:BH:74:GLN:HE21 | 2.28                     | 0.57              |
| 34:BA:586:C:OP1    | 50:BU:34:LYS:CE   | 2.52                     | 0.57              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:682:G:C6     | 34:BA:683:G:N7     | 2.73                     | 0.57              |
| 34:BA:728:A:H5'    | 48:BS:54:ARG:HH22  | 1.69                     | 0.57              |
| 34:BA:776:G:C5'    | 34:BA:777:A:OP1    | 2.51                     | 0.57              |
| 34:BA:861:G:H2'    | 34:BA:862:C:H6     | 1.69                     | 0.57              |
| 34:BA:952:U:C5'    | 34:BA:972:C:N4     | 2.65                     | 0.57              |
| 34:BA:962:C:O2'    | 34:BA:1200:C:C5    | 2.57                     | 0.57              |
| 34:BA:1135:U:O3'   | 34:BA:1136:U:H6    | 1.86                     | 0.57              |
| 34:BA:1244:C:OP2   | 54:BY:9:ARG:CD     | 2.49                     | 0.57              |
| 34:BA:1269:A:H8    | 34:BA:1270:C:C1'   | 2.15                     | 0.57              |
| 34:BA:1308:U:C4    | 34:BA:1309:G:OP2   | 2.34                     | 0.57              |
| 34:BA:1316:G:H4'   | 34:BA:1360:A:N6    | 2.12                     | 0.57              |
| 34:BA:1430:C:N3    | 34:BA:1431:C:H5    | 2.02                     | 0.57              |
| 35:BF:80:ILE:HD13  | 35:BF:211:ILE:HG22 | 1.86                     | 0.57              |
| 35:BF:82:ARG:HA    | 35:BF:92:TYR:CZ    | 2.39                     | 0.57              |
| 35:BF:219:VAL:CG1  | 35:BF:222:ILE:HD11 | 2.32                     | 0.57              |
| 36:BG:116:VAL:C    | 36:BG:119:ARG:HB3  | 2.30                     | 0.57              |
| 37:BH:106:TYR:HB3  | 37:BH:114:ARG:NE   | 2.20                     | 0.57              |
| 37:BH:154:ASN:HD22 | 37:BH:155:LEU:N    | 2.02                     | 0.57              |
| 38:BI:20:GLN:CD    | 38:BI:21:ALA:N     | 2.62                     | 0.57              |
| 38:BI:20:GLN:NE2   | 38:BI:21:ALA:H     | 2.03                     | 0.57              |
| 38:BI:114:GLY:O    | 38:BI:115:VAL:CG1  | 2.51                     | 0.57              |
| 38:BI:151:LEU:HD21 | 41:BL:67:PRO:CG    | 2.34                     | 0.57              |
| 39:BJ:42:GLU:HB2   | 39:BJ:61:LEU:HD23  | 1.87                     | 0.57              |
| 40:BK:23:VAL:HG12  | 40:BK:24:THR:N     | 2.19                     | 0.57              |
| 40:BK:116:ALA:O    | 40:BK:120:ILE:HG13 | 2.05                     | 0.57              |
| 41:BL:17:THR:HG21  | 41:BL:18:ARG:NH2   | 2.19                     | 0.57              |
| 41:BL:98:LYS:H     | 41:BL:98:LYS:NZ    | 1.90                     | 0.57              |
| 43:BN:16:LEU:HB3   | 43:BN:70:ARG:HG2   | 1.86                     | 0.57              |
| 43:BN:35:SER:N     | 43:BN:73:ASP:O     | 2.38                     | 0.57              |
| 43:BN:41:PRO:O     | 43:BN:42:THR:C     | 2.47                     | 0.57              |
| 45:BP:10:LEU:HD21  | 45:BP:15:ARG:HE    | 1.69                     | 0.57              |
| 46:BQ:22:ILE:CG2   | 46:BQ:67:GLU:OE1   | 2.53                     | 0.57              |
| 48:BS:34:LEU:CD1   | 48:BS:35:ARG:N     | 2.67                     | 0.57              |
| 50:BU:59:ILE:CG1   | 50:BU:60:ILE:N     | 2.67                     | 0.57              |
| 51:BV:17:SER:HB3   | 51:BV:54:ARG:CZ    | 2.34                     | 0.57              |
| 52:BW:11:VAL:HG12  | 52:BW:15:LEU:CD1   | 2.35                     | 0.57              |
| 52:BW:62:ILE:HD11  | 52:BW:67:VAL:CG1   | 2.35                     | 0.57              |
| 53:BX:49:ALA:HB1   | 53:BX:99:LEU:HG    | 1.86                     | 0.57              |
| 55:BC:16:U:C2'     | 55:BC:17:C:H5'     | 2.34                     | 0.57              |
| 56:BD:7:A:C6       | 56:BD:67:C:N4      | 2.50                     | 0.57              |
| 57:BZ:36:ALA:O     | 57:BZ:37:GLU:HG2   | 2.03                     | 0.57              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 57:BZ:101:ALA:O    | 57:BZ:135:ALA:HB1 | 2.04                     | 0.57              |
| 57:BZ:222:GLY:O    | 57:BZ:223:ILE:HB  | 2.04                     | 0.57              |
| 57:BZ:267:LEU:HD23 | 57:BZ:268:ALA:H   | 1.68                     | 0.57              |
| 57:BZ:322:GLU:HB3  | 57:BZ:582:PRO:HD2 | 1.86                     | 0.57              |
| 57:BZ:488:LEU:HG   | 57:BZ:526:ILE:N   | 2.18                     | 0.57              |
| 57:BZ:538:LEU:H    | 57:BZ:539:THR:CB  | 2.17                     | 0.57              |
| 1:AA:28:A:H1'      | 1:AA:513:A:C6     | 2.36                     | 0.57              |
| 1:AA:128:C:H2'     | 1:AA:129:C:C6     | 2.39                     | 0.57              |
| 1:AA:180:G:OP1     | 28:Ad:32:LYS:HD3  | 2.05                     | 0.57              |
| 1:AA:205:G:O2'     | 1:AA:206:U:OP2    | 2.23                     | 0.57              |
| 1:AA:354:G:H3'     | 1:AA:354:G:OP2    | 2.05                     | 0.57              |
| 1:AA:386:G:H4'     | 1:AA:387:U:H5     | 1.68                     | 0.57              |
| 1:AA:414:C:H1'     | 1:AA:1864:U:C1'   | 2.32                     | 0.57              |
| 1:AA:564:C:H42     | 1:AA:578:A:N6     | 2.02                     | 0.57              |
| 1:AA:650:C:OP1     | 29:Ae:21:LYS:NZ   | 2.32                     | 0.57              |
| 1:AA:659:C:H5'     | 6:AF:102:PRO:HD3  | 1.87                     | 0.57              |
| 1:AA:780:G:N3      | 1:AA:785:G:O6     | 2.38                     | 0.57              |
| 1:AA:811:U:H3'     | 1:AA:811:U:H6     | 1.70                     | 0.57              |
| 1:AA:1024:G:OP2    | 1:AA:1025:G:C2    | 2.58                     | 0.57              |
| 1:AA:1105:U:C3'    | 1:AA:1107:G:C8    | 2.80                     | 0.57              |
| 1:AA:1130:U:O2'    | 1:AA:1131:G:OP1   | 2.18                     | 0.57              |
| 1:AA:1363:C:H42    | 25:Aa:2:LYS:HE2   | 1.63                     | 0.57              |
| 1:AA:1424:G:H2'    | 1:AA:1425:G:O5'   | 2.04                     | 0.57              |
| 1:AA:1471:A:C4     | 1:AA:1521:G:N2    | 2.72                     | 0.57              |
| 1:AA:1472:A:C2'    | 1:AA:1473:G:C8    | 2.87                     | 0.57              |
| 1:AA:1579:A:N6     | 1:AA:1581:G:C2    | 2.72                     | 0.57              |
| 1:AA:1628:G:H2'    | 1:AA:1629:U:C6    | 2.39                     | 0.57              |
| 1:AA:1645:G:H5''   | 1:AA:1646:C:H5'   | 1.86                     | 0.57              |
| 1:AA:1664:A:C2'    | 1:AA:1665:A:H8    | 2.18                     | 0.57              |
| 1:AA:1679:U:C4'    | 1:AA:1990:C:O2'   | 2.53                     | 0.57              |
| 1:AA:1855:G:C6     | 1:AA:1856:G:C5    | 2.93                     | 0.57              |
| 1:AA:1928:A:C8     | 1:AA:1929:G:N3    | 2.73                     | 0.57              |
| 1:AA:1936:A:H1'    | 1:AA:1940:U:C4    | 2.39                     | 0.57              |
| 1:AA:1939:U:C2'    | 1:AA:2592:G:HO2'  | 2.18                     | 0.57              |
| 1:AA:2000:G:C2     | 1:AA:2001:A:N7    | 2.72                     | 0.57              |
| 1:AA:2026:C:C2'    | 1:AA:2027:G:H5'   | 2.35                     | 0.57              |
| 1:AA:2043:C:C5     | 1:AA:2777:G:H1'   | 2.39                     | 0.57              |
| 1:AA:2181:G:C2     | 1:AA:2182:G:O6    | 2.52                     | 0.57              |
| 1:AA:2333:A:N3     | 1:AA:2333:A:C2'   | 2.67                     | 0.57              |
| 1:AA:2509:G:N2     | 1:AA:2510:C:H1'   | 2.18                     | 0.57              |
| 1:AA:2670:A:C6     | 1:AA:2671:A:C5    | 2.93                     | 0.57              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 1:AA:2850:A:C2   | 13:AO:61:HIS:CE1   | 2.93                     | 0.57              |
| 1:AA:2856:C:O2'  | 1:AA:2857:G:H5'    | 2.05                     | 0.57              |
| 1:AA:2869:G:C6   | 1:AA:2870:C:C4     | 2.92                     | 0.57              |
| 2:AB:11:C:H3'    | 22:AX:74:ARG:NH2   | 2.20                     | 0.57              |
| 3:AC:52:ARG:HD3  | 55:BC:62:C:H1'     | 1.85                     | 0.57              |
| 3:AC:53:ARG:C    | 3:AC:55:ASP:H      | 2.12                     | 0.57              |
| 3:AC:156:ILE:CA  | 3:AC:159:GLY:C     | 2.77                     | 0.57              |
| 4:AD:64:ILE:O    | 4:AD:64:ILE:CG2    | 2.53                     | 0.57              |
| 4:AD:92:ILE:HD11 | 4:AD:104:TYR:CD1   | 2.39                     | 0.57              |
| 4:AD:155:LEU:HG  | 4:AD:157:ARG:CZ    | 2.34                     | 0.57              |
| 4:AD:169:GLU:CG  | 4:AD:184:LYS:NZ    | 2.68                     | 0.57              |
| 4:AD:269:PHE:O   | 4:AD:270:ILE:HG13  | 2.05                     | 0.57              |
| 5:AE:48:GLN:O    | 5:AE:77:ILE:HG13   | 2.05                     | 0.57              |
| 5:AE:53:PRO:HD2  | 5:AE:75:VAL:HG13   | 1.85                     | 0.57              |
| 5:AE:149:ARG:NH1 | 5:AE:151:TYR:HA    | 2.19                     | 0.57              |
| 5:AE:171:GLU:OE1 | 5:AE:172:VAL:HG22  | 2.05                     | 0.57              |
| 6:AF:75:HIS:NE2  | 6:AF:80:ALA:HB3    | 2.19                     | 0.57              |
| 7:AG:36:LYS:NZ   | 7:AG:160:VAL:HG23  | 2.20                     | 0.57              |
| 8:AH:88:LEU:HD21 | 8:AH:90:LYS:HB3    | 1.87                     | 0.57              |
| 9:AK:10:GLU:O    | 9:AK:12:ARG:NH2    | 2.38                     | 0.57              |
| 9:AK:95:PRO:HG2  | 9:AK:96:GLU:H      | 1.69                     | 0.57              |
| 9:AK:118:LYS:O   | 9:AK:121:LYS:HE3   | 2.03                     | 0.57              |
| 9:AK:123:TYR:CG  | 9:AK:129:PRO:HB2   | 2.40                     | 0.57              |
| 10:AL:65:THR:HA  | 10:AL:77:ILE:HG13  | 1.87                     | 0.57              |
| 11:AM:72:PRO:HA  | 11:AM:110:TYR:CD1  | 2.40                     | 0.57              |
| 12:AN:48:GLU:CA  | 12:AN:51:ARG:HG3   | 2.33                     | 0.57              |
| 12:AN:115:MET:HA | 12:AN:118:LEU:HD11 | 1.87                     | 0.57              |
| 14:AP:77:ALA:O   | 14:AP:78:LEU:C     | 2.47                     | 0.57              |
| 15:AQ:7:ILE:C    | 15:AQ:9:LEU:N      | 2.61                     | 0.57              |
| 16:AR:46:ALA:HA  | 16:AR:49:HIS:ND1   | 2.20                     | 0.57              |
| 16:AR:89:GLU:OE2 | 17:AS:52:VAL:HB    | 2.04                     | 0.57              |
| 17:AS:13:ARG:O   | 17:AS:14:VAL:CG2   | 2.53                     | 0.57              |
| 17:AS:83:ARG:HD3 | 17:AS:84:LYS:HA    | 1.87                     | 0.57              |
| 18:AT:5:ALA:CB   | 18:AT:54:ALA:HB2   | 2.24                     | 0.57              |
| 19:AU:31:HIS:NE2 | 19:AU:33:LYS:HB3   | 2.20                     | 0.57              |
| 19:AU:62:LYS:HA  | 19:AU:72:LYS:HB3   | 1.85                     | 0.57              |
| 20:AV:29:GLU:HB2 | 20:AV:32:PRO:O     | 2.03                     | 0.57              |
| 20:AV:32:PRO:C   | 20:AV:34:LYS:H     | 2.13                     | 0.57              |
| 20:AV:47:LYS:CE  | 20:AV:49:VAL:HG11  | 2.34                     | 0.57              |
| 21:AW:105:VAL:HB | 21:AW:140:ASP:CG   | 2.30                     | 0.57              |
| 22:AX:46:LYS:HE3 | 22:AX:76:GLY:HA3   | 1.87                     | 0.57              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 23:AY:50:ARG:HB2  | 23:AY:54:ARG:HH12  | 1.69                     | 0.57              |
| 25:Aa:7:PRO:CG    | 25:Aa:60:GLN:HB2   | 2.35                     | 0.57              |
| 28:Ad:35:ARG:HH11 | 28:Ad:35:ARG:HB2   | 1.69                     | 0.57              |
| 32:AJ:84:LEU:C    | 32:AJ:86:LYS:HZ2   | 2.11                     | 0.57              |
| 32:AJ:134:MET:HE3 | 32:AJ:135:GLY:N    | 2.20                     | 0.57              |
| 33:Ag:8:UNK:O     | 33:Ag:151:UNK:CB   | 2.53                     | 0.57              |
| 33:Ag:290:UNK:CB  | 33:Ag:343:UNK:N    | 2.68                     | 0.57              |
| 34:BA:176:C:H2'   | 34:BA:177:C:H6     | 1.70                     | 0.57              |
| 34:BA:256:U:O5'   | 34:BA:256:U:H6     | 1.87                     | 0.57              |
| 34:BA:276:G:P     | 50:BU:14:LYS:HD3   | 2.44                     | 0.57              |
| 34:BA:428:G:O2'   | 34:BA:429:U:P      | 2.62                     | 0.57              |
| 34:BA:484:G:O4'   | 34:BA:486:U:C6     | 2.58                     | 0.57              |
| 34:BA:533:A:C6    | 34:BA:536:C:C4     | 2.93                     | 0.57              |
| 34:BA:571:U:O4    | 34:BA:865:A:N1     | 2.37                     | 0.57              |
| 34:BA:907:A:C2'   | 34:BA:908:A:H8     | 2.16                     | 0.57              |
| 34:BA:943:U:H2'   | 34:BA:944:G:H8     | 1.70                     | 0.57              |
| 34:BA:972:C:P     | 43:BN:57:LYS:HZ2   | 2.28                     | 0.57              |
| 34:BA:1265:G:C2'  | 34:BA:1266:G:H5'   | 2.35                     | 0.57              |
| 34:BA:1316:G:HO2' | 34:BA:1318:A:N6    | 2.02                     | 0.57              |
| 35:BF:67:THR:OG1  | 35:BF:155:LEU:HD11 | 2.04                     | 0.57              |
| 35:BF:87:ARG:NH2  | 35:BF:219:VAL:HG11 | 2.19                     | 0.57              |
| 35:BF:173:ALA:CA  | 35:BF:176:GLU:HB2  | 2.34                     | 0.57              |
| 36:BG:135:LYS:HZ2 | 38:BI:52:PRO:HG2   | 1.69                     | 0.57              |
| 37:BH:26:CYS:O    | 37:BH:33:MET:SD    | 2.63                     | 0.57              |
| 37:BH:98:GLU:O    | 37:BH:103:ASN:HB3  | 2.04                     | 0.57              |
| 37:BH:100:ARG:CZ  | 37:BH:137:SER:HA   | 2.34                     | 0.57              |
| 38:BI:57:LYS:O    | 38:BI:58:ALA:C     | 2.48                     | 0.57              |
| 38:BI:80:ILE:CG2  | 38:BI:142:LEU:HD21 | 2.34                     | 0.57              |
| 39:BJ:83:ASP:OD1  | 39:BJ:84:ASN:ND2   | 2.37                     | 0.57              |
| 40:BK:113:GLU:HB2 | 40:BK:118:VAL:HG11 | 1.86                     | 0.57              |
| 41:BL:38:ILE:CD1  | 41:BL:118:VAL:HB   | 2.34                     | 0.57              |
| 42:BM:11:LYS:HG2  | 42:BM:11:LYS:O     | 2.03                     | 0.57              |
| 42:BM:26:VAL:HG22 | 42:BM:61:ALA:CB    | 2.34                     | 0.57              |
| 42:BM:50:LEU:HD23 | 42:BM:50:LEU:C     | 2.29                     | 0.57              |
| 42:BM:50:LEU:CD2  | 42:BM:51:ARG:HH12  | 2.15                     | 0.57              |
| 44:BO:13:GLN:CB   | 44:BO:76:GLY:HA3   | 2.34                     | 0.57              |
| 44:BO:18:ARG:CA   | 44:BO:80:VAL:HG23  | 2.34                     | 0.57              |
| 44:BO:23:ALA:CB   | 44:BO:28:THR:HG23  | 2.35                     | 0.57              |
| 45:BP:46:LYS:HZ3  | 45:BP:94:PRO:CG    | 2.18                     | 0.57              |
| 45:BP:76:ASN:HD22 | 45:BP:77:LEU:HD23  | 1.69                     | 0.57              |
| 46:BQ:20:THR:HA   | 46:BQ:25:ILE:HG22  | 1.86                     | 0.57              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 46:BQ:70:LEU:O    | 46:BQ:74:VAL:HG23  | 2.04                     | 0.57              |
| 48:BS:39:LEU:HD21 | 48:BS:56:LEU:HD22  | 1.85                     | 0.57              |
| 52:BW:6:LYS:HB3   | 52:BW:41:VAL:HG12  | 1.83                     | 0.57              |
| 53:BX:72:LEU:HD22 | 53:BX:76:ALA:CB    | 2.34                     | 0.57              |
| 55:BC:15:G:H8     | 55:BC:15:G:O5'     | 1.87                     | 0.57              |
| 56:BE:19:G:C2     | 56:BE:57:G:C2      | 2.93                     | 0.57              |
| 57:BZ:69:ARG:CA   | 57:BZ:70:ILE:HB    | 2.31                     | 0.57              |
| 57:BZ:131:ASP:CG  | 57:BZ:166:SER:HA   | 2.29                     | 0.57              |
| 57:BZ:220:VAL:O   | 57:BZ:279:LEU:HD21 | 2.03                     | 0.57              |
| 57:BZ:295:GLU:HG3 | 57:BZ:296:ALA:HA   | 1.86                     | 0.57              |
| 1:AA:81:G:HO2'    | 1:AA:294:A:C2'     | 2.18                     | 0.57              |
| 1:AA:303:U:C2'    | 1:AA:304:G:H5'     | 2.35                     | 0.57              |
| 1:AA:356:G:H3'    | 1:AA:357:A:C8      | 2.39                     | 0.57              |
| 1:AA:400:G:O6     | 25:Aa:63:TYR:HE2   | 1.88                     | 0.57              |
| 1:AA:448:U:O4     | 1:AA:583:G:N3      | 2.37                     | 0.57              |
| 1:AA:643:A:C1'    | 1:AA:644:A:C8      | 2.87                     | 0.57              |
| 1:AA:643:A:O2'    | 1:AA:644:A:OP2     | 2.21                     | 0.57              |
| 1:AA:691:C:H1'    | 4:AD:45:ASN:ND2    | 2.16                     | 0.57              |
| 1:AA:783:A:H3'    | 4:AD:227:ASN:OD1   | 2.04                     | 0.57              |
| 1:AA:942:G:C2     | 1:AA:943:U:C4      | 2.92                     | 0.57              |
| 1:AA:988:A:C3'    | 24:AZ:10:LYS:NZ    | 2.57                     | 0.57              |
| 1:AA:1036:G:OP1   | 8:AH:59:ARG:CZ     | 2.47                     | 0.57              |
| 1:AA:1140:C:H5'   | 9:AK:65:LYS:NZ     | 2.19                     | 0.57              |
| 1:AA:1310:G:H2'   | 1:AA:1311:G:O4'    | 2.05                     | 0.57              |
| 1:AA:1324:G:O2'   | 1:AA:1616:A:C6     | 2.54                     | 0.57              |
| 1:AA:1424:G:C2'   | 1:AA:1425:G:O5'    | 2.53                     | 0.57              |
| 1:AA:1424:G:H5'   | 1:AA:1499:C:O2'    | 2.05                     | 0.57              |
| 1:AA:1782:C:H6    | 1:AA:1782:C:H3'    | 1.69                     | 0.57              |
| 1:AA:1935:G:C1'   | 1:AA:1964:G:N2     | 2.68                     | 0.57              |
| 1:AA:1992:G:C1'   | 1:AA:1993:U:C4     | 2.88                     | 0.57              |
| 1:AA:2227:A:N3    | 4:AD:262:ARG:NH1   | 2.53                     | 0.57              |
| 1:AA:2289:G:O2'   | 1:AA:2383:G:H1'    | 2.05                     | 0.57              |
| 1:AA:2371:G:H2'   | 1:AA:2372:G:O4'    | 2.03                     | 0.57              |
| 1:AA:2507:C:C6    | 59:AA:3002:8AN:C2' | 2.87                     | 0.57              |
| 1:AA:2667:C:C6    | 1:AA:2668:G:C8     | 2.92                     | 0.57              |
| 1:AA:2694:G:O6    | 1:AA:2695:C:N4     | 2.38                     | 0.57              |
| 1:AA:2719:G:H8    | 1:AA:2719:G:O5'    | 1.87                     | 0.57              |
| 1:AA:2803:C:C4    | 1:AA:2804:C:N4     | 2.73                     | 0.57              |
| 1:AA:2824:C:N4    | 1:AA:2825:C:C2     | 2.73                     | 0.57              |
| 1:AA:2848:G:C2'   | 15:AQ:99:LEU:HD21  | 2.35                     | 0.57              |
| 3:AC:77:ILE:CG2   | 3:AC:123:VAL:HG22  | 2.29                     | 0.57              |

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| Atom-1              | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 4:AD:5:LYS:HB3      | 4:AD:29:PRO:CD     | 2.31                     | 0.57              |
| 4:AD:178:PRO:HG2    | 4:AD:179:SER:N     | 2.18                     | 0.57              |
| 4:AD:223:GLY:C      | 4:AD:225:ALA:H     | 2.13                     | 0.57              |
| 5:AE:5:LEU:C        | 5:AE:5:LEU:CD2     | 2.77                     | 0.57              |
| 6:AF:50:SER:O       | 6:AF:92:PRO:HG2    | 2.04                     | 0.57              |
| 6:AF:70:THR:O       | 6:AF:72:ARG:N      | 2.36                     | 0.57              |
| 6:AF:176:LEU:C      | 6:AF:178:PRO:CD    | 2.77                     | 0.57              |
| 7:AG:6:ALA:CA       | 7:AG:9:ARG:HH21    | 2.18                     | 0.57              |
| 8:AH:6:ARG:CD       | 8:AH:66:GLY:HA2    | 2.34                     | 0.57              |
| 9:AK:114:ARG:O      | 9:AK:115:ARG:C     | 2.48                     | 0.57              |
| 11:AM:36:LYS:NZ     | 11:AM:42:SER:CB    | 2.68                     | 0.57              |
| 11:AM:42:SER:O      | 11:AM:44:GLY:N     | 2.37                     | 0.57              |
| 11:AM:131:SER:OG    | 11:AM:134:ALA:HB2  | 2.04                     | 0.57              |
| 12:AN:120:ILE:O     | 12:AN:124:LYS:CG   | 2.53                     | 0.57              |
| 13:AO:65:LEU:C      | 13:AO:65:LEU:CD2   | 2.77                     | 0.57              |
| 13:AO:96:ARG:NH2    | 13:AO:117:VAL:HG23 | 2.20                     | 0.57              |
| 15:AQ:7:ILE:O       | 15:AQ:9:LEU:N      | 2.37                     | 0.57              |
| 15:AQ:56:GLY:O      | 15:AQ:61:PHE:CA    | 2.53                     | 0.57              |
| 15:AQ:76:PHE:HZ     | 15:AQ:78:LEU:CD1   | 2.18                     | 0.57              |
| 16:AR:31:SER:C      | 16:AR:35:ALA:HB2   | 2.29                     | 0.57              |
| 17:AS:35:LEU:C      | 17:AS:61:VAL:HG13  | 2.30                     | 0.57              |
| 18:AT:76:VAL:HA     | 18:AT:104:THR:HG22 | 1.87                     | 0.57              |
| 18:AT:88:ARG:O      | 18:AT:89:ALA:HB3   | 2.03                     | 0.57              |
| 21:AW:118:GLN:NE2   | 21:AW:119:GLU:C    | 2.63                     | 0.57              |
| 21:AW:144:LEU:C     | 21:AW:174:VAL:HG11 | 2.30                     | 0.57              |
| 27:Ac:40:CYS:HA     | 27:Ac:47:THR:O     | 2.05                     | 0.57              |
| 29:Ae:30:ARG:HH21   | 29:Ae:43:GLN:CA    | 2.17                     | 0.57              |
| 32:AJ:123:ALA:HA    | 32:AJ:127:ILE:CD1  | 2.35                     | 0.57              |
| 34:BA:225:C:H2'     | 34:BA:226:G:O5'    | 2.05                     | 0.57              |
| 34:BA:330:C:H2'     | 34:BA:331:G:H8     | 1.70                     | 0.57              |
| 34:BA:413:G:H22     | 34:BA:428:G:C2'    | 2.17                     | 0.57              |
| 34:BA:564:C:N3      | 50:BU:31:LEU:HD11  | 2.20                     | 0.57              |
| 34:BA:744:C:O2'     | 34:BA:851:G:N2     | 2.37                     | 0.57              |
| 34:BA:872:A:C5      | 34:BA:874:G:N7     | 2.73                     | 0.57              |
| 34:BA:900:A:C2'     | 34:BA:901:A:O5'    | 2.52                     | 0.57              |
| 34:BA:932:C:H5''    | 40:BK:3:ARG:HB3    | 1.87                     | 0.57              |
| 34:BA:944:G:N2      | 34:BA:1339:A:H62   | 1.86                     | 0.57              |
| 34:BA:973:G:C1'     | 43:BN:55:LYS:H     | 2.15                     | 0.57              |
| 34:BA:1309:G:C8     | 34:BA:1330:U:C2    | 2.93                     | 0.57              |
| 34:BA:1347:G:C8     | 42:BM:107:ARG:CB   | 2.81                     | 0.57              |
| 34:BA:1362(A):C:H5' | 34:BA:1363:A:P     | 2.45                     | 0.57              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1488:G:C2   | 34:BA:1489:G:C5    | 2.93                     | 0.57              |
| 35:BF:57:PHE:HD2  | 35:BF:57:PHE:O     | 1.88                     | 0.57              |
| 36:BG:24:ALA:HB2  | 36:BG:32:LEU:CD1   | 2.35                     | 0.57              |
| 36:BG:142:MET:C   | 36:BG:142:MET:SD   | 2.88                     | 0.57              |
| 37:BH:110:PHE:CZ  | 37:BH:147:ALA:CB   | 2.87                     | 0.57              |
| 37:BH:169:LYS:CG  | 37:BH:176:LEU:HD21 | 2.34                     | 0.57              |
| 39:BJ:75:LEU:O    | 39:BJ:78:GLU:N     | 2.38                     | 0.57              |
| 40:BK:75:VAL:HG12 | 40:BK:76:ARG:N     | 2.19                     | 0.57              |
| 40:BK:146:GLU:O   | 40:BK:147:ALA:C    | 2.47                     | 0.57              |
| 41:BL:7:ALA:O     | 41:BL:8:ASP:C      | 2.46                     | 0.57              |
| 42:BM:99:LEU:N    | 42:BM:99:LEU:HD22  | 2.20                     | 0.57              |
| 46:BQ:14:ARG:CB   | 46:BQ:41:PRO:HA    | 2.35                     | 0.57              |
| 46:BQ:16:ASP:HB2  | 46:BQ:30:ALA:CB    | 2.33                     | 0.57              |
| 50:BU:34:LYS:HD2  | 50:BU:35:VAL:H     | 1.69                     | 0.57              |
| 51:BV:53:ARG:NH2  | 51:BV:60:ALA:N     | 2.50                     | 0.57              |
| 52:BW:64:GLU:O    | 52:BW:67:VAL:HG23  | 2.03                     | 0.57              |
| 53:BX:89:ARG:HH21 | 53:BX:104:LEU:HD22 | 1.70                     | 0.57              |
| 56:BE:4:C:C6      | 56:BE:6:G:C6       | 2.93                     | 0.57              |
| 57:BZ:2:ILE:HG23  | 57:BZ:268:ALA:CA   | 2.33                     | 0.57              |
| 57:BZ:488:LEU:CD2 | 57:BZ:527:HIS:N    | 2.67                     | 0.57              |
| 1:AA:173:G:N2     | 1:AA:174:C:C2      | 2.73                     | 0.57              |
| 1:AA:239:U:H1'    | 1:AA:259:G:H22     | 1.68                     | 0.57              |
| 1:AA:245:G:N2     | 1:AA:254:G:C1'     | 2.68                     | 0.57              |
| 1:AA:246:C:C2     | 1:AA:247:G:C8      | 2.93                     | 0.57              |
| 1:AA:364:C:C2'    | 1:AA:365:C:C5      | 2.80                     | 0.57              |
| 1:AA:388:G:P      | 25:Aa:23:GLU:HB3   | 2.43                     | 0.57              |
| 1:AA:448:U:C2'    | 1:AA:449:A:OP1     | 2.53                     | 0.57              |
| 1:AA:448:U:O2'    | 1:AA:449:A:OP1     | 2.23                     | 0.57              |
| 1:AA:548:A:N7     | 1:AA:549:G:H1'     | 2.20                     | 0.57              |
| 1:AA:608:A:H61    | 1:AA:619:G:H2'     | 1.70                     | 0.57              |
| 1:AA:650:C:O2     | 1:AA:651:G:O4'     | 2.23                     | 0.57              |
| 1:AA:672:C:C6     | 11:AM:38:GLN:OE1   | 2.57                     | 0.57              |
| 1:AA:819:A:H2'    | 1:AA:820:A:H8      | 1.68                     | 0.57              |
| 1:AA:884:C:H1'    | 1:AA:885:C:P       | 2.45                     | 0.57              |
| 1:AA:892:G:C2     | 1:AA:893:C:N4      | 2.73                     | 0.57              |
| 1:AA:920:G:C2     | 1:AA:921:G:C8      | 2.91                     | 0.57              |
| 1:AA:1000:A:N6    | 1:AA:1155:A:H5'    | 2.19                     | 0.57              |
| 1:AA:1005:C:O2    | 9:AK:28:THR:CB     | 2.47                     | 0.57              |
| 1:AA:1028:A:N6    | 1:AA:1126:A:C8     | 2.73                     | 0.57              |
| 1:AA:1033:U:H5'   | 30:Af:16:VAL:CG1   | 2.33                     | 0.57              |
| 1:AA:1053:C:C4    | 1:AA:1054:A:N6     | 2.73                     | 0.57              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:AA:1055:G:O3'  | 31:AI:34:ALA:N   | 2.36                     | 0.57              |
| 1:AA:1177:A:C2   | 1:AA:1178:C:C2   | 2.93                     | 0.57              |
| 1:AA:1199:U:C6   | 1:AA:1199:U:OP2  | 2.58                     | 0.57              |
| 1:AA:1200:C:C2   | 1:AA:1201:C:C5   | 2.91                     | 0.57              |
| 1:AA:1304:C:OP1  | 1:AA:1642:G:O2'  | 2.23                     | 0.57              |
| 1:AA:1399:C:H2'  | 1:AA:1400:G:H8   | 1.70                     | 0.57              |
| 1:AA:1526:G:N2   | 1:AA:1546:C:C4   | 2.72                     | 0.57              |
| 1:AA:1609:A:H1'  | 1:AA:1616:A:H4'  | 1.85                     | 0.57              |
| 1:AA:1652:A:H62  | 1:AA:1653:G:H21  | 1.50                     | 0.57              |
| 1:AA:1670:C:H2'  | 1:AA:1671:U:H5'  | 1.85                     | 0.57              |
| 1:AA:1906:G:O2'  | 1:AA:1907:G:H5'  | 2.04                     | 0.57              |
| 1:AA:1971:A:N3   | 4:AD:239:ARG:HA  | 2.20                     | 0.57              |
| 1:AA:1971:A:C2   | 4:AD:239:ARG:HB3 | 2.39                     | 0.57              |
| 1:AA:2047:U:O2'  | 1:AA:2048:G:H5'  | 2.04                     | 0.57              |
| 1:AA:2062:A:H2'  | 1:AA:2063:C:OP1  | 2.05                     | 0.57              |
| 1:AA:2168:G:C2   | 1:AA:2170:A:H3'  | 2.40                     | 0.57              |
| 1:AA:2227:A:C5   | 1:AA:2228:G:C8   | 2.92                     | 0.57              |
| 1:AA:2290:G:C2   | 1:AA:2291:U:C2   | 2.92                     | 0.57              |
| 1:AA:2519:U:C6   | 1:AA:2542:A:N1   | 2.72                     | 0.57              |
| 1:AA:2653:U:C4   | 1:AA:2669:G:N2   | 2.70                     | 0.57              |
| 1:AA:2729:G:C2'  | 1:AA:2730:C:H5'  | 2.35                     | 0.57              |
| 1:AA:2790:A:H4'  | 1:AA:2791:C:H5'' | 1.84                     | 0.57              |
| 1:AA:2807:G:N3   | 1:AA:2808:U:H5   | 1.78                     | 0.57              |
| 2:AB:37:C:N3     | 2:AB:49:C:O4'    | 2.38                     | 0.57              |
| 2:AB:116:G:C6    | 2:AB:117:G:C4    | 2.93                     | 0.57              |
| 3:AC:68:LEU:HD22 | 3:AC:156:ILE:O   | 2.04                     | 0.57              |
| 5:AE:57:LYS:O    | 5:AE:58:ARG:HB2  | 2.04                     | 0.57              |
| 5:AE:102:VAL:HA  | 5:AE:202:LYS:HZ2 | 1.69                     | 0.57              |
| 6:AF:71:GLY:O    | 6:AF:73:ALA:N    | 2.31                     | 0.57              |
| 7:AG:19:LEU:HA   | 7:AG:22:ARG:NE   | 2.19                     | 0.57              |
| 7:AG:125:PHE:CE2 | 7:AG:127:GLY:C   | 2.83                     | 0.57              |
| 8:AH:95:ARG:HD2  | 8:AH:95:ARG:N    | 2.20                     | 0.57              |
| 9:AK:13:TRP:HA   | 9:AK:51:PHE:O    | 2.04                     | 0.57              |
| 12:AN:9:TYR:H    | 12:AN:9:TYR:HD2  | 1.52                     | 0.57              |
| 12:AN:75:THR:HB  | 12:AN:77:LYS:CE  | 2.35                     | 0.57              |
| 12:AN:75:THR:CG2 | 12:AN:77:LYS:H   | 2.14                     | 0.57              |
| 13:AO:87:TYR:O   | 13:AO:89:ASP:CG  | 2.48                     | 0.57              |
| 14:AP:96:GLY:O   | 14:AP:99:LYS:N   | 2.38                     | 0.57              |
| 16:AR:45:TYR:HB3 | 16:AR:49:HIS:CE1 | 2.40                     | 0.57              |
| 16:AR:52:ARG:O   | 16:AR:54:LYS:N   | 2.38                     | 0.57              |
| 16:AR:88:ILE:CG2 | 17:AS:55:ALA:HB3 | 2.33                     | 0.57              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 18:AT:65:LEU:O     | 18:AT:68:ARG:HG2   | 2.05                     | 0.57              |
| 18:AT:76:VAL:CG2   | 18:AT:77:ASP:N     | 2.68                     | 0.57              |
| 19:AU:12:VAL:HG22  | 19:AU:29:TRP:CE2   | 2.39                     | 0.57              |
| 19:AU:63:LYS:HE2   | 19:AU:63:LYS:CA    | 2.35                     | 0.57              |
| 20:AV:19:LYS:C     | 20:AV:21:LYS:H     | 2.12                     | 0.57              |
| 20:AV:46:LYS:HZ1   | 20:AV:49:VAL:CG2   | 2.18                     | 0.57              |
| 22:AX:44:ARG:HH21  | 22:AX:77:ARG:NH1   | 2.02                     | 0.57              |
| 26:Ab:4:HIS:NE2    | 26:Ab:5:PRO:HB3    | 2.20                     | 0.57              |
| 27:Ac:46:HIS:CG    | 27:Ac:47:THR:H     | 2.21                     | 0.57              |
| 28:Ad:42:LEU:C     | 28:Ad:44:PRO:CD    | 2.77                     | 0.57              |
| 33:Ag:7:UNK:CB     | 33:Ag:145:UNK:N    | 2.68                     | 0.57              |
| 34:BA:47:C:O2'     | 34:BA:48:C:OP2     | 2.19                     | 0.57              |
| 34:BA:129(A):G:N2  | 34:BA:191(A):G:N7  | 2.50                     | 0.57              |
| 34:BA:325:A:N7     | 34:BA:326:G:C6     | 2.72                     | 0.57              |
| 34:BA:358:U:H2'    | 34:BA:359:U:C6     | 2.39                     | 0.57              |
| 34:BA:409:G:OP2    | 37:BH:22:LYS:HG2   | 2.04                     | 0.57              |
| 34:BA:438:G:H21    | 34:BA:495:A:H8     | 1.46                     | 0.57              |
| 34:BA:572:A:O5'    | 34:BA:573:A:P      | 2.62                     | 0.57              |
| 34:BA:597:G:O2'    | 34:BA:598:U:H5'    | 2.05                     | 0.57              |
| 34:BA:685:G:H4'    | 44:BO:40:ILE:O     | 2.05                     | 0.57              |
| 34:BA:754:C:C2'    | 34:BA:755:G:OP1    | 2.53                     | 0.57              |
| 34:BA:769:G:H5'    | 34:BA:1513:A:C4'   | 2.34                     | 0.57              |
| 34:BA:778:G:N3     | 34:BA:779:C:C6     | 2.73                     | 0.57              |
| 34:BA:889:A:H5''   | 34:BA:890:G:OP1    | 2.05                     | 0.57              |
| 34:BA:932:C:H5''   | 40:BK:3:ARG:CB     | 2.35                     | 0.57              |
| 34:BA:1022:G:H2'   | 34:BA:1022:G:N3    | 2.18                     | 0.57              |
| 34:BA:1059:C:O2'   | 43:BN:53:PRO:HD3   | 2.04                     | 0.57              |
| 34:BA:1125:U:H5''  | 43:BN:38:ILE:HG21  | 1.86                     | 0.57              |
| 34:BA:1180:A:OP1   | 42:BM:102:LEU:CD1  | 2.48                     | 0.57              |
| 34:BA:1204:A:H2'   | 34:BA:1205:U:H5'   | 1.87                     | 0.57              |
| 34:BA:1221:G:C5'   | 52:BW:52:TYR:C     | 2.70                     | 0.57              |
| 34:BA:1225:A:C2'   | 52:BW:80:TYR:HB2   | 2.35                     | 0.57              |
| 34:BA:1248:A:O2'   | 42:BM:36:TYR:CE1   | 2.57                     | 0.57              |
| 34:BA:1376:U:H2'   | 34:BA:1377:A:N7    | 2.19                     | 0.57              |
| 34:BA:1405:G:C6    | 34:BA:1497:G:O6    | 2.56                     | 0.57              |
| 35:BF:162:ILE:O    | 35:BF:185:ILE:CD1  | 2.53                     | 0.57              |
| 35:BF:182:ILE:H    | 35:BF:182:ILE:CD1  | 2.16                     | 0.57              |
| 35:BF:208:ILE:HG13 | 35:BF:211:ILE:HD12 | 1.87                     | 0.57              |
| 36:BG:21:ARG:HD2   | 36:BG:58:GLU:OE2   | 2.04                     | 0.57              |
| 36:BG:157:ILE:O    | 36:BG:159:GLY:N    | 2.38                     | 0.57              |
| 37:BH:137:SER:O    | 37:BH:138:TYR:C    | 2.47                     | 0.57              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 37:BH:151:LYS:HD2 | 37:BH:151:LYS:N   | 2.20                     | 0.57              |
| 41:BL:67:PRO:HD2  | 41:BL:76:PRO:HB3  | 1.85                     | 0.57              |
| 44:BO:54:ARG:C    | 44:BO:56:GLY:N    | 2.60                     | 0.57              |
| 45:BP:88:GLY:O    | 45:BP:90:VAL:HG23 | 2.04                     | 0.57              |
| 47:BR:26:ARG:HE   | 47:BR:43:CYS:C    | 2.11                     | 0.57              |
| 48:BS:63:ARG:NH2  | 48:BS:87:ILE:HG21 | 2.18                     | 0.57              |
| 48:BS:70:LEU:O    | 48:BS:74:ASP:O    | 2.23                     | 0.57              |
| 50:BU:10:VAL:CG2  | 50:BU:55:ASP:HB2  | 2.33                     | 0.57              |
| 53:BX:15:ARG:O    | 53:BX:16:HIS:C    | 2.47                     | 0.57              |
| 54:BY:12:LYS:HG3  | 54:BY:17:THR:OG1  | 2.05                     | 0.57              |
| 56:BD:1:G:C5      | 56:BD:2:C:N4      | 2.73                     | 0.57              |
| 56:BD:4:C:C2      | 56:BD:70:G:C2     | 2.93                     | 0.57              |
| 57:BZ:61:THR:O    | 57:BZ:62:ALA:HB2  | 2.05                     | 0.57              |
| 1:AA:26:G:N2      | 1:AA:27:G:N2      | 2.53                     | 0.57              |
| 1:AA:179:G:H3'    | 1:AA:180:G:H8     | 1.70                     | 0.57              |
| 1:AA:197:A:C2     | 1:AA:198:C:H1'    | 2.40                     | 0.57              |
| 1:AA:516:C:H2'    | 1:AA:517:C:C6     | 2.39                     | 0.57              |
| 1:AA:565:C:O3'    | 1:AA:1253:A:C2    | 2.58                     | 0.57              |
| 1:AA:673:C:C2'    | 1:AA:674:G:C5'    | 2.80                     | 0.57              |
| 1:AA:786:C:C5'    | 1:AA:1780:A:C8    | 2.88                     | 0.57              |
| 1:AA:803:U:O2'    | 1:AA:804:A:H5'    | 2.05                     | 0.57              |
| 1:AA:816:C:H5'    | 1:AA:816:C:C6     | 2.35                     | 0.57              |
| 1:AA:1020:A:O2'   | 1:AA:1021:A:C8    | 2.58                     | 0.57              |
| 1:AA:1038:C:C4'   | 1:AA:1039:G:OP1   | 2.53                     | 0.57              |
| 1:AA:1039:G:N2    | 1:AA:1040:C:C2    | 2.73                     | 0.57              |
| 1:AA:1139:G:O5'   | 1:AA:1139:G:H8    | 1.88                     | 0.57              |
| 1:AA:1168:G:C6    | 1:AA:1182:A:N1    | 2.72                     | 0.57              |
| 1:AA:1173:G:N2    | 1:AA:1175:U:OP1   | 2.37                     | 0.57              |
| 1:AA:1183:G:H1'   | 1:AA:1184:G:N7    | 2.18                     | 0.57              |
| 1:AA:1302:A:C5'   | 1:AA:1303:G:OP2   | 2.50                     | 0.57              |
| 1:AA:1343:G:N2    | 1:AA:1405:U:H1'   | 2.19                     | 0.57              |
| 1:AA:1360:A:N6    | 1:AA:1371:G:H1'   | 2.20                     | 0.57              |
| 1:AA:1451:C:H5''  | 1:AA:1453:A:O2'   | 2.05                     | 0.57              |
| 1:AA:1699:G:H2'   | 1:AA:1763:G:H22   | 1.70                     | 0.57              |
| 1:AA:1773:A:C5    | 1:AA:1774:C:O2    | 2.57                     | 0.57              |
| 1:AA:1788:C:C2'   | 4:AD:222:ARG:HE   | 2.18                     | 0.57              |
| 1:AA:1920:C:O2'   | 1:AA:1921:G:O5'   | 2.22                     | 0.57              |
| 1:AA:1993:U:N1    | 1:AA:1994:C:C5    | 2.73                     | 0.57              |
| 1:AA:2075:U:H2'   | 1:AA:2075:U:O2    | 2.05                     | 0.57              |
| 1:AA:2169:A:O2'   | 55:BC:56:C:C5'    | 2.52                     | 0.57              |
| 1:AA:2171:A:O2'   | 1:AA:2172:U:O5'   | 2.22                     | 0.57              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2232:U:C2'    | 1:AA:2233:U:H5'   | 2.33                     | 0.57              |
| 1:AA:2466:C:H5''   | 30:Af:5:ALA:HB1   | 1.86                     | 0.57              |
| 1:AA:2531:A:O2'    | 1:AA:2532:G:H5'   | 2.05                     | 0.57              |
| 1:AA:2602:A:C2     | 22:AX:1:MET:HA    | 2.40                     | 0.57              |
| 1:AA:2636:U:O3'    | 5:AE:79:ARG:NH2   | 2.38                     | 0.57              |
| 1:AA:2716:U:H2'    | 1:AA:2717:G:H8    | 1.68                     | 0.57              |
| 1:AA:2834:G:H3'    | 1:AA:2834:G:H8    | 1.69                     | 0.57              |
| 1:AA:2884:U:H3     | 26:Ab:40:LYS:NZ   | 2.03                     | 0.57              |
| 4:AD:5:LYS:HD2     | 4:AD:81:ALA:HB1   | 1.85                     | 0.57              |
| 4:AD:151:LYS:O     | 4:AD:152:GLY:O    | 2.23                     | 0.57              |
| 4:AD:199:ALA:O     | 4:AD:200:ASP:C    | 2.48                     | 0.57              |
| 4:AD:260:ARG:CG    | 4:AD:260:ARG:NH1  | 2.66                     | 0.57              |
| 5:AE:4:ILE:C       | 5:AE:4:ILE:HD12   | 2.29                     | 0.57              |
| 5:AE:53:PRO:CD     | 5:AE:75:VAL:HG13  | 2.34                     | 0.57              |
| 5:AE:109:LYS:CA    | 5:AE:191:PRO:HD3  | 2.34                     | 0.57              |
| 5:AE:113:PHE:CA    | 5:AE:158:GLY:HA2  | 2.35                     | 0.57              |
| 5:AE:173:VAL:HG13  | 5:AE:183:LEU:O    | 2.05                     | 0.57              |
| 6:AF:194:MET:SD    | 6:AF:200:GLU:HG2  | 2.44                     | 0.57              |
| 8:AH:118:PRO:CD    | 8:AH:121:ILE:HG21 | 2.35                     | 0.57              |
| 10:AL:3:GLN:OE1    | 10:AL:6:THR:HG21  | 2.05                     | 0.57              |
| 10:AL:8:LEU:HD22   | 10:AL:81:ASP:O    | 2.05                     | 0.57              |
| 10:AL:23:ARG:N     | 10:AL:23:ARG:CD   | 2.67                     | 0.57              |
| 10:AL:39:ILE:N     | 10:AL:39:ILE:CD1  | 2.66                     | 0.57              |
| 11:AM:123:LEU:HD12 | 11:AM:130:PHE:CE2 | 2.40                     | 0.57              |
| 13:AO:38:VAL:CB    | 13:AO:39:PRO:CD   | 2.77                     | 0.57              |
| 13:AO:79:LEU:HD23  | 13:AO:80:PHE:H    | 1.59                     | 0.57              |
| 14:AP:66:ALA:O     | 14:AP:67:ARG:C    | 2.48                     | 0.57              |
| 14:AP:76:LYS:CG    | 14:AP:77:ALA:N    | 2.68                     | 0.57              |
| 15:AQ:32:TYR:CD2   | 15:AQ:88:ILE:HA   | 2.40                     | 0.57              |
| 15:AQ:45:PHE:HE1   | 15:AQ:86:ILE:HG22 | 1.70                     | 0.57              |
| 15:AQ:55:ASN:O     | 15:AQ:57:PHE:HE2  | 1.87                     | 0.57              |
| 15:AQ:68:TYR:CD1   | 15:AQ:68:TYR:C    | 2.81                     | 0.57              |
| 16:AR:49:HIS:HA    | 16:AR:52:ARG:NE   | 2.20                     | 0.57              |
| 16:AR:84:LYS:HE2   | 16:AR:84:LYS:N    | 2.20                     | 0.57              |
| 16:AR:93:LYS:NZ    | 16:AR:93:LYS:CA   | 2.60                     | 0.57              |
| 17:AS:7:THR:O      | 17:AS:9:GLY:N     | 2.38                     | 0.57              |
| 17:AS:12:TYR:HE1   | 17:AS:14:VAL:HB   | 1.69                     | 0.57              |
| 17:AS:18:LEU:HD23  | 17:AS:18:LEU:N    | 2.12                     | 0.57              |
| 17:AS:67:GLY:O     | 17:AS:92:THR:OG1  | 2.23                     | 0.57              |
| 17:AS:74:LYS:C     | 17:AS:75:PHE:CD1  | 2.83                     | 0.57              |
| 17:AS:77:ALA:O     | 17:AS:84:LYS:HA   | 2.05                     | 0.57              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 20:AV:37:VAL:HG13 | 20:AV:39:VAL:HB    | 1.85                     | 0.57              |
| 24:AZ:45:GLY:HA2  | 24:AZ:48:GLU:OE1   | 2.04                     | 0.57              |
| 25:Aa:59:PHE:N    | 25:Aa:59:PHE:CD1   | 2.72                     | 0.57              |
| 26:Ab:51:TYR:C    | 26:Ab:51:TYR:HD2   | 2.11                     | 0.57              |
| 31:AI:54:ALA:C    | 31:AI:83:TYR:O     | 2.47                     | 0.57              |
| 32:AJ:52:ILE:HD13 | 32:AJ:73:PRO:HG2   | 1.87                     | 0.57              |
| 33:Ag:305:UNK:C   | 33:Ag:307:UNK:N    | 2.64                     | 0.57              |
| 34:BA:33:A:O2'    | 34:BA:363:A:H1'    | 2.05                     | 0.57              |
| 34:BA:55:A:C2'    | 34:BA:56:U:C5'     | 2.80                     | 0.57              |
| 34:BA:112:G:OP2   | 49:BT:27:LYS:HD3   | 2.05                     | 0.57              |
| 34:BA:173:U:H4'   | 34:BA:197:A:N3     | 2.20                     | 0.57              |
| 34:BA:251:G:C2    | 34:BA:266:G:C6     | 2.93                     | 0.57              |
| 34:BA:263:A:O5'   | 34:BA:263:A:H8     | 1.87                     | 0.57              |
| 34:BA:509:A:C5    | 34:BA:510:A:C6     | 2.92                     | 0.57              |
| 34:BA:597:G:C2'   | 34:BA:598:U:H5'    | 2.35                     | 0.57              |
| 34:BA:696:A:N3    | 34:BA:786:G:O2'    | 2.35                     | 0.57              |
| 34:BA:697:U:C2'   | 34:BA:698:G:C8     | 2.84                     | 0.57              |
| 34:BA:993:G:O2'   | 34:BA:994:A:P      | 2.63                     | 0.57              |
| 34:BA:1110:A:C5   | 34:BA:1111:A:N7    | 2.73                     | 0.57              |
| 34:BA:1155:G:H2'  | 34:BA:1156:G:C8    | 2.40                     | 0.57              |
| 34:BA:1164:G:C6   | 34:BA:1165:C:N4    | 2.73                     | 0.57              |
| 34:BA:1219:U:O3'  | 52:BW:34:TRP:CE2   | 2.33                     | 0.57              |
| 34:BA:1313:U:N3   | 34:BA:1325:C:C2    | 2.72                     | 0.57              |
| 34:BA:1494:G:H3'  | 34:BA:1494:G:P     | 2.43                     | 0.57              |
| 35:BF:20:GLU:OE1  | 35:BF:20:GLU:N     | 2.38                     | 0.57              |
| 35:BF:169:LYS:C   | 35:BF:171:ALA:N    | 2.62                     | 0.57              |
| 35:BF:189:ASP:CG  | 35:BF:205:ASP:CG   | 2.71                     | 0.57              |
| 36:BG:126:ARG:O   | 36:BG:127:ARG:HB2  | 2.02                     | 0.57              |
| 37:BH:166:LYS:HA  | 37:BH:178:VAL:HG11 | 1.85                     | 0.57              |
| 37:BH:170:VAL:CG1 | 37:BH:174:LEU:HB2  | 2.34                     | 0.57              |
| 39:BJ:9:VAL:HG13  | 39:BJ:59:TYR:O     | 2.05                     | 0.57              |
| 40:BK:43:PHE:HD2  | 40:BK:44:TYR:CD2   | 2.23                     | 0.57              |
| 40:BK:97:GLN:O    | 40:BK:98:SER:C     | 2.44                     | 0.57              |
| 41:BL:40:ALA:N    | 41:BL:45:ILE:CG2   | 2.68                     | 0.57              |
| 41:BL:46:LYS:HE3  | 41:BL:64:LYS:CG    | 2.27                     | 0.57              |
| 42:BM:11:LYS:H    | 42:BM:104:ARG:HH21 | 1.51                     | 0.57              |
| 42:BM:65:VAL:HG21 | 42:BM:77:ILE:HD11  | 1.85                     | 0.57              |
| 45:BP:106:ASP:CB  | 57:BZ:329:ARG:NE   | 2.66                     | 0.57              |
| 46:BQ:64:TRP:CZ2  | 46:BQ:66:LEU:HD13  | 2.40                     | 0.57              |
| 49:BT:73:LEU:C    | 49:BT:73:LEU:CD1   | 2.76                     | 0.57              |
| 50:BU:20:THR:C    | 50:BU:21:VAL:HG13  | 2.30                     | 0.57              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 52:BW:21:GLU:O     | 52:BW:24:ALA:CB    | 2.52                     | 0.57              |
| 53:BX:16:HIS:O     | 53:BX:17:ARG:C     | 2.48                     | 0.57              |
| 53:BX:56:MET:SD    | 53:BX:84:LEU:CD1   | 2.92                     | 0.57              |
| 55:BC:38:A:C2      | 55:BC:39:U:C6      | 2.93                     | 0.57              |
| 57:BZ:220:VAL:HG21 | 57:BZ:279:LEU:HB2  | 1.71                     | 0.57              |
| 57:BZ:228:ARG:CA   | 57:BZ:267:LEU:CD1  | 2.83                     | 0.57              |
| 57:BZ:380:LEU:H    | 57:BZ:580:VAL:CG2  | 2.18                     | 0.57              |
| 57:BZ:411:HIS:CD2  | 57:BZ:459:THR:HG22 | 2.39                     | 0.57              |
| 57:BZ:520:GLU:CD   | 57:BZ:593:THR:N    | 2.62                     | 0.57              |
| 57:BZ:566:GLU:O    | 57:BZ:567:GLN:HB2  | 2.04                     | 0.57              |
| 1:AA:64:A:H5''     | 19:AU:73:ARG:HA    | 1.86                     | 0.56              |
| 1:AA:270:A:N6      | 1:AA:370:G:C8      | 2.73                     | 0.56              |
| 1:AA:351:G:O2'     | 1:AA:352:G:C8      | 2.56                     | 0.56              |
| 1:AA:526:A:C2      | 1:AA:2626:C:O4'    | 2.58                     | 0.56              |
| 1:AA:573:G:C2'     | 1:AA:574:C:O5'     | 2.53                     | 0.56              |
| 1:AA:580:C:C2      | 1:AA:581:C:C5      | 2.92                     | 0.56              |
| 1:AA:754:C:O2'     | 1:AA:755:C:H5'     | 2.05                     | 0.56              |
| 1:AA:772:C:H2'     | 1:AA:773:U:H6      | 1.70                     | 0.56              |
| 1:AA:800:A:HO2'    | 1:AA:801:G:P       | 2.28                     | 0.56              |
| 1:AA:867:C:N4      | 1:AA:868:U:C4      | 2.73                     | 0.56              |
| 1:AA:903:C:C4      | 1:AA:904:C:N4      | 2.73                     | 0.56              |
| 1:AA:972:G:OP1     | 1:AA:974(A):C:C5'  | 2.47                     | 0.56              |
| 1:AA:973:A:O2'     | 1:AA:974:G:C5'     | 2.53                     | 0.56              |
| 1:AA:1080:C:C1'    | 32:AJ:129:GLY:CA   | 2.83                     | 0.56              |
| 1:AA:1174:A:N3     | 1:AA:1175:U:H5''   | 2.19                     | 0.56              |
| 1:AA:1210:A:H1'    | 1:AA:1212:G:H21    | 1.69                     | 0.56              |
| 1:AA:1496:A:H2'    | 1:AA:1496:A:N3     | 2.18                     | 0.56              |
| 1:AA:1511:A:H3'    | 1:AA:1511:A:H8     | 1.70                     | 0.56              |
| 1:AA:1702:G:C5     | 1:AA:1703:G:N7     | 2.72                     | 0.56              |
| 1:AA:1759:A:C2'    | 1:AA:1760:A:O5'    | 2.52                     | 0.56              |
| 1:AA:1791:A:H4'    | 4:AD:206:LEU:CD2   | 2.34                     | 0.56              |
| 1:AA:1833:U:O2'    | 1:AA:1834:U:OP1    | 2.14                     | 0.56              |
| 1:AA:2111:C:N4     | 1:AA:2145:C:C5     | 2.73                     | 0.56              |
| 1:AA:2210:G:O2'    | 1:AA:2211:G:P      | 2.63                     | 0.56              |
| 1:AA:2291:U:C2     | 1:AA:2292:C:C5     | 2.92                     | 0.56              |
| 1:AA:2309:A:N7     | 7:AG:80:PHE:CZ     | 2.73                     | 0.56              |
| 1:AA:2332:U:O4'    | 1:AA:2336:A:N6     | 2.37                     | 0.56              |
| 1:AA:2346:A:H4'    | 1:AA:2383:G:O4'    | 2.05                     | 0.56              |
| 1:AA:2394:C:OP1    | 11:AM:57:THR:CA    | 2.52                     | 0.56              |
| 1:AA:2438:U:O2     | 1:AA:2441:C:C5     | 2.58                     | 0.56              |
| 1:AA:2519:U:OP1    | 1:AA:2519:U:H3'    | 2.05                     | 0.56              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2527:C:H2'   | 1:AA:2528:U:C6    | 2.40                     | 0.56              |
| 1:AA:2585:U:C6    | 1:AA:2585:U:OP1   | 2.58                     | 0.56              |
| 1:AA:2596:U:O4    | 1:AA:2597:G:N1    | 2.38                     | 0.56              |
| 1:AA:2660:A:N3    | 57:BZ:456:MET:O   | 2.37                     | 0.56              |
| 1:AA:2772:C:H2'   | 1:AA:2772:C:O2    | 2.03                     | 0.56              |
| 1:AA:2810:A:H2'   | 1:AA:2811:G:H5'   | 1.87                     | 0.56              |
| 1:AA:2815:C:C3'   | 26:Ab:42:PRO:HG3  | 2.35                     | 0.56              |
| 1:AA:2845:G:O2'   | 1:AA:2846:G:O5'   | 2.23                     | 0.56              |
| 4:AD:78:LYS:HA    | 4:AD:115:GLN:O    | 2.04                     | 0.56              |
| 5:AE:59:VAL:HG12  | 5:AE:62:PRO:HD2   | 1.86                     | 0.56              |
| 5:AE:147:PRO:CD   | 5:AE:148:GLY:N    | 2.64                     | 0.56              |
| 8:AH:35:VAL:HG21  | 8:AH:75:ALA:CB    | 2.34                     | 0.56              |
| 8:AH:98:LEU:C     | 8:AH:100:GLY:H    | 2.12                     | 0.56              |
| 9:AK:4:TYR:CZ     | 16:AR:101:ARG:CZ  | 2.88                     | 0.56              |
| 9:AK:51:PHE:CE1   | 9:AK:119:ARG:NE   | 2.73                     | 0.56              |
| 9:AK:89:LYS:H     | 9:AK:89:LYS:HE3   | 1.63                     | 0.56              |
| 10:AL:76:ALA:HB1  | 10:AL:78:ARG:HH22 | 1.70                     | 0.56              |
| 11:AM:58:THR:HG22 | 11:AM:60:MET:H    | 1.69                     | 0.56              |
| 12:AN:6:ARG:O     | 12:AN:7:MET:HG2   | 2.05                     | 0.56              |
| 12:AN:16:ARG:HG2  | 12:AN:73:PRO:CD   | 2.34                     | 0.56              |
| 14:AP:70:GLY:O    | 14:AP:71:ARG:C    | 2.47                     | 0.56              |
| 15:AQ:112:ARG:NH2 | 34:BA:1464:G:H3'  | 2.20                     | 0.56              |
| 16:AR:63:VAL:O    | 16:AR:65:ILE:N    | 2.38                     | 0.56              |
| 16:AR:68:ALA:O    | 16:AR:72:HIS:ND1  | 2.38                     | 0.56              |
| 16:AR:80:ILE:HA   | 16:AR:83:LEU:HD13 | 1.87                     | 0.56              |
| 16:AR:108:GLU:OE1 | 16:AR:109:LEU:CG  | 2.51                     | 0.56              |
| 17:AS:3:ALA:HA    | 17:AS:44:LYS:NZ   | 2.20                     | 0.56              |
| 17:AS:28:GLU:N    | 17:AS:29:PRO:CD   | 2.67                     | 0.56              |
| 17:AS:36:PRO:CA   | 17:AS:60:GLU:O    | 2.43                     | 0.56              |
| 18:AT:34:ASN:ND2  | 18:AT:37:ARG:NH1  | 2.53                     | 0.56              |
| 19:AU:24:GLY:O    | 19:AU:83:VAL:HG22 | 2.04                     | 0.56              |
| 20:AV:32:PRO:O    | 20:AV:34:LYS:N    | 2.37                     | 0.56              |
| 20:AV:69:ALA:HB3  | 20:AV:71:LYS:NZ   | 2.19                     | 0.56              |
| 21:AW:76:LEU:HD23 | 21:AW:82:ARG:O    | 2.04                     | 0.56              |
| 25:Aa:56:VAL:HB   | 25:Aa:61:ARG:NE   | 2.20                     | 0.56              |
| 26:Ab:21:SER:C    | 26:Ab:23:HIS:N    | 2.59                     | 0.56              |
| 26:Ab:32:PRO:HA   | 26:Ab:38:ALA:O    | 2.04                     | 0.56              |
| 27:Ac:25:LYS:O    | 27:Ac:26:ASN:HB2  | 2.04                     | 0.56              |
| 27:Ac:51:GLU:OE1  | 27:Ac:52:VAL:N    | 2.38                     | 0.56              |
| 29:Ae:31:HIS:O    | 29:Ae:32:LEU:HD23 | 2.05                     | 0.56              |
| 29:Ae:61:LEU:O    | 29:Ae:62:LEU:CB   | 2.53                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 31:AI:47:ASN:O    | 31:AI:95:GLN:CB    | 2.53                     | 0.56              |
| 31:AI:135:ARG:O   | 31:AI:137:GLU:N    | 2.35                     | 0.56              |
| 34:BA:22:G:C4     | 34:BA:23:C:C5      | 2.93                     | 0.56              |
| 34:BA:173:U:C5'   | 34:BA:197:A:O2'    | 2.53                     | 0.56              |
| 34:BA:308:C:C2'   | 34:BA:309:G:O5'    | 2.53                     | 0.56              |
| 34:BA:511:C:O2'   | 34:BA:512:U:O4'    | 2.23                     | 0.56              |
| 34:BA:521:G:OP2   | 45:BP:54:LYS:NZ    | 2.38                     | 0.56              |
| 34:BA:528:C:H42   | 45:BP:49:ASN:ND2   | 2.01                     | 0.56              |
| 34:BA:970:C:H4'   | 34:BA:972:C:C5     | 2.40                     | 0.56              |
| 34:BA:1003:G:N7   | 34:BA:1004:A:N3    | 2.52                     | 0.56              |
| 34:BA:1039:C:H2'  | 34:BA:1040:U:H6    | 1.70                     | 0.56              |
| 34:BA:1106:G:C4   | 34:BA:1107:C:C5    | 2.93                     | 0.56              |
| 34:BA:1216:G:C4   | 34:BA:1217:C:C5    | 2.93                     | 0.56              |
| 34:BA:1241:G:OP2  | 34:BA:1241:G:H8    | 1.88                     | 0.56              |
| 34:BA:1257:U:O2'  | 34:BA:1258:G:C8    | 2.57                     | 0.56              |
| 34:BA:1336:C:O2'  | 34:BA:1337:G:C5    | 2.56                     | 0.56              |
| 34:BA:1346:A:C2   | 40:BK:10:ARG:CD    | 2.87                     | 0.56              |
| 35:BF:16:HIS:NE2  | 35:BF:213:LEU:HB3  | 2.20                     | 0.56              |
| 35:BF:50:GLU:CG   | 35:BF:200:ILE:O    | 2.42                     | 0.56              |
| 35:BF:157:ARG:O   | 35:BF:158:LEU:HG   | 2.05                     | 0.56              |
| 36:BG:107:GLN:OE1 | 36:BG:111:LEU:HD22 | 2.05                     | 0.56              |
| 37:BH:61:LYS:HZ1  | 37:BH:72:GLU:CD    | 2.13                     | 0.56              |
| 37:BH:144:ASP:HA  | 37:BH:184:LYS:HZ2  | 1.68                     | 0.56              |
| 38:BI:50:GLU:HB2  | 38:BI:53:LEU:HD23  | 1.86                     | 0.56              |
| 38:BI:72:GLN:HE21 | 38:BI:144:THR:HG23 | 1.70                     | 0.56              |
| 39:BJ:36:ARG:HB2  | 39:BJ:36:ARG:NH1   | 2.20                     | 0.56              |
| 40:BK:36:LYS:HA   | 40:BK:36:LYS:HZ1   | 1.68                     | 0.56              |
| 40:BK:109:ASN:O   | 40:BK:119:ARG:NE   | 2.38                     | 0.56              |
| 42:BM:78:LYS:HD3  | 42:BM:79:LEU:HD22  | 1.87                     | 0.56              |
| 42:BM:115:GLY:C   | 42:BM:117:HIS:H    | 2.13                     | 0.56              |
| 45:BP:16:GLU:O    | 45:BP:17:LYS:HB3   | 2.04                     | 0.56              |
| 45:BP:23:LYS:HE3  | 45:BP:23:LYS:CA    | 2.15                     | 0.56              |
| 45:BP:102:ARG:HD3 | 45:BP:110:VAL:HG13 | 1.87                     | 0.56              |
| 47:BR:33:VAL:O    | 47:BR:34:TYR:O     | 2.23                     | 0.56              |
| 47:BR:41:ARG:HA   | 47:BR:44:LEU:CD2   | 2.35                     | 0.56              |
| 49:BT:7:ALA:HB3   | 49:BT:18:ARG:HB2   | 1.87                     | 0.56              |
| 49:BT:58:TYR:CD1  | 49:BT:59:TRP:N     | 2.73                     | 0.56              |
| 51:BV:45:SER:N    | 51:BV:51:LEU:HD21  | 2.20                     | 0.56              |
| 56:BD:15:G:H22    | 56:BD:59:U:H3      | 1.52                     | 0.56              |
| 57:BZ:172:ALA:CB  | 57:BZ:179:MET:SD   | 2.79                     | 0.56              |
| 57:BZ:228:ARG:HA  | 57:BZ:267:LEU:HD13 | 1.87                     | 0.56              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:147:U:H2'   | 1:AA:148:C:C6     | 2.39                     | 0.56              |
| 1:AA:149:A:C8    | 1:AA:150:C:C6     | 2.93                     | 0.56              |
| 1:AA:172:C:N1    | 1:AA:173:G:N7     | 2.52                     | 0.56              |
| 1:AA:270(V):G:C6 | 1:AA:270(W):G:O6  | 2.57                     | 0.56              |
| 1:AA:308:G:C2    | 1:AA:329:G:N2     | 2.73                     | 0.56              |
| 1:AA:363(B):G:P  | 1:AA:363(B):G:H3' | 2.45                     | 0.56              |
| 1:AA:392:C:C5'   | 1:AA:409:C:H5''   | 2.34                     | 0.56              |
| 1:AA:569:U:O4    | 1:AA:2498:C:H4'   | 2.05                     | 0.56              |
| 1:AA:629:G:H5'   | 1:AA:649:G:N3     | 2.20                     | 0.56              |
| 1:AA:728:G:H21   | 1:AA:730:C:C5'    | 2.18                     | 0.56              |
| 1:AA:763:G:C4    | 1:AA:765:G:C8     | 2.93                     | 0.56              |
| 1:AA:820:A:N1    | 1:AA:821:A:N3     | 2.53                     | 0.56              |
| 1:AA:821:A:H8    | 1:AA:946:G:C5     | 2.22                     | 0.56              |
| 1:AA:1024:G:C3'  | 1:AA:1025:G:H5''  | 2.35                     | 0.56              |
| 1:AA:1045:A:O4'  | 1:AA:1111:A:N1    | 2.38                     | 0.56              |
| 1:AA:1081:U:C4'  | 32:AJ:125:ARG:CD  | 2.82                     | 0.56              |
| 1:AA:1418:G:OP2  | 1:AA:1418:G:H8    | 1.89                     | 0.56              |
| 1:AA:1523:U:N3   | 1:AA:1524:G:N7    | 2.54                     | 0.56              |
| 1:AA:1676:A:C8   | 1:AA:1677:A:N7    | 2.73                     | 0.56              |
| 1:AA:1696:G:C6   | 1:AA:1697:G:C2    | 2.93                     | 0.56              |
| 1:AA:1749:A:O2'  | 1:AA:1750:G:H5'   | 2.05                     | 0.56              |
| 1:AA:1780:A:C2'  | 1:AA:1781:C:OP1   | 2.52                     | 0.56              |
| 1:AA:1791:A:O3'  | 4:AD:206:LEU:CD2  | 2.52                     | 0.56              |
| 1:AA:1838:C:C5   | 1:AA:1899:G:C6    | 2.93                     | 0.56              |
| 1:AA:1840:G:O2'  | 1:AA:1841:U:H5'   | 2.05                     | 0.56              |
| 1:AA:1950:G:N7   | 1:AA:1951:U:H5    | 2.01                     | 0.56              |
| 1:AA:1952:A:C2   | 10:AL:22:ILE:HG12 | 2.39                     | 0.56              |
| 1:AA:1955:U:O3'  | 1:AA:1956:U:C5    | 2.58                     | 0.56              |
| 1:AA:1999:C:N3   | 1:AA:2000:G:C8    | 2.73                     | 0.56              |
| 1:AA:2013:A:H2'  | 1:AA:2014:A:O5'   | 2.04                     | 0.56              |
| 1:AA:2053:G:H2'  | 1:AA:2054:A:O5'   | 2.05                     | 0.56              |
| 1:AA:2125:G:C3'  | 3:AC:217:THR:OG1  | 2.53                     | 0.56              |
| 1:AA:2197:U:H1'  | 1:AA:2198:A:C2    | 2.39                     | 0.56              |
| 1:AA:2206:C:C2   | 1:AA:2207:C:C5    | 2.92                     | 0.56              |
| 1:AA:2283:C:N3   | 1:AA:2389:G:N2    | 2.53                     | 0.56              |
| 1:AA:2384:G:O2'  | 1:AA:2385:C:OP1   | 2.19                     | 0.56              |
| 1:AA:2416:C:H5'' | 11:AM:59:LEU:CB   | 2.10                     | 0.56              |
| 1:AA:2479:G:H5'' | 1:AA:2537:U:H4'   | 1.86                     | 0.56              |
| 1:AA:2673:G:N2   | 1:AA:2674:G:C5    | 2.73                     | 0.56              |
| 1:AA:2691:C:O4'  | 1:AA:2872:G:O6    | 2.23                     | 0.56              |
| 1:AA:2711:A:N6   | 1:AA:2714:G:C5    | 2.74                     | 0.56              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2714:G:C6    | 1:AA:2715:C:N4    | 2.73                     | 0.56              |
| 1:AA:2748:A:C6    | 1:AA:2757:A:N6    | 2.72                     | 0.56              |
| 1:AA:2762:G:N7    | 1:AA:2763:G:N7    | 2.53                     | 0.56              |
| 1:AA:2793:G:N2    | 1:AA:2803:C:C2    | 2.73                     | 0.56              |
| 2:AB:9:G:N2       | 2:AB:10:C:C2      | 2.73                     | 0.56              |
| 2:AB:14:U:C1'     | 2:AB:107:U:H1'    | 2.34                     | 0.56              |
| 2:AB:104:A:O2'    | 21:AW:29:TYR:OH   | 2.19                     | 0.56              |
| 4:AD:55:GLY:N     | 4:AD:218:ARG:HD3  | 2.20                     | 0.56              |
| 4:AD:64:ILE:O     | 4:AD:64:ILE:HG23  | 2.06                     | 0.56              |
| 4:AD:172:TYR:HD2  | 4:AD:186:HIS:N    | 2.03                     | 0.56              |
| 5:AE:33:VAL:HG23  | 5:AE:34:VAL:HG23  | 1.87                     | 0.56              |
| 5:AE:111:ARG:HB2  | 5:AE:161:GLY:CA   | 2.35                     | 0.56              |
| 5:AE:122:PHE:CD1  | 5:AE:122:PHE:N    | 2.72                     | 0.56              |
| 5:AE:142:GLY:C    | 5:AE:143:ASN:CG   | 2.71                     | 0.56              |
| 5:AE:199:ARG:O    | 5:AE:200:GLU:CD   | 2.49                     | 0.56              |
| 7:AG:8:LYS:HB2    | 7:AG:104:GLU:HB2  | 1.87                     | 0.56              |
| 8:AH:54:ARG:HH11  | 8:AH:57:ASP:CB    | 2.18                     | 0.56              |
| 8:AH:69:ARG:CG    | 8:AH:70:THR:H     | 2.18                     | 0.56              |
| 8:AH:69:ARG:CG    | 8:AH:70:THR:N     | 2.68                     | 0.56              |
| 8:AH:74:ASN:ND2   | 8:AH:75:ALA:N     | 2.53                     | 0.56              |
| 8:AH:107:VAL:HG13 | 8:AH:152:ARG:CD   | 2.35                     | 0.56              |
| 8:AH:127:GLU:HB3  | 8:AH:129:THR:N    | 2.20                     | 0.56              |
| 8:AH:133:VAL:HG22 | 8:AH:134:SER:H    | 1.70                     | 0.56              |
| 10:AL:19:ILE:C    | 10:AL:19:ILE:CD1  | 2.78                     | 0.56              |
| 11:AM:97:PRO:CA   | 11:AM:102:ARG:CZ  | 2.83                     | 0.56              |
| 13:AO:65:LEU:O    | 13:AO:68:ARG:N    | 2.38                     | 0.56              |
| 13:AO:74:LYS:CA   | 13:AO:77:ARG:HH22 | 2.17                     | 0.56              |
| 13:AO:105:ARG:C   | 13:AO:107:ASP:H   | 2.13                     | 0.56              |
| 14:AP:42:ASP:OD2  | 14:AP:43:GLU:N    | 2.38                     | 0.56              |
| 14:AP:42:ASP:OD1  | 14:AP:44:LYS:HD2  | 2.05                     | 0.56              |
| 15:AQ:76:PHE:HZ   | 15:AQ:78:LEU:HD12 | 1.70                     | 0.56              |
| 16:AR:47:TYR:CZ   | 17:AS:76:LYS:O    | 2.59                     | 0.56              |
| 16:AR:61:TRP:HZ3  | 16:AR:94:ASN:N    | 2.04                     | 0.56              |
| 19:AU:26:TYR:HB2  | 19:AU:28:PHE:HZ   | 1.70                     | 0.56              |
| 21:AW:18:LEU:O    | 21:AW:19:ARG:C    | 2.48                     | 0.56              |
| 21:AW:77:ASP:H    | 21:AW:83:PRO:HA   | 1.70                     | 0.56              |
| 21:AW:176:PRO:HB2 | 21:AW:179:ASP:N   | 2.19                     | 0.56              |
| 22:AX:12:ASN:O    | 22:AX:14:ARG:HG2  | 2.05                     | 0.56              |
| 23:AY:42:ASN:O    | 23:AY:45:ILE:HG23 | 2.05                     | 0.56              |
| 27:Ac:20:ASN:CG   | 27:Ac:42:TRP:HD1  | 2.12                     | 0.56              |
| 27:Ac:51:GLU:OE1  | 27:Ac:52:VAL:CA   | 2.52                     | 0.56              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 30:Af:11:CYS:CB    | 30:Af:32:HIS:CE1  | 2.86                     | 0.56              |
| 34:BA:194:C:H5''   | 53:BX:65:LYS:CD   | 2.35                     | 0.56              |
| 34:BA:197:A:O4'    | 34:BA:197:A:OP2   | 2.22                     | 0.56              |
| 34:BA:295:C:O2'    | 34:BA:296:U:H5'   | 2.04                     | 0.56              |
| 34:BA:558:G:O5'    | 34:BA:559:A:H3'   | 2.06                     | 0.56              |
| 34:BA:571:U:H6     | 34:BA:571:U:C5'   | 2.19                     | 0.56              |
| 34:BA:581:G:O3'    | 48:BS:64:ARG:NH2  | 2.38                     | 0.56              |
| 34:BA:607:A:C5     | 34:BA:608:A:C8    | 2.93                     | 0.56              |
| 34:BA:689:C:OP2    | 44:BO:46:GLY:HA3  | 2.04                     | 0.56              |
| 34:BA:696:A:C2     | 34:BA:697:U:O4'   | 2.58                     | 0.56              |
| 34:BA:886:G:C2'    | 34:BA:887:G:C5'   | 2.82                     | 0.56              |
| 34:BA:927:G:O5'    | 34:BA:1503:A:C6   | 2.54                     | 0.56              |
| 34:BA:962:C:O2'    | 34:BA:963:G:H5'   | 2.05                     | 0.56              |
| 34:BA:1000:A:C2    | 34:BA:1001:G:N7   | 2.74                     | 0.56              |
| 34:BA:1060:C:H4'   | 43:BN:52:GLY:HA2  | 1.87                     | 0.56              |
| 34:BA:1109:C:C2'   | 34:BA:1110:A:H5'  | 2.34                     | 0.56              |
| 34:BA:1144:G:H2'   | 34:BA:1144:G:N3   | 2.20                     | 0.56              |
| 34:BA:1241:G:O2'   | 34:BA:1242:C:H5'  | 2.06                     | 0.56              |
| 34:BA:1317:C:C2    | 34:BA:1318:A:C4   | 2.93                     | 0.56              |
| 34:BA:1412:C:N4    | 34:BA:1489:G:O6   | 2.38                     | 0.56              |
| 34:BA:1419:G:H2'   | 34:BA:1420:C:C6   | 2.39                     | 0.56              |
| 34:BA:1464:G:H2'   | 34:BA:1465:C:C6   | 2.40                     | 0.56              |
| 35:BF:70:PHE:HB3   | 35:BF:163:PHE:HB3 | 1.88                     | 0.56              |
| 35:BF:70:PHE:HA    | 35:BF:163:PHE:O   | 2.04                     | 0.56              |
| 36:BG:33:LEU:HD23  | 36:BG:36:ASP:OD1  | 2.05                     | 0.56              |
| 36:BG:151:VAL:CG1  | 36:BG:152:ILE:N   | 2.68                     | 0.56              |
| 37:BH:13:ARG:CB    | 37:BH:40:PRO:HD3  | 2.35                     | 0.56              |
| 37:BH:187:ARG:O    | 37:BH:188:LEU:C   | 2.48                     | 0.56              |
| 38:BI:109:ILE:HG23 | 38:BI:110:LEU:CD2 | 2.34                     | 0.56              |
| 39:BJ:53:ALA:CB    | 39:BJ:86:ARG:HH11 | 2.18                     | 0.56              |
| 40:BK:76:ARG:HH11  | 40:BK:89:MET:HG3  | 1.69                     | 0.56              |
| 41:BL:9:MET:O      | 41:BL:10:LEU:C    | 2.48                     | 0.56              |
| 41:BL:69:ARG:NH1   | 41:BL:74:PRO:O    | 2.38                     | 0.56              |
| 42:BM:17:VAL:HG21  | 42:BM:77:ILE:O    | 2.05                     | 0.56              |
| 43:BN:49:VAL:CG2   | 47:BR:41:ARG:HB2  | 2.35                     | 0.56              |
| 50:BU:74:LEU:O     | 50:BU:74:LEU:HD13 | 2.05                     | 0.56              |
| 51:BV:64:ARG:O     | 51:BV:67:ALA:HB3  | 2.04                     | 0.56              |
| 55:BC:38:A:N6      | 55:BC:39:U:C5     | 2.73                     | 0.56              |
| 56:BD:52:G:O6      | 56:BD:63:G:N1     | 2.38                     | 0.56              |
| 56:BE:19:G:H3'     | 56:BE:20:U:O4'    | 2.05                     | 0.56              |
| 57:BZ:240:ILE:HG21 | 57:BZ:286:ASP:HA  | 1.83                     | 0.56              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:BZ:400:TYR:CD1 | 57:BZ:444:PRO:CA  | 2.88                     | 0.56              |
| 57:BZ:544:THR:O   | 57:BZ:545:ASN:ND2 | 2.37                     | 0.56              |
| 1:AA:76:C:O2'     | 1:AA:77:C:H5'     | 2.05                     | 0.56              |
| 1:AA:203:C:H3'    | 1:AA:204:A:C8     | 2.36                     | 0.56              |
| 1:AA:259:G:H1'    | 1:AA:621:A:O2'    | 2.05                     | 0.56              |
| 1:AA:281:G:H22    | 1:AA:283:A:C4'    | 2.18                     | 0.56              |
| 1:AA:373:U:C4     | 25:Aa:63:TYR:HE1  | 2.23                     | 0.56              |
| 1:AA:543:C:H2'    | 1:AA:544:C:H5     | 1.70                     | 0.56              |
| 1:AA:653:A:H3'    | 1:AA:654:A:H4'    | 1.87                     | 0.56              |
| 1:AA:662:G:H5'    | 11:AM:16:ARG:HA   | 1.86                     | 0.56              |
| 1:AA:691:C:N3     | 1:AA:692:C:C5     | 2.73                     | 0.56              |
| 1:AA:793:A:H2'    | 1:AA:793:A:N3     | 2.19                     | 0.56              |
| 1:AA:805:G:C2'    | 1:AA:806:C:OP1    | 2.53                     | 0.56              |
| 1:AA:873:G:H4'    | 12:AN:65:PHE:CZ   | 2.40                     | 0.56              |
| 1:AA:893:C:C2     | 1:AA:894:C:C5     | 2.93                     | 0.56              |
| 1:AA:942:G:C5'    | 11:AM:32:THR:HG22 | 2.35                     | 0.56              |
| 1:AA:943:U:O4'    | 1:AA:943:U:P      | 2.64                     | 0.56              |
| 1:AA:948:G:O4'    | 1:AA:984:A:C2     | 2.58                     | 0.56              |
| 1:AA:955:C:P      | 12:AN:17:LEU:HD23 | 2.45                     | 0.56              |
| 1:AA:972:G:C5     | 1:AA:973:A:C8     | 2.94                     | 0.56              |
| 1:AA:1022:G:O2'   | 1:AA:1023:U:O5'   | 2.23                     | 0.56              |
| 1:AA:1024:G:OP2   | 1:AA:1025:G:N3    | 2.39                     | 0.56              |
| 1:AA:1061:U:O5'   | 32:AJ:52:ILE:HD13 | 2.05                     | 0.56              |
| 1:AA:1062:G:H1'   | 1:AA:1063:G:P     | 2.45                     | 0.56              |
| 1:AA:1069:A:N1    | 1:AA:1096:A:OP1   | 2.37                     | 0.56              |
| 1:AA:1071:G:N7    | 1:AA:1089:G:N2    | 2.09                     | 0.56              |
| 1:AA:1127:A:C8    | 1:AA:1127:A:C3'   | 2.89                     | 0.56              |
| 1:AA:1135:C:H2'   | 1:AA:1136:G:C8    | 2.32                     | 0.56              |
| 1:AA:1142(A):A:N6 | 1:AA:1143:A:C8    | 2.74                     | 0.56              |
| 1:AA:1201:C:H42   | 1:AA:1241:A:N6    | 2.03                     | 0.56              |
| 1:AA:1227:A:C3'   | 1:AA:1228:G:H5''  | 2.36                     | 0.56              |
| 1:AA:1296:G:H5''  | 1:AA:2709:G:O2'   | 2.05                     | 0.56              |
| 1:AA:1312:U:H2'   | 1:AA:1313:U:C1'   | 2.34                     | 0.56              |
| 1:AA:1316:U:H5'   | 1:AA:1392:A:H1'   | 1.87                     | 0.56              |
| 1:AA:1342:A:C1'   | 1:AA:1345:C:N4    | 2.68                     | 0.56              |
| 1:AA:1364:G:OP1   | 25:Aa:3:GLU:HB2   | 2.05                     | 0.56              |
| 1:AA:1366:A:C2    | 1:AA:1367:A:H1'   | 2.40                     | 0.56              |
| 1:AA:1366:A:N1    | 1:AA:1367:A:N3    | 2.54                     | 0.56              |
| 1:AA:1405:U:C2'   | 1:AA:1406:U:C6    | 2.77                     | 0.56              |
| 1:AA:1520:U:C6    | 1:AA:1520:U:OP2   | 2.58                     | 0.56              |
| 1:AA:1528:A:H5'   | 1:AA:1529:A:OP2   | 2.06                     | 0.56              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:1579:A:H61  | 1:AA:1581:G:N2    | 2.00                     | 0.56              |
| 1:AA:1675:C:O2   | 1:AA:1675:C:C2'   | 2.52                     | 0.56              |
| 1:AA:1699:G:O2'  | 1:AA:1700:A:P     | 2.63                     | 0.56              |
| 1:AA:1754:C:C5   | 15:AQ:98:LYS:NZ   | 2.74                     | 0.56              |
| 1:AA:1762:A:C5'  | 1:AA:1763:G:OP2   | 2.53                     | 0.56              |
| 1:AA:1790:C:O2'  | 4:AD:213:ARG:CZ   | 2.54                     | 0.56              |
| 1:AA:1799:G:C6   | 4:AD:177:LEU:HD12 | 2.40                     | 0.56              |
| 1:AA:1804:C:C4'  | 4:AD:250:TRP:CH2  | 2.72                     | 0.56              |
| 1:AA:1838:C:H2'  | 1:AA:1898:U:C5    | 2.40                     | 0.56              |
| 1:AA:1934:C:H4'  | 1:AA:1974:C:H4'   | 1.86                     | 0.56              |
| 1:AA:1944:U:O4'  | 1:AA:1955:U:C6    | 2.58                     | 0.56              |
| 1:AA:1947:C:N3   | 1:AA:1948:G:C8    | 2.74                     | 0.56              |
| 1:AA:1982:C:C4   | 1:AA:1983:C:N4    | 2.72                     | 0.56              |
| 1:AA:1993:U:O2'  | 1:AA:1994:C:H5'   | 2.05                     | 0.56              |
| 1:AA:2139:C:H2'  | 1:AA:2140:C:H6    | 1.70                     | 0.56              |
| 1:AA:2208:U:H1'  | 1:AA:2217:G:H1    | 1.70                     | 0.56              |
| 1:AA:2208:U:C2'  | 1:AA:2209:C:H5'   | 2.35                     | 0.56              |
| 1:AA:2215:G:P    | 1:AA:2215:G:H8    | 2.29                     | 0.56              |
| 1:AA:2238:G:H2'  | 1:AA:2239:G:H5''  | 1.87                     | 0.56              |
| 1:AA:2259:G:N2   | 1:AA:2282:G:C5    | 2.74                     | 0.56              |
| 1:AA:2287:A:O2'  | 1:AA:2288:A:O5'   | 2.16                     | 0.56              |
| 1:AA:2322:A:N3   | 1:AA:2323:G:H5'   | 2.19                     | 0.56              |
| 1:AA:2324:C:O2   | 1:AA:2385:C:C5    | 2.58                     | 0.56              |
| 1:AA:2333:A:C4'  | 1:AA:2335:A:O4'   | 2.52                     | 0.56              |
| 1:AA:2345:G:C5   | 1:AA:2371:G:N2    | 2.73                     | 0.56              |
| 1:AA:2352:A:C2   | 22:AX:34:GLY:HA3  | 2.40                     | 0.56              |
| 1:AA:2373:G:C6   | 1:AA:2374:C:N4    | 2.73                     | 0.56              |
| 1:AA:2385:C:N3   | 1:AA:2386:C:C5    | 2.74                     | 0.56              |
| 1:AA:2387:U:H1'  | 22:AX:41:ARG:CZ   | 2.33                     | 0.56              |
| 1:AA:2450:A:C2'  | 1:AA:2451:A:H5'   | 2.35                     | 0.56              |
| 1:AA:2472:G:O5'  | 1:AA:2472:G:C8    | 2.57                     | 0.56              |
| 1:AA:2479:G:H5'' | 1:AA:2537:U:C4'   | 2.35                     | 0.56              |
| 1:AA:2576:G:OP2  | 1:AA:2576:G:N2    | 2.39                     | 0.56              |
| 1:AA:2601:C:O2   | 1:AA:2603:G:N7    | 2.38                     | 0.56              |
| 1:AA:2646:C:C2'  | 1:AA:2647:U:H5'   | 2.35                     | 0.56              |
| 1:AA:2717:G:C2   | 1:AA:2718:G:C5    | 2.94                     | 0.56              |
| 1:AA:2723:C:O2'  | 13:AO:2:ARG:CA    | 2.51                     | 0.56              |
| 1:AA:2748:A:N3   | 8:AH:67:LEU:HD11  | 2.20                     | 0.56              |
| 1:AA:2749:A:C2   | 1:AA:2757:A:N1    | 2.74                     | 0.56              |
| 1:AA:2781:A:C3'  | 1:AA:2782:G:H4'   | 2.35                     | 0.56              |
| 1:AA:2840:C:O2'  | 1:AA:2841:C:H5'   | 2.05                     | 0.56              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:2853:C:H2'    | 1:AA:2854:G:C8     | 2.39                     | 0.56              |
| 2:AB:43:C:O5'      | 2:AB:43:C:C6       | 2.48                     | 0.56              |
| 2:AB:77:U:O3'      | 21:AW:78:LYS:CE    | 2.47                     | 0.56              |
| 3:AC:33:ALA:CB     | 3:AC:39:GLU:OE1    | 2.54                     | 0.56              |
| 3:AC:64:LEU:HD11   | 3:AC:161:ILE:HG12  | 1.86                     | 0.56              |
| 3:AC:76:ALA:HB2    | 3:AC:153:ILE:HD11  | 1.84                     | 0.56              |
| 3:AC:81:GLU:OE2    | 3:AC:82:LYS:HD3    | 2.05                     | 0.56              |
| 3:AC:93:TYR:CZ     | 3:AC:109:ASP:HB3   | 2.41                     | 0.56              |
| 3:AC:153:ILE:HA    | 3:AC:156:ILE:CD1   | 2.26                     | 0.56              |
| 4:AD:5:LYS:HD3     | 4:AD:31:LYS:HZ2    | 1.70                     | 0.56              |
| 4:AD:90:ALA:O      | 4:AD:91:ARG:O      | 2.23                     | 0.56              |
| 4:AD:111:LEU:CB    | 4:AD:115:GLN:HE22  | 2.13                     | 0.56              |
| 4:AD:219:PRO:C     | 4:AD:220:HIS:CG    | 2.83                     | 0.56              |
| 5:AE:4:ILE:HG13    | 5:AE:27:LEU:CD1    | 2.34                     | 0.56              |
| 5:AE:7:VAL:CG1     | 5:AE:196:VAL:HG23  | 2.32                     | 0.56              |
| 5:AE:127:ASP:CG    | 5:AE:135:HIS:H     | 2.12                     | 0.56              |
| 5:AE:175:VAL:O     | 5:AE:175:VAL:HG23  | 2.04                     | 0.56              |
| 5:AE:201:THR:O     | 5:AE:202:LYS:HD3   | 2.05                     | 0.56              |
| 6:AF:31:HIS:HB2    | 11:AM:14:LYS:NZ    | 2.10                     | 0.56              |
| 6:AF:103:LYS:HB3   | 6:AF:107:LYS:CE    | 2.32                     | 0.56              |
| 6:AF:133:ASN:CG    | 6:AF:162:LEU:HD13  | 2.31                     | 0.56              |
| 6:AF:203:GLN:N     | 6:AF:203:GLN:NE2   | 2.52                     | 0.56              |
| 7:AG:12:TYR:CG     | 7:AG:13:GLU:N      | 2.72                     | 0.56              |
| 7:AG:79:ASN:O      | 7:AG:82:LEU:HD23   | 2.04                     | 0.56              |
| 8:AH:11:VAL:HG13   | 8:AH:15:VAL:HG12   | 1.85                     | 0.56              |
| 8:AH:51:ARG:HD3    | 8:AH:52:VAL:H      | 1.70                     | 0.56              |
| 8:AH:68:THR:O      | 8:AH:72:ILE:HG13   | 2.06                     | 0.56              |
| 9:AK:46:VAL:O      | 9:AK:47:ALA:CB     | 2.52                     | 0.56              |
| 10:AL:34:THR:O     | 10:AL:61:VAL:HG21  | 2.05                     | 0.56              |
| 10:AL:73:ASP:HB3   | 15:AQ:79:HIS:CD2   | 2.39                     | 0.56              |
| 10:AL:86:ILE:CG2   | 10:AL:87:ILE:N     | 2.68                     | 0.56              |
| 10:AL:112:MET:HA   | 10:AL:115:VAL:HG21 | 1.87                     | 0.56              |
| 11:AM:7:ARG:HD3    | 11:AM:8:PRO:HD3    | 1.87                     | 0.56              |
| 11:AM:99:LEU:CD2   | 11:AM:101:VAL:HG13 | 2.35                     | 0.56              |
| 11:AM:126:VAL:HB   | 11:AM:146:VAL:HG23 | 1.86                     | 0.56              |
| 12:AN:6:ARG:NH2    | 12:AN:9:TYR:N      | 2.53                     | 0.56              |
| 12:AN:34:LEU:HD21  | 12:AN:118:LEU:HD22 | 1.88                     | 0.56              |
| 12:AN:77:LYS:HA    | 12:AN:89:ASN:HB2   | 1.88                     | 0.56              |
| 12:AN:85:LYS:O     | 12:AN:87:LYS:N     | 2.38                     | 0.56              |
| 12:AN:98:LYS:CE    | 12:AN:98:LYS:N     | 2.68                     | 0.56              |
| 12:AN:102:VAL:HG13 | 12:AN:104:PHE:CE1  | 2.40                     | 0.56              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 12:AN:114:ALA:O    | 12:AN:115:MET:C   | 2.45                     | 0.56              |
| 12:AN:116:GLU:CA   | 12:AN:119:ARG:HG3 | 2.34                     | 0.56              |
| 13:AO:14:SER:HA    | 13:AO:17:ARG:CD   | 2.36                     | 0.56              |
| 13:AO:41:ALA:O     | 13:AO:42:LYS:C    | 2.48                     | 0.56              |
| 13:AO:86:ARG:NH1   | 13:AO:87:TYR:HE2  | 2.03                     | 0.56              |
| 13:AO:102:GLU:CD   | 13:AO:103:ARG:HG2 | 2.31                     | 0.56              |
| 14:AP:19:LYS:HD3   | 14:AP:19:LYS:C    | 2.31                     | 0.56              |
| 14:AP:93:LYS:O     | 14:AP:98:VAL:CG1  | 2.54                     | 0.56              |
| 15:AQ:50:ILE:HG23  | 15:AQ:68:TYR:HB2  | 1.86                     | 0.56              |
| 16:AR:16:LYS:CG    | 16:AR:20:LEU:HD21 | 2.35                     | 0.56              |
| 16:AR:40:PHE:HD2   | 17:AS:84:LYS:HG2  | 1.70                     | 0.56              |
| 16:AR:92:ARG:O     | 16:AR:94:ASN:N    | 2.34                     | 0.56              |
| 17:AS:62:LEU:CD1   | 17:AS:96:ILE:HD13 | 2.35                     | 0.56              |
| 18:AT:8:ARG:C      | 18:AT:102:HIS:HD2 | 2.12                     | 0.56              |
| 19:AU:15:GLU:HG3   | 19:AU:16:LYS:N    | 2.19                     | 0.56              |
| 19:AU:36:LYS:O     | 19:AU:39:ILE:HB   | 2.05                     | 0.56              |
| 20:AV:98:VAL:O     | 20:AV:99:CYS:C    | 2.47                     | 0.56              |
| 21:AW:17:ALA:HA    | 21:AW:20:ARG:CZ   | 2.35                     | 0.56              |
| 21:AW:25:PRO:HG2   | 21:AW:85:HIS:HA   | 1.88                     | 0.56              |
| 21:AW:31:ARG:HG2   | 21:AW:31:ARG:HH11 | 1.69                     | 0.56              |
| 21:AW:40:ASP:O     | 21:AW:44:PHE:CD1  | 2.59                     | 0.56              |
| 21:AW:110:GLY:HA2  | 21:AW:144:LEU:O   | 2.06                     | 0.56              |
| 21:AW:116:VAL:HG12 | 21:AW:176:PRO:HA  | 1.87                     | 0.56              |
| 21:AW:118:GLN:HB2  | 21:AW:144:LEU:CD2 | 2.27                     | 0.56              |
| 21:AW:127:LYS:HD3  | 21:AW:165:VAL:CG2 | 2.31                     | 0.56              |
| 22:AX:50:ASN:HB2   | 22:AX:81:VAL:HB   | 1.87                     | 0.56              |
| 22:AX:54:GLY:C     | 22:AX:56:ASP:H    | 2.10                     | 0.56              |
| 23:AY:6:GLU:O      | 23:AY:7:GLU:C     | 2.48                     | 0.56              |
| 23:AY:7:GLU:C      | 23:AY:10:LYS:HG2  | 2.30                     | 0.56              |
| 23:AY:59:LEU:HD11  | 23:AY:63:ARG:HD3  | 1.86                     | 0.56              |
| 25:Aa:5:ILE:HD13   | 25:Aa:60:GLN:OE1  | 2.05                     | 0.56              |
| 26:Ab:50:GLY:O     | 26:Ab:51:TYR:HB3  | 2.04                     | 0.56              |
| 27:Ac:24:GLU:CD    | 29:Ae:37:SER:HB2  | 2.30                     | 0.56              |
| 29:Ae:5:LYS:C      | 29:Ae:7:HIS:N     | 2.64                     | 0.56              |
| 29:Ae:15:LYS:O     | 29:Ae:22:VAL:CG1  | 2.50                     | 0.56              |
| 31:AI:53:VAL:O     | 31:AI:54:ALA:HB3  | 2.05                     | 0.56              |
| 32:AJ:17:ALA:HB1   | 32:AJ:41:PHE:N    | 2.20                     | 0.56              |
| 32:AJ:27:LEU:HB3   | 32:AJ:59:ILE:HD12 | 1.86                     | 0.56              |
| 34:BA:22:G:H4'     | 34:BA:885:G:C8    | 2.41                     | 0.56              |
| 34:BA:32:A:H2'     | 34:BA:33:A:C8     | 2.41                     | 0.56              |
| 34:BA:60:A:H62     | 34:BA:110:C:H42   | 1.53                     | 0.56              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:80:G:H3'     | 34:BA:81:G:H8      | 1.70                     | 0.56              |
| 34:BA:81:G:H3'     | 34:BA:82:U:H5''    | 1.87                     | 0.56              |
| 34:BA:101:A:C4     | 34:BA:102:G:C8     | 2.93                     | 0.56              |
| 34:BA:103:C:H1'    | 34:BA:151:A:H2     | 1.70                     | 0.56              |
| 34:BA:132:C:O2'    | 34:BA:133:U:O5'    | 2.23                     | 0.56              |
| 34:BA:155:C:C2     | 34:BA:167:G:C2     | 2.94                     | 0.56              |
| 34:BA:189:U:C2     | 50:BU:63:ARG:NH2   | 2.72                     | 0.56              |
| 34:BA:482:A:N3     | 34:BA:482:A:C2'    | 2.66                     | 0.56              |
| 34:BA:508:C:H4'    | 34:BA:509:A:O5'    | 2.03                     | 0.56              |
| 34:BA:539:A:OP1    | 45:BP:114:LYS:NZ   | 2.38                     | 0.56              |
| 34:BA:560:U:O5'    | 34:BA:566:G:N2     | 2.38                     | 0.56              |
| 34:BA:582:U:C5'    | 48:BS:64:ARG:NH2   | 2.64                     | 0.56              |
| 34:BA:654:G:H1'    | 34:BA:753:A:C2     | 2.40                     | 0.56              |
| 34:BA:815:A:C5     | 34:BA:1529:G:C6    | 2.93                     | 0.56              |
| 34:BA:818:G:O2'    | 34:BA:819:A:OP1    | 2.17                     | 0.56              |
| 34:BA:876:G:O2'    | 41:BL:11:THR:HG21  | 2.05                     | 0.56              |
| 34:BA:902:G:H2'    | 34:BA:903:G:H8     | 1.70                     | 0.56              |
| 34:BA:942:G:N2     | 42:BM:124:GLN:OE1  | 2.38                     | 0.56              |
| 34:BA:949:A:O2'    | 34:BA:971:G:N2     | 2.39                     | 0.56              |
| 34:BA:955:U:C1'    | 34:BA:1227:A:H61   | 2.03                     | 0.56              |
| 34:BA:973:G:N1     | 34:BA:974:A:C6     | 2.73                     | 0.56              |
| 34:BA:1103:C:O2'   | 35:BF:111:ARG:HD2  | 2.05                     | 0.56              |
| 34:BA:1171:G:H2'   | 34:BA:1172:C:C5    | 2.40                     | 0.56              |
| 34:BA:1321:C:C5    | 34:BA:1322:C:H3'   | 2.40                     | 0.56              |
| 34:BA:1333:A:H2'   | 34:BA:1334:G:C8    | 2.39                     | 0.56              |
| 34:BA:1348:U:O2    | 34:BA:1349:A:C8    | 2.57                     | 0.56              |
| 34:BA:1361:G:H8    | 34:BA:1361:G:H3'   | 1.69                     | 0.56              |
| 34:BA:1396:A:C2'   | 34:BA:1397:C:OP2   | 2.52                     | 0.56              |
| 34:BA:1438:G:C6    | 34:BA:1439:C:N4    | 2.73                     | 0.56              |
| 34:BA:1447:G:H2'   | 34:BA:1448:C:C6    | 2.39                     | 0.56              |
| 34:BA:1449:C:O2    | 34:BA:1450:U:O4'   | 2.22                     | 0.56              |
| 34:BA:1462:G:C6    | 34:BA:1463:C:N4    | 2.73                     | 0.56              |
| 34:BA:1537:U:C2    | 34:BA:1538:C:C6    | 2.94                     | 0.56              |
| 35:BF:115:LEU:HD13 | 35:BF:145:LEU:HG   | 1.88                     | 0.56              |
| 36:BG:58:GLU:N     | 36:BG:65:ALA:HB3   | 2.18                     | 0.56              |
| 37:BH:152:SER:HA   | 37:BH:155:LEU:HD21 | 1.88                     | 0.56              |
| 38:BI:63:ARG:HA    | 38:BI:66:MET:CG    | 2.33                     | 0.56              |
| 38:BI:150:ARG:HD3  | 38:BI:150:ARG:C    | 2.29                     | 0.56              |
| 39:BJ:89:MET:CE    | 51:BV:75:ILE:HG21  | 2.36                     | 0.56              |
| 40:BK:5:ARG:HB3    | 40:BK:5:ARG:HH11   | 1.68                     | 0.56              |
| 40:BK:47:CYS:SG    | 40:BK:50:ILE:HD12  | 2.46                     | 0.56              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 41:BL:8:ASP:OD2   | 41:BL:8:ASP:C     | 2.46                     | 0.56              |
| 41:BL:24:THR:O    | 41:BL:60:ARG:CA   | 2.54                     | 0.56              |
| 41:BL:44:PHE:HD1  | 41:BL:79:VAL:HG12 | 1.71                     | 0.56              |
| 41:BL:126:LYS:CE  | 41:BL:127:LEU:HB2 | 2.34                     | 0.56              |
| 42:BM:36:TYR:HD2  | 42:BM:37:PHE:CE2  | 2.23                     | 0.56              |
| 42:BM:47:LEU:HD21 | 42:BM:50:LEU:HD13 | 1.86                     | 0.56              |
| 43:BN:45:ARG:HG2  | 43:BN:65:LEU:O    | 2.04                     | 0.56              |
| 43:BN:52:GLY:H    | 43:BN:59:SER:CB   | 2.18                     | 0.56              |
| 43:BN:65:LEU:CB   | 47:BR:56:VAL:HG13 | 2.31                     | 0.56              |
| 44:BO:85:ARG:NH2  | 44:BO:111:ASP:OD2 | 2.39                     | 0.56              |
| 45:BP:23:LYS:O    | 45:BP:24:VAL:HG23 | 2.05                     | 0.56              |
| 46:BQ:91:ARG:NH1  | 46:BQ:91:ARG:HG2  | 2.20                     | 0.56              |
| 47:BR:27:CYS:C    | 47:BR:40:CYS:SG   | 2.88                     | 0.56              |
| 47:BR:40:CYS:O    | 47:BR:44:LEU:HB3  | 2.04                     | 0.56              |
| 48:BS:27:VAL:HG12 | 48:BS:31:LEU:HD22 | 1.87                     | 0.56              |
| 49:BT:49:LEU:HD12 | 49:BT:50:LYS:H    | 1.70                     | 0.56              |
| 49:BT:67:THR:HB   | 49:BT:70:ALA:CB   | 2.36                     | 0.56              |
| 51:BV:75:ILE:O    | 51:BV:76:LEU:C    | 2.45                     | 0.56              |
| 52:BW:32:LYS:HB3  | 52:BW:50:ALA:HB3  | 1.86                     | 0.56              |
| 52:BW:80:TYR:CG   | 52:BW:81:ARG:N    | 2.73                     | 0.56              |
| 55:BC:68:C:O2'    | 55:BC:69:G:H5'    | 2.05                     | 0.56              |
| 56:BD:7:A:C2      | 56:BD:66:U:O2     | 2.56                     | 0.56              |
| 56:BD:48:C:N3     | 56:BD:59:U:C2     | 2.73                     | 0.56              |
| 57:BZ:81:PHE:C    | 57:BZ:361:ARG:CG  | 2.71                     | 0.56              |
| 57:BZ:89:MET:CG   | 57:BZ:119:TYR:CZ  | 2.88                     | 0.56              |
| 57:BZ:119:TYR:HB3 | 57:BZ:120:GLY:CA  | 2.36                     | 0.56              |
| 57:BZ:131:ASP:CG  | 57:BZ:166:SER:CA  | 2.77                     | 0.56              |
| 57:BZ:308:SER:HG  | 57:BZ:357:ARG:HG3 | 1.70                     | 0.56              |
| 57:BZ:311:PHE:HB2 | 57:BZ:356:PHE:CB  | 2.21                     | 0.56              |
| 1:AA:280:C:N3     | 1:AA:283:A:N7     | 2.54                     | 0.56              |
| 1:AA:513:A:C2     | 1:AA:514:A:H8     | 2.24                     | 0.56              |
| 1:AA:630:G:H5''   | 29:Ae:46:ARG:CZ   | 2.36                     | 0.56              |
| 1:AA:740:U:O4'    | 1:AA:1784:A:C5    | 2.58                     | 0.56              |
| 1:AA:948:G:C6     | 1:AA:970:C:C2     | 2.94                     | 0.56              |
| 1:AA:1015:G:O2'   | 1:AA:1016:G:H5'   | 2.06                     | 0.56              |
| 1:AA:1048:A:C8    | 1:AA:1110:G:O2'   | 2.55                     | 0.56              |
| 1:AA:1092:C:C6    | 1:AA:1092:C:C3'   | 2.87                     | 0.56              |
| 1:AA:1221:C:N3    | 1:AA:1229:G:N1    | 2.54                     | 0.56              |
| 1:AA:1303:G:N7    | 1:AA:1304:C:C4    | 2.73                     | 0.56              |
| 1:AA:1358:G:N1    | 1:AA:1372:U:OP2   | 2.36                     | 0.56              |
| 1:AA:1652:A:N7    | 1:AA:1653:G:N3    | 2.52                     | 0.56              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1665:A:O3'    | 10:AL:1:MET:N      | 2.38                     | 0.56              |
| 1:AA:1891:G:N3     | 1:AA:1891:G:H2'    | 2.21                     | 0.56              |
| 1:AA:1941:C:O2     | 1:AA:1941:C:C2'    | 2.52                     | 0.56              |
| 1:AA:2194:G:H2'    | 1:AA:2194:G:N3     | 2.19                     | 0.56              |
| 1:AA:2259:G:O4'    | 1:AA:2427:C:C6     | 2.58                     | 0.56              |
| 1:AA:2286:A:H4'    | 1:AA:2287:A:N3     | 2.20                     | 0.56              |
| 1:AA:2416:C:O5'    | 1:AA:2416:C:C6     | 2.58                     | 0.56              |
| 1:AA:2478:A:O4'    | 30:Af:31:LYS:NZ    | 2.39                     | 0.56              |
| 1:AA:2512:C:OP1    | 5:AE:120:TRP:HH2   | 1.89                     | 0.56              |
| 1:AA:2532:G:C4'    | 1:AA:2657:A:C6     | 2.86                     | 0.56              |
| 1:AA:2559:C:O2'    | 1:AA:2560:C:C5'    | 2.53                     | 0.56              |
| 1:AA:2583:G:N1     | 59:AA:3002:8AN:C2' | 2.68                     | 0.56              |
| 1:AA:2669:G:H2'    | 1:AA:2670:A:O4'    | 2.05                     | 0.56              |
| 1:AA:2721:A:C2'    | 1:AA:2722:G:H8     | 2.19                     | 0.56              |
| 1:AA:2749:A:N1     | 1:AA:2750:A:N6     | 2.45                     | 0.56              |
| 1:AA:2749:A:O3'    | 8:AH:62:LYS:HE2    | 2.05                     | 0.56              |
| 1:AA:2794:C:H3'    | 1:AA:2799:A:H2     | 1.71                     | 0.56              |
| 3:AC:156:ILE:C     | 3:AC:159:GLY:C     | 2.74                     | 0.56              |
| 4:AD:8:PRO:HD2     | 4:AD:26:LYS:H      | 1.71                     | 0.56              |
| 4:AD:264:LYS:O     | 4:AD:265:PRO:C     | 2.48                     | 0.56              |
| 5:AE:102:VAL:HG22  | 5:AE:104:VAL:HG23  | 1.87                     | 0.56              |
| 6:AF:18:ARG:HG3    | 6:AF:19:GLU:N      | 2.21                     | 0.56              |
| 6:AF:37:VAL:HA     | 6:AF:184:TYR:CE2   | 2.41                     | 0.56              |
| 7:AG:162:THR:O     | 7:AG:162:THR:HG22  | 2.06                     | 0.56              |
| 8:AH:7:LEU:N       | 8:AH:8:PRO:HD2     | 2.18                     | 0.56              |
| 9:AK:34:LEU:HD21   | 9:AK:120:LEU:HD13  | 1.88                     | 0.56              |
| 9:AK:133:GLN:OE1   | 9:AK:133:GLN:HA    | 2.05                     | 0.56              |
| 10:AL:89:ASN:HD22  | 10:AL:91:LEU:CB    | 2.19                     | 0.56              |
| 11:AM:23:PRO:HB2   | 11:AM:29:LYS:H     | 1.65                     | 0.56              |
| 11:AM:93:GLY:O     | 11:AM:102:ARG:NH2  | 2.39                     | 0.56              |
| 12:AN:109:VAL:HG11 | 12:AN:114:ALA:N    | 2.20                     | 0.56              |
| 13:AO:25:ALA:HA    | 13:AO:48:VAL:CG2   | 2.34                     | 0.56              |
| 14:AP:51:ALA:O     | 14:AP:73:LEU:HD12  | 2.05                     | 0.56              |
| 14:AP:68:GLN:O     | 14:AP:70:GLY:N     | 2.38                     | 0.56              |
| 16:AR:105:VAL:HG22 | 16:AR:109:LEU:HD11 | 1.87                     | 0.56              |
| 17:AS:6:LYS:HZ3    | 17:AS:10:LYS:HD2   | 1.70                     | 0.56              |
| 18:AT:6:ILE:CG2    | 18:AT:7:ALA:N      | 2.68                     | 0.56              |
| 20:AV:1:MET:HG2    | 20:AV:33:LYS:CD    | 2.36                     | 0.56              |
| 21:AW:118:GLN:OE1  | 21:AW:172:ALA:HB1  | 2.05                     | 0.56              |
| 21:AW:161:VAL:CG1  | 21:AW:162:GLU:H    | 2.15                     | 0.56              |
| 22:AX:32:ARG:CB    | 22:AX:32:ARG:CZ    | 2.83                     | 0.56              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 23:AY:36:ILE:CG2   | 23:AY:37:GLY:H    | 2.17                     | 0.56              |
| 24:AZ:9:VAL:CG1    | 24:AZ:54:VAL:HA   | 2.33                     | 0.56              |
| 29:Ae:23:VAL:HG11  | 29:Ae:46:ARG:HB3  | 1.87                     | 0.56              |
| 29:Ae:34:TRP:O     | 29:Ae:36:LYS:N    | 2.33                     | 0.56              |
| 30:Af:9:ARG:C      | 30:Af:10:ILE:CG1  | 2.78                     | 0.56              |
| 32:AJ:22:PRO:O     | 32:AJ:24:GLY:HA3  | 2.04                     | 0.56              |
| 32:AJ:105:LEU:HD22 | 32:AJ:123:ALA:CB  | 2.35                     | 0.56              |
| 33:Ag:290:UNK:C    | 33:Ag:342:UNK:C   | 2.77                     | 0.56              |
| 34:BA:17:U:H2'     | 34:BA:18:C:C6     | 2.37                     | 0.56              |
| 34:BA:237:C:H2'    | 34:BA:238:G:C8    | 2.40                     | 0.56              |
| 34:BA:250:A:H5'    | 34:BA:252:U:O4'   | 2.05                     | 0.56              |
| 34:BA:263:A:C5'    | 53:BX:75:ASN:HD21 | 2.19                     | 0.56              |
| 34:BA:337:C:N4     | 34:BA:338:A:N6    | 2.54                     | 0.56              |
| 34:BA:475:G:C2'    | 34:BA:476:G:C8    | 2.79                     | 0.56              |
| 34:BA:562:C:O2     | 45:BP:15:ARG:O    | 2.23                     | 0.56              |
| 34:BA:600:C:H5'    | 41:BL:129:VAL:HA  | 1.86                     | 0.56              |
| 34:BA:640:A:H2'    | 34:BA:641:U:C5'   | 2.36                     | 0.56              |
| 34:BA:702:A:HO2'   | 34:BA:703:G:P     | 2.28                     | 0.56              |
| 34:BA:706:A:H4'    | 44:BO:29:ILE:HD13 | 1.88                     | 0.56              |
| 34:BA:763:G:C2'    | 34:BA:764:C:O5'   | 2.53                     | 0.56              |
| 34:BA:809:G:O2'    | 34:BA:810:C:H5'   | 2.05                     | 0.56              |
| 34:BA:918:A:H2'    | 34:BA:919:A:H8    | 1.68                     | 0.56              |
| 34:BA:975:A:C8     | 34:BA:1365:G:N2   | 2.74                     | 0.56              |
| 34:BA:1002:G:C6    | 34:BA:1003:G:O6   | 2.59                     | 0.56              |
| 34:BA:1082:G:H2'   | 34:BA:1083:U:H5'  | 1.88                     | 0.56              |
| 34:BA:1187:G:H2'   | 34:BA:1188:A:C8   | 2.39                     | 0.56              |
| 34:BA:1305:G:OP1   | 54:BY:2:GLY:HA3   | 2.05                     | 0.56              |
| 34:BA:1394:A:H62   | 34:BA:1501:C:C4'  | 2.18                     | 0.56              |
| 34:BA:1453:G:H2'   | 34:BA:1454:G:C4'  | 2.31                     | 0.56              |
| 34:BA:1461:G:C4    | 34:BA:1462:G:N7   | 2.74                     | 0.56              |
| 35:BF:54:THR:HG23  | 35:BF:199:TYR:CB  | 2.36                     | 0.56              |
| 35:BF:134:GLU:HB3  | 35:BF:135:GLN:NE2 | 2.21                     | 0.56              |
| 35:BF:171:ALA:CA   | 35:BF:174:VAL:HB  | 2.36                     | 0.56              |
| 36:BG:117:ALA:O    | 36:BG:118:GLN:C   | 2.49                     | 0.56              |
| 36:BG:139:GLN:O    | 36:BG:143:GLU:HG3 | 2.05                     | 0.56              |
| 37:BH:13:ARG:HH21  | 37:BH:40:PRO:CA   | 2.14                     | 0.56              |
| 37:BH:25:ARG:C     | 37:BH:27:TYR:N    | 2.59                     | 0.56              |
| 37:BH:93:PHE:O     | 37:BH:96:LEU:N    | 2.39                     | 0.56              |
| 37:BH:198:VAL:CG2  | 37:BH:199:ASN:H   | 2.14                     | 0.56              |
| 38:BI:18:ARG:HB2   | 38:BI:26:PHE:HA   | 1.85                     | 0.56              |
| 38:BI:75:THR:HG23  | 38:BI:75:THR:O    | 2.05                     | 0.56              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 38:BI:106:PRO:O    | 38:BI:109:ILE:CG2  | 2.54                     | 0.56              |
| 42:BM:49:PRO:HD3   | 42:BM:78:LYS:NZ    | 2.20                     | 0.56              |
| 42:BM:111:ARG:HG2  | 42:BM:112:LYS:O    | 2.05                     | 0.56              |
| 43:BN:6:ILE:HD11   | 43:BN:73:ASP:H     | 1.70                     | 0.56              |
| 43:BN:32:ALA:CB    | 43:BN:75:ILE:HB    | 2.34                     | 0.56              |
| 44:BO:106:LYS:HG2  | 44:BO:107:SER:N    | 2.19                     | 0.56              |
| 46:BQ:5:ALA:CB     | 46:BQ:67:GLU:CD    | 2.73                     | 0.56              |
| 47:BR:55:GLY:O     | 47:BR:56:VAL:O     | 2.23                     | 0.56              |
| 48:BS:8:LYS:HE2    | 48:BS:12:ILE:HD11  | 1.86                     | 0.56              |
| 48:BS:83:GLU:O     | 48:BS:84:LYS:C     | 2.49                     | 0.56              |
| 51:BV:47:THR:H     | 51:BV:49:LYS:NZ    | 2.00                     | 0.56              |
| 51:BV:63:GLN:O     | 51:BV:67:ALA:CB    | 2.53                     | 0.56              |
| 52:BW:6:LYS:CG     | 52:BW:41:VAL:HG11  | 2.36                     | 0.56              |
| 53:BX:40:ALA:O     | 53:BX:41:ILE:C     | 2.47                     | 0.56              |
| 53:BX:73:HIS:H     | 53:BX:76:ALA:HB2   | 1.65                     | 0.56              |
| 57:BZ:6:ARG:CD     | 57:BZ:195:PRO:O    | 2.54                     | 0.56              |
| 57:BZ:10:ILE:CA    | 57:BZ:74:ASP:H     | 2.16                     | 0.56              |
| 57:BZ:87:ARG:NH2   | 57:BZ:210:SER:C    | 2.63                     | 0.56              |
| 57:BZ:119:TYR:CG   | 57:BZ:120:GLY:HA3  | 2.40                     | 0.56              |
| 57:BZ:226:ILE:CG2  | 57:BZ:267:LEU:HA   | 2.36                     | 0.56              |
| 57:BZ:258:LEU:HD13 | 57:BZ:260:LEU:CD2  | 2.31                     | 0.56              |
| 57:BZ:380:LEU:H    | 57:BZ:580:VAL:HG23 | 1.70                     | 0.56              |
| 57:BZ:403:VAL:C    | 57:BZ:465:LEU:HB2  | 2.31                     | 0.56              |
| 57:BZ:409:GLU:CD   | 57:BZ:409:GLU:H    | 2.13                     | 0.56              |
| 57:BZ:546:MET:HB3  | 57:BZ:547:ARG:HA   | 1.87                     | 0.56              |
| 1:AA:67:U:H2'      | 1:AA:68:G:H8       | 1.67                     | 0.56              |
| 1:AA:67:U:O5'      | 1:AA:67:U:H6       | 1.89                     | 0.56              |
| 1:AA:72:U:C4       | 1:AA:112:U:H1'     | 2.40                     | 0.56              |
| 1:AA:137(A):G:N2   | 1:AA:142:G:C2      | 2.73                     | 0.56              |
| 1:AA:246:C:O2'     | 1:AA:385:C:H4'     | 2.05                     | 0.56              |
| 1:AA:270(W):G:C4   | 1:AA:270(X):G:C8   | 2.94                     | 0.56              |
| 1:AA:281:G:C8      | 1:AA:281:G:OP1     | 2.59                     | 0.56              |
| 1:AA:373:U:C2      | 1:AA:400:G:N2      | 2.73                     | 0.56              |
| 1:AA:600:G:O2'     | 6:AF:104:LYS:HG2   | 2.04                     | 0.56              |
| 1:AA:721:C:C2      | 1:AA:722:A:N7      | 2.73                     | 0.56              |
| 1:AA:730:C:H5''    | 1:AA:763:G:OP1     | 2.05                     | 0.56              |
| 1:AA:774:A:O2'     | 1:AA:775:G:P       | 2.63                     | 0.56              |
| 1:AA:792:G:H21     | 1:AA:2072:G:C2'    | 2.19                     | 0.56              |
| 1:AA:1054:A:H8     | 1:AA:1054:A:O5'    | 1.88                     | 0.56              |
| 1:AA:1247:A:O2'    | 1:AA:1248:G:P      | 2.63                     | 0.56              |
| 1:AA:1417:C:O3'    | 1:AA:1588:C:H1'    | 2.05                     | 0.56              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1428:C:C4    | 1:AA:1569:A:H5''  | 2.41                     | 0.56              |
| 1:AA:1439:A:C5    | 1:AA:1440:G:H1'   | 2.41                     | 0.56              |
| 1:AA:1482:U:H2'   | 1:AA:1483:G:H4'   | 1.86                     | 0.56              |
| 1:AA:1580:A:H2'   | 1:AA:1581:G:C1'   | 2.36                     | 0.56              |
| 1:AA:1790:C:OP2   | 4:AD:221:VAL:O    | 2.22                     | 0.56              |
| 1:AA:1819:A:OP2   | 4:AD:157:ARG:NE   | 2.39                     | 0.56              |
| 1:AA:1834:U:C1'   | 1:AA:1969:A:H2    | 2.19                     | 0.56              |
| 1:AA:1956:U:O2'   | 1:AA:1985:G:H4'   | 2.06                     | 0.56              |
| 1:AA:1957:C:C2    | 1:AA:1958:C:C5    | 2.93                     | 0.56              |
| 1:AA:1973:G:H2'   | 1:AA:1974:C:H6    | 1.70                     | 0.56              |
| 1:AA:2053:G:O2'   | 1:AA:2054:A:C5'   | 2.53                     | 0.56              |
| 1:AA:2083:G:C4    | 1:AA:2084:C:C5    | 2.93                     | 0.56              |
| 1:AA:2215:G:H2'   | 1:AA:2216:G:H8    | 1.69                     | 0.56              |
| 1:AA:2246:G:C4    | 1:AA:2426:A:C2    | 2.93                     | 0.56              |
| 1:AA:2296:U:C5    | 14:AP:5:THR:HG23  | 2.41                     | 0.56              |
| 1:AA:2376:A:C2    | 1:AA:2377:A:C4    | 2.94                     | 0.56              |
| 1:AA:2543:G:N2    | 1:AA:2765:A:C2    | 2.74                     | 0.56              |
| 1:AA:2572:A:OP1   | 1:AA:2574:G:H4'   | 2.06                     | 0.56              |
| 1:AA:2666:C:C2'   | 1:AA:2667:C:H5''  | 2.35                     | 0.56              |
| 1:AA:2682:U:C2'   | 1:AA:2683:C:O5'   | 2.53                     | 0.56              |
| 1:AA:2746:U:O4    | 1:AA:2756:U:H5    | 1.77                     | 0.56              |
| 1:AA:2759:G:O2'   | 1:AA:2760:C:H5'   | 2.04                     | 0.56              |
| 1:AA:2823:A:OP2   | 5:AE:113:PHE:CE1  | 2.59                     | 0.56              |
| 3:AC:7:TYR:CE2    | 3:AC:11:LEU:HD22  | 2.41                     | 0.56              |
| 4:AD:69:ARG:C     | 4:AD:70:TRP:CG    | 2.83                     | 0.56              |
| 4:AD:107:ALA:H    | 4:AD:108:PRO:CD   | 2.09                     | 0.56              |
| 4:AD:132:PRO:HA   | 4:AD:189:CYS:O    | 2.06                     | 0.56              |
| 4:AD:183:ARG:HA   | 4:AD:268:ARG:CA   | 2.35                     | 0.56              |
| 4:AD:236:GLY:O    | 4:AD:237:GLU:HG2  | 2.05                     | 0.56              |
| 5:AE:7:VAL:HG11   | 5:AE:196:VAL:CG2  | 2.32                     | 0.56              |
| 5:AE:100:GLU:HB2  | 5:AE:172:VAL:HG11 | 1.87                     | 0.56              |
| 7:AG:29:TRP:C     | 7:AG:31:VAL:N     | 2.56                     | 0.56              |
| 7:AG:35:GLU:HA    | 7:AG:100:TRP:HH2  | 1.70                     | 0.56              |
| 7:AG:74:LYS:CD    | 7:AG:87:PRO:HG3   | 2.31                     | 0.56              |
| 8:AH:25:LYS:HZ3   | 8:AH:32:GLU:CB    | 2.14                     | 0.56              |
| 8:AH:149:ARG:NH1  | 8:AH:164:TYR:HB3  | 2.20                     | 0.56              |
| 9:AK:17:ASP:OD1   | 9:AK:18:ALA:N     | 2.39                     | 0.56              |
| 11:AM:107:LYS:CE  | 11:AM:110:TYR:HB3 | 2.33                     | 0.56              |
| 13:AO:104:ARG:NH2 | 13:AO:107:ASP:OD1 | 2.38                     | 0.56              |
| 14:AP:15:ARG:HH21 | 14:AP:15:ARG:HG2  | 1.69                     | 0.56              |
| 17:AS:13:ARG:NH2  | 17:AS:43:GLU:OE2  | 2.37                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 18:AT:12:ILE:HD12 | 18:AT:46:PHE:CE2   | 2.41                     | 0.56              |
| 19:AU:26:TYR:CB   | 19:AU:28:PHE:CZ    | 2.88                     | 0.56              |
| 19:AU:79:ALA:C    | 19:AU:80:ILE:HD13  | 2.29                     | 0.56              |
| 20:AV:46:LYS:HD3  | 20:AV:52:SER:OG    | 2.05                     | 0.56              |
| 21:AW:99:TYR:CE1  | 21:AW:124:ILE:HB   | 2.41                     | 0.56              |
| 21:AW:102:LEU:CD1 | 21:AW:137:ILE:HG22 | 2.36                     | 0.56              |
| 27:Ac:17:LYS:HD3  | 27:Ac:17:LYS:H     | 1.70                     | 0.56              |
| 27:Ac:38:LYS:C    | 27:Ac:38:LYS:HD3   | 2.30                     | 0.56              |
| 34:BA:230:G:H4'   | 49:BT:25:ARG:NH1   | 2.20                     | 0.56              |
| 34:BA:261:U:C2'   | 34:BA:263:A:OP2    | 2.52                     | 0.56              |
| 34:BA:379:C:H2'   | 34:BA:380:G:C5'    | 2.35                     | 0.56              |
| 34:BA:412:A:H4'   | 34:BA:412:A:OP2    | 2.04                     | 0.56              |
| 34:BA:432:A:N7    | 34:BA:433:C:C6     | 2.74                     | 0.56              |
| 34:BA:689:C:P     | 44:BO:55:LYS:HZ2   | 2.29                     | 0.56              |
| 34:BA:712:A:O2'   | 34:BA:713:G:O4'    | 2.23                     | 0.56              |
| 34:BA:713:G:H2'   | 34:BA:714:G:N7     | 2.20                     | 0.56              |
| 34:BA:714:G:H8    | 34:BA:714:G:O5'    | 1.87                     | 0.56              |
| 34:BA:1002:G:N2   | 34:BA:1039:C:C4    | 2.74                     | 0.56              |
| 34:BA:1073:U:H2'  | 34:BA:1074:G:C8    | 2.32                     | 0.56              |
| 34:BA:1127:G:H21  | 34:BA:1147:C:N4    | 2.04                     | 0.56              |
| 34:BA:1164:G:N1   | 34:BA:1165:C:N3    | 2.53                     | 0.56              |
| 34:BA:1186:G:H21  | 47:BR:61:TRP:C     | 2.13                     | 0.56              |
| 34:BA:1220:G:N3   | 52:BW:54:GLY:C     | 2.63                     | 0.56              |
| 34:BA:1230:C:C5'  | 56:BE:30:G:C5'     | 2.83                     | 0.56              |
| 34:BA:1251:A:H2'  | 34:BA:1252:A:N7    | 2.20                     | 0.56              |
| 34:BA:1261:A:C2   | 34:BA:1262:C:C2    | 2.93                     | 0.56              |
| 34:BA:1278:U:H5'  | 34:BA:1279:A:C4'   | 2.35                     | 0.56              |
| 34:BA:1300:G:O2'  | 34:BA:1301:U:O5'   | 2.24                     | 0.56              |
| 35:BF:15:VAL:C    | 35:BF:16:HIS:HD1   | 2.14                     | 0.56              |
| 35:BF:69:LEU:HD22 | 35:BF:91:PRO:CB    | 2.35                     | 0.56              |
| 35:BF:101:MET:C   | 35:BF:103:THR:N    | 2.59                     | 0.56              |
| 35:BF:163:PHE:CA  | 35:BF:185:ILE:O    | 2.47                     | 0.56              |
| 35:BF:176:GLU:O   | 35:BF:180:LEU:CG   | 2.52                     | 0.56              |
| 36:BG:136:GLN:O   | 36:BG:137:ALA:C    | 2.47                     | 0.56              |
| 37:BH:21:LEU:CD1  | 37:BH:67:ILE:HG22  | 2.34                     | 0.56              |
| 37:BH:46:LYS:O    | 37:BH:47:ARG:C     | 2.48                     | 0.56              |
| 37:BH:59:ARG:HB3  | 37:BH:63:LYS:HZ2   | 1.69                     | 0.56              |
| 38:BI:142:LEU:H   | 38:BI:143:ARG:HE   | 1.52                     | 0.56              |
| 41:BL:61:VAL:CG1  | 41:BL:62:TYR:H     | 2.19                     | 0.56              |
| 41:BL:82:HIS:O    | 41:BL:137:VAL:CG1  | 2.52                     | 0.56              |
| 42:BM:50:LEU:HD21 | 42:BM:55:ALA:C     | 2.31                     | 0.56              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 42:BM:97:LYS:NZ    | 42:BM:102:LEU:HD22 | 2.21                     | 0.56              |
| 45:BP:85:ILE:HG13  | 45:BP:99:HIS:O     | 2.05                     | 0.56              |
| 45:BP:86:ARG:HH22  | 45:BP:119:LYS:HG2  | 1.70                     | 0.56              |
| 46:BQ:15:VAL:C     | 46:BQ:34:LEU:HD21  | 2.30                     | 0.56              |
| 47:BR:10:ALA:O     | 47:BR:12:ARG:HG2   | 2.05                     | 0.56              |
| 47:BR:18:VAL:HG23  | 47:BR:19:ARG:HG3   | 1.86                     | 0.56              |
| 50:BU:32:TYR:O     | 50:BU:33:GLY:C     | 2.48                     | 0.56              |
| 51:BV:75:ILE:HG22  | 51:BV:76:LEU:HD22  | 1.87                     | 0.56              |
| 52:BW:16:LEU:HD12  | 52:BW:19:VAL:HG12  | 1.87                     | 0.56              |
| 56:BE:5:G:O4'      | 56:BE:6:G:H2'      | 2.06                     | 0.56              |
| 57:BZ:38:THR:HB    | 57:BZ:39:GLN:C     | 2.30                     | 0.56              |
| 57:BZ:41:ARG:CG    | 57:BZ:42:VAL:HG13  | 2.36                     | 0.56              |
| 57:BZ:57:LEU:HD23  | 57:BZ:71:ASN:OD1   | 2.05                     | 0.56              |
| 57:BZ:58:ALA:HA    | 57:BZ:255:LEU:O    | 2.06                     | 0.56              |
| 57:BZ:107:PRO:O    | 57:BZ:110:ARG:HB2  | 2.06                     | 0.56              |
| 57:BZ:397:GLN:HB3  | 57:BZ:472:TYR:CA   | 2.31                     | 0.56              |
| 57:BZ:493:GLN:CA   | 57:BZ:519:TYR:HA   | 2.34                     | 0.56              |
| 57:BZ:543:LEU:HG   | 57:BZ:544:THR:CG2  | 2.21                     | 0.56              |
| 1:AA:37:C:O2'      | 6:AF:50:SER:OG     | 2.21                     | 0.56              |
| 1:AA:154:G:N2      | 1:AA:173:G:C2      | 2.73                     | 0.56              |
| 1:AA:192:C:O2      | 1:AA:192:C:C2'     | 2.46                     | 0.56              |
| 1:AA:270(F):U:C4   | 1:AA:270(G):C:C5   | 2.94                     | 0.56              |
| 1:AA:270(K):C:H5'' | 1:AA:270(L):U:C6   | 2.41                     | 0.56              |
| 1:AA:331:A:C2      | 1:AA:1209:G:C6     | 2.93                     | 0.56              |
| 1:AA:455:C:P       | 1:AA:455:C:O4'     | 2.63                     | 0.56              |
| 1:AA:530:G:H22     | 1:AA:2021:C:C2'    | 2.18                     | 0.56              |
| 1:AA:641:C:H2'     | 1:AA:642:G:C5'     | 2.35                     | 0.56              |
| 1:AA:662:G:N1      | 1:AA:663:G:O6      | 2.39                     | 0.56              |
| 1:AA:685:A:C5'     | 1:AA:686:G:H21     | 2.07                     | 0.56              |
| 1:AA:769:G:C2      | 1:AA:770:G:C8      | 2.93                     | 0.56              |
| 1:AA:775:G:N2      | 1:AA:788:A:OP2     | 2.38                     | 0.56              |
| 1:AA:811:U:C6      | 1:AA:811:U:C3'     | 2.88                     | 0.56              |
| 1:AA:859:G:O2'     | 1:AA:2268:A:C2     | 2.53                     | 0.56              |
| 1:AA:1000:A:N7     | 1:AA:1001:A:C5     | 2.74                     | 0.56              |
| 1:AA:1059:G:N2     | 32:AJ:130:SER:N    | 2.52                     | 0.56              |
| 1:AA:1142:U:H2'    | 1:AA:1142(A):A:C8  | 2.39                     | 0.56              |
| 1:AA:1206:G:H2'    | 1:AA:1207:C:C4'    | 2.32                     | 0.56              |
| 1:AA:1234:U:H2'    | 1:AA:1235:G:C8     | 2.40                     | 0.56              |
| 1:AA:1264:G:H3'    | 1:AA:1264:G:H8     | 1.71                     | 0.56              |
| 1:AA:1399:C:P      | 19:AU:25:LYS:HZ1   | 2.27                     | 0.56              |
| 1:AA:1401:G:C5     | 1:AA:1402:C:C5     | 2.93                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1657:C:O2'   | 1:AA:1658:C:H5'    | 2.06                     | 0.56              |
| 1:AA:1901:A:H4'   | 4:AD:244:ARG:NH1   | 2.17                     | 0.56              |
| 1:AA:1964:G:C8    | 1:AA:1964:G:OP1    | 2.59                     | 0.56              |
| 1:AA:2030:A:O2'   | 1:AA:2031:A:O5'    | 2.21                     | 0.56              |
| 1:AA:2074:U:O2'   | 1:AA:2075:U:H5'    | 2.06                     | 0.56              |
| 1:AA:2097:C:H2'   | 1:AA:2098:U:C5'    | 2.34                     | 0.56              |
| 1:AA:2226:C:O2    | 4:AD:262:ARG:CZ    | 2.54                     | 0.56              |
| 1:AA:2283:C:N3    | 1:AA:2284:C:H1'    | 2.19                     | 0.56              |
| 1:AA:2284:C:C5'   | 27:Ac:9:LEU:HG     | 2.36                     | 0.56              |
| 1:AA:2428:G:C4'   | 1:AA:2429:G:O5'    | 2.54                     | 0.56              |
| 1:AA:2595:G:N3    | 1:AA:2599:G:N1     | 2.54                     | 0.56              |
| 1:AA:2606:C:C2    | 1:AA:2607:G:C8     | 2.93                     | 0.56              |
| 1:AA:2706:G:C2    | 1:AA:2707:G:C5     | 2.93                     | 0.56              |
| 1:AA:2759:G:C6    | 1:AA:2760:C:C5     | 2.93                     | 0.56              |
| 1:AA:2823:A:P     | 5:AE:113:PHE:CZ    | 2.99                     | 0.56              |
| 2:AB:88:C:H2'     | 2:AB:89:G:H5'      | 1.86                     | 0.56              |
| 3:AC:21:THR:CG2   | 3:AC:228:SER:HB3   | 2.35                     | 0.56              |
| 4:AD:211:ARG:C    | 4:AD:215:LEU:HD12  | 2.30                     | 0.56              |
| 5:AE:47:VAL:HA    | 5:AE:48:GLN:NE2    | 2.21                     | 0.56              |
| 6:AF:158:THR:CG2  | 6:AF:159:GLY:N     | 2.68                     | 0.56              |
| 8:AH:29:PRO:CD    | 8:AH:79:VAL:HA     | 2.35                     | 0.56              |
| 8:AH:135:GLY:HA3  | 8:AH:141:VAL:HG22  | 1.87                     | 0.56              |
| 9:AK:67:LEU:O     | 9:AK:68:GLU:CB     | 2.54                     | 0.56              |
| 9:AK:76:SER:OG    | 9:AK:81:GLY:O      | 2.21                     | 0.56              |
| 10:AL:26:LYS:HG3  | 10:AL:27:GLY:H     | 1.70                     | 0.56              |
| 11:AM:51:PHE:O    | 11:AM:55:ARG:CG    | 2.53                     | 0.56              |
| 11:AM:70:GLN:HB3  | 11:AM:110:TYR:OH   | 2.06                     | 0.56              |
| 11:AM:124:LYS:HA  | 11:AM:138:LEU:HD23 | 1.87                     | 0.56              |
| 12:AN:6:ARG:HE    | 12:AN:8:LYS:HG3    | 1.71                     | 0.56              |
| 12:AN:36:ALA:HA   | 12:AN:129:THR:CG2  | 2.35                     | 0.56              |
| 13:AO:83:ILE:O    | 13:AO:86:ARG:N     | 2.38                     | 0.56              |
| 14:AP:26:LEU:CD2  | 14:AP:37:ALA:HB1   | 2.29                     | 0.56              |
| 15:AQ:10:VAL:HB   | 15:AQ:11:GLU:OE2   | 2.04                     | 0.56              |
| 16:AR:83:LEU:HD21 | 16:AR:95:LEU:HD13  | 1.88                     | 0.56              |
| 17:AS:18:LEU:O    | 17:AS:20:LEU:N     | 2.38                     | 0.56              |
| 20:AV:2:ARG:HD2   | 20:AV:3:VAL:CB     | 2.35                     | 0.56              |
| 21:AW:9:TYR:C     | 21:AW:10:ARG:HG3   | 2.30                     | 0.56              |
| 21:AW:57:ILE:O    | 21:AW:58:VAL:HG22  | 2.05                     | 0.56              |
| 21:AW:94:GLU:O    | 21:AW:96:VAL:HG23  | 2.06                     | 0.56              |
| 23:AY:20:VAL:HG21 | 23:AY:56:LEU:CD1   | 2.33                     | 0.56              |
| 31:AI:117:LEU:HA  | 31:AI:121:ASP:O    | 2.06                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 32:AJ:17:ALA:HB3  | 32:AJ:38:VAL:O     | 1.91                     | 0.56              |
| 33:Ag:339:UNK:O   | 33:Ag:341:UNK:N    | 2.39                     | 0.56              |
| 34:BA:68:G:H4'    | 34:BA:171:A:O4'    | 2.06                     | 0.56              |
| 34:BA:189:U:C2    | 50:BU:72:ARG:NH1   | 2.70                     | 0.56              |
| 34:BA:266:G:N2    | 34:BA:270:A:N6     | 2.53                     | 0.56              |
| 34:BA:517:G:H5''  | 34:BA:518:C:OP1    | 2.05                     | 0.56              |
| 34:BA:519:C:H5''  | 45:BP:51:ALA:HB2   | 1.87                     | 0.56              |
| 34:BA:545:C:OP2   | 37:BH:62:GLN:OE1   | 2.23                     | 0.56              |
| 34:BA:575:G:N1    | 34:BA:821:G:N7     | 2.53                     | 0.56              |
| 34:BA:718:G:C4'   | 44:BO:117:ASN:HD21 | 2.17                     | 0.56              |
| 34:BA:782:A:N6    | 34:BA:801:U:C6     | 2.74                     | 0.56              |
| 34:BA:815:A:C8    | 34:BA:819:A:H2     | 2.24                     | 0.56              |
| 34:BA:843:U:C3'   | 34:BA:848:C:H5'    | 2.35                     | 0.56              |
| 34:BA:966:G:C2'   | 34:BA:967:C:O5'    | 2.54                     | 0.56              |
| 34:BA:993:G:HO2'  | 34:BA:994:A:P      | 2.28                     | 0.56              |
| 34:BA:1108:G:C6   | 34:BA:1109:C:N4    | 2.73                     | 0.56              |
| 34:BA:1225:A:O3'  | 52:BW:80:TYR:CB    | 2.54                     | 0.56              |
| 35:BF:97:TRP:HE1  | 35:BF:101:MET:CE   | 2.18                     | 0.56              |
| 35:BF:101:MET:O   | 35:BF:103:THR:N    | 2.39                     | 0.56              |
| 35:BF:113:HIS:HA  | 35:BF:116:GLU:OE2  | 2.04                     | 0.56              |
| 35:BF:135:GLN:O   | 35:BF:139:LYS:HG2  | 2.06                     | 0.56              |
| 35:BF:157:ARG:HG2 | 35:BF:158:LEU:CD2  | 2.35                     | 0.56              |
| 36:BG:5:ILE:HD12  | 36:BG:5:ILE:N      | 2.21                     | 0.56              |
| 36:BG:8:ILE:HD11  | 36:BG:16:ARG:HD2   | 1.88                     | 0.56              |
| 36:BG:91:LEU:CD2  | 36:BG:91:LEU:C     | 2.79                     | 0.56              |
| 36:BG:122:GLU:O   | 36:BG:125:GLU:CB   | 2.53                     | 0.56              |
| 36:BG:183:ASP:C   | 36:BG:183:ASP:OD2  | 2.47                     | 0.56              |
| 37:BH:4:TYR:CG    | 37:BH:5:ILE:N      | 2.74                     | 0.56              |
| 37:BH:16:GLY:O    | 37:BH:17:VAL:C     | 2.47                     | 0.56              |
| 37:BH:58:LEU:O    | 37:BH:58:LEU:HD22  | 2.06                     | 0.56              |
| 37:BH:72:GLU:OE1  | 37:BH:72:GLU:HA    | 2.05                     | 0.56              |
| 38:BI:76:ILE:HG22 | 38:BI:78:HIS:HD2   | 1.69                     | 0.56              |
| 38:BI:79:GLU:HA   | 38:BI:91:LEU:CD2   | 2.35                     | 0.56              |
| 39:BJ:42:GLU:HG3  | 39:BJ:44:GLY:H     | 1.70                     | 0.56              |
| 40:BK:77:SER:C    | 40:BK:156:TRP:CZ2  | 2.83                     | 0.56              |
| 41:BL:13:ILE:CG2  | 41:BL:14:ARG:N     | 2.54                     | 0.56              |
| 43:BN:47:PHE:CE2  | 47:BR:37:PHE:HZ    | 2.24                     | 0.56              |
| 46:BQ:36:LYS:CD   | 46:BQ:59:TYR:CD2   | 2.82                     | 0.56              |
| 46:BQ:52:GLU:HA   | 46:BQ:55:ARG:CD    | 2.36                     | 0.56              |
| 48:BS:78:TYR:HD2  | 48:BS:78:TYR:C     | 2.14                     | 0.56              |
| 49:BT:60:LEU:CA   | 49:BT:64:ALA:HB3   | 2.28                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 56:BD:48:C:H2'    | 56:BD:59:U:O4'     | 2.06                     | 0.56              |
| 56:BE:8:U:O5'     | 56:BE:8:U:H6       | 1.87                     | 0.56              |
| 57:BZ:19:THR:OG1  | 57:BZ:22:VAL:HG22  | 2.05                     | 0.56              |
| 57:BZ:137:PRO:HB2 | 57:BZ:164:TYR:HE2  | 1.69                     | 0.56              |
| 57:BZ:241:ASP:HB2 | 57:BZ:286:ASP:OD1  | 2.05                     | 0.56              |
| 57:BZ:400:TYR:H   | 57:BZ:469:PHE:HA   | 1.70                     | 0.56              |
| 1:AA:27:G:C2      | 1:AA:512:G:H2'     | 2.41                     | 0.56              |
| 1:AA:112:U:O2     | 1:AA:112:U:H2'     | 2.06                     | 0.56              |
| 1:AA:116:C:O2'    | 1:AA:117:G:H5'     | 2.06                     | 0.56              |
| 1:AA:140:A:H2     | 1:AA:1408:C:O2     | 1.88                     | 0.56              |
| 1:AA:221:A:C8     | 1:AA:221:A:C3'     | 2.89                     | 0.56              |
| 1:AA:223:A:O2'    | 1:AA:420:C:H1'     | 2.06                     | 0.56              |
| 1:AA:269:U:C5     | 1:AA:270(Z):U:OP2  | 2.58                     | 0.56              |
| 1:AA:270(J):G:C6  | 1:AA:270(K):C:C4   | 2.93                     | 0.56              |
| 1:AA:270(K):C:H3' | 1:AA:270(L):U:O4'  | 2.06                     | 0.56              |
| 1:AA:270(X):G:N2  | 1:AA:270(Y):G:HO2' | 2.04                     | 0.56              |
| 1:AA:270(Z):U:O2' | 1:AA:271(A):C:OP1  | 2.23                     | 0.56              |
| 1:AA:451:C:C5     | 1:AA:453:C:H5'     | 2.32                     | 0.56              |
| 1:AA:461:C:N4     | 1:AA:469:G:N2      | 2.54                     | 0.56              |
| 1:AA:627:A:N6     | 1:AA:636:G:O2'     | 2.39                     | 0.56              |
| 1:AA:662:G:H5'    | 11:AM:17:LYS:N     | 2.20                     | 0.56              |
| 1:AA:684:G:C2     | 1:AA:775:G:C6      | 2.93                     | 0.56              |
| 1:AA:746:A:C8     | 1:AA:2611:U:O2'    | 2.58                     | 0.56              |
| 1:AA:847:U:O4     | 1:AA:933:A:C2      | 2.59                     | 0.56              |
| 1:AA:947:G:C2'    | 1:AA:948:G:H5'     | 2.36                     | 0.56              |
| 1:AA:972:G:C6     | 1:AA:973:A:N7      | 2.74                     | 0.56              |
| 1:AA:988:A:C2     | 1:AA:989:G:N2      | 2.73                     | 0.56              |
| 1:AA:1000:A:N1    | 1:AA:1155:A:C4     | 2.74                     | 0.56              |
| 1:AA:1064:C:C6    | 1:AA:1065:U:C4     | 2.93                     | 0.56              |
| 1:AA:1144:G:C4    | 1:AA:1145:C:C5     | 2.94                     | 0.56              |
| 1:AA:1178:C:N3    | 1:AA:1179:C:C4     | 2.74                     | 0.56              |
| 1:AA:1341:U:O2'   | 19:AU:56:THR:O     | 2.20                     | 0.56              |
| 1:AA:1358:G:N7    | 1:AA:1371:G:C6     | 2.74                     | 0.56              |
| 1:AA:1488:G:C3'   | 1:AA:1489:U:C5'    | 2.83                     | 0.56              |
| 1:AA:1649:G:C2    | 1:AA:1650:G:N7     | 2.74                     | 0.56              |
| 1:AA:1700:A:C8    | 1:AA:1701:A:C8     | 2.93                     | 0.56              |
| 1:AA:2075:U:O2    | 1:AA:2075:U:C2'    | 2.53                     | 0.56              |
| 1:AA:2173:A:N9    | 3:AC:218:MET:CE    | 2.68                     | 0.56              |
| 1:AA:2277:G:H5''  | 22:AX:12:ASN:HD21  | 1.70                     | 0.56              |
| 1:AA:2287:A:C8    | 1:AA:2289:G:C5     | 2.93                     | 0.56              |
| 1:AA:2353:G:H1'   | 22:AX:34:GLY:HA3   | 1.87                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2447:G:C4    | 1:AA:2500:U:C4     | 2.94                     | 0.56              |
| 1:AA:2487:G:H2'   | 1:AA:2488:A:H8     | 1.70                     | 0.56              |
| 1:AA:2690:C:H5    | 13:AO:14:SER:HB2   | 1.65                     | 0.56              |
| 1:AA:2740:A:C6    | 1:AA:2741:A:N6     | 2.74                     | 0.56              |
| 1:AA:2789:C:HO2'  | 1:AA:2791:C:H5''   | 1.70                     | 0.56              |
| 1:AA:2885:C:N3    | 1:AA:2886:G:H1'    | 2.20                     | 0.56              |
| 59:AA:3002:8AN:P  | 56:BD:75:C:H1'     | 2.46                     | 0.56              |
| 2:AB:48:A:O3'     | 14:AP:95:HIS:CE1   | 2.59                     | 0.56              |
| 2:AB:68:C:H2'     | 2:AB:69:G:C1'      | 2.36                     | 0.56              |
| 2:AB:77:U:H5      | 2:AB:98:G:N2       | 2.04                     | 0.56              |
| 3:AC:62:VAL:CB    | 3:AC:192:PHE:CA    | 2.81                     | 0.56              |
| 3:AC:87:GLU:OE2   | 3:AC:94:VAL:HG11   | 2.06                     | 0.56              |
| 3:AC:141:LYS:HG3  | 3:AC:141:LYS:O     | 2.05                     | 0.56              |
| 4:AD:63:ARG:HD3   | 4:AD:65:ILE:HD11   | 1.88                     | 0.56              |
| 4:AD:78:LYS:HE2   | 4:AD:114:GLY:O     | 2.06                     | 0.56              |
| 5:AE:94:GLU:O     | 5:AE:96:PHE:N      | 2.39                     | 0.56              |
| 6:AF:6:VAL:C      | 6:AF:18:ARG:HD2    | 2.30                     | 0.56              |
| 6:AF:32:LEU:HD11  | 6:AF:105:VAL:HG11  | 1.88                     | 0.56              |
| 6:AF:34:TRP:CD1   | 6:AF:38:ARG:NH1    | 2.73                     | 0.56              |
| 6:AF:54:ARG:C     | 6:AF:56:GLU:H      | 2.11                     | 0.56              |
| 6:AF:148:LEU:N    | 6:AF:148:LEU:HD22  | 2.21                     | 0.56              |
| 7:AG:61:ALA:HB1   | 7:AG:67:LYS:HE2    | 1.82                     | 0.56              |
| 7:AG:119:GLY:HA3  | 7:AG:180:PHE:CG    | 2.40                     | 0.56              |
| 8:AH:15:VAL:HG21  | 8:AH:79:VAL:HG21   | 1.87                     | 0.56              |
| 8:AH:148:ILE:HG23 | 8:AH:149:ARG:N     | 2.21                     | 0.56              |
| 9:AK:99:LEU:CD2   | 9:AK:122:VAL:HG21  | 2.36                     | 0.56              |
| 10:AL:106:LEU:HA  | 10:AL:111:PHE:HE1  | 1.71                     | 0.56              |
| 11:AM:74:GLU:HG2  | 11:AM:112:LEU:HD23 | 1.88                     | 0.56              |
| 11:AM:81:GLN:HA   | 11:AM:86:LYS:CG    | 2.36                     | 0.56              |
| 11:AM:135:LEU:H   | 11:AM:135:LEU:CD1  | 2.18                     | 0.56              |
| 13:AO:34:ILE:HG22 | 13:AO:35:THR:N     | 2.20                     | 0.56              |
| 15:AQ:92:GLY:C    | 15:AQ:93:ARG:NE    | 2.63                     | 0.56              |
| 16:AR:45:TYR:C    | 16:AR:47:TYR:N     | 2.60                     | 0.56              |
| 19:AU:24:GLY:O    | 19:AU:82:GLN:HG3   | 2.06                     | 0.56              |
| 19:AU:31:HIS:CD2  | 19:AU:31:HIS:C     | 2.83                     | 0.56              |
| 19:AU:42:ALA:O    | 19:AU:46:ALA:CB    | 2.54                     | 0.56              |
| 19:AU:50:LYS:HG3  | 19:AU:84:ALA:H     | 1.71                     | 0.56              |
| 21:AW:6:LYS:CA    | 21:AW:37:VAL:HG13  | 2.36                     | 0.56              |
| 21:AW:104:PHE:N   | 21:AW:104:PHE:HD2  | 2.03                     | 0.56              |
| 23:AY:27:LEU:C    | 23:AY:30:LEU:HG    | 2.29                     | 0.56              |
| 25:Aa:37:SER:OG   | 25:Aa:38:LYS:N     | 2.36                     | 0.56              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 26:Ab:17:ASP:C     | 26:Ab:19:ARG:N     | 2.63                     | 0.56              |
| 31:Al:54:ALA:N     | 31:Al:84:GLU:C     | 2.60                     | 0.56              |
| 34:BA:9:G:H3'      | 38:BI:126:ARG:NH1  | 2.21                     | 0.56              |
| 34:BA:19:C:N3      | 34:BA:20:U:C5      | 2.73                     | 0.56              |
| 34:BA:186(C):G:O2' | 34:BA:186(D):C:H5' | 2.05                     | 0.56              |
| 34:BA:333:G:H4'    | 53:BX:16:HIS:HD2   | 1.65                     | 0.56              |
| 34:BA:376:G:OP1    | 49:BT:5:ARG:HB2    | 2.05                     | 0.56              |
| 34:BA:389:A:N1     | 34:BA:390:C:H1'    | 2.20                     | 0.56              |
| 34:BA:409:G:C2     | 34:BA:410:G:C8     | 2.93                     | 0.56              |
| 34:BA:483:C:O5'    | 34:BA:483:C:H6     | 1.88                     | 0.56              |
| 34:BA:887:G:H2'    | 34:BA:888:G:H8     | 1.67                     | 0.56              |
| 34:BA:949:A:C1'    | 34:BA:1364:U:H3    | 2.18                     | 0.56              |
| 34:BA:978:A:H8     | 34:BA:978:A:H3'    | 1.69                     | 0.56              |
| 34:BA:1004:A:H2'   | 34:BA:1036:G:O6    | 2.05                     | 0.56              |
| 34:BA:1125:U:OP2   | 34:BA:1126:U:O4    | 2.24                     | 0.56              |
| 34:BA:1138:G:N1    | 34:BA:1140:C:C6    | 2.73                     | 0.56              |
| 34:BA:1196:U:O2'   | 34:BA:1197:G:OP2   | 2.21                     | 0.56              |
| 34:BA:1225:A:O3'   | 52:BW:80:TYR:HB2   | 2.06                     | 0.56              |
| 34:BA:1312:G:C5    | 34:BA:1326:C:C2    | 2.85                     | 0.56              |
| 34:BA:1364:U:O5'   | 34:BA:1364:U:H6    | 1.88                     | 0.56              |
| 34:BA:1405:G:C4    | 34:BA:1406:U:H5    | 2.23                     | 0.56              |
| 34:BA:1468:A:H2'   | 34:BA:1469:G:O5'   | 2.05                     | 0.56              |
| 36:BG:25:GLY:N     | 36:BG:28:GLN:HE22  | 2.03                     | 0.56              |
| 37:BH:19:LEU:O     | 37:BH:20:TYR:C     | 2.48                     | 0.56              |
| 37:BH:52:SER:OG    | 37:BH:54:TYR:HB3   | 2.05                     | 0.56              |
| 37:BH:59:ARG:HH11  | 37:BH:59:ARG:CA    | 2.14                     | 0.56              |
| 37:BH:162:LEU:O    | 37:BH:166:LYS:HG2  | 2.05                     | 0.56              |
| 37:BH:199:ASN:CG   | 37:BH:200:GLU:N    | 2.64                     | 0.56              |
| 38:BI:61:TYR:HA    | 38:BI:64:ARG:HG3   | 1.87                     | 0.56              |
| 39:BJ:6:VAL:HG12   | 39:BJ:63:TYR:H     | 1.69                     | 0.56              |
| 39:BJ:76:ALA:HA    | 39:BJ:79:LEU:HD12  | 1.88                     | 0.56              |
| 40:BK:26:PHE:CD2   | 40:BK:43:PHE:CE1   | 2.94                     | 0.56              |
| 40:BK:49:ILE:HG21  | 40:BK:121:ALA:CB   | 2.30                     | 0.56              |
| 40:BK:50:ILE:HB    | 40:BK:51:GLN:OE1   | 2.06                     | 0.56              |
| 41:BL:18:ARG:CZ    | 41:BL:18:ARG:N     | 2.68                     | 0.56              |
| 41:BL:26:VAL:HG13  | 41:BL:27:PRO:CD    | 2.35                     | 0.56              |
| 44:BO:62:GLN:HA    | 44:BO:97:ALA:CB    | 2.36                     | 0.56              |
| 45:BP:5:PRO:O      | 45:BP:6:THR:OG1    | 2.23                     | 0.56              |
| 45:BP:84:LEU:HD23  | 45:BP:85:ILE:N     | 2.20                     | 0.56              |
| 47:BR:16:PHE:O     | 47:BR:17:LYS:C     | 2.47                     | 0.56              |
| 48:BS:81:LEU:O     | 48:BS:82:ILE:C     | 2.46                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 51:BV:40:LEU:N    | 51:BV:40:LEU:HD23  | 2.20                     | 0.56              |
| 53:BX:72:LEU:HD22 | 53:BX:76:ALA:C     | 2.30                     | 0.56              |
| 55:BC:38:A:N6     | 55:BC:39:U:C4      | 2.74                     | 0.56              |
| 56:BD:51:U:O4     | 56:BD:64:A:N1      | 2.30                     | 0.56              |
| 57:BZ:25:LEU:O    | 57:BZ:28:GLN:CD    | 2.49                     | 0.56              |
| 57:BZ:81:PHE:CB   | 57:BZ:365:HIS:HD2  | 1.82                     | 0.56              |
| 57:BZ:206:GLN:O   | 57:BZ:227:LYS:CB   | 2.54                     | 0.56              |
| 57:BZ:208:GLN:HB2 | 57:BZ:227:LYS:HE2  | 1.88                     | 0.56              |
| 57:BZ:276:ILE:O   | 57:BZ:276:ILE:HD12 | 2.05                     | 0.56              |
| 57:BZ:488:LEU:N   | 57:BZ:525:GLY:O    | 2.35                     | 0.56              |
| 1:AA:68:G:N2      | 1:AA:74:A:O5'      | 2.38                     | 0.56              |
| 1:AA:396:G:H1'    | 25:Aa:39:CYS:SG    | 2.46                     | 0.56              |
| 1:AA:422:A:N3     | 1:AA:422:A:C2'     | 2.69                     | 0.56              |
| 1:AA:513:A:O2'    | 1:AA:1217:C:OP1    | 2.22                     | 0.56              |
| 1:AA:687:C:O2     | 1:AA:788:A:P       | 2.64                     | 0.56              |
| 1:AA:738:G:N3     | 1:AA:739:G:H1'     | 2.21                     | 0.56              |
| 1:AA:827:U:O3'    | 1:AA:828:U:O2      | 2.23                     | 0.56              |
| 1:AA:842:G:C6     | 1:AA:843:G:C6      | 2.94                     | 0.56              |
| 1:AA:848:G:C2     | 1:AA:931:G:O6      | 2.58                     | 0.56              |
| 1:AA:856:C:H1'    | 22:AX:69:PHE:HE1   | 1.69                     | 0.56              |
| 1:AA:946:G:O6     | 1:AA:972:G:N2      | 2.38                     | 0.56              |
| 1:AA:996:A:H5'    | 16:AR:93:LYS:HD2   | 1.88                     | 0.56              |
| 1:AA:1127:A:C6    | 1:AA:2518:A:C2     | 2.94                     | 0.56              |
| 1:AA:1207:C:OP2   | 1:AA:1207:C:C6     | 2.58                     | 0.56              |
| 1:AA:1272:A:N1    | 1:AA:1618:A:C2     | 2.73                     | 0.56              |
| 1:AA:1285:G:C8    | 1:AA:1285:G:O5'    | 2.59                     | 0.56              |
| 1:AA:1315:C:C2    | 1:AA:1316:U:C5     | 2.93                     | 0.56              |
| 1:AA:1344:G:H4'   | 1:AA:1384:A:C6     | 2.41                     | 0.56              |
| 1:AA:1374:G:C6    | 1:AA:1375:C:C4     | 2.94                     | 0.56              |
| 1:AA:1609:A:N6    | 1:AA:1616:A:C2     | 2.74                     | 0.56              |
| 1:AA:1614:A:N3    | 1:AA:1614:A:C3'    | 2.65                     | 0.56              |
| 1:AA:1669:A:N6    | 1:AA:1994:C:C2     | 2.73                     | 0.56              |
| 1:AA:1788:C:C4    | 1:AA:1789:A:H8     | 2.20                     | 0.56              |
| 1:AA:1790:C:H2'   | 1:AA:1790:C:O2     | 2.04                     | 0.56              |
| 1:AA:1975:G:H2'   | 1:AA:1976:U:O5'    | 2.06                     | 0.56              |
| 1:AA:1996:C:H2'   | 1:AA:1997:G:O5'    | 2.06                     | 0.56              |
| 1:AA:2040:C:C2    | 1:AA:2041:U:C5     | 2.94                     | 0.56              |
| 1:AA:2051:A:C6    | 1:AA:2614:A:C6     | 2.94                     | 0.56              |
| 1:AA:2122:U:C1'   | 3:AC:166:ASP:OD2   | 2.54                     | 0.56              |
| 1:AA:2171:A:O2'   | 1:AA:2172:U:C6     | 2.56                     | 0.56              |
| 1:AA:2173:A:N9    | 3:AC:218:MET:HE3   | 2.18                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2287:A:C2    | 1:AA:2346:A:N6     | 2.74                     | 0.56              |
| 1:AA:2313:C:H2'   | 1:AA:2314:C:C6     | 2.41                     | 0.56              |
| 1:AA:2318:G:O5'   | 1:AA:2318:G:C8     | 2.54                     | 0.56              |
| 1:AA:2346:A:H5'   | 1:AA:2383:G:O4'    | 2.06                     | 0.56              |
| 1:AA:2378:A:C2    | 1:AA:2379:G:C1'    | 2.88                     | 0.56              |
| 1:AA:2383:G:N2    | 1:AA:2384:G:N3     | 2.53                     | 0.56              |
| 1:AA:2437:U:C2    | 1:AA:2438:U:C5     | 2.94                     | 0.56              |
| 1:AA:2723:C:C4    | 1:AA:2724:C:C5     | 2.93                     | 0.56              |
| 1:AA:2745:C:H1'   | 8:AH:143:GLN:CG    | 2.35                     | 0.56              |
| 1:AA:2811:G:P     | 5:AE:60:ASN:HD22   | 2.28                     | 0.56              |
| 1:AA:2815:C:H2'   | 1:AA:2816:C:H6     | 1.70                     | 0.56              |
| 2:AB:73:A:HO2'    | 2:AB:74:U:C5'      | 2.19                     | 0.56              |
| 3:AC:21:THR:HG22  | 3:AC:225:ASN:HD22  | 1.70                     | 0.56              |
| 3:AC:73:ARG:HG2   | 3:AC:92:ASP:CG     | 2.31                     | 0.56              |
| 3:AC:161:ILE:HG22 | 3:AC:174:PRO:HG2   | 1.87                     | 0.56              |
| 4:AD:102:LYS:O    | 4:AD:103:ARG:HG3   | 2.06                     | 0.56              |
| 4:AD:112:GLN:N    | 4:AD:115:GLN:HE22  | 2.03                     | 0.56              |
| 4:AD:176:ARG:HG3  | 4:AD:176:ARG:NH1   | 2.09                     | 0.56              |
| 4:AD:244:ARG:H    | 4:AD:245:PRO:CD    | 2.05                     | 0.56              |
| 5:AE:49:LEU:HD13  | 5:AE:50:GLY:H      | 1.71                     | 0.56              |
| 6:AF:182:ASN:OD1  | 6:AF:185:ASP:OD1   | 2.23                     | 0.56              |
| 7:AG:19:LEU:HD12  | 7:AG:19:LEU:H      | 1.70                     | 0.56              |
| 9:AK:2:LYS:O      | 9:AK:3:THR:O       | 2.23                     | 0.56              |
| 9:AK:13:TRP:C     | 9:AK:14:VAL:CG2    | 2.79                     | 0.56              |
| 9:AK:67:LEU:HB2   | 9:AK:88:GLU:OE1    | 2.05                     | 0.56              |
| 9:AK:96:GLU:OE2   | 9:AK:96:GLU:N      | 2.38                     | 0.56              |
| 10:AL:47:ILE:O    | 10:AL:47:ILE:HG23  | 2.04                     | 0.56              |
| 11:AM:9:ASN:O     | 11:AM:10:PRO:C     | 2.49                     | 0.56              |
| 11:AM:122:PRO:HG3 | 11:AM:138:LEU:N    | 2.20                     | 0.56              |
| 12:AN:36:ALA:HB1  | 12:AN:39:PRO:HG2   | 1.87                     | 0.56              |
| 12:AN:68:ILE:HG13 | 12:AN:69:PHE:H     | 1.70                     | 0.56              |
| 13:AO:20:LEU:CD1  | 13:AO:21:TYR:N     | 2.69                     | 0.56              |
| 13:AO:35:THR:HG22 | 13:AO:113:LEU:HD23 | 1.88                     | 0.56              |
| 13:AO:59:ASP:OD1  | 13:AO:62:ALA:N     | 2.39                     | 0.56              |
| 13:AO:63:ARG:HG2  | 13:AO:63:ARG:HH11  | 1.71                     | 0.56              |
| 13:AO:97:VAL:CA   | 13:AO:114:VAL:HG22 | 2.32                     | 0.56              |
| 14:AP:24:LEU:HG   | 14:AP:41:ASP:HA    | 1.87                     | 0.56              |
| 16:AR:59:ARG:HA   | 16:AR:62:ILE:CD1   | 2.33                     | 0.56              |
| 17:AS:41:GLY:N    | 17:AS:51:VAL:HG22  | 2.20                     | 0.56              |
| 20:AV:88:LYS:HG2  | 20:AV:89:PHE:N     | 2.21                     | 0.56              |
| 21:AW:31:ARG:NH1  | 21:AW:31:ARG:O     | 2.37                     | 0.56              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 21:AW:41:LEU:HA   | 21:AW:44:PHE:HB2  | 1.87                     | 0.56              |
| 21:AW:44:PHE:HD2  | 21:AW:48:PHE:HE1  | 1.52                     | 0.56              |
| 21:AW:60:GLU:OE2  | 21:AW:67:LEU:O    | 2.24                     | 0.56              |
| 22:AX:31:VAL:HG22 | 22:AX:67:VAL:N    | 2.21                     | 0.56              |
| 25:Aa:29:PRO:O    | 25:Aa:31:ILE:HG23 | 2.06                     | 0.56              |
| 25:Aa:52:THR:CG2  | 25:Aa:53:GLU:H    | 2.06                     | 0.56              |
| 28:Ad:32:LYS:HA   | 28:Ad:35:ARG:HD3  | 1.88                     | 0.56              |
| 32:AJ:11:GLN:CA   | 32:AJ:56:GLU:HB2  | 2.18                     | 0.56              |
| 34:BA:37:U:H2'    | 34:BA:38:G:H5'    | 1.86                     | 0.56              |
| 34:BA:46:G:H1'    | 34:BA:396:G:N2    | 2.21                     | 0.56              |
| 34:BA:93:U:H2'    | 34:BA:95:G:H8     | 1.71                     | 0.56              |
| 34:BA:295:C:O2    | 34:BA:296:U:O4'   | 2.24                     | 0.56              |
| 34:BA:301:G:N2    | 34:BA:302:G:N9    | 2.53                     | 0.56              |
| 34:BA:373:A:C6    | 34:BA:482:A:N6    | 2.74                     | 0.56              |
| 34:BA:406:G:N2    | 34:BA:407:G:C4    | 2.73                     | 0.56              |
| 34:BA:454:C:H5''  | 34:BA:455:C:OP2   | 2.06                     | 0.56              |
| 34:BA:465:A:N7    | 34:BA:467:G:N1    | 2.53                     | 0.56              |
| 34:BA:532:A:C5'   | 36:BG:161:GLU:OE1 | 2.54                     | 0.56              |
| 34:BA:562:C:O2'   | 45:BP:15:ARG:CB   | 2.53                     | 0.56              |
| 34:BA:815:A:C8    | 34:BA:819:A:C2    | 2.94                     | 0.56              |
| 34:BA:815:A:H2    | 34:BA:1527:C:O2   | 1.87                     | 0.56              |
| 34:BA:872:A:C6    | 34:BA:874:G:N7    | 2.73                     | 0.56              |
| 34:BA:983:A:O2'   | 34:BA:1050:G:OP2  | 2.22                     | 0.56              |
| 34:BA:1132:C:H2'  | 34:BA:1133:G:H8   | 1.70                     | 0.56              |
| 34:BA:1329:A:P    | 46:BQ:29:ARG:CG   | 2.91                     | 0.56              |
| 34:BA:1409:C:O2'  | 34:BA:1410:G:H5'  | 2.06                     | 0.56              |
| 34:BA:1493:A:OP1  | 58:BA:1601:NMY:N6 | 2.39                     | 0.56              |
| 35:BF:78:GLN:HE22 | 35:BF:96:ARG:CZ   | 2.17                     | 0.56              |
| 35:BF:152:PHE:O   | 35:BF:154:LEU:N   | 2.38                     | 0.56              |
| 36:BG:10:PHE:HD1  | 36:BG:178:LEU:CD2 | 2.14                     | 0.56              |
| 36:BG:72:LYS:O    | 36:BG:76:VAL:HB   | 2.06                     | 0.56              |
| 37:BH:192:GLU:H   | 37:BH:192:GLU:CD  | 2.11                     | 0.56              |
| 38:BI:43:LEU:HD23 | 38:BI:44:GLY:CA   | 2.36                     | 0.56              |
| 38:BI:63:ARG:C    | 38:BI:66:MET:HG2  | 2.30                     | 0.56              |
| 38:BI:91:LEU:HG   | 38:BI:92:LYS:N    | 2.20                     | 0.56              |
| 39:BJ:23:LYS:HA   | 39:BJ:26:ILE:CG1  | 2.35                     | 0.56              |
| 39:BJ:100:ASN:O   | 51:BV:28:GLU:N    | 2.39                     | 0.56              |
| 41:BL:18:ARG:HH11 | 41:BL:18:ARG:CB   | 2.17                     | 0.56              |
| 41:BL:121:ASP:O   | 41:BL:122:ARG:C   | 2.49                     | 0.56              |
| 42:BM:17:VAL:HG11 | 42:BM:81:ILE:HA   | 1.88                     | 0.56              |
| 45:BP:45:PRO:HG2  | 45:BP:49:ASN:O    | 2.06                     | 0.56              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 45:BP:68:ALA:CB    | 45:BP:98:TYR:O    | 2.54                     | 0.56              |
| 46:BQ:7:VAL:HG23   | 46:BQ:7:VAL:O     | 2.06                     | 0.56              |
| 46:BQ:15:VAL:CG1   | 46:BQ:34:LEU:HD23 | 2.25                     | 0.56              |
| 48:BS:78:TYR:C     | 48:BS:78:TYR:CD2  | 2.84                     | 0.56              |
| 49:BT:3:LYS:C      | 49:BT:4:ILE:HD13  | 2.30                     | 0.56              |
| 51:BV:30:ASP:OD2   | 51:BV:32:ARG:HB2  | 2.06                     | 0.56              |
| 53:BX:62:LEU:HD23  | 53:BX:65:LYS:HG3  | 1.87                     | 0.56              |
| 55:BC:30:G:H8      | 55:BC:30:G:O5'    | 1.88                     | 0.56              |
| 57:BZ:15:ASP:HB2   | 57:BZ:16:HIS:CB   | 2.26                     | 0.56              |
| 57:BZ:79:ALA:HA    | 57:BZ:80:ASP:O    | 2.05                     | 0.56              |
| 57:BZ:111:PHE:CZ   | 57:BZ:115:LYS:HG2 | 2.40                     | 0.56              |
| 57:BZ:377:GLY:C    | 57:BZ:582:PRO:HG2 | 2.30                     | 0.56              |
| 57:BZ:398:GLU:HB2  | 57:BZ:399:PRO:CD  | 2.36                     | 0.56              |
| 57:BZ:426:LEU:N    | 57:BZ:441:TYR:CD2 | 2.74                     | 0.56              |
| 57:BZ:488:LEU:HD21 | 57:BZ:527:HIS:HA  | 1.86                     | 0.56              |
| 1:AA:92:G:H2'      | 1:AA:93:C:C6      | 2.40                     | 0.56              |
| 1:AA:397:G:OP1     | 25:Aa:40:HIS:C    | 2.48                     | 0.56              |
| 1:AA:495:G:O3'     | 18:AT:4:LYS:HE3   | 2.06                     | 0.56              |
| 1:AA:519:U:H4'     | 18:AT:75:TYR:HB2  | 1.88                     | 0.56              |
| 1:AA:585:G:N2      | 1:AA:1256:G:C6    | 2.74                     | 0.56              |
| 1:AA:623:G:H2'     | 1:AA:624:C:C5'    | 2.36                     | 0.56              |
| 1:AA:884:C:H1'     | 1:AA:885:C:H5'    | 1.86                     | 0.56              |
| 1:AA:942:G:H3'     | 11:AM:32:THR:HG22 | 1.86                     | 0.56              |
| 1:AA:1041:C:C2     | 1:AA:1115:G:O6    | 2.59                     | 0.56              |
| 1:AA:1131:G:N2     | 1:AA:1132:A:C2    | 2.74                     | 0.56              |
| 1:AA:1147:C:O2'    | 1:AA:1148:A:H5'   | 2.03                     | 0.56              |
| 1:AA:1202:C:C2     | 1:AA:1203:G:O2'   | 2.52                     | 0.56              |
| 1:AA:1237:A:O2'    | 1:AA:1238:G:P     | 2.64                     | 0.56              |
| 1:AA:1298:C:O2'    | 1:AA:1302:A:C8    | 2.58                     | 0.56              |
| 1:AA:1525:G:C4     | 1:AA:1526:G:C8    | 2.94                     | 0.56              |
| 1:AA:1526:G:N2     | 1:AA:1546:C:N3    | 2.54                     | 0.56              |
| 1:AA:1598:C:O2'    | 19:AU:35:THR:HG23 | 2.04                     | 0.56              |
| 1:AA:1742:C:C6     | 1:AA:1743:G:H5''  | 2.41                     | 0.56              |
| 1:AA:1762:A:H8     | 1:AA:1762:A:C3'   | 2.10                     | 0.56              |
| 1:AA:1780:A:P      | 1:AA:1782:C:OP1   | 2.64                     | 0.56              |
| 1:AA:1788:C:O5'    | 1:AA:1788:C:H6    | 1.89                     | 0.56              |
| 1:AA:1790:C:O2     | 1:AA:1790:C:C2'   | 2.50                     | 0.56              |
| 1:AA:1992:G:H4'    | 1:AA:1993:U:C5    | 2.40                     | 0.56              |
| 1:AA:1993:U:N1     | 1:AA:1994:C:H5    | 2.04                     | 0.56              |
| 1:AA:2311:A:H5''   | 1:AA:2312:U:C5    | 2.40                     | 0.56              |
| 1:AA:2335:A:O2'    | 1:AA:2336:A:H8    | 1.89                     | 0.56              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2387:U:C1'    | 22:AX:41:ARG:CZ   | 2.83                     | 0.56              |
| 1:AA:2436:G:C5     | 1:AA:2437:U:C4    | 2.94                     | 0.56              |
| 1:AA:2472:G:N2     | 1:AA:2477:C:OP1   | 2.33                     | 0.56              |
| 1:AA:2553:G:N2     | 1:AA:2554:U:O2    | 2.38                     | 0.56              |
| 1:AA:2623:G:H5'    | 1:AA:2826:A:C1'   | 2.33                     | 0.56              |
| 3:AC:4:GLY:O       | 3:AC:5:LYS:HG3    | 2.06                     | 0.56              |
| 3:AC:99:ILE:HG23   | 3:AC:107:TRP:HZ3  | 1.70                     | 0.56              |
| 3:AC:211:SER:HB2   | 3:AC:213:TYR:CE1  | 2.40                     | 0.56              |
| 4:AD:126:GLN:O     | 4:AD:126:GLN:HG3  | 2.06                     | 0.56              |
| 7:AG:76:SER:O      | 7:AG:82:LEU:O     | 2.24                     | 0.56              |
| 7:AG:149:VAL:HG13  | 7:AG:150:ASP:N    | 2.21                     | 0.56              |
| 8:AH:9:ILE:HG13    | 8:AH:69:ARG:HH12  | 1.70                     | 0.56              |
| 8:AH:41:MET:SD     | 8:AH:64:LEU:HD22  | 2.46                     | 0.56              |
| 8:AH:157:TYR:CD1   | 8:AH:158:HIS:HB2  | 2.41                     | 0.56              |
| 9:AK:107:LEU:HD22  | 9:AK:117:PHE:CZ   | 2.41                     | 0.56              |
| 10:AL:22:ILE:HB    | 10:AL:23:ARG:HD2  | 1.88                     | 0.56              |
| 11:AM:114:ILE:HG12 | 11:AM:130:PHE:CA  | 2.35                     | 0.56              |
| 12:AN:66:ILE:CG2   | 12:AN:67:ARG:N    | 2.40                     | 0.56              |
| 12:AN:137:TYR:C    | 12:AN:138:ASP:CG  | 2.70                     | 0.56              |
| 14:AP:52:SER:CB    | 14:AP:69:VAL:HG13 | 2.35                     | 0.56              |
| 14:AP:56:LEU:HB3   | 14:AP:59:LYS:HZ2  | 1.70                     | 0.56              |
| 15:AQ:113:LYS:O    | 15:AQ:116:ALA:N   | 2.38                     | 0.56              |
| 16:AR:65:ILE:HG21  | 16:AR:95:LEU:HB2  | 1.88                     | 0.56              |
| 17:AS:73:SER:OG    | 17:AS:89:GLN:NE2  | 2.39                     | 0.56              |
| 19:AU:85:PRO:CB    | 19:AU:87:GLN:HE21 | 2.19                     | 0.56              |
| 20:AV:14:LEU:HD13  | 20:AV:20:TYR:O    | 2.06                     | 0.56              |
| 20:AV:74:PRO:C     | 20:AV:76:CYS:N    | 2.54                     | 0.56              |
| 21:AW:4:ARG:HG2    | 21:AW:38:TYR:O    | 2.05                     | 0.56              |
| 21:AW:116:VAL:HA   | 21:AW:175:VAL:O   | 2.05                     | 0.56              |
| 22:AX:43:THR:O     | 22:AX:43:THR:HG22 | 2.05                     | 0.56              |
| 22:AX:50:ASN:HB3   | 22:AX:63:VAL:CG2  | 2.36                     | 0.56              |
| 23:AY:7:GLU:CD     | 23:AY:7:GLU:H     | 2.13                     | 0.56              |
| 23:AY:16:LEU:HD22  | 23:AY:58:VAL:HG22 | 1.88                     | 0.56              |
| 24:AZ:17:LYS:CA    | 24:AZ:20:LYS:NZ   | 2.68                     | 0.56              |
| 26:Ab:17:ASP:N     | 26:Ab:17:ASP:OD2  | 2.37                     | 0.56              |
| 29:Ae:16:ILE:CG2   | 29:Ae:21:LYS:O    | 2.54                     | 0.56              |
| 30:Af:32:HIS:O     | 30:Af:33:LYS:C    | 2.49                     | 0.56              |
| 32:AJ:60:TYR:CD1   | 32:AJ:61:ALA:N    | 2.73                     | 0.56              |
| 34:BA:8:A:C4'      | 38:BI:102:ALA:HA  | 2.36                     | 0.56              |
| 34:BA:250:A:H4'    | 34:BA:251:G:O5'   | 2.05                     | 0.56              |
| 34:BA:575:G:C6     | 34:BA:821:G:C8    | 2.93                     | 0.56              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:589:C:N4     | 34:BA:590:C:N4     | 2.53                     | 0.56              |
| 34:BA:859:A:C2'    | 34:BA:860:A:C5'    | 2.84                     | 0.56              |
| 34:BA:893:C:C2     | 34:BA:894:G:C8     | 2.94                     | 0.56              |
| 34:BA:974:A:H8     | 34:BA:974:A:OP1    | 1.88                     | 0.56              |
| 34:BA:978:A:N1     | 34:BA:1318:A:C6    | 2.74                     | 0.56              |
| 34:BA:1004:A:H5''  | 34:BA:1025:U:C5    | 2.41                     | 0.56              |
| 34:BA:1017:G:H2'   | 34:BA:1018:C:H6    | 1.71                     | 0.56              |
| 34:BA:1100:C:H2'   | 35:BF:98:LEU:HD13  | 1.86                     | 0.56              |
| 34:BA:1128:C:C4'   | 42:BM:16:ARG:HH22  | 2.19                     | 0.56              |
| 34:BA:1314:C:N3    | 34:BA:1323:G:N2    | 2.48                     | 0.56              |
| 34:BA:1377:A:H5''  | 34:BA:1378:C:C6    | 2.41                     | 0.56              |
| 34:BA:1494:G:C5    | 58:BA:1601:NMY:H82 | 2.40                     | 0.56              |
| 34:BA:1526:G:H2'   | 34:BA:1527:C:C6    | 2.41                     | 0.56              |
| 35:BF:20:GLU:C     | 35:BF:39:ILE:HG13  | 2.30                     | 0.56              |
| 35:BF:35:GLU:OE2   | 35:BF:36:ARG:O     | 2.23                     | 0.56              |
| 35:BF:52:GLU:CD    | 35:BF:53:ARG:H     | 2.13                     | 0.56              |
| 35:BF:102:LEU:CB   | 35:BF:180:LEU:CD1  | 2.84                     | 0.56              |
| 36:BG:6:HIS:HB3    | 47:BR:49:HIS:ND1   | 2.20                     | 0.56              |
| 36:BG:69:HIS:HA    | 36:BG:104:GLN:O    | 2.06                     | 0.56              |
| 37:BH:58:LEU:CD2   | 37:BH:62:GLN:HG2   | 2.36                     | 0.56              |
| 38:BI:102:ALA:CB   | 38:BI:120:THR:HG22 | 2.33                     | 0.56              |
| 39:BJ:50:TYR:CZ    | 39:BJ:52:ILE:HD11  | 2.40                     | 0.56              |
| 41:BL:7:ALA:HA     | 41:BL:10:LEU:CG    | 2.35                     | 0.56              |
| 41:BL:19:VAL:HB    | 41:BL:21:LYS:CG    | 2.35                     | 0.56              |
| 41:BL:45:ILE:HG12  | 41:BL:45:ILE:O     | 2.06                     | 0.56              |
| 41:BL:119:LEU:HB3  | 41:BL:123:GLU:CD   | 2.31                     | 0.56              |
| 42:BM:96:LEU:HD12  | 42:BM:101:PHE:HE1  | 1.70                     | 0.56              |
| 43:BN:27:ALA:HB2   | 43:BN:85:LEU:HD21  | 1.87                     | 0.56              |
| 46:BQ:44:ARG:O     | 46:BQ:45:VAL:HB    | 2.05                     | 0.56              |
| 46:BQ:64:TRP:CZ2   | 46:BQ:66:LEU:CD2   | 2.89                     | 0.56              |
| 46:BQ:106:ASN:O    | 46:BQ:107:ALA:HB2  | 2.06                     | 0.56              |
| 50:BU:18:THR:HG23  | 50:BU:69:LYS:HE3   | 1.87                     | 0.56              |
| 50:BU:43:LEU:HD11  | 50:BU:69:LYS:CG    | 2.35                     | 0.56              |
| 50:BU:51:TYR:O     | 50:BU:52:LYS:HG3   | 2.06                     | 0.56              |
| 50:BU:69:LYS:CB    | 50:BU:69:LYS:HZ2   | 2.19                     | 0.56              |
| 51:BV:44:LEU:O     | 51:BV:45:SER:OG    | 2.21                     | 0.56              |
| 53:BX:12:ALA:H     | 53:BX:13:LEU:CD1   | 2.01                     | 0.56              |
| 53:BX:18:GLN:O     | 53:BX:19:SER:C     | 2.49                     | 0.56              |
| 55:BC:16:U:O4      | 55:BC:18:G:O2'     | 2.24                     | 0.56              |
| 57:BZ:392:ILE:HD12 | 57:BZ:392:ILE:O    | 2.06                     | 0.56              |
| 1:AA:184:C:O3'     | 1:AA:217:G:N2      | 2.38                     | 0.56              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:196:A:C6    | 1:AA:828:U:H5''   | 2.38                     | 0.56              |
| 1:AA:236:C:N3    | 1:AA:237:C:C5     | 2.74                     | 0.56              |
| 1:AA:257:A:O2'   | 1:AA:258:G:H5'    | 2.06                     | 0.56              |
| 1:AA:269:U:H2'   | 1:AA:269:U:O2     | 2.06                     | 0.56              |
| 1:AA:389:G:N3    | 1:AA:389:G:H2'    | 2.21                     | 0.56              |
| 1:AA:424:G:C2'   | 1:AA:425:G:H5'    | 2.35                     | 0.56              |
| 1:AA:494:G:C5'   | 18:AT:7:ALA:HA    | 2.33                     | 0.56              |
| 1:AA:547:A:O2'   | 1:AA:548:A:H5'    | 2.06                     | 0.56              |
| 1:AA:584:C:H2'   | 1:AA:585:G:C5'    | 2.36                     | 0.56              |
| 1:AA:609:A:N1    | 1:AA:619:G:C2     | 2.74                     | 0.56              |
| 1:AA:714:U:O4    | 1:AA:717:G:OP2    | 2.24                     | 0.56              |
| 1:AA:729:G:OP1   | 4:AD:13:ARG:NH2   | 2.39                     | 0.56              |
| 1:AA:740:U:H2'   | 1:AA:741:G:O5'    | 2.04                     | 0.56              |
| 1:AA:785:G:C4    | 1:AA:786:C:C5     | 2.94                     | 0.56              |
| 1:AA:786:C:H5''  | 1:AA:1780:A:H8    | 1.70                     | 0.56              |
| 1:AA:914:C:H5    | 1:AA:915:C:C5     | 2.23                     | 0.56              |
| 1:AA:955:C:H5''  | 12:AN:87:LYS:CE   | 2.36                     | 0.56              |
| 1:AA:960:A:C4    | 1:AA:962:G:C8     | 2.94                     | 0.56              |
| 1:AA:996:A:N6    | 1:AA:1160:G:C6    | 2.74                     | 0.56              |
| 1:AA:1037:G:N1   | 1:AA:1119:C:C4    | 2.74                     | 0.56              |
| 1:AA:1047:G:HO2' | 1:AA:1048:A:P     | 2.29                     | 0.56              |
| 1:AA:1056:G:H4'  | 1:AA:1057:A:C5'   | 2.34                     | 0.56              |
| 1:AA:1152:C:H4'  | 16:AR:80:ILE:HG21 | 1.87                     | 0.56              |
| 1:AA:1201:C:N4   | 1:AA:1241:A:H62   | 2.04                     | 0.56              |
| 1:AA:1472:A:N7   | 1:AA:1474:C:C5    | 2.74                     | 0.56              |
| 1:AA:1520:U:OP2  | 1:AA:1520:U:C5    | 2.59                     | 0.56              |
| 1:AA:1558:A:H2   | 1:AA:1560:G:C8    | 2.24                     | 0.56              |
| 1:AA:1591:G:H2'  | 1:AA:1592:C:C6    | 2.40                     | 0.56              |
| 1:AA:1655:A:H3'  | 1:AA:1656:C:H6    | 1.70                     | 0.56              |
| 1:AA:1780:A:O2'  | 1:AA:1781:C:OP1   | 2.22                     | 0.56              |
| 1:AA:1811:G:H2'  | 1:AA:1812:A:O4'   | 2.06                     | 0.56              |
| 1:AA:1838:C:O2   | 1:AA:1838:C:C2'   | 2.52                     | 0.56              |
| 1:AA:1964:G:N1   | 1:AA:1967:C:C5    | 2.72                     | 0.56              |
| 1:AA:2067:G:N1   | 1:AA:2069:G:C4    | 2.73                     | 0.56              |
| 1:AA:2184:G:N3   | 1:AA:2184:G:H2'   | 2.21                     | 0.56              |
| 1:AA:2211:G:H21  | 1:AA:2212:A:C5'   | 2.19                     | 0.56              |
| 1:AA:2284:C:H3'  | 27:Ac:27:LYS:NZ   | 2.19                     | 0.56              |
| 1:AA:2366:A:N6   | 1:AA:2367:G:C2    | 2.74                     | 0.56              |
| 1:AA:2371:G:C2'  | 1:AA:2372:G:O4'   | 2.53                     | 0.56              |
| 1:AA:2463:C:H2'  | 1:AA:2464:C:C5'   | 2.36                     | 0.56              |
| 1:AA:2556:C:N4   | 57:BZ:546:MET:HE1 | 2.21                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2594:C:H2'   | 1:AA:2595:G:O4'    | 2.06                     | 0.56              |
| 1:AA:2617:C:N3    | 1:AA:2618:G:C8     | 2.74                     | 0.56              |
| 59:AA:3003:8AN:N7 | 56:BE:75:C:C2      | 2.74                     | 0.56              |
| 2:AB:51:G:N7      | 14:AP:32:LEU:HD21  | 2.21                     | 0.56              |
| 2:AB:74:U:H2'     | 2:AB:75:G:C1'      | 2.36                     | 0.56              |
| 2:AB:109:G:N1     | 2:AB:110:G:C5      | 2.74                     | 0.56              |
| 3:AC:10:LEU:HD13  | 3:AC:13:LYS:HD2    | 1.86                     | 0.56              |
| 3:AC:104:LEU:HD13 | 3:AC:130:ILE:CD1   | 2.34                     | 0.56              |
| 4:AD:5:LYS:O      | 4:AD:27:THR:CG2    | 2.54                     | 0.56              |
| 4:AD:148:GLU:HB2  | 4:AD:151:LYS:HG3   | 1.87                     | 0.56              |
| 4:AD:226:MET:O    | 4:AD:228:PRO:N     | 2.38                     | 0.56              |
| 5:AE:14:ILE:HD12  | 5:AE:14:ILE:N      | 2.15                     | 0.56              |
| 5:AE:149:ARG:HH11 | 5:AE:151:TYR:HA    | 1.71                     | 0.56              |
| 7:AG:14:GLU:CD    | 7:AG:15:VAL:N      | 2.63                     | 0.56              |
| 7:AG:49:ASP:CA    | 7:AG:53:LEU:HD13   | 2.36                     | 0.56              |
| 7:AG:62:LEU:HD23  | 7:AG:143:GLU:HB3   | 1.86                     | 0.56              |
| 7:AG:148:MET:HG2  | 7:AG:151:ALA:H     | 1.70                     | 0.56              |
| 8:AH:9:ILE:HD13   | 8:AH:73:ALA:HB2    | 1.87                     | 0.56              |
| 8:AH:89:ILE:HG12  | 8:AH:94:TYR:CD2    | 2.41                     | 0.56              |
| 8:AH:124:GLU:C    | 8:AH:126:PRO:HD2   | 2.31                     | 0.56              |
| 9:AK:39:ARG:HG2   | 9:AK:40:PRO:CD     | 2.36                     | 0.56              |
| 9:AK:42:TRP:O     | 9:AK:43:THR:CG2    | 2.53                     | 0.56              |
| 10:AL:63:VAL:HG12 | 10:AL:99:PHE:CZ    | 2.41                     | 0.56              |
| 10:AL:75:SER:O    | 15:AQ:77:PRO:O     | 2.23                     | 0.56              |
| 10:AL:116:SER:HA  | 34:BA:345:C:H1'    | 1.87                     | 0.56              |
| 11:AM:15:ARG:HH22 | 11:AM:16:ARG:HB2   | 1.71                     | 0.56              |
| 12:AN:63:LYS:O    | 12:AN:106:VAL:HG13 | 2.06                     | 0.56              |
| 13:AO:17:ARG:HB2  | 13:AO:17:ARG:NH1   | 2.21                     | 0.56              |
| 14:AP:106:ARG:NH2 | 14:AP:110:LEU:CD2  | 2.58                     | 0.56              |
| 16:AR:25:TRP:O    | 16:AR:26:GLY:C     | 2.49                     | 0.56              |
| 16:AR:81:HIS:O    | 16:AR:117:GLN:NE2  | 2.38                     | 0.56              |
| 19:AU:65:ARG:HA   | 19:AU:70:LEU:CD1   | 2.36                     | 0.56              |
| 19:AU:72:LYS:O    | 19:AU:73:ARG:CB    | 2.47                     | 0.56              |
| 20:AV:7:VAL:C     | 20:AV:8:LYS:HD2    | 2.30                     | 0.56              |
| 20:AV:32:PRO:HB2  | 20:AV:34:LYS:CG    | 2.35                     | 0.56              |
| 22:AX:12:ASN:CA   | 22:AX:14:ARG:NE    | 2.69                     | 0.56              |
| 24:AZ:4:LEU:CD2   | 24:AZ:56:VAL:HG23  | 2.27                     | 0.56              |
| 24:AZ:10:LYS:CE   | 24:AZ:31:LEU:HD21  | 2.30                     | 0.56              |
| 24:AZ:18:ASP:OD1  | 24:AZ:19:GLN:N     | 2.39                     | 0.56              |
| 25:Aa:65:ASP:OD2  | 25:Aa:69:LYS:HE3   | 2.05                     | 0.56              |
| 29:Ae:23:VAL:HG13 | 29:Ae:24:ALA:N     | 2.20                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 29:Ae:40:GLU:O    | 29:Ae:43:GLN:OE1   | 2.23                     | 0.56              |
| 31:AI:54:ALA:N    | 31:AI:85:ASP:CA    | 2.60                     | 0.56              |
| 32:AJ:12:LEU:HD11 | 32:AJ:41:PHE:HZ    | 1.70                     | 0.56              |
| 34:BA:41:G:C4     | 34:BA:42:G:C8      | 2.94                     | 0.56              |
| 34:BA:237:C:H2'   | 34:BA:238:G:H8     | 1.71                     | 0.56              |
| 34:BA:474:G:O5'   | 49:BT:81:ARG:HA    | 2.06                     | 0.56              |
| 34:BA:791:G:H2'   | 34:BA:792:A:O4'    | 2.06                     | 0.56              |
| 34:BA:890:G:C2'   | 34:BA:891:U:OP2    | 2.53                     | 0.56              |
| 34:BA:935:A:H2'   | 34:BA:936:C:C6     | 2.40                     | 0.56              |
| 34:BA:962:C:H2'   | 34:BA:963:G:C8     | 2.41                     | 0.56              |
| 34:BA:1049:U:O5'  | 34:BA:1049:U:C6    | 2.58                     | 0.56              |
| 34:BA:1431:C:N4   | 34:BA:1470:G:C6    | 2.74                     | 0.56              |
| 35:BF:130:ARG:HB3 | 35:BF:131:PRO:CD   | 2.31                     | 0.56              |
| 36:BG:30:ARG:HD3  | 36:BG:30:ARG:H     | 1.71                     | 0.56              |
| 36:BG:192:THR:O   | 36:BG:192:THR:HG22 | 2.06                     | 0.56              |
| 37:BH:15:GLU:HB3  | 37:BH:19:LEU:HD11  | 1.88                     | 0.56              |
| 38:BI:70:PRO:O    | 38:BI:76:ILE:HG12  | 2.06                     | 0.56              |
| 40:BK:69:VAL:CG1  | 40:BK:104:LEU:HD21 | 2.36                     | 0.56              |
| 40:BK:109:ASN:HA  | 40:BK:119:ARG:HD3  | 1.88                     | 0.56              |
| 41:BL:81:HIS:HB3  | 41:BL:138:TRP:O    | 2.05                     | 0.56              |
| 42:BM:15:ALA:CB   | 42:BM:76:ALA:HB3   | 2.36                     | 0.56              |
| 43:BN:28:ARG:HH11 | 43:BN:28:ARG:HG2   | 1.71                     | 0.56              |
| 44:BO:44:SER:N    | 44:BO:47:VAL:HG21  | 2.21                     | 0.56              |
| 45:BP:7:ILE:HB    | 45:BP:8:ASN:HD22   | 1.70                     | 0.56              |
| 45:BP:97:ARG:HB3  | 45:BP:98:TYR:CD1   | 2.41                     | 0.56              |
| 46:BQ:6:GLY:O     | 46:BQ:7:VAL:HG22   | 2.06                     | 0.56              |
| 46:BQ:48:LEU:CG   | 46:BQ:53:VAL:HG22  | 2.35                     | 0.56              |
| 46:BQ:56:LEU:HD13 | 46:BQ:56:LEU:O     | 2.06                     | 0.56              |
| 46:BQ:97:PRO:HG2  | 46:BQ:101:GLN:CG   | 2.32                     | 0.56              |
| 48:BS:76:GLU:O    | 48:BS:77:ARG:C     | 2.49                     | 0.56              |
| 50:BU:53:LEU:HG   | 50:BU:53:LEU:O     | 2.06                     | 0.56              |
| 50:BU:53:LEU:O    | 50:BU:82:MET:SD    | 2.63                     | 0.56              |
| 51:BV:22:VAL:HG22 | 51:BV:55:ARG:O     | 2.05                     | 0.56              |
| 51:BV:51:LEU:N    | 51:BV:51:LEU:HD12  | 2.21                     | 0.56              |
| 51:BV:74:ARG:HH11 | 51:BV:74:ARG:CG    | 2.17                     | 0.56              |
| 53:BX:63:ILE:HG22 | 53:BX:64:ASP:N     | 2.21                     | 0.56              |
| 56:BE:18:G:C4     | 56:BE:58:A:C4      | 2.94                     | 0.56              |
| 56:BE:18:G:N7     | 56:BE:58:A:C2      | 2.74                     | 0.56              |
| 56:BE:73:A:O2'    | 56:BE:74:C:OP2     | 2.24                     | 0.56              |
| 57:BZ:122:LYS:HE3 | 57:BZ:155:ASP:O    | 2.05                     | 0.56              |
| 57:BZ:403:VAL:O   | 57:BZ:465:LEU:CD1  | 2.54                     | 0.56              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:BZ:546:MET:HB3 | 57:BZ:547:ARG:CA  | 2.36                     | 0.56              |
| 1:AA:41:C:C2      | 1:AA:43:G:C8      | 2.94                     | 0.55              |
| 1:AA:86:C:OP1     | 20:AV:30:VAL:HG23 | 2.05                     | 0.55              |
| 1:AA:535:C:O2'    | 16:AR:53:ARG:HG2  | 2.06                     | 0.55              |
| 1:AA:565:C:O4'    | 1:AA:1252:G:O6    | 2.23                     | 0.55              |
| 1:AA:811:U:O5'    | 1:AA:811:U:H6     | 1.86                     | 0.55              |
| 1:AA:875:G:C6     | 1:AA:876:C:N4     | 2.75                     | 0.55              |
| 1:AA:922:U:H2'    | 1:AA:923:C:C6     | 2.41                     | 0.55              |
| 1:AA:943:U:P      | 11:AM:32:THR:HB   | 2.46                     | 0.55              |
| 1:AA:1011:G:OP2   | 16:AR:75:ASN:CG   | 2.50                     | 0.55              |
| 1:AA:1182:A:C6    | 1:AA:1183:G:C6    | 2.94                     | 0.55              |
| 1:AA:1223:C:C4    | 1:AA:1227:A:N1    | 2.73                     | 0.55              |
| 1:AA:1456:G:H1    | 1:AA:2703:C:H42   | 1.51                     | 0.55              |
| 1:AA:1460:A:N1    | 1:AA:1732:A:C6    | 2.74                     | 0.55              |
| 1:AA:1470:G:H2'   | 1:AA:1519:G:O6    | 2.07                     | 0.55              |
| 1:AA:1635:G:C2'   | 1:AA:1636:C:H5'   | 2.36                     | 0.55              |
| 1:AA:1905:C:O2'   | 1:AA:1929:G:O2'   | 2.22                     | 0.55              |
| 1:AA:2011:U:C2'   | 1:AA:2012:G:H8    | 2.18                     | 0.55              |
| 1:AA:2020:A:OP2   | 16:AR:27:LEU:HD22 | 2.06                     | 0.55              |
| 1:AA:2163:C:C2'   | 1:AA:2164:C:H5'   | 2.36                     | 0.55              |
| 1:AA:2277:G:N7    | 22:AX:14:ARG:HG3  | 2.21                     | 0.55              |
| 1:AA:2306:C:OP1   | 7:AG:136:ARG:CD   | 2.53                     | 0.55              |
| 1:AA:2311:A:H5''  | 1:AA:2312:U:H5    | 1.71                     | 0.55              |
| 1:AA:2315:G:H4'   | 7:AG:130:ASN:OD1  | 2.06                     | 0.55              |
| 1:AA:2491:U:C6    | 1:AA:2492:U:OP2   | 2.59                     | 0.55              |
| 1:AA:2512:C:O5'   | 1:AA:2512:C:H6    | 1.89                     | 0.55              |
| 1:AA:2688:U:H1'   | 1:AA:2721:A:N6    | 2.22                     | 0.55              |
| 1:AA:2740:A:N6    | 1:AA:2764:A:N9    | 2.54                     | 0.55              |
| 1:AA:2785:C:C4    | 1:AA:2786:U:O4    | 2.59                     | 0.55              |
| 1:AA:2794:C:H3'   | 1:AA:2799:A:C2    | 2.40                     | 0.55              |
| 1:AA:2822:G:N7    | 13:AO:4:LEU:HD21  | 2.21                     | 0.55              |
| 1:AA:2851:A:N1    | 1:AA:2852:G:N3    | 2.54                     | 0.55              |
| 2:AB:9:G:C2       | 2:AB:10:C:C4      | 2.94                     | 0.55              |
| 2:AB:61:G:C6      | 2:AB:62:C:N4      | 2.74                     | 0.55              |
| 2:AB:80:U:C2'     | 2:AB:81:G:H8      | 2.19                     | 0.55              |
| 4:AD:105:ILE:HD11 | 4:AD:106:ILE:HD13 | 1.88                     | 0.55              |
| 5:AE:46:ALA:HB2   | 5:AE:85:ASN:ND2   | 2.21                     | 0.55              |
| 5:AE:105:THR:HB   | 5:AE:166:THR:OG1  | 2.05                     | 0.55              |
| 6:AF:9:ILE:HG21   | 6:AF:124:LEU:O    | 2.06                     | 0.55              |
| 6:AF:122:LYS:HA   | 6:AF:122:LYS:HZ2  | 1.68                     | 0.55              |
| 8:AH:7:LEU:CA     | 8:AH:52:VAL:HG13  | 2.35                     | 0.55              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AH:103:LEU:CD1  | 8:AH:115:VAL:HG11  | 2.23                     | 0.55              |
| 8:AH:149:ARG:CZ   | 8:AH:164:TYR:CD1   | 2.82                     | 0.55              |
| 8:AH:152:ARG:HB2  | 8:AH:152:ARG:CZ    | 2.37                     | 0.55              |
| 9:AK:24:GLY:O     | 9:AK:27:ALA:N      | 2.40                     | 0.55              |
| 9:AK:38:HIS:O     | 16:AR:71:GLN:NE2   | 2.39                     | 0.55              |
| 9:AK:97:ARG:CA    | 9:AK:100:GLU:HG2   | 2.32                     | 0.55              |
| 9:AK:107:LEU:HD13 | 9:AK:117:PHE:CE1   | 2.41                     | 0.55              |
| 10:AL:12:ASP:O    | 10:AL:94:ARG:CZ    | 2.54                     | 0.55              |
| 10:AL:94:ARG:CG   | 10:AL:96:THR:N     | 2.67                     | 0.55              |
| 11:AM:28:GLY:C    | 11:AM:29:LYS:CG    | 2.78                     | 0.55              |
| 12:AN:6:ARG:NE    | 12:AN:8:LYS:HG3    | 2.21                     | 0.55              |
| 12:AN:114:ALA:O   | 12:AN:117:ALA:HB3  | 2.06                     | 0.55              |
| 13:AO:28:LEU:HD13 | 13:AO:28:LEU:C     | 2.31                     | 0.55              |
| 13:AO:52:ILE:O    | 13:AO:56:LYS:HG3   | 2.06                     | 0.55              |
| 13:AO:60:LEU:H    | 13:AO:60:LEU:CD2   | 2.19                     | 0.55              |
| 13:AO:105:ARG:HG3 | 13:AO:106:GLY:N    | 2.20                     | 0.55              |
| 14:AP:57:LYS:O    | 14:AP:58:LEU:HB2   | 2.06                     | 0.55              |
| 14:AP:93:LYS:O    | 14:AP:98:VAL:HG13  | 2.06                     | 0.55              |
| 15:AQ:64:ARG:NH2  | 15:AQ:77:PRO:HB2   | 2.21                     | 0.55              |
| 16:AR:29:SER:OG   | 16:AR:30:LYS:HD2   | 2.06                     | 0.55              |
| 17:AS:5:VAL:HG11  | 17:AS:37:VAL:HG22  | 1.87                     | 0.55              |
| 17:AS:40:LEU:N    | 17:AS:54:GLY:HA3   | 2.21                     | 0.55              |
| 18:AT:29:LEU:HD23 | 18:AT:29:LEU:C     | 2.31                     | 0.55              |
| 20:AV:29:GLU:OE1  | 20:AV:34:LYS:HB2   | 2.06                     | 0.55              |
| 20:AV:81:LYS:HD3  | 20:AV:96:ILE:CG1   | 2.36                     | 0.55              |
| 21:AW:23:LYS:HA   | 21:AW:39:VAL:O     | 2.06                     | 0.55              |
| 22:AX:70:GLN:O    | 22:AX:78:TYR:O     | 2.23                     | 0.55              |
| 32:AJ:23:VAL:N    | 32:AJ:24:GLY:HA3   | 2.19                     | 0.55              |
| 34:BA:8:A:H4'     | 38:BI:102:ALA:HA   | 1.87                     | 0.55              |
| 34:BA:319:G:C2'   | 34:BA:320:C:H5'    | 2.36                     | 0.55              |
| 34:BA:409:G:C5'   | 37:BH:24:GLU:OE1   | 2.54                     | 0.55              |
| 34:BA:501:C:H2'   | 34:BA:502:G:C8     | 2.41                     | 0.55              |
| 34:BA:772:U:C2    | 34:BA:773:G:C8     | 2.94                     | 0.55              |
| 34:BA:815:A:C2    | 34:BA:1529:G:N2    | 2.73                     | 0.55              |
| 34:BA:1125:U:H4'  | 34:BA:1126:U:H5    | 1.71                     | 0.55              |
| 34:BA:1496:C:H2'  | 34:BA:1497:G:H8    | 1.71                     | 0.55              |
| 35:BF:44:LEU:O    | 35:BF:45:GLN:C     | 2.48                     | 0.55              |
| 35:BF:73:THR:O    | 35:BF:74:LYS:C     | 2.48                     | 0.55              |
| 35:BF:221:LEU:O   | 35:BF:221:LEU:HD22 | 2.07                     | 0.55              |
| 36:BG:34:LEU:O    | 36:BG:38:ARG:HD3   | 2.06                     | 0.55              |
| 37:BH:34:GLU:O    | 37:BH:35:ARG:CB    | 2.54                     | 0.55              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 38:BI:16:THR:CG2   | 38:BI:28:PHE:HA    | 2.34                     | 0.55              |
| 38:BI:63:ARG:CA    | 38:BI:66:MET:HG2   | 2.35                     | 0.55              |
| 38:BI:109:ILE:HG12 | 38:BI:110:LEU:HD23 | 1.87                     | 0.55              |
| 39:BJ:60:PHE:HE2   | 51:BV:78:LEU:HD21  | 1.68                     | 0.55              |
| 41:BL:102:ARG:HD3  | 41:BL:105:ARG:NH1  | 2.21                     | 0.55              |
| 41:BL:114:THR:O    | 41:BL:116:LYS:N    | 2.39                     | 0.55              |
| 42:BM:27:THR:HG22  | 42:BM:30:GLY:H     | 1.71                     | 0.55              |
| 44:BO:71:LYS:HG3   | 44:BO:72:ALA:H     | 1.71                     | 0.55              |
| 44:BO:80:VAL:CG2   | 44:BO:81:ASP:N     | 2.69                     | 0.55              |
| 44:BO:83:ILE:HD12  | 44:BO:83:ILE:N     | 2.21                     | 0.55              |
| 45:BP:115:LYS:O    | 45:BP:116:SER:C    | 2.49                     | 0.55              |
| 47:BR:23:ARG:HH11  | 47:BR:29:ARG:N     | 2.05                     | 0.55              |
| 47:BR:42:ILE:O     | 47:BR:44:LEU:N     | 2.39                     | 0.55              |
| 47:BR:48:ALA:HA    | 47:BR:53:LEU:HD12  | 1.88                     | 0.55              |
| 48:BS:6:GLU:C      | 48:BS:8:LYS:N      | 2.64                     | 0.55              |
| 48:BS:66:LEU:HD23  | 48:BS:66:LEU:H     | 1.70                     | 0.55              |
| 49:BT:4:ILE:HG12   | 49:BT:66:PRO:HA    | 1.89                     | 0.55              |
| 49:BT:57:ARG:O     | 49:BT:58:TYR:C     | 2.48                     | 0.55              |
| 50:BU:4:LYS:C      | 50:BU:5:VAL:HG23   | 2.31                     | 0.55              |
| 52:BW:12:ASP:OD1   | 52:BW:38:SER:HA    | 2.06                     | 0.55              |
| 52:BW:45:VAL:CA    | 52:BW:67:VAL:HG21  | 2.37                     | 0.55              |
| 53:BX:48:LYS:O     | 53:BX:49:ALA:C     | 2.48                     | 0.55              |
| 53:BX:50:GLU:OE1   | 53:BX:100:ILE:HG12 | 2.05                     | 0.55              |
| 54:BY:3:LYS:O      | 54:BY:14:TRP:CE3   | 2.59                     | 0.55              |
| 56:BD:16:U:H3'     | 56:BD:17:C:C5'     | 2.35                     | 0.55              |
| 56:BE:53:G:H2'     | 56:BE:54:U:C6      | 2.42                     | 0.55              |
| 56:BE:73:A:H4'     | 56:BE:74:C:O2      | 2.05                     | 0.55              |
| 57:BZ:11:ILE:CD1   | 57:BZ:95:VAL:CB    | 2.56                     | 0.55              |
| 57:BZ:20:THR:HG21  | 60:BZ:701:GCP:O1A  | 2.06                     | 0.55              |
| 57:BZ:22:VAL:HG11  | 57:BZ:74:ASP:CG    | 2.30                     | 0.55              |
| 1:AA:27:G:H22      | 1:AA:512:G:C2'     | 2.20                     | 0.55              |
| 1:AA:62:C:O5'      | 1:AA:62:C:H6       | 1.90                     | 0.55              |
| 1:AA:154:G:H2'     | 1:AA:155:C:C6      | 2.41                     | 0.55              |
| 1:AA:195:A:H5''    | 1:AA:196:A:OP2     | 2.07                     | 0.55              |
| 1:AA:204:A:H5'     | 1:AA:206:U:O4'     | 2.06                     | 0.55              |
| 1:AA:239:U:O2'     | 1:AA:240:G:C5'     | 2.51                     | 0.55              |
| 1:AA:270(U):C:H2'  | 1:AA:270(V):G:O4'  | 2.06                     | 0.55              |
| 1:AA:460:A:H2'     | 1:AA:461:C:O4'     | 2.06                     | 0.55              |
| 1:AA:475:U:C6      | 1:AA:475:U:OP2     | 2.59                     | 0.55              |
| 1:AA:547:A:N6      | 1:AA:548:A:C6      | 2.74                     | 0.55              |
| 1:AA:558:G:O2'     | 1:AA:559:G:H5''    | 2.07                     | 0.55              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:564:C:HO2'   | 1:AA:1252:G:H1     | 1.53                     | 0.55              |
| 1:AA:988:A:OP1    | 24:AZ:12:PRO:HD2   | 2.07                     | 0.55              |
| 1:AA:1035:U:H2'   | 1:AA:1036:G:O4'    | 2.05                     | 0.55              |
| 1:AA:1061:U:OP2   | 1:AA:1061:U:H6     | 1.90                     | 0.55              |
| 1:AA:1069:A:H5'   | 1:AA:1070:A:C8     | 2.41                     | 0.55              |
| 1:AA:1083:U:H2'   | 1:AA:1083:U:O2     | 2.07                     | 0.55              |
| 1:AA:1105:U:N3    | 1:AA:1107:G:N1     | 2.54                     | 0.55              |
| 1:AA:1106:G:H2'   | 1:AA:1107:G:H8     | 1.68                     | 0.55              |
| 1:AA:1163:G:C6    | 1:AA:1164:G:N7     | 2.74                     | 0.55              |
| 1:AA:1189:A:OP1   | 11:AM:29:LYS:HE3   | 2.05                     | 0.55              |
| 1:AA:1269:A:C8    | 1:AA:1269:A:O5'    | 2.59                     | 0.55              |
| 1:AA:1447:G:H1'   | 1:AA:1545(A):A:C1' | 2.36                     | 0.55              |
| 1:AA:1592:C:O2'   | 1:AA:1593:G:C5'    | 2.53                     | 0.55              |
| 1:AA:1655:A:N6    | 1:AA:2005:A:O2'    | 2.39                     | 0.55              |
| 1:AA:1746:G:H2'   | 1:AA:1747:G:H8     | 1.67                     | 0.55              |
| 1:AA:1784:A:H4'   | 1:AA:1785:A:C1'    | 2.37                     | 0.55              |
| 1:AA:1923:U:C4    | 1:AA:1924:C:N4     | 2.73                     | 0.55              |
| 1:AA:1936:A:C4    | 1:AA:1940:U:N3     | 2.74                     | 0.55              |
| 1:AA:1937:A:O2'   | 1:AA:1938:A:OP1    | 2.23                     | 0.55              |
| 1:AA:2003:G:N1    | 1:AA:2004:G:C2     | 2.74                     | 0.55              |
| 1:AA:2010:G:P     | 18:AT:41:LYS:HZ3   | 2.29                     | 0.55              |
| 1:AA:2022:U:O2    | 1:AA:2022:U:C2'    | 2.53                     | 0.55              |
| 1:AA:2048:G:C2    | 1:AA:2049:G:C4     | 2.94                     | 0.55              |
| 1:AA:2261:C:O5'   | 1:AA:2261:C:H6     | 1.89                     | 0.55              |
| 1:AA:2457:U:O2'   | 1:AA:2458:G:H5'    | 2.06                     | 0.55              |
| 1:AA:2533:A:H4'   | 1:AA:2664:G:O3'    | 2.06                     | 0.55              |
| 1:AA:2734:A:N3    | 5:AE:203:LYS:HD2   | 2.21                     | 0.55              |
| 1:AA:2747:G:N2    | 1:AA:2754:U:H3     | 2.04                     | 0.55              |
| 1:AA:2877:G:C2    | 1:AA:2878:U:C2     | 2.94                     | 0.55              |
| 2:AB:82:G:C2      | 2:AB:83:G:N7       | 2.74                     | 0.55              |
| 2:AB:112:G:C5'    | 2:AB:113:C:OP2     | 2.54                     | 0.55              |
| 3:AC:102:LYS:O    | 3:AC:105:ASP:HB2   | 2.05                     | 0.55              |
| 3:AC:127:LEU:HB3  | 3:AC:131:LEU:CD1   | 2.36                     | 0.55              |
| 4:AD:55:GLY:H     | 4:AD:219:PRO:HD2   | 1.62                     | 0.55              |
| 4:AD:61:LEU:HB3   | 4:AD:86:PRO:HG2    | 1.82                     | 0.55              |
| 4:AD:165:ILE:HD12 | 4:AD:165:ILE:N     | 2.21                     | 0.55              |
| 5:AE:59:VAL:CG1   | 5:AE:62:PRO:HD2    | 2.36                     | 0.55              |
| 6:AF:31:HIS:CG    | 11:AM:14:LYS:NZ    | 2.74                     | 0.55              |
| 6:AF:120:GLU:OE1  | 6:AF:120:GLU:HA    | 2.04                     | 0.55              |
| 6:AF:196:LEU:HD22 | 6:AF:199:TRP:NE1   | 2.21                     | 0.55              |
| 7:AG:1:MET:HB3    | 7:AG:2:PRO:HD3     | 1.88                     | 0.55              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 7:AG:82:LEU:O     | 7:AG:83:ARG:HG3    | 2.07                     | 0.55              |
| 8:AH:101:ARG:C    | 8:AH:117:PRO:HD3   | 2.31                     | 0.55              |
| 9:AK:15:LEU:CD1   | 9:AK:137:LYS:HB3   | 2.35                     | 0.55              |
| 9:AK:33:LEU:O     | 9:AK:33:LEU:HD22   | 2.05                     | 0.55              |
| 9:AK:100:GLU:HB3  | 9:AK:104:LYS:HE2   | 1.89                     | 0.55              |
| 9:AK:126:PRO:O    | 9:AK:127:ASP:HB3   | 2.07                     | 0.55              |
| 10:AL:59:LYS:HE2  | 10:AL:59:LYS:C     | 2.31                     | 0.55              |
| 11:AM:46:LYS:N    | 11:AM:46:LYS:CE    | 2.64                     | 0.55              |
| 11:AM:81:GLN:CA   | 11:AM:86:LYS:HG3   | 2.36                     | 0.55              |
| 11:AM:90:ARG:CA   | 11:AM:125:VAL:HG22 | 2.36                     | 0.55              |
| 13:AO:17:ARG:NH1  | 13:AO:17:ARG:CB    | 2.69                     | 0.55              |
| 14:AP:33:LYS:HE2  | 14:AP:54:LEU:CD2   | 2.35                     | 0.55              |
| 14:AP:106:ARG:CD  | 14:AP:107:GLU:OE2  | 2.54                     | 0.55              |
| 16:AR:45:TYR:O    | 16:AR:49:HIS:ND1   | 2.39                     | 0.55              |
| 16:AR:45:TYR:O    | 16:AR:46:ALA:C     | 2.49                     | 0.55              |
| 17:AS:39:LEU:HG   | 17:AS:58:VAL:C     | 2.29                     | 0.55              |
| 18:AT:20:VAL:CG1  | 18:AT:21:VAL:N     | 2.67                     | 0.55              |
| 18:AT:25:ARG:C    | 18:AT:71:VAL:HG13  | 2.31                     | 0.55              |
| 19:AU:52:VAL:O    | 19:AU:82:GLN:HB3   | 2.05                     | 0.55              |
| 21:AW:56:VAL:HG13 | 21:AW:133:ILE:CD1  | 2.36                     | 0.55              |
| 21:AW:87:ASP:N    | 21:AW:87:ASP:OD2   | 2.39                     | 0.55              |
| 21:AW:114:GLY:H   | 21:AW:145:GLU:CD   | 2.14                     | 0.55              |
| 25:Aa:5:ILE:HB    | 25:Aa:8:LYS:O      | 2.06                     | 0.55              |
| 26:Ab:9:LYS:CD    | 26:Ab:10:LYS:H     | 2.19                     | 0.55              |
| 26:Ab:20:ARG:HA   | 26:Ab:23:HIS:HD2   | 1.70                     | 0.55              |
| 29:Ae:24:ALA:O    | 29:Ae:25:MET:C     | 2.48                     | 0.55              |
| 32:AJ:78:ILE:HG21 | 32:AJ:122:ALA:O    | 2.04                     | 0.55              |
| 34:BA:22:G:C5'    | 34:BA:885:G:O4'    | 2.53                     | 0.55              |
| 34:BA:258:G:H2'   | 34:BA:259:G:H8     | 1.71                     | 0.55              |
| 34:BA:413:G:H2'   | 34:BA:414:A:OP2    | 2.06                     | 0.55              |
| 34:BA:591:U:OP1   | 41:BL:30:ARG:CZ    | 2.54                     | 0.55              |
| 34:BA:593:G:C5    | 34:BA:594:G:C8     | 2.94                     | 0.55              |
| 34:BA:738:C:C2    | 34:BA:739:C:C5     | 2.93                     | 0.55              |
| 34:BA:862:C:C2    | 34:BA:863:U:H5     | 2.24                     | 0.55              |
| 34:BA:1095:U:H5'  | 34:BA:1109:C:O2    | 2.07                     | 0.55              |
| 34:BA:1112:C:O2   | 36:BG:179:ARG:CZ   | 2.52                     | 0.55              |
| 34:BA:1238:A:N6   | 34:BA:1301:U:H3    | 1.97                     | 0.55              |
| 34:BA:1268:A:C2   | 34:BA:1311:G:C4    | 2.92                     | 0.55              |
| 34:BA:1299:A:N6   | 34:BA:1301:U:C2    | 2.74                     | 0.55              |
| 34:BA:1428:A:C6   | 34:BA:1429:C:N4    | 2.75                     | 0.55              |
| 35:BF:52:GLU:OE1  | 35:BF:53:ARG:HB2   | 2.06                     | 0.55              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BF:54:THR:HG23 | 35:BF:199:TYR:HB3  | 1.89                     | 0.55              |
| 35:BF:57:PHE:HD2  | 35:BF:57:PHE:C     | 2.15                     | 0.55              |
| 35:BF:60:ASP:CG   | 35:BF:64:ARG:HH22  | 2.14                     | 0.55              |
| 36:BG:47:LEU:CD1  | 36:BG:83:ARG:NH2   | 2.70                     | 0.55              |
| 36:BG:52:LEU:CA   | 36:BG:70:VAL:HG22  | 2.27                     | 0.55              |
| 36:BG:65:ALA:O    | 36:BG:66:VAL:HB    | 2.06                     | 0.55              |
| 36:BG:150:LYS:NZ  | 36:BG:152:ILE:CG2  | 2.69                     | 0.55              |
| 36:BG:155:GLY:O   | 36:BG:196:LEU:HB2  | 2.06                     | 0.55              |
| 37:BH:17:VAL:O    | 37:BH:18:LYS:C     | 2.48                     | 0.55              |
| 37:BH:78:LEU:O    | 37:BH:81:GLU:N     | 2.39                     | 0.55              |
| 37:BH:91:SER:O    | 37:BH:92:VAL:C     | 2.49                     | 0.55              |
| 37:BH:114:ARG:O   | 37:BH:117:ALA:HB3  | 2.04                     | 0.55              |
| 37:BH:120:LEU:HG  | 37:BH:121:VAL:N    | 2.21                     | 0.55              |
| 37:BH:123:HIS:HB2 | 37:BH:125:HIS:HE1  | 1.71                     | 0.55              |
| 37:BH:179:GLU:O   | 37:BH:181:MET:N    | 2.33                     | 0.55              |
| 39:BJ:47:ARG:C    | 39:BJ:48:LEU:HD23  | 2.31                     | 0.55              |
| 39:BJ:49:ALA:HB3  | 51:BV:79:LEU:CA    | 2.36                     | 0.55              |
| 40:BK:17:VAL:O    | 40:BK:17:VAL:CG1   | 2.55                     | 0.55              |
| 40:BK:57:GLU:O    | 40:BK:61:VAL:HG23  | 2.06                     | 0.55              |
| 40:BK:110:GLN:O   | 40:BK:111:ARG:O    | 2.24                     | 0.55              |
| 41:BL:44:PHE:O    | 41:BL:64:LYS:CD    | 2.55                     | 0.55              |
| 41:BL:70:GLN:HE21 | 41:BL:70:GLN:C     | 2.14                     | 0.55              |
| 41:BL:79:VAL:O    | 41:BL:80:ILE:C     | 2.47                     | 0.55              |
| 41:BL:123:GLU:OE1 | 41:BL:124:ALA:N    | 2.39                     | 0.55              |
| 43:BN:32:ALA:HB2  | 43:BN:75:ILE:O     | 2.05                     | 0.55              |
| 43:BN:32:ALA:O    | 43:BN:33:GLN:HB2   | 2.05                     | 0.55              |
| 44:BO:31:THR:OG1  | 44:BO:42:TRP:HB3   | 2.05                     | 0.55              |
| 44:BO:112:THR:O   | 44:BO:112:THR:HG22 | 2.06                     | 0.55              |
| 45:BP:24:VAL:HG23 | 45:BP:97:ARG:CG    | 2.24                     | 0.55              |
| 45:BP:85:ILE:CD1  | 45:BP:98:TYR:HB3   | 2.37                     | 0.55              |
| 46:BQ:5:ALA:HB3   | 46:BQ:67:GLU:OE1   | 2.06                     | 0.55              |
| 49:BT:12:LYS:NZ   | 49:BT:13:HIS:CE1   | 2.74                     | 0.55              |
| 49:BT:20:VAL:HG12 | 49:BT:21:VAL:N     | 2.21                     | 0.55              |
| 50:BU:44:ALA:CB   | 50:BU:71:PHE:O     | 2.55                     | 0.55              |
| 50:BU:86:GLU:O    | 50:BU:89:LEU:HB2   | 2.05                     | 0.55              |
| 51:BV:45:SER:HB3  | 51:BV:51:LEU:CD1   | 2.31                     | 0.55              |
| 52:BW:18:LYS:HE2  | 52:BW:22:LEU:HB2   | 1.88                     | 0.55              |
| 52:BW:51:VAL:CG1  | 52:BW:75:ALA:HB2   | 2.34                     | 0.55              |
| 53:BX:86:ARG:HG2  | 53:BX:87:LYS:N     | 2.21                     | 0.55              |
| 54:BY:6:ARG:HH11  | 54:BY:15:ARG:NH2   | 2.03                     | 0.55              |
| 56:BE:5:G:C1'     | 56:BE:7:A:H5''     | 2.27                     | 0.55              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:BZ:87:ARG:HH21 | 57:BZ:210:SER:HB3  | 1.70                     | 0.55              |
| 57:BZ:389:PHE:CG  | 57:BZ:396:LYS:CG   | 2.89                     | 0.55              |
| 57:BZ:411:HIS:CD2 | 57:BZ:459:THR:CG2  | 2.89                     | 0.55              |
| 57:BZ:488:LEU:HG  | 57:BZ:526:ILE:CA   | 2.36                     | 0.55              |
| 1:AA:18:C:H4'     | 16:AR:23:GLY:O     | 2.06                     | 0.55              |
| 1:AA:172:C:C6     | 1:AA:173:G:C8      | 2.93                     | 0.55              |
| 1:AA:252:G:H21    | 1:AA:253:C:H1'     | 1.70                     | 0.55              |
| 1:AA:341:G:H2'    | 1:AA:342:G:O4'     | 2.07                     | 0.55              |
| 1:AA:542:C:H2'    | 1:AA:543:C:H6      | 1.72                     | 0.55              |
| 1:AA:643:A:H4'    | 1:AA:644:A:C5'     | 2.35                     | 0.55              |
| 1:AA:768:G:H2'    | 1:AA:769:G:H8      | 1.71                     | 0.55              |
| 1:AA:840:C:H4'    | 1:AA:1192:G:O2'    | 2.07                     | 0.55              |
| 1:AA:876:C:O5'    | 1:AA:876:C:H6      | 1.89                     | 0.55              |
| 1:AA:950:G:C4     | 1:AA:951:C:C5      | 2.94                     | 0.55              |
| 1:AA:958:U:O4     | 12:AN:19:GLY:O     | 2.23                     | 0.55              |
| 1:AA:975:G:N3     | 1:AA:975:G:H2'     | 2.21                     | 0.55              |
| 1:AA:1024:G:C2    | 1:AA:1139:G:N2     | 2.74                     | 0.55              |
| 1:AA:1027:A:H2'   | 1:AA:1028:A:C8     | 2.41                     | 0.55              |
| 1:AA:1083:U:O2'   | 1:AA:1084:A:H5''   | 2.07                     | 0.55              |
| 1:AA:1178:C:C4    | 1:AA:1179:C:N4     | 2.74                     | 0.55              |
| 1:AA:1366:A:C5'   | 25:Aa:1:MET:N      | 2.69                     | 0.55              |
| 1:AA:1392:A:H2'   | 1:AA:1393:A:C8     | 2.42                     | 0.55              |
| 1:AA:1455:G:C2'   | 1:AA:1456:G:H5'    | 2.37                     | 0.55              |
| 1:AA:1487:G:H2'   | 1:AA:1488:G:H8     | 1.72                     | 0.55              |
| 1:AA:1488:G:C2'   | 1:AA:1489:U:C5'    | 2.77                     | 0.55              |
| 1:AA:1515:C:OP1   | 1:AA:1515:C:C6     | 2.59                     | 0.55              |
| 1:AA:1579:A:H61   | 1:AA:1581:G:H21    | 1.53                     | 0.55              |
| 1:AA:1658:C:OP1   | 5:AE:134:ILE:CB    | 2.51                     | 0.55              |
| 1:AA:1670:C:OP2   | 1:AA:1671:U:H5     | 1.82                     | 0.55              |
| 1:AA:1688:U:C2'   | 1:AA:1689:A:OP2    | 2.54                     | 0.55              |
| 1:AA:1692:U:H1'   | 1:AA:1696:G:H21    | 1.71                     | 0.55              |
| 1:AA:1718:G:C2'   | 1:AA:1725:G:H8     | 2.05                     | 0.55              |
| 1:AA:1786:A:HO2'  | 1:AA:1787:A:H5'    | 1.70                     | 0.55              |
| 1:AA:1827:C:C1'   | 1:AA:1970:A:H2     | 2.20                     | 0.55              |
| 1:AA:2002:G:H4'   | 1:AA:2712(A):A:O2' | 2.06                     | 0.55              |
| 1:AA:2047:U:O2'   | 1:AA:2048:G:O5'    | 2.24                     | 0.55              |
| 1:AA:2067:G:C6    | 1:AA:2069:G:C5     | 2.94                     | 0.55              |
| 1:AA:2168:G:N3    | 1:AA:2170:A:C8     | 2.74                     | 0.55              |
| 1:AA:2206:C:O2'   | 1:AA:2207:C:H5'    | 2.07                     | 0.55              |
| 1:AA:2209:C:H2'   | 1:AA:2210:G:C3'    | 2.36                     | 0.55              |
| 1:AA:2309:A:H3'   | 1:AA:2309:A:N3     | 2.21                     | 0.55              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2423:U:C1'   | 1:AA:2425:A:C4     | 2.89                     | 0.55              |
| 1:AA:2436:G:O2'   | 1:AA:2437:U:H5'    | 2.06                     | 0.55              |
| 1:AA:2486:G:N1    | 1:AA:2487:G:C5     | 2.75                     | 0.55              |
| 1:AA:2501:C:H5''  | 1:AA:2502:G:H5''   | 1.88                     | 0.55              |
| 1:AA:2555:U:C4    | 57:BZ:547:ARG:NH2  | 2.51                     | 0.55              |
| 1:AA:2596:U:C2'   | 4:AD:242:ARG:NH1   | 2.53                     | 0.55              |
| 1:AA:2730:C:H4'   | 5:AE:169:ASN:O     | 2.06                     | 0.55              |
| 1:AA:2845:G:C5'   | 15:AQ:57:PHE:O     | 2.55                     | 0.55              |
| 2:AB:69:G:C5'     | 2:AB:70:C:OP2      | 2.54                     | 0.55              |
| 3:AC:120:MET:HE1  | 3:AC:138:PRO:CB    | 2.34                     | 0.55              |
| 4:AD:63:ARG:HG2   | 4:AD:65:ILE:HG12   | 1.88                     | 0.55              |
| 4:AD:94:LEU:HD12  | 4:AD:95:LEU:N      | 2.21                     | 0.55              |
| 4:AD:148:GLU:HA   | 4:AD:186:HIS:HE1   | 1.71                     | 0.55              |
| 4:AD:244:ARG:HA   | 4:AD:252:TRP:NE1   | 2.21                     | 0.55              |
| 6:AF:39:TRP:CG    | 6:AF:40:GLN:N      | 2.73                     | 0.55              |
| 6:AF:200:GLU:O    | 6:AF:201:VAL:C     | 2.49                     | 0.55              |
| 7:AG:54:GLU:OE2   | 7:AG:70:VAL:HG22   | 2.06                     | 0.55              |
| 7:AG:68:PRO:HB3   | 7:AG:72:ARG:NH1    | 2.21                     | 0.55              |
| 7:AG:128:ARG:CZ   | 7:AG:130:ASN:HD21  | 2.19                     | 0.55              |
| 8:AH:6:ARG:HD3    | 8:AH:69:ARG:HD3    | 1.87                     | 0.55              |
| 8:AH:30:LYS:O     | 8:AH:32:GLU:N      | 2.39                     | 0.55              |
| 9:AK:14:VAL:HG13  | 9:AK:138:LEU:C     | 2.31                     | 0.55              |
| 9:AK:16:ILE:CD1   | 9:AK:52:VAL:HG22   | 2.11                     | 0.55              |
| 9:AK:49:GLY:O     | 9:AK:50:ASP:O      | 2.24                     | 0.55              |
| 9:AK:126:PRO:C    | 9:AK:127:ASP:CG    | 2.72                     | 0.55              |
| 10:AL:59:LYS:CB   | 10:AL:84:ALA:O     | 2.50                     | 0.55              |
| 12:AN:19:GLY:O    | 12:AN:20:ALA:HB3   | 2.06                     | 0.55              |
| 12:AN:54:MET:HE1  | 12:AN:118:LEU:HD23 | 1.87                     | 0.55              |
| 12:AN:93:TYR:N    | 12:AN:93:TYR:CD1   | 2.73                     | 0.55              |
| 12:AN:98:LYS:N    | 12:AN:98:LYS:HE3   | 2.21                     | 0.55              |
| 12:AN:99:PRO:O    | 12:AN:99:PRO:HG2   | 2.07                     | 0.55              |
| 14:AP:17:ARG:NH1  | 14:AP:25:ARG:HD2   | 2.21                     | 0.55              |
| 14:AP:26:LEU:H    | 14:AP:88:ASP:HB2   | 1.71                     | 0.55              |
| 14:AP:51:ALA:CA   | 14:AP:73:LEU:HG    | 2.36                     | 0.55              |
| 16:AR:59:ARG:HB3  | 16:AR:59:ARG:HH11  | 1.70                     | 0.55              |
| 17:AS:15:GLU:C    | 17:AS:100:ARG:NH2  | 2.64                     | 0.55              |
| 21:AW:1:MET:H2    | 21:AW:53:ILE:HD11  | 1.72                     | 0.55              |
| 21:AW:120:ILE:HB  | 21:AW:123:ASP:CG   | 2.32                     | 0.55              |
| 22:AX:57:PHE:N    | 22:AX:57:PHE:CD1   | 2.73                     | 0.55              |
| 22:AX:76:GLY:C    | 22:AX:78:TYR:HE1   | 2.14                     | 0.55              |
| 23:AY:63:ARG:HH21 | 23:AY:63:ARG:HB3   | 1.71                     | 0.55              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 29:Ae:44:LYS:HZ2  | 29:Ae:44:LYS:HA    | 1.72                     | 0.55              |
| 29:Ae:58:ILE:CG2  | 29:Ae:61:LEU:HD12  | 2.36                     | 0.55              |
| 30:Af:25:VAL:HG21 | 30:Af:34:GLN:CD    | 2.32                     | 0.55              |
| 31:AI:19:ARG:C    | 31:AI:21:GLN:H     | 2.13                     | 0.55              |
| 31:AI:54:ALA:HB1  | 31:AI:83:TYR:CB    | 2.36                     | 0.55              |
| 32:AJ:99:ILE:HG22 | 32:AJ:99:ILE:O     | 2.05                     | 0.55              |
| 34:BA:105:G:H2'   | 34:BA:106:C:H6     | 1.70                     | 0.55              |
| 34:BA:189:U:H3    | 50:BU:63:ARG:HE    | 1.53                     | 0.55              |
| 34:BA:324:G:N2    | 34:BA:327:A:OP2    | 2.39                     | 0.55              |
| 34:BA:493:G:H2'   | 34:BA:494:U:C5     | 2.41                     | 0.55              |
| 34:BA:577:G:H1'   | 34:BA:816:A:C2     | 2.41                     | 0.55              |
| 34:BA:619:U:H3    | 37:BH:135:LEU:CD2  | 2.20                     | 0.55              |
| 34:BA:619:U:O4    | 37:BH:134:ASP:OD1  | 2.24                     | 0.55              |
| 34:BA:750:G:H1'   | 48:BS:22:THR:C     | 2.31                     | 0.55              |
| 34:BA:817:C:C2    | 34:BA:819:A:H5'    | 2.40                     | 0.55              |
| 34:BA:878:G:O4'   | 41:BL:3:THR:HG21   | 2.06                     | 0.55              |
| 34:BA:953:G:N7    | 46:BQ:104:ARG:NH2  | 2.55                     | 0.55              |
| 34:BA:974:A:P     | 47:BR:31:ARG:HG2   | 2.46                     | 0.55              |
| 34:BA:1104:G:O2'  | 35:BF:111:ARG:NH2  | 2.38                     | 0.55              |
| 34:BA:1110:A:C4   | 34:BA:1111:A:C8    | 2.94                     | 0.55              |
| 34:BA:1217:C:H2'  | 34:BA:1218:C:H6    | 1.71                     | 0.55              |
| 34:BA:1269:A:H5'  | 34:BA:1326:C:H4'   | 1.87                     | 0.55              |
| 34:BA:1443:G:H4'  | 34:BA:1446:A:O5'   | 2.05                     | 0.55              |
| 35:BF:84:GLU:OE2  | 35:BF:84:GLU:HA    | 2.06                     | 0.55              |
| 35:BF:105:PHE:CD1 | 35:BF:108:ILE:HB   | 2.42                     | 0.55              |
| 36:BG:28:GLN:CD   | 36:BG:29:TYR:N     | 2.64                     | 0.55              |
| 36:BG:123:GLN:HB3 | 36:BG:128:PHE:CE2  | 2.41                     | 0.55              |
| 36:BG:127:ARG:C   | 36:BG:128:PHE:CD1  | 2.84                     | 0.55              |
| 37:BH:63:LYS:HD2  | 37:BH:63:LYS:N     | 2.21                     | 0.55              |
| 37:BH:98:GLU:HA   | 37:BH:103:ASN:HD21 | 1.65                     | 0.55              |
| 37:BH:172:PRO:CG  | 37:BH:193:ASP:HB3  | 2.37                     | 0.55              |
| 40:BK:68:ASN:ND2  | 40:BK:127:ALA:O    | 2.39                     | 0.55              |
| 42:BM:118:LYS:HB2 | 42:BM:121:ARG:HB2  | 1.87                     | 0.55              |
| 44:BO:92:GLU:OE2  | 44:BO:96:ARG:HB2   | 2.05                     | 0.55              |
| 46:BQ:14:ARG:HE   | 46:BQ:42:ALA:HA    | 1.71                     | 0.55              |
| 46:BQ:22:ILE:HB   | 46:BQ:25:ILE:CG1   | 2.24                     | 0.55              |
| 46:BQ:78:ILE:C    | 46:BQ:81:LEU:HD11  | 2.32                     | 0.55              |
| 46:BQ:103:THR:O   | 46:BQ:105:THR:N    | 2.38                     | 0.55              |
| 50:BU:3:LYS:HE3   | 50:BU:62:SER:O     | 2.06                     | 0.55              |
| 50:BU:8:GLY:O     | 50:BU:56:VAL:CG1   | 2.53                     | 0.55              |
| 50:BU:44:ALA:HB1  | 50:BU:71:PHE:O     | 2.06                     | 0.55              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 50:BU:84:LEU:O     | 50:BU:87:LYS:HB2  | 2.06                     | 0.55              |
| 51:BV:79:LEU:HD12  | 51:BV:79:LEU:N    | 2.20                     | 0.55              |
| 52:BW:3:ARG:HB3    | 52:BW:42:PRO:HA   | 1.89                     | 0.55              |
| 57:BZ:28:GLN:HG3   | 57:BZ:60:ASN:HB3  | 1.88                     | 0.55              |
| 57:BZ:313:VAL:HG23 | 57:BZ:354:ASP:CB  | 2.35                     | 0.55              |
| 57:BZ:512:LEU:CD2  | 57:BZ:524:ILE:CG2 | 2.77                     | 0.55              |
| 1:AA:108:U:H4'     | 1:AA:348:G:C2     | 2.41                     | 0.55              |
| 1:AA:253:C:H2'     | 1:AA:254:G:O5'    | 2.06                     | 0.55              |
| 1:AA:270(E):G:OP2  | 1:AA:270(E):G:C8  | 2.60                     | 0.55              |
| 1:AA:330:A:H2      | 1:AA:1210:A:H2'   | 1.70                     | 0.55              |
| 1:AA:348:G:N3      | 1:AA:349:G:C8     | 2.75                     | 0.55              |
| 1:AA:388:G:OP1     | 25:Aa:29:PRO:HD3  | 2.07                     | 0.55              |
| 1:AA:556:G:C4      | 1:AA:557:U:C5     | 2.94                     | 0.55              |
| 1:AA:562:U:N3      | 1:AA:572:A:N3     | 2.44                     | 0.55              |
| 1:AA:572:A:C2      | 1:AA:2033:A:C2    | 2.92                     | 0.55              |
| 1:AA:627:A:C1'     | 1:AA:637:A:C6     | 2.89                     | 0.55              |
| 1:AA:679:C:H2'     | 1:AA:679:C:O2     | 2.06                     | 0.55              |
| 1:AA:721:C:N3      | 1:AA:722:A:N7     | 2.55                     | 0.55              |
| 1:AA:730:C:H2'     | 1:AA:730:C:O2     | 2.06                     | 0.55              |
| 1:AA:764:A:C6      | 1:AA:1789:A:H2    | 2.24                     | 0.55              |
| 1:AA:786:C:H5''    | 1:AA:1780:A:C8    | 2.41                     | 0.55              |
| 1:AA:824:A:C3'     | 1:AA:825:C:C5     | 2.89                     | 0.55              |
| 1:AA:838:C:N3      | 1:AA:941:A:N7     | 2.54                     | 0.55              |
| 1:AA:852:G:C5      | 1:AA:853:G:N7     | 2.75                     | 0.55              |
| 1:AA:878:A:C5      | 1:AA:898:C:N4     | 2.74                     | 0.55              |
| 1:AA:949:C:C2      | 1:AA:950:G:N7     | 2.74                     | 0.55              |
| 1:AA:977:G:O2'     | 1:AA:978:G:H5'    | 2.06                     | 0.55              |
| 1:AA:1034:G:C6     | 1:AA:1035:U:C4    | 2.94                     | 0.55              |
| 1:AA:1072:C:H2'    | 1:AA:1093:G:N1    | 2.20                     | 0.55              |
| 1:AA:1080:C:H5     | 32:AJ:132:ARG:NH2 | 2.01                     | 0.55              |
| 1:AA:1095:A:H2'    | 1:AA:1096:A:O4'   | 2.07                     | 0.55              |
| 1:AA:1134:G:C5     | 1:AA:1136:G:OP2   | 2.59                     | 0.55              |
| 1:AA:1224:G:C2'    | 17:AS:87:HIS:CE1  | 2.89                     | 0.55              |
| 1:AA:1286:A:C2     | 1:AA:1329:U:C2    | 2.94                     | 0.55              |
| 1:AA:1407:C:C2     | 1:AA:1408:C:C5    | 2.94                     | 0.55              |
| 1:AA:1455:G:H1'    | 1:AA:2853:C:OP1   | 2.06                     | 0.55              |
| 1:AA:1456:G:C2     | 1:AA:1457:A:C8    | 2.94                     | 0.55              |
| 1:AA:1527:G:C1'    | 1:AA:1528:A:N3    | 2.68                     | 0.55              |
| 1:AA:1565:C:C4     | 1:AA:1567:A:C8    | 2.94                     | 0.55              |
| 1:AA:1679:U:H4'    | 1:AA:1990:C:O2'   | 2.06                     | 0.55              |
| 1:AA:1698:A:O2'    | 1:AA:1699:G:P     | 2.64                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1819:A:H3'   | 4:AD:178:PRO:CB   | 2.29                     | 0.55              |
| 1:AA:2041:U:O2    | 1:AA:2042:A:C8    | 2.60                     | 0.55              |
| 1:AA:2056:G:C4    | 1:AA:2577:A:N3    | 2.75                     | 0.55              |
| 1:AA:2132:U:O2    | 1:AA:2132:U:C2'   | 2.53                     | 0.55              |
| 1:AA:2215:G:C8    | 1:AA:2215:G:O5'   | 2.60                     | 0.55              |
| 1:AA:2271:G:H5'   | 22:AX:20:ARG:HH12 | 1.71                     | 0.55              |
| 1:AA:2273:A:H8    | 1:AA:2274:A:O4'   | 1.89                     | 0.55              |
| 1:AA:2286:A:N7    | 27:Ac:31:PRO:HD2  | 2.21                     | 0.55              |
| 1:AA:2385:C:N3    | 1:AA:2386:C:C6    | 2.74                     | 0.55              |
| 1:AA:2498:C:C3'   | 1:AA:2499:C:H5''  | 2.37                     | 0.55              |
| 1:AA:2558:C:H2'   | 1:AA:2558:C:O2    | 2.07                     | 0.55              |
| 1:AA:2639:A:C4    | 1:AA:2778:A:C2    | 2.95                     | 0.55              |
| 1:AA:2668:G:N2    | 1:AA:2669:G:C2    | 2.75                     | 0.55              |
| 1:AA:2756:U:O2'   | 1:AA:2757:A:C5'   | 2.55                     | 0.55              |
| 1:AA:2786:U:O4'   | 5:AE:65:GLY:HA2   | 2.06                     | 0.55              |
| 1:AA:2815:C:H4'   | 26:Ab:42:PRO:CG   | 2.36                     | 0.55              |
| 1:AA:2827:C:O2'   | 1:AA:2828:C:H5'   | 2.05                     | 0.55              |
| 59:AA:3003:8AN:N7 | 56:BE:75:C:N3     | 2.54                     | 0.55              |
| 2:AB:1:U:C4       | 2:AB:2:C:N4       | 2.75                     | 0.55              |
| 2:AB:73:A:C2      | 2:AB:74:U:C2      | 2.95                     | 0.55              |
| 2:AB:80:U:C2      | 2:AB:81:G:N7      | 2.74                     | 0.55              |
| 4:AD:10:THR:H     | 4:AD:23:GLU:CD    | 2.14                     | 0.55              |
| 4:AD:78:LYS:O     | 4:AD:95:LEU:HD22  | 2.06                     | 0.55              |
| 4:AD:181:GLU:CD   | 4:AD:271:ILE:O    | 2.50                     | 0.55              |
| 6:AF:43:LYS:HG3   | 6:AF:98:SER:CA    | 2.37                     | 0.55              |
| 6:AF:106:ARG:CG   | 6:AF:107:LYS:N    | 2.65                     | 0.55              |
| 6:AF:116:ASP:HA   | 6:AF:119:ARG:HG3  | 1.87                     | 0.55              |
| 6:AF:120:GLU:OE1  | 6:AF:120:GLU:CA   | 2.54                     | 0.55              |
| 7:AG:86:MET:H     | 7:AG:87:PRO:HD3   | 1.71                     | 0.55              |
| 7:AG:140:ILE:HG22 | 7:AG:141:PHE:CD1  | 2.41                     | 0.55              |
| 9:AK:4:TYR:CE2    | 16:AR:100:VAL:HB  | 2.41                     | 0.55              |
| 9:AK:67:LEU:HA    | 9:AK:70:LYS:NZ    | 2.21                     | 0.55              |
| 9:AK:127:ASP:OD1  | 9:AK:128:HIS:ND1  | 2.39                     | 0.55              |
| 10:AL:24:VAL:HG21 | 10:AL:30:ALA:HA   | 1.87                     | 0.55              |
| 10:AL:86:ILE:HG21 | 10:AL:90:GLN:HA   | 1.87                     | 0.55              |
| 10:AL:112:MET:HE3 | 34:BA:345:C:C4    | 2.41                     | 0.55              |
| 10:AL:113:LYS:HZ1 | 10:AL:117:LEU:HB2 | 1.71                     | 0.55              |
| 11:AM:55:ARG:O    | 11:AM:56:SER:CB   | 2.46                     | 0.55              |
| 11:AM:88:LEU:HD21 | 11:AM:124:LYS:HZ1 | 1.71                     | 0.55              |
| 12:AN:26:TYR:H    | 12:AN:102:VAL:CB  | 2.19                     | 0.55              |
| 12:AN:29:PHE:HB2  | 12:AN:104:PHE:CD2 | 2.40                     | 0.55              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 13:AO:20:LEU:HD11  | 13:AO:24:GLN:CD    | 2.31                     | 0.55              |
| 15:AQ:107:ASP:OD1  | 15:AQ:107:ASP:N    | 2.40                     | 0.55              |
| 16:AR:97:ASP:CB    | 16:AR:101:ARG:NH2  | 2.66                     | 0.55              |
| 17:AS:50:PRO:CB    | 17:AS:53:GLU:OE1   | 2.55                     | 0.55              |
| 18:AT:7:ALA:N      | 18:AT:103:ILE:HD13 | 2.21                     | 0.55              |
| 18:AT:7:ALA:O      | 18:AT:102:HIS:HA   | 2.05                     | 0.55              |
| 18:AT:72:LYS:CB    | 18:AT:108:GLY:HA3  | 2.36                     | 0.55              |
| 19:AU:7:VAL:CG2    | 23:AY:31:ARG:NH2   | 2.65                     | 0.55              |
| 20:AV:46:LYS:HZ2   | 20:AV:46:LYS:HB3   | 1.70                     | 0.55              |
| 20:AV:53:PRO:C     | 20:AV:55:TYR:N     | 2.63                     | 0.55              |
| 21:AW:10:ARG:CB    | 21:AW:36:LYS:HD2   | 2.25                     | 0.55              |
| 21:AW:102:LEU:HD21 | 21:AW:125:LEU:HD12 | 1.87                     | 0.55              |
| 21:AW:152:ALA:CA   | 21:AW:155:LEU:HD22 | 2.37                     | 0.55              |
| 22:AX:27:GLU:OE1   | 22:AX:27:GLU:HA    | 2.06                     | 0.55              |
| 22:AX:45:PHE:HB3   | 22:AX:59:LEU:HD11  | 1.88                     | 0.55              |
| 25:Aa:39:CYS:C     | 25:Aa:40:HIS:CG    | 2.85                     | 0.55              |
| 25:Aa:42:PHE:CE2   | 25:Aa:43:TYR:O     | 2.60                     | 0.55              |
| 25:Aa:44:THR:CG2   | 25:Aa:45:GLY:H     | 2.20                     | 0.55              |
| 25:Aa:55:ARG:O     | 25:Aa:61:ARG:NE    | 2.38                     | 0.55              |
| 25:Aa:68:ARG:H     | 25:Aa:68:ARG:CD    | 2.19                     | 0.55              |
| 29:Ae:30:ARG:HH21  | 29:Ae:43:GLN:N     | 2.05                     | 0.55              |
| 31:AI:49:ALA:C     | 31:AI:51:LEU:H     | 2.14                     | 0.55              |
| 32:AJ:107:ILE:O    | 32:AJ:108:ALA:HB2  | 2.05                     | 0.55              |
| 34:BA:164:U:H2'    | 34:BA:165:C:C6     | 2.39                     | 0.55              |
| 34:BA:465:A:H5'    | 34:BA:466:C:OP2    | 2.06                     | 0.55              |
| 34:BA:476:G:O2'    | 34:BA:477:G:H5'    | 2.06                     | 0.55              |
| 34:BA:582:U:O5'    | 34:BA:582:U:H6     | 1.90                     | 0.55              |
| 34:BA:768:A:N6     | 34:BA:769:G:C6     | 2.74                     | 0.55              |
| 34:BA:781:A:O2'    | 34:BA:782:A:OP1    | 2.24                     | 0.55              |
| 34:BA:920:U:H2'    | 34:BA:921:U:H6     | 1.72                     | 0.55              |
| 34:BA:925:G:O2'    | 34:BA:927:G:OP1    | 2.18                     | 0.55              |
| 34:BA:978:A:H8     | 34:BA:980:C:N4     | 2.05                     | 0.55              |
| 34:BA:1065:U:C5    | 34:BA:1190:G:H1'   | 2.42                     | 0.55              |
| 34:BA:1187:G:H1'   | 47:BR:61:TRP:C     | 2.31                     | 0.55              |
| 34:BA:1213:A:N6    | 34:BA:1215:G:C2    | 2.74                     | 0.55              |
| 34:BA:1339:A:C4'   | 56:BE:41:C:O4'     | 2.47                     | 0.55              |
| 34:BA:1524:C:H2'   | 34:BA:1525:G:O4'   | 2.06                     | 0.55              |
| 35:BF:12:GLU:OE1   | 35:BF:209:ARG:NH2  | 2.40                     | 0.55              |
| 35:BF:23:ARG:HH11  | 35:BF:24:TRP:H     | 1.48                     | 0.55              |
| 36:BG:40:ARG:HA    | 36:BG:43:LEU:CD1   | 2.33                     | 0.55              |
| 36:BG:110:ASN:HD21 | 36:BG:140:ARG:CG   | 2.19                     | 0.55              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 37:BH:13:ARG:HB3   | 37:BH:40:PRO:HD3   | 1.89                     | 0.55              |
| 37:BH:58:LEU:HD22  | 37:BH:62:GLN:HG2   | 1.88                     | 0.55              |
| 37:BH:118:ARG:NH2  | 37:BH:118:ARG:HG3  | 2.21                     | 0.55              |
| 37:BH:151:LYS:H    | 37:BH:151:LYS:HD2  | 1.71                     | 0.55              |
| 37:BH:170:VAL:HG11 | 37:BH:174:LEU:HD12 | 1.88                     | 0.55              |
| 37:BH:171:GLY:HA3  | 37:BH:173:TRP:HZ3  | 1.71                     | 0.55              |
| 38:BI:109:ILE:HD11 | 38:BI:139:LEU:CD1  | 2.35                     | 0.55              |
| 40:BK:51:GLN:CD    | 40:BK:58:PRO:HD3   | 2.32                     | 0.55              |
| 40:BK:63:LYS:O     | 40:BK:66:VAL:HB    | 2.05                     | 0.55              |
| 41:BL:6:ILE:HD12   | 41:BL:85:ARG:HD3   | 1.88                     | 0.55              |
| 41:BL:17:THR:HB    | 41:BL:18:ARG:NH2   | 2.21                     | 0.55              |
| 41:BL:82:HIS:CD2   | 41:BL:138:TRP:HE1  | 2.24                     | 0.55              |
| 41:BL:138:TRP:OXT  | 41:BL:138:TRP:CE3  | 2.60                     | 0.55              |
| 42:BM:37:PHE:CE1   | 42:BM:74:ILE:HG12  | 2.41                     | 0.55              |
| 42:BM:58:HIS:HD2   | 42:BM:59:PHE:CE1   | 2.23                     | 0.55              |
| 45:BP:18:VAL:O     | 45:BP:19:ARG:HB2   | 2.06                     | 0.55              |
| 45:BP:24:VAL:HG13  | 45:BP:98:TYR:CE2   | 2.41                     | 0.55              |
| 45:BP:27:LEU:CD2   | 45:BP:33:ARG:HH11  | 2.19                     | 0.55              |
| 48:BS:71:GLN:N     | 48:BS:78:TYR:HD1   | 2.03                     | 0.55              |
| 49:BT:39:TYR:HD1   | 49:BT:40:ASP:N     | 2.03                     | 0.55              |
| 49:BT:68:ASP:O     | 49:BT:69:THR:C     | 2.49                     | 0.55              |
| 50:BU:92:ARG:O     | 50:BU:95:TYR:N     | 2.36                     | 0.55              |
| 51:BV:34:TYR:HE1   | 51:BV:35:ARG:HE    | 1.53                     | 0.55              |
| 51:BV:75:ILE:HG22  | 51:BV:76:LEU:N     | 2.21                     | 0.55              |
| 52:BW:9:VAL:CG1    | 52:BW:41:VAL:CG2   | 2.80                     | 0.55              |
| 53:BX:53:LEU:HD21  | 53:BX:92:LEU:CD1   | 2.37                     | 0.55              |
| 56:BD:65:G:N1      | 56:BD:66:U:C2      | 2.74                     | 0.55              |
| 56:BE:41:C:H2'     | 56:BE:41:C:O2      | 2.06                     | 0.55              |
| 57:BZ:50:LYS:NZ    | 57:BZ:368:VAL:CG2  | 2.70                     | 0.55              |
| 57:BZ:69:ARG:HG3   | 57:BZ:70:ILE:O     | 2.07                     | 0.55              |
| 57:BZ:253:LYS:CB   | 57:BZ:262:ARG:HG3  | 2.35                     | 0.55              |
| 57:BZ:317:PRO:HD2  | 57:BZ:318:PHE:H    | 1.71                     | 0.55              |
| 1:AA:13:A:C8       | 1:AA:15:G:O6       | 2.59                     | 0.55              |
| 1:AA:27:G:N2       | 1:AA:512:G:C2'     | 2.69                     | 0.55              |
| 1:AA:161:U:H2'     | 1:AA:161:U:O2      | 2.06                     | 0.55              |
| 1:AA:267:C:OP2     | 1:AA:271(A):C:C5   | 2.60                     | 0.55              |
| 1:AA:334:C:OP2     | 1:AA:335:C:H5      | 1.90                     | 0.55              |
| 1:AA:400:G:N2      | 25:Aa:63:TYR:HH    | 2.05                     | 0.55              |
| 1:AA:410:G:H8      | 1:AA:410:G:O5'     | 1.89                     | 0.55              |
| 1:AA:434:U:O2'     | 1:AA:435:C:O5'     | 2.23                     | 0.55              |
| 1:AA:469:G:C2      | 28:Ad:40:TRP:HZ2   | 2.22                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:516:C:H2'    | 1:AA:517:C:H6     | 1.69                     | 0.55              |
| 1:AA:529:A:O3'    | 1:AA:530:G:C8     | 2.60                     | 0.55              |
| 1:AA:735:A:H2'    | 1:AA:736:C:C5'    | 2.37                     | 0.55              |
| 1:AA:779:U:OP1    | 4:AD:50:THR:HB    | 2.07                     | 0.55              |
| 1:AA:819:A:C8     | 1:AA:973:A:C2     | 2.95                     | 0.55              |
| 1:AA:908:C:H2'    | 1:AA:909:A:O5'    | 2.07                     | 0.55              |
| 1:AA:1174:A:H2'   | 1:AA:1175:U:C5'   | 2.20                     | 0.55              |
| 1:AA:1175:U:H5'   | 1:AA:1176:G:P     | 2.47                     | 0.55              |
| 1:AA:1179:C:H6    | 1:AA:1179:C:OP2   | 1.90                     | 0.55              |
| 1:AA:1256:G:C4    | 1:AA:1257:C:C5    | 2.94                     | 0.55              |
| 1:AA:1522:G:C8    | 1:AA:1522:G:H3'   | 2.41                     | 0.55              |
| 1:AA:1718:G:N2    | 1:AA:1742:C:C4    | 2.75                     | 0.55              |
| 1:AA:1782:C:H3'   | 1:AA:1782:C:C6    | 2.41                     | 0.55              |
| 1:AA:1935:G:O2'   | 1:AA:1937:A:C2    | 2.40                     | 0.55              |
| 1:AA:1953:A:H62   | 1:AA:2550:G:H4'   | 1.71                     | 0.55              |
| 1:AA:2052:G:C5    | 1:AA:2053:G:N7    | 2.74                     | 0.55              |
| 1:AA:2094:G:N2    | 1:AA:2196:C:C2    | 2.75                     | 0.55              |
| 1:AA:2163:C:H2'   | 1:AA:2164:C:H5'   | 1.88                     | 0.55              |
| 1:AA:2273:A:C8    | 1:AA:2274:A:C8    | 2.94                     | 0.55              |
| 1:AA:2322:A:N3    | 1:AA:2322:A:H2'   | 2.20                     | 0.55              |
| 1:AA:2458:G:C8    | 1:AA:2490:G:O6    | 2.60                     | 0.55              |
| 1:AA:2523:G:C1'   | 1:AA:2765:A:H62   | 2.17                     | 0.55              |
| 1:AA:2560:C:C2'   | 1:AA:2561:A:H5'   | 2.36                     | 0.55              |
| 1:AA:2570:G:N2    | 1:AA:2571:C:N1    | 2.54                     | 0.55              |
| 1:AA:2718:G:C5    | 1:AA:2719:G:C5    | 2.94                     | 0.55              |
| 1:AA:2747:G:N2    | 1:AA:2748:A:N6    | 2.54                     | 0.55              |
| 1:AA:2793:G:C2    | 1:AA:2803:C:C2    | 2.94                     | 0.55              |
| 1:AA:2815:C:C2    | 1:AA:2816:C:C5    | 2.94                     | 0.55              |
| 1:AA:2848:G:C1'   | 15:AQ:99:LEU:HD21 | 2.37                     | 0.55              |
| 1:AA:2881:C:OP1   | 13:AO:90:ARG:NH1  | 2.40                     | 0.55              |
| 3:AC:44:HIS:HB2   | 3:AC:213:TYR:HB2  | 1.88                     | 0.55              |
| 3:AC:161:ILE:HG23 | 3:AC:188:ASN:ND2  | 2.22                     | 0.55              |
| 3:AC:171:ILE:HD11 | 3:AC:192:PHE:CE2  | 2.04                     | 0.55              |
| 3:AC:187:ASP:OD2  | 3:AC:187:ASP:C    | 2.48                     | 0.55              |
| 4:AD:5:LYS:HD2    | 4:AD:113:VAL:CG2  | 2.36                     | 0.55              |
| 4:AD:7:LYS:CD     | 4:AD:25:THR:HG22  | 2.36                     | 0.55              |
| 5:AE:148:GLY:O    | 5:AE:149:ARG:CB   | 2.54                     | 0.55              |
| 6:AF:106:ARG:HG3  | 6:AF:107:LYS:H    | 1.67                     | 0.55              |
| 6:AF:201:VAL:HG12 | 6:AF:205:ARG:CZ   | 2.36                     | 0.55              |
| 7:AG:9:ARG:HD2    | 7:AG:10:LYS:CE    | 2.37                     | 0.55              |
| 8:AH:152:ARG:HG3  | 8:AH:152:ARG:HH21 | 1.71                     | 0.55              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 9:AK:87:LEU:HA     | 9:AK:90:MET:CB     | 2.36                     | 0.55              |
| 9:AK:100:GLU:HB3   | 9:AK:104:LYS:CE    | 2.36                     | 0.55              |
| 10:AL:20:MET:O     | 10:AL:41:ALA:HB1   | 2.07                     | 0.55              |
| 10:AL:49:ARG:NE    | 34:BA:1423:G:OP1   | 2.39                     | 0.55              |
| 10:AL:106:LEU:CD2  | 15:AQ:38:ASN:HD21  | 2.19                     | 0.55              |
| 12:AN:119:ARG:O    | 12:AN:123:HIS:HB2  | 2.05                     | 0.55              |
| 12:AN:126:PRO:C    | 12:AN:127:ILE:CG1  | 2.78                     | 0.55              |
| 12:AN:137:TYR:HE2  | 21:AW:124:ILE:HD12 | 1.72                     | 0.55              |
| 13:AO:51:LEU:O     | 13:AO:52:ILE:C     | 2.50                     | 0.55              |
| 13:AO:116:LEU:HG   | 13:AO:116:LEU:O    | 2.07                     | 0.55              |
| 14:AP:7:TYR:O      | 14:AP:11:LYS:HD3   | 2.07                     | 0.55              |
| 14:AP:24:LEU:H     | 14:AP:86:ALA:HB2   | 1.70                     | 0.55              |
| 14:AP:24:LEU:HD23  | 14:AP:39:ILE:HG22  | 1.86                     | 0.55              |
| 14:AP:74:ALA:CB    | 14:AP:104:GLY:O    | 2.53                     | 0.55              |
| 14:AP:106:ARG:HH11 | 14:AP:106:ARG:C    | 2.14                     | 0.55              |
| 15:AQ:23:ARG:NH2   | 15:AQ:88:ILE:O     | 2.40                     | 0.55              |
| 16:AR:57:PHE:HA    | 16:AR:60:LEU:CD1   | 2.37                     | 0.55              |
| 17:AS:11:GLN:O     | 17:AS:21:ARG:CD    | 2.52                     | 0.55              |
| 18:AT:81:ALA:CB    | 18:AT:98:LYS:O     | 2.54                     | 0.55              |
| 19:AU:7:VAL:CB     | 23:AY:28:MET:HG2   | 2.36                     | 0.55              |
| 19:AU:29:TRP:CB    | 19:AU:76:ARG:HH21  | 2.19                     | 0.55              |
| 20:AV:12:THR:CG2   | 20:AV:70:SER:O     | 2.54                     | 0.55              |
| 20:AV:37:VAL:CG1   | 20:AV:64:GLU:HG2   | 2.34                     | 0.55              |
| 20:AV:97:ARG:CA    | 20:AV:101:LYS:HG3  | 2.27                     | 0.55              |
| 22:AX:40:GLN:HE22  | 22:AX:43:THR:HA    | 1.72                     | 0.55              |
| 23:AY:55:LEU:C     | 23:AY:58:VAL:HG13  | 2.28                     | 0.55              |
| 25:Aa:22:ILE:HG22  | 25:Aa:22:ILE:O     | 2.06                     | 0.55              |
| 26:Ab:44:THR:N     | 26:Ab:52:TYR:OH    | 2.39                     | 0.55              |
| 29:Ae:40:GLU:C     | 29:Ae:42:ARG:H     | 2.14                     | 0.55              |
| 34:BA:595:G:H8     | 34:BA:641:U:C4     | 2.19                     | 0.55              |
| 34:BA:720:C:H1'    | 51:BV:50:ILE:HD12  | 1.88                     | 0.55              |
| 34:BA:859:A:C2'    | 34:BA:860:A:O5'    | 2.55                     | 0.55              |
| 34:BA:961:U:C6     | 34:BA:983:A:N1     | 2.74                     | 0.55              |
| 34:BA:1157:A:H2'   | 34:BA:1181:G:N3    | 2.21                     | 0.55              |
| 34:BA:1224:G:O6    | 34:BA:1322:C:H1'   | 2.06                     | 0.55              |
| 34:BA:1277:C:O2'   | 34:BA:1279:A:C8    | 2.60                     | 0.55              |
| 34:BA:1307:U:O4'   | 46:BQ:109:THR:HG21 | 2.07                     | 0.55              |
| 34:BA:1309:G:C2    | 34:BA:1328:C:C2    | 2.83                     | 0.55              |
| 35:BF:19:HIS:CE1   | 35:BF:204:ASN:ND2  | 2.73                     | 0.55              |
| 35:BF:189:ASP:HB2  | 35:BF:205:ASP:CB   | 2.36                     | 0.55              |
| 36:BG:47:LEU:HD11  | 36:BG:83:ARG:HH21  | 1.67                     | 0.55              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 37:BH:67:ILE:C     | 37:BH:67:ILE:CD1   | 2.79                     | 0.55              |
| 37:BH:200:GLU:CG   | 37:BH:201:GLN:N    | 2.68                     | 0.55              |
| 38:BI:78:HIS:CE1   | 38:BI:142:LEU:HD22 | 2.42                     | 0.55              |
| 39:BJ:37:VAL:HA    | 39:BJ:65:VAL:HG11  | 1.87                     | 0.55              |
| 40:BK:132:GLY:O    | 40:BK:136:LYS:HB2  | 2.06                     | 0.55              |
| 42:BM:11:LYS:O     | 42:BM:12:GLU:HG2   | 2.07                     | 0.55              |
| 42:BM:16:ARG:NH1   | 42:BM:64:THR:HG21  | 2.21                     | 0.55              |
| 42:BM:67:GLY:N     | 42:BM:73:GLN:HE21  | 2.03                     | 0.55              |
| 45:BP:27:LEU:HD21  | 45:BP:33:ARG:HH11  | 1.70                     | 0.55              |
| 45:BP:100:ILE:HD13 | 45:BP:100:ILE:H    | 1.71                     | 0.55              |
| 46:BQ:4:ILE:CD1    | 46:BQ:57:ARG:CB    | 2.83                     | 0.55              |
| 46:BQ:19:LEU:HD11  | 46:BQ:30:ALA:HA    | 0.55                     | 0.55              |
| 49:BT:12:LYS:HZ2   | 49:BT:13:HIS:CE1   | 2.22                     | 0.55              |
| 49:BT:18:ARG:HH11  | 49:BT:20:VAL:HG21  | 1.71                     | 0.55              |
| 50:BU:16:GLN:O     | 50:BU:17:LYS:CB    | 2.55                     | 0.55              |
| 56:BD:63:G:C6      | 56:BD:64:A:N6      | 2.73                     | 0.55              |
| 56:BE:65:G:O2'     | 56:BE:66:U:H5'     | 2.07                     | 0.55              |
| 57:BZ:20:THR:CG2   | 60:BZ:701:GCP:O1A  | 2.55                     | 0.55              |
| 57:BZ:79:ALA:HA    | 57:BZ:80:ASP:C     | 2.31                     | 0.55              |
| 57:BZ:90:SER:O     | 57:BZ:91:MET:HB2   | 2.04                     | 0.55              |
| 57:BZ:172:ALA:CA   | 57:BZ:179:MET:HE1  | 2.35                     | 0.55              |
| 57:BZ:426:LEU:HD21 | 57:BZ:429:MET:CB   | 2.29                     | 0.55              |
| 1:AA:2:G:C2        | 1:AA:3:U:C2        | 2.94                     | 0.55              |
| 1:AA:108:U:H2'     | 1:AA:109:G:H8      | 1.71                     | 0.55              |
| 1:AA:270(X):G:C2   | 1:AA:270(Y):G:H1'  | 2.41                     | 0.55              |
| 1:AA:297:C:N4      | 1:AA:298:G:N2      | 2.54                     | 0.55              |
| 1:AA:344:G:H5''    | 1:AA:345:A:OP2     | 2.06                     | 0.55              |
| 1:AA:460:A:C6      | 1:AA:470:A:C8      | 2.94                     | 0.55              |
| 1:AA:489:G:C5      | 1:AA:1284:A:C2     | 2.95                     | 0.55              |
| 1:AA:558:G:O2'     | 1:AA:559:G:C5'     | 2.55                     | 0.55              |
| 1:AA:621:A:C8      | 1:AA:622:G:C4'     | 2.89                     | 0.55              |
| 1:AA:636:G:H22     | 11:AM:75:ILE:HG23  | 1.64                     | 0.55              |
| 1:AA:696:G:N2      | 1:AA:697:C:C2      | 2.74                     | 0.55              |
| 1:AA:850:C:H5''    | 24:AZ:18:ASP:HB2   | 1.88                     | 0.55              |
| 1:AA:967:C:H2'     | 1:AA:968:G:C8      | 2.42                     | 0.55              |
| 1:AA:1029:A:H2'    | 1:AA:1030:G:C4'    | 2.36                     | 0.55              |
| 1:AA:1077:A:N6     | 1:AA:1088:A:C4'    | 2.69                     | 0.55              |
| 1:AA:1161:C:C1'    | 17:AS:22:VAL:HG11  | 2.34                     | 0.55              |
| 1:AA:1201:C:N4     | 1:AA:1241:A:H61    | 2.04                     | 0.55              |
| 1:AA:1267:U:C5     | 1:AA:2012:G:N2     | 2.75                     | 0.55              |
| 1:AA:1299:G:C6     | 1:AA:1639:U:H5''   | 2.41                     | 0.55              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:1342:A:C4     | 1:AA:1345:C:N4    | 2.75                     | 0.55              |
| 1:AA:1469:A:H2'    | 1:AA:1470:G:H5'   | 1.88                     | 0.55              |
| 1:AA:1510:A:H5'    | 1:AA:1511:A:OP2   | 2.06                     | 0.55              |
| 1:AA:1545(A):A:O5' | 1:AA:1545(A):A:C8 | 2.57                     | 0.55              |
| 1:AA:1555:G:C4     | 1:AA:1556:C:C5    | 2.94                     | 0.55              |
| 1:AA:1613:G:N2     | 1:AA:1619:G:C5    | 2.75                     | 0.55              |
| 1:AA:1636:C:H2'    | 1:AA:1636:C:O2    | 2.07                     | 0.55              |
| 1:AA:1655:A:H5''   | 5:AE:113:PHE:C    | 2.32                     | 0.55              |
| 1:AA:1675:C:N4     | 5:AE:128:SER:CB   | 2.69                     | 0.55              |
| 1:AA:1688:U:O2     | 1:AA:1698:A:C5    | 2.60                     | 0.55              |
| 1:AA:1699:G:O6     | 1:AA:1763:G:O4'   | 2.24                     | 0.55              |
| 1:AA:1935:G:N2     | 1:AA:1962:C:C2'   | 2.69                     | 0.55              |
| 1:AA:1942:C:P      | 1:AA:1943:U:H3'   | 2.46                     | 0.55              |
| 1:AA:2169:A:C2     | 55:BC:56:C:N4     | 2.75                     | 0.55              |
| 1:AA:2361:A:OP2    | 29:Ae:47:LYS:NZ   | 2.34                     | 0.55              |
| 1:AA:2615:U:H2'    | 1:AA:2616:C:C6    | 2.39                     | 0.55              |
| 1:AA:2645:G:O2'    | 1:AA:2733:A:P     | 2.65                     | 0.55              |
| 1:AA:2706:G:C4     | 1:AA:2707:G:C8    | 2.95                     | 0.55              |
| 1:AA:2791:C:P      | 1:AA:2791:C:C3'   | 2.94                     | 0.55              |
| 1:AA:2825:C:C4     | 1:AA:2826:A:N7    | 2.74                     | 0.55              |
| 3:AC:7:TYR:CE2     | 3:AC:11:LEU:HD13  | 2.41                     | 0.55              |
| 3:AC:10:LEU:CD1    | 3:AC:32:LEU:CD2   | 2.84                     | 0.55              |
| 3:AC:50:ASP:OD1    | 3:AC:53:ARG:HG3   | 2.06                     | 0.55              |
| 3:AC:103:ILE:CD1   | 3:AC:110:PHE:HZ   | 2.20                     | 0.55              |
| 4:AD:17:THR:O      | 4:AD:17:THR:HG22  | 2.04                     | 0.55              |
| 4:AD:221:VAL:O     | 4:AD:222:ARG:CG   | 2.52                     | 0.55              |
| 4:AD:244:ARG:C     | 4:AD:252:TRP:CD1  | 2.84                     | 0.55              |
| 6:AF:31:HIS:CB     | 11:AM:11:GLY:H    | 2.18                     | 0.55              |
| 6:AF:68:LYS:O      | 6:AF:69:HIS:HB3   | 2.06                     | 0.55              |
| 6:AF:201:VAL:HG12  | 6:AF:205:ARG:NH2  | 2.22                     | 0.55              |
| 7:AG:122:PRO:O     | 7:AG:123:ASN:C    | 2.48                     | 0.55              |
| 7:AG:127:GLY:O     | 7:AG:128:ARG:CB   | 2.55                     | 0.55              |
| 8:AH:33:LEU:CD2    | 8:AH:35:VAL:HG22  | 2.36                     | 0.55              |
| 9:AK:99:LEU:HD12   | 9:AK:100:GLU:CA   | 2.37                     | 0.55              |
| 10:AL:18:LYS:HE2   | 10:AL:44:LYS:HD2  | 1.87                     | 0.55              |
| 10:AL:24:VAL:HG22  | 10:AL:30:ALA:CB   | 2.37                     | 0.55              |
| 11:AM:114:ILE:HD11 | 11:AM:123:LEU:HG  | 1.86                     | 0.55              |
| 11:AM:124:LYS:CB   | 11:AM:143:GLY:HA3 | 2.37                     | 0.55              |
| 12:AN:8:LYS:NZ     | 12:AN:11:LYS:NZ   | 2.51                     | 0.55              |
| 12:AN:122:GLY:O    | 12:AN:124:LYS:C   | 2.50                     | 0.55              |
| 13:AO:47:PHE:O     | 13:AO:48:VAL:C    | 2.49                     | 0.55              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 14:AP:17:ARG:O     | 14:AP:20:ARG:CB   | 2.54                     | 0.55              |
| 14:AP:101:LEU:HD13 | 14:AP:101:LEU:O   | 2.07                     | 0.55              |
| 16:AR:88:ILE:CB    | 17:AS:52:VAL:HG13 | 2.37                     | 0.55              |
| 17:AS:33:VAL:CG1   | 17:AS:34:GLU:N    | 2.69                     | 0.55              |
| 17:AS:57:VAL:HG12  | 17:AS:58:VAL:HG23 | 1.89                     | 0.55              |
| 20:AV:1:MET:HA     | 20:AV:33:LYS:CG   | 2.37                     | 0.55              |
| 20:AV:35:TYR:OH    | 20:AV:67:LEU:HB2  | 2.07                     | 0.55              |
| 21:AW:44:PHE:CD2   | 21:AW:48:PHE:HE1  | 2.24                     | 0.55              |
| 24:AZ:29:ARG:O     | 24:AZ:30:ARG:O    | 2.24                     | 0.55              |
| 26:Ab:50:GLY:HA3   | 26:Ab:57:VAL:HG23 | 1.87                     | 0.55              |
| 29:Ae:16:ILE:CG2   | 29:Ae:57:ARG:NH2  | 2.70                     | 0.55              |
| 32:AJ:52:ILE:CD1   | 32:AJ:73:PRO:HG2  | 2.33                     | 0.55              |
| 34:BA:42:G:H2'     | 34:BA:43:C:H6     | 1.66                     | 0.55              |
| 34:BA:232:G:C4     | 34:BA:233:C:C5    | 2.95                     | 0.55              |
| 34:BA:307:C:O2     | 34:BA:307:C:H2'   | 2.06                     | 0.55              |
| 34:BA:366:C:O2'    | 34:BA:394:G:N2    | 2.39                     | 0.55              |
| 34:BA:440:A:C3'    | 34:BA:442:C:H6    | 2.18                     | 0.55              |
| 34:BA:594:G:N7     | 34:BA:595:G:N3    | 2.55                     | 0.55              |
| 34:BA:686:U:OP1    | 34:BA:686:U:H4'   | 2.06                     | 0.55              |
| 34:BA:752:G:OP2    | 34:BA:752:G:H8    | 1.90                     | 0.55              |
| 34:BA:758:G:C2'    | 34:BA:759:A:OP2   | 2.54                     | 0.55              |
| 34:BA:787:A:C2     | 34:BA:788:U:O4'   | 2.60                     | 0.55              |
| 34:BA:792:A:C2'    | 34:BA:794:A:H62   | 2.06                     | 0.55              |
| 34:BA:939:G:N2     | 34:BA:940:C:C2    | 2.75                     | 0.55              |
| 34:BA:945:G:N2     | 34:BA:1337:G:C2   | 2.75                     | 0.55              |
| 34:BA:1054:C:OP1   | 34:BA:1197:G:OP1  | 2.25                     | 0.55              |
| 34:BA:1081:G:OP1   | 38:BI:17:ALA:O    | 2.25                     | 0.55              |
| 34:BA:1345:U:C2    | 34:BA:1377:A:C6   | 2.95                     | 0.55              |
| 34:BA:1395:C:C2'   | 34:BA:1396:A:O5'  | 2.55                     | 0.55              |
| 34:BA:1450:U:H1'   | 34:BA:1454:G:N2   | 2.22                     | 0.55              |
| 34:BA:1496:C:H2'   | 34:BA:1497:G:C8   | 2.42                     | 0.55              |
| 34:BA:1504:G:P     | 34:BA:1504:G:C3'  | 2.94                     | 0.55              |
| 35:BF:149:LEU:O    | 35:BF:150:SER:C   | 2.50                     | 0.55              |
| 35:BF:177:ALA:O    | 35:BF:178:ARG:C   | 2.49                     | 0.55              |
| 35:BF:217:ARG:HG3  | 35:BF:217:ARG:NH1 | 2.22                     | 0.55              |
| 36:BG:59:ARG:CZ    | 36:BG:64:VAL:HG22 | 2.36                     | 0.55              |
| 36:BG:159:GLY:N    | 36:BG:193:TYR:CE1 | 2.68                     | 0.55              |
| 37:BH:15:GLU:HA    | 37:BH:15:GLU:OE1  | 2.06                     | 0.55              |
| 37:BH:80:GLU:CA    | 37:BH:83:SER:OG   | 2.54                     | 0.55              |
| 38:BI:73:ASN:O     | 38:BI:73:ASN:ND2  | 2.32                     | 0.55              |
| 39:BJ:37:VAL:HA    | 39:BJ:65:VAL:HB   | 1.88                     | 0.55              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 39:BJ:50:TYR:CE1   | 51:BV:81:PHE:CE2   | 2.95                     | 0.55              |
| 39:BJ:55:ASP:OD2   | 39:BJ:86:ARG:NH1   | 2.39                     | 0.55              |
| 39:BJ:77:ARG:HA    | 39:BJ:80:ARG:HE    | 1.71                     | 0.55              |
| 39:BJ:79:LEU:C     | 39:BJ:81:ILE:N     | 2.60                     | 0.55              |
| 40:BK:85:TYR:HD1   | 40:BK:154:TYR:CE1  | 2.24                     | 0.55              |
| 41:BL:6:ILE:C      | 41:BL:6:ILE:CD1    | 2.79                     | 0.55              |
| 41:BL:91:ARG:C     | 41:BL:92:ARG:HD2   | 2.31                     | 0.55              |
| 44:BO:126:ARG:C    | 44:BO:128:ALA:N    | 2.62                     | 0.55              |
| 45:BP:60:LEU:HD21  | 45:BP:64:TYR:CD2   | 2.42                     | 0.55              |
| 50:BU:104:LYS:CG   | 50:BU:105:ALA:H    | 2.19                     | 0.55              |
| 55:BC:68:C:H2'     | 55:BC:69:G:H8      | 1.71                     | 0.55              |
| 56:BD:7:A:C2       | 56:BD:67:C:N4      | 2.64                     | 0.55              |
| 57:BZ:16:HIS:O     | 60:BZ:701:GCP:C5'  | 2.55                     | 0.55              |
| 57:BZ:50:LYS:NZ    | 57:BZ:368:VAL:HG22 | 2.22                     | 0.55              |
| 57:BZ:102:PHE:HA   | 57:BZ:135:ALA:HA   | 1.88                     | 0.55              |
| 57:BZ:125:VAL:H    | 57:BZ:161:ALA:HB1  | 1.72                     | 0.55              |
| 57:BZ:205:PHE:HE1  | 57:BZ:226:ILE:HG21 | 1.72                     | 0.55              |
| 57:BZ:380:LEU:HD12 | 57:BZ:380:LEU:O    | 2.06                     | 0.55              |
| 57:BZ:406:ASP:CG   | 57:BZ:407:VAL:HG22 | 2.31                     | 0.55              |
| 57:BZ:546:MET:CG   | 57:BZ:547:ARG:HA   | 2.37                     | 0.55              |
| 1:AA:12:U:O2       | 1:AA:2627:G:OP1    | 2.25                     | 0.55              |
| 1:AA:26:G:N2       | 1:AA:27:G:H21      | 2.05                     | 0.55              |
| 1:AA:274:G:N3      | 1:AA:274:G:O5'     | 2.40                     | 0.55              |
| 1:AA:507:A:H5'     | 1:AA:509:C:C1'     | 2.37                     | 0.55              |
| 1:AA:748:G:H8      | 1:AA:750:A:OP2     | 1.89                     | 0.55              |
| 1:AA:807:U:O2      | 1:AA:807:U:H2'     | 2.06                     | 0.55              |
| 1:AA:819:A:N6      | 1:AA:1188:U:H3     | 2.04                     | 0.55              |
| 1:AA:836:G:C5      | 1:AA:837:C:N4      | 2.75                     | 0.55              |
| 1:AA:892:G:C2      | 1:AA:893:C:N3      | 2.75                     | 0.55              |
| 1:AA:919:G:N3      | 1:AA:920:G:C8      | 2.74                     | 0.55              |
| 1:AA:1047:G:O2'    | 1:AA:1048:A:O5'    | 2.14                     | 0.55              |
| 1:AA:1068:G:C2     | 1:AA:1069:A:N6     | 2.75                     | 0.55              |
| 1:AA:1071:G:C6     | 1:AA:1072:C:N4     | 2.74                     | 0.55              |
| 1:AA:1083:U:C2     | 1:AA:1085:A:C5     | 2.93                     | 0.55              |
| 1:AA:1164:G:H2'    | 1:AA:1165:U:O5'    | 2.07                     | 0.55              |
| 1:AA:1287:A:N1     | 1:AA:1648:C:O2'    | 2.32                     | 0.55              |
| 1:AA:1310:G:N2     | 1:AA:1610:A:C2     | 2.75                     | 0.55              |
| 1:AA:1509:C:OP2    | 1:AA:1509:C:H3'    | 2.07                     | 0.55              |
| 1:AA:1530:G:O3'    | 1:AA:1531:C:O4'    | 2.25                     | 0.55              |
| 1:AA:1578:U:H3'    | 1:AA:1580:A:C2     | 2.41                     | 0.55              |
| 1:AA:1670:C:C6     | 1:AA:1671:U:C5     | 2.94                     | 0.55              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1672:C:O2    | 1:AA:2582:G:C1'    | 2.54                     | 0.55              |
| 1:AA:1799:G:C2'   | 1:AA:1800:C:O5'    | 2.54                     | 0.55              |
| 1:AA:1936:A:O4'   | 1:AA:1940:U:C4     | 2.59                     | 0.55              |
| 1:AA:1946:U:H2'   | 1:AA:1947:C:H6     | 1.71                     | 0.55              |
| 1:AA:1954:G:HO2'  | 1:AA:1955:U:H5'    | 1.70                     | 0.55              |
| 1:AA:1990:C:N3    | 1:AA:1991:U:N3     | 2.54                     | 0.55              |
| 1:AA:2033:A:N1    | 1:AA:2036:C:C5     | 2.75                     | 0.55              |
| 1:AA:2091:U:H5''  | 1:AA:2093:G:OP1    | 2.07                     | 0.55              |
| 1:AA:2253:G:H2'   | 1:AA:2254:C:C6     | 2.37                     | 0.55              |
| 1:AA:2347:C:C5    | 1:AA:2382:G:H1'    | 2.41                     | 0.55              |
| 1:AA:2357:U:OP2   | 1:AA:2357:U:C6     | 2.60                     | 0.55              |
| 1:AA:2393:A:H5''  | 11:AM:56:SER:HA    | 1.87                     | 0.55              |
| 1:AA:2437:U:H2'   | 1:AA:2438:U:H6     | 1.69                     | 0.55              |
| 1:AA:2447:G:C4    | 1:AA:2500:U:C5     | 2.94                     | 0.55              |
| 1:AA:2582:G:H21   | 1:AA:2583:G:H1'    | 1.68                     | 0.55              |
| 1:AA:2597:G:H5'   | 4:AD:242:ARG:CD    | 2.36                     | 0.55              |
| 1:AA:2718:G:C4    | 1:AA:2719:G:C8     | 2.94                     | 0.55              |
| 1:AA:2725:A:O2'   | 1:AA:2726:U:H6     | 1.88                     | 0.55              |
| 1:AA:2737:G:H2'   | 1:AA:2738:A:H8     | 1.71                     | 0.55              |
| 1:AA:2753:A:H2'   | 1:AA:2754:U:O5'    | 2.06                     | 0.55              |
| 1:AA:2842:G:H2'   | 1:AA:2843:G:O4'    | 2.07                     | 0.55              |
| 2:AB:4:C:N3       | 2:AB:117:G:C2      | 2.74                     | 0.55              |
| 2:AB:38:C:O3'     | 14:AP:93:LYS:NZ    | 2.39                     | 0.55              |
| 2:AB:57:A:O4'     | 7:AG:29:TRP:CH2    | 2.59                     | 0.55              |
| 4:AD:77:ALA:HB1   | 4:AD:95:LEU:CG     | 2.36                     | 0.55              |
| 4:AD:90:ALA:CA    | 4:AD:91:ARG:NH1    | 2.69                     | 0.55              |
| 5:AE:41:LYS:O     | 5:AE:44:TYR:N      | 2.39                     | 0.55              |
| 6:AF:36:VAL:HG13  | 6:AF:37:VAL:N      | 2.21                     | 0.55              |
| 7:AG:16:ARG:CG    | 7:AG:16:ARG:NH2    | 2.68                     | 0.55              |
| 7:AG:74:LYS:HB3   | 7:AG:87:PRO:CG     | 2.36                     | 0.55              |
| 7:AG:151:ALA:C    | 7:AG:152:LEU:CG    | 2.80                     | 0.55              |
| 9:AK:99:LEU:HG    | 9:AK:100:GLU:H     | 1.70                     | 0.55              |
| 10:AL:35:VAL:HG11 | 10:AL:64:ARG:HD3   | 1.88                     | 0.55              |
| 11:AM:92:GLU:N    | 11:AM:125:VAL:HG11 | 2.22                     | 0.55              |
| 11:AM:122:PRO:CG  | 11:AM:137:LYS:C    | 2.77                     | 0.55              |
| 12:AN:48:GLU:O    | 12:AN:51:ARG:CG    | 2.37                     | 0.55              |
| 12:AN:85:LYS:CE   | 12:AN:88:GLY:HA3   | 2.36                     | 0.55              |
| 12:AN:109:VAL:CG1 | 12:AN:110:THR:N    | 2.67                     | 0.55              |
| 14:AP:16:ASN:CG   | 14:AP:17:ARG:N     | 2.64                     | 0.55              |
| 14:AP:56:LEU:CD1  | 14:AP:59:LYS:HD2   | 2.36                     | 0.55              |
| 16:AR:99:ALA:CA   | 16:AR:106:PHE:CD1  | 2.90                     | 0.55              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 20:AV:97:ARG:O     | 20:AV:98:VAL:HG22  | 2.07                     | 0.55              |
| 21:AW:29:TYR:CD2   | 21:AW:72:ARG:NH1   | 2.74                     | 0.55              |
| 22:AX:50:ASN:HB3   | 22:AX:63:VAL:CG1   | 2.37                     | 0.55              |
| 24:AZ:5:LYS:CE     | 24:AZ:57:GLU:HB2   | 2.36                     | 0.55              |
| 25:Aa:44:THR:HG22  | 25:Aa:45:GLY:H     | 1.72                     | 0.55              |
| 27:Ac:16:CYS:HA    | 27:Ac:49:HIS:O     | 2.07                     | 0.55              |
| 29:Ae:30:ARG:C     | 29:Ae:34:TRP:HE1   | 2.14                     | 0.55              |
| 30:Af:10:ILE:HD13  | 30:Af:14:CYS:SG    | 2.47                     | 0.55              |
| 30:Af:23:VAL:HB    | 30:Af:36:GLN:HG3   | 1.86                     | 0.55              |
| 32:AJ:104:VAL:CG1  | 32:AJ:127:ILE:CB   | 2.78                     | 0.55              |
| 32:AJ:122:ALA:C    | 32:AJ:126:MET:HB3  | 2.30                     | 0.55              |
| 34:BA:151:A:N6     | 34:BA:152:A:C2     | 2.74                     | 0.55              |
| 34:BA:308:C:H2'    | 34:BA:309:G:O5'    | 2.07                     | 0.55              |
| 34:BA:446:G:H2'    | 34:BA:447:G:C8     | 2.42                     | 0.55              |
| 34:BA:519:C:C5     | 34:BA:520:A:N3     | 2.74                     | 0.55              |
| 34:BA:577:G:N2     | 34:BA:578:C:H1'    | 2.19                     | 0.55              |
| 34:BA:646:U:C2     | 34:BA:647:C:C5     | 2.95                     | 0.55              |
| 34:BA:794:A:C6     | 34:BA:795:C:N4     | 2.74                     | 0.55              |
| 34:BA:833:U:C2     | 34:BA:834:C:C5     | 2.94                     | 0.55              |
| 34:BA:858:G:N2     | 34:BA:870:U:P      | 2.80                     | 0.55              |
| 34:BA:1259:C:O5'   | 34:BA:1259:C:H6    | 1.88                     | 0.55              |
| 34:BA:1406:U:O2    | 34:BA:1406:U:C2'   | 2.51                     | 0.55              |
| 34:BA:1438:G:H2'   | 34:BA:1439:C:H5'   | 1.89                     | 0.55              |
| 34:BA:1487:G:H2'   | 34:BA:1488:G:H8    | 1.71                     | 0.55              |
| 34:BA:1516:G:N2    | 34:BA:1518:A:P     | 2.79                     | 0.55              |
| 35:BF:67:THR:HB    | 35:BF:155:LEU:CD2  | 2.36                     | 0.55              |
| 35:BF:147:LYS:HE2  | 35:BF:147:LYS:CA   | 2.36                     | 0.55              |
| 36:BG:181:ASN:HD21 | 36:BG:206:GLU:HG2  | 1.71                     | 0.55              |
| 37:BH:20:TYR:C     | 37:BH:22:LYS:H     | 2.12                     | 0.55              |
| 37:BH:185:PHE:HD2  | 37:BH:186:LEU:H    | 1.54                     | 0.55              |
| 38:BI:33:VAL:CG2   | 38:BI:43:LEU:HD12  | 2.32                     | 0.55              |
| 38:BI:101:ILE:HD13 | 38:BI:101:ILE:N    | 2.22                     | 0.55              |
| 38:BI:102:ALA:CB   | 38:BI:106:PRO:CB   | 2.79                     | 0.55              |
| 39:BJ:12:PRO:C     | 39:BJ:14:LEU:H     | 2.14                     | 0.55              |
| 41:BL:5:PRO:CA     | 41:BL:8:ASP:HB3    | 2.34                     | 0.55              |
| 41:BL:14:ARG:HD2   | 41:BL:15:ASN:ND2   | 2.21                     | 0.55              |
| 41:BL:82:HIS:NE2   | 41:BL:84:ARG:CG    | 2.70                     | 0.55              |
| 41:BL:110:ALA:C    | 41:BL:111:ILE:HD12 | 2.31                     | 0.55              |
| 42:BM:15:ALA:CB    | 42:BM:77:ILE:N     | 2.70                     | 0.55              |
| 42:BM:47:LEU:HD11  | 42:BM:56:LEU:CG    | 2.33                     | 0.55              |
| 42:BM:118:LYS:O    | 42:BM:119:ALA:C    | 2.50                     | 0.55              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 43:BN:19:SER:N    | 43:BN:91:PRO:HG3   | 2.21                     | 0.55              |
| 44:BO:59:TYR:O    | 44:BO:62:GLN:NE2   | 2.40                     | 0.55              |
| 45:BP:28:LYS:NZ   | 45:BP:33:ARG:NH2   | 2.41                     | 0.55              |
| 45:BP:83:VAL:C    | 45:BP:104:VAL:HG11 | 2.32                     | 0.55              |
| 47:BR:13:THR:O    | 47:BR:15:LYS:N     | 2.39                     | 0.55              |
| 47:BR:34:TYR:N    | 47:BR:34:TYR:CD1   | 2.71                     | 0.55              |
| 48:BS:56:LEU:HD12 | 48:BS:59:MET:HE3   | 1.89                     | 0.55              |
| 50:BU:87:LYS:O    | 50:BU:91:ARG:HB3   | 2.06                     | 0.55              |
| 52:BW:47:HIS:O    | 52:BW:61:TYR:HA    | 2.06                     | 0.55              |
| 57:BZ:1:MET:O     | 57:BZ:68:TYR:OH    | 2.17                     | 0.55              |
| 57:BZ:11:ILE:HG22 | 57:BZ:12:ALA:N     | 2.20                     | 0.55              |
| 57:BZ:18:LYS:HB2  | 60:BZ:701:GCP:C3B  | 2.35                     | 0.55              |
| 57:BZ:25:LEU:C    | 57:BZ:28:GLN:HG2   | 2.24                     | 0.55              |
| 57:BZ:99:VAL:HG12 | 57:BZ:100:ASP:H    | 1.71                     | 0.55              |
| 57:BZ:140:VAL:O   | 57:BZ:144:VAL:HG23 | 2.06                     | 0.55              |
| 57:BZ:407:VAL:H   | 57:BZ:408:GLU:HG3  | 1.70                     | 0.55              |
| 57:BZ:496:ALA:HB3 | 57:BZ:514:HIS:CA   | 2.32                     | 0.55              |
| 1:AA:74:A:N1      | 23:AY:46:ARG:CD    | 2.70                     | 0.55              |
| 1:AA:86:C:O5'     | 1:AA:86:C:H6       | 1.89                     | 0.55              |
| 1:AA:179:G:H5'    | 28:Ad:32:LYS:CE    | 2.36                     | 0.55              |
| 1:AA:186:G:O2'    | 1:AA:187:G:H5'     | 2.07                     | 0.55              |
| 1:AA:216:A:C2     | 1:AA:217:G:C5      | 2.94                     | 0.55              |
| 1:AA:273(E):U:C6  | 1:AA:363(B):G:N2   | 2.75                     | 0.55              |
| 1:AA:292:C:C2'    | 1:AA:293:U:H3      | 2.20                     | 0.55              |
| 1:AA:296:C:H6     | 1:AA:338:G:N2      | 2.03                     | 0.55              |
| 1:AA:417:C:C4     | 1:AA:418:G:N7      | 2.75                     | 0.55              |
| 1:AA:513:A:N1     | 1:AA:514:A:N7      | 2.54                     | 0.55              |
| 1:AA:516:C:C2     | 1:AA:517:C:C5      | 2.95                     | 0.55              |
| 1:AA:545:G:H1'    | 1:AA:549:G:C2      | 2.41                     | 0.55              |
| 1:AA:570:G:H1     | 1:AA:2498:C:C3'    | 2.19                     | 0.55              |
| 1:AA:574:C:H41    | 1:AA:2054:A:C5'    | 2.19                     | 0.55              |
| 1:AA:722:A:N3     | 1:AA:723:G:C8      | 2.75                     | 0.55              |
| 1:AA:819:A:H8     | 1:AA:819:A:H5'     | 1.72                     | 0.55              |
| 1:AA:848:G:N2     | 1:AA:933:A:C4      | 2.74                     | 0.55              |
| 1:AA:861:A:C6     | 1:AA:917:A:C2      | 2.95                     | 0.55              |
| 1:AA:945:A:H2'    | 1:AA:946:G:C5'     | 2.36                     | 0.55              |
| 1:AA:967:C:H2'    | 1:AA:968:G:H8      | 1.72                     | 0.55              |
| 1:AA:1077:A:H2    | 32:AJ:133:SER:HA   | 1.71                     | 0.55              |
| 1:AA:1093:G:H21   | 1:AA:1098:A:N6     | 2.05                     | 0.55              |
| 1:AA:1174:A:N3    | 1:AA:1174:A:C2'    | 2.69                     | 0.55              |
| 1:AA:1179:C:C2'   | 1:AA:1180:C:H6     | 2.19                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1291:C:H2'   | 1:AA:1292:U:H6    | 1.71                     | 0.55              |
| 1:AA:1355:G:N2    | 1:AA:1377:G:N3    | 2.54                     | 0.55              |
| 1:AA:1449:A:C2    | 1:AA:1449(A):G:N9 | 2.74                     | 0.55              |
| 1:AA:1617:C:O2    | 1:AA:1617:C:C2'   | 2.48                     | 0.55              |
| 1:AA:1769:G:H2'   | 1:AA:1770:G:C8    | 2.42                     | 0.55              |
| 1:AA:1780:A:O5'   | 1:AA:1781:C:H3'   | 2.06                     | 0.55              |
| 1:AA:1783:A:OP2   | 1:AA:1783:A:C8    | 2.59                     | 0.55              |
| 1:AA:1815:A:C1'   | 1:AA:1817:G:C4    | 2.89                     | 0.55              |
| 1:AA:1826:G:N2    | 1:AA:1970:A:C2    | 2.73                     | 0.55              |
| 1:AA:2000:G:OP2   | 13:AO:2:ARG:HG2   | 2.06                     | 0.55              |
| 1:AA:2052:G:O5'   | 5:AE:141:ILE:HG13 | 2.07                     | 0.55              |
| 1:AA:2057:A:H2'   | 1:AA:2058:A:C8    | 2.38                     | 0.55              |
| 1:AA:2121:G:O2'   | 3:AC:167:LYS:CG   | 2.54                     | 0.55              |
| 1:AA:2208:U:O2'   | 1:AA:2217:G:N2    | 2.39                     | 0.55              |
| 1:AA:2286:A:H3'   | 1:AA:2286:A:H8    | 1.71                     | 0.55              |
| 1:AA:2423:U:O2    | 1:AA:2423:U:C2'   | 2.51                     | 0.55              |
| 1:AA:2436:G:C5    | 1:AA:2437:U:C5    | 2.95                     | 0.55              |
| 1:AA:2588:G:H8    | 1:AA:2588:G:O5'   | 1.90                     | 0.55              |
| 1:AA:2619:C:O3'   | 5:AE:152:LYS:O    | 2.25                     | 0.55              |
| 1:AA:2637:U:C5'   | 5:AE:81:ILE:CD1   | 2.79                     | 0.55              |
| 1:AA:2694:G:C5    | 1:AA:2695:C:C5    | 2.94                     | 0.55              |
| 1:AA:2821:A:O2'   | 1:AA:2822:G:H5'   | 2.07                     | 0.55              |
| 1:AA:2830:G:N1    | 1:AA:2831:G:C5    | 2.75                     | 0.55              |
| 4:AD:7:LYS:CD     | 4:AD:91:ARG:HE    | 2.20                     | 0.55              |
| 4:AD:132:PRO:O    | 4:AD:133:LEU:O    | 2.25                     | 0.55              |
| 4:AD:148:GLU:O    | 4:AD:149:PRO:C    | 2.49                     | 0.55              |
| 4:AD:260:ARG:HH11 | 4:AD:260:ARG:HB2  | 1.71                     | 0.55              |
| 5:AE:5:LEU:HD23   | 5:AE:6:GLY:C      | 2.31                     | 0.55              |
| 5:AE:13:ARG:HE    | 5:AE:21:VAL:CA    | 2.18                     | 0.55              |
| 5:AE:53:PRO:CG    | 5:AE:75:VAL:CG1   | 2.84                     | 0.55              |
| 5:AE:176:ILE:HD13 | 5:AE:176:ILE:C    | 2.32                     | 0.55              |
| 6:AF:61:GLY:HA3   | 6:AF:78:ILE:HG22  | 1.89                     | 0.55              |
| 6:AF:182:ASN:OD1  | 6:AF:182:ASN:O    | 2.25                     | 0.55              |
| 7:AG:12:TYR:CE1   | 7:AG:13:GLU:HG3   | 2.41                     | 0.55              |
| 8:AH:6:ARG:O      | 8:AH:69:ARG:HD2   | 2.06                     | 0.55              |
| 8:AH:20:ALA:HB1   | 8:AH:21:PRO:HD3   | 1.87                     | 0.55              |
| 8:AH:35:VAL:CB    | 8:AH:72:ILE:HG23  | 2.37                     | 0.55              |
| 8:AH:103:LEU:N    | 8:AH:115:VAL:HG12 | 2.21                     | 0.55              |
| 10:AL:8:LEU:HD13  | 10:AL:9:GLU:N     | 2.22                     | 0.55              |
| 10:AL:19:ILE:HB   | 10:AL:42:SER:O    | 2.07                     | 0.55              |
| 10:AL:21:CYS:SG   | 10:AL:22:ILE:N    | 2.80                     | 0.55              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AL:64:ARG:NH1   | 10:AL:66:LYS:H     | 2.04                     | 0.55              |
| 11:AM:77:ARG:HA    | 11:AM:115:LEU:HB2  | 1.88                     | 0.55              |
| 12:AN:110:THR:O    | 12:AN:110:THR:HG22 | 2.07                     | 0.55              |
| 13:AO:85:PRO:O     | 13:AO:86:ARG:C     | 2.50                     | 0.55              |
| 15:AQ:110:ILE:HD12 | 15:AQ:113:LYS:CE   | 2.37                     | 0.55              |
| 16:AR:110:VAL:O    | 16:AR:111:GLU:C    | 2.47                     | 0.55              |
| 18:AT:98:LYS:HE2   | 18:AT:99:ARG:C     | 2.32                     | 0.55              |
| 19:AU:39:ILE:O     | 19:AU:43:VAL:HG23  | 2.06                     | 0.55              |
| 19:AU:40:LYS:O     | 19:AU:51:VAL:HG21  | 2.07                     | 0.55              |
| 20:AV:95:LYS:CG    | 20:AV:103:GLY:HA3  | 2.32                     | 0.55              |
| 21:AW:29:TYR:CD1   | 21:AW:72:ARG:NH2   | 2.75                     | 0.55              |
| 21:AW:50:GLN:O     | 21:AW:52:SER:N     | 2.32                     | 0.55              |
| 22:AX:32:ARG:HB2   | 22:AX:32:ARG:HH11  | 1.70                     | 0.55              |
| 25:Aa:44:THR:CG2   | 25:Aa:45:GLY:N     | 2.69                     | 0.55              |
| 25:Aa:68:ARG:H     | 25:Aa:68:ARG:CZ    | 2.20                     | 0.55              |
| 26:Ab:46:CYS:H     | 26:Ab:50:GLY:HA2   | 1.72                     | 0.55              |
| 28:Ad:30:VAL:HG22  | 28:Ad:33:ARG:NH2   | 2.22                     | 0.55              |
| 28:Ad:33:ARG:CG    | 28:Ad:37:LYS:HD3   | 2.33                     | 0.55              |
| 34:BA:20:U:C2'     | 34:BA:21:G:O4'     | 2.55                     | 0.55              |
| 34:BA:27:G:N1      | 34:BA:557:G:C4     | 2.75                     | 0.55              |
| 34:BA:265:G:C8     | 34:BA:267:C:C5     | 2.94                     | 0.55              |
| 34:BA:307:C:H41    | 34:BA:308:C:H41    | 1.52                     | 0.55              |
| 34:BA:363:A:C4     | 45:BP:31:PRO:HG2   | 2.42                     | 0.55              |
| 34:BA:494:U:O2'    | 34:BA:495:A:H5'    | 2.07                     | 0.55              |
| 34:BA:587:G:N3     | 34:BA:755:G:C2     | 2.74                     | 0.55              |
| 34:BA:643:C:H5'    | 41:BL:31:PHE:CZ    | 2.42                     | 0.55              |
| 34:BA:667:G:OP2    | 34:BA:732:C:O2'    | 2.25                     | 0.55              |
| 34:BA:722:A:O3'    | 34:BA:723:U:C4     | 2.59                     | 0.55              |
| 34:BA:959:A:C3'    | 34:BA:960:U:C5'    | 2.83                     | 0.55              |
| 34:BA:961:U:C6     | 34:BA:983:A:C6     | 2.95                     | 0.55              |
| 34:BA:977:A:H4'    | 34:BA:982:U:O4     | 2.06                     | 0.55              |
| 34:BA:1054:C:C6    | 34:BA:1054:C:C3'   | 2.89                     | 0.55              |
| 34:BA:1068:G:OP2   | 34:BA:1094:G:H5'   | 2.07                     | 0.55              |
| 34:BA:1202:G:N7    | 43:BN:53:PRO:HB2   | 2.22                     | 0.55              |
| 34:BA:1222:G:OP2   | 34:BA:1322:C:H5    | 1.89                     | 0.55              |
| 34:BA:1330:U:H4'   | 46:BQ:70:LEU:HD21  | 1.85                     | 0.55              |
| 34:BA:1353:G:N3    | 34:BA:1370:G:N2    | 2.55                     | 0.55              |
| 34:BA:1406:U:O2    | 34:BA:1407:C:C6    | 2.60                     | 0.55              |
| 34:BA:1481:U:H2'   | 34:BA:1482:G:N7    | 2.21                     | 0.55              |
| 35:BF:69:LEU:O     | 35:BF:162:ILE:HB   | 2.06                     | 0.55              |
| 35:BF:121:LEU:HD22 | 35:BF:126:GLU:OE2  | 2.07                     | 0.55              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BF:131:PRO:O    | 35:BF:134:GLU:HB2  | 2.07                     | 0.55              |
| 35:BF:149:LEU:HD23 | 35:BF:153:ARG:HG2  | 1.89                     | 0.55              |
| 35:BF:234:PRO:HB2  | 35:BF:238:LEU:HD22 | 1.89                     | 0.55              |
| 36:BG:12:LEU:HG    | 47:BR:57:ARG:HG3   | 1.85                     | 0.55              |
| 36:BG:138:VAL:O    | 36:BG:139:GLN:C    | 2.50                     | 0.55              |
| 36:BG:157:ILE:HG13 | 36:BG:164:ARG:HB3  | 1.89                     | 0.55              |
| 36:BG:193:TYR:N    | 36:BG:193:TYR:HD2  | 2.05                     | 0.55              |
| 37:BH:13:ARG:NH1   | 37:BH:38:TYR:CE1   | 2.75                     | 0.55              |
| 37:BH:101:LEU:C    | 37:BH:104:VAL:HG22 | 2.26                     | 0.55              |
| 37:BH:118:ARG:HH21 | 37:BH:136:PRO:HB2  | 1.70                     | 0.55              |
| 37:BH:152:SER:HA   | 37:BH:155:LEU:CD2  | 2.37                     | 0.55              |
| 37:BH:168:ARG:CD   | 37:BH:168:ARG:N    | 2.69                     | 0.55              |
| 38:BI:105:VAL:HG12 | 38:BI:106:PRO:CD   | 2.37                     | 0.55              |
| 38:BI:115:VAL:HG11 | 38:BI:118:ILE:HD12 | 1.89                     | 0.55              |
| 39:BJ:100:ASN:OD1  | 51:BV:26:LEU:O     | 2.25                     | 0.55              |
| 40:BK:5:ARG:C      | 40:BK:5:ARG:HH11   | 2.15                     | 0.55              |
| 40:BK:111:ARG:CZ   | 40:BK:112:PRO:HD2  | 2.36                     | 0.55              |
| 41:BL:32:LYS:HG3   | 41:BL:59:LEU:HD12  | 1.89                     | 0.55              |
| 41:BL:47:GLY:O     | 41:BL:61:VAL:HA    | 2.06                     | 0.55              |
| 42:BM:17:VAL:HA    | 42:BM:63:ILE:HG23  | 1.89                     | 0.55              |
| 44:BO:64:ALA:O     | 44:BO:65:ALA:C     | 2.47                     | 0.55              |
| 45:BP:48:PRO:CG    | 45:BP:49:ASN:N     | 2.70                     | 0.55              |
| 46:BQ:37:THR:CG2   | 46:BQ:39:ILE:HG12  | 2.31                     | 0.55              |
| 48:BS:44:LYS:O     | 48:BS:46:HIS:N     | 2.40                     | 0.55              |
| 49:BT:59:TRP:HA    | 49:BT:59:TRP:HE3   | 1.70                     | 0.55              |
| 50:BU:11:VAL:HB    | 50:BU:20:THR:HG1   | 1.70                     | 0.55              |
| 50:BU:40:LYS:NZ    | 50:BU:42:TYR:CE1   | 2.74                     | 0.55              |
| 50:BU:44:ALA:CA    | 50:BU:71:PHE:O     | 2.55                     | 0.55              |
| 51:BV:81:PHE:O     | 51:BV:82:THR:HG22  | 2.07                     | 0.55              |
| 52:BW:40:ILE:HD11  | 52:BW:71:LEU:HD23  | 1.88                     | 0.55              |
| 55:BC:16:U:H5      | 55:BC:18:G:H5''    | 1.72                     | 0.55              |
| 56:BD:47:U:C3'     | 56:BD:48:C:H5''    | 2.37                     | 0.55              |
| 56:BE:21:A:N7      | 56:BE:46:G:N7      | 2.54                     | 0.55              |
| 56:BE:71:G:C2      | 56:BE:72:C:C2      | 2.95                     | 0.55              |
| 57:BZ:136:ARG:O    | 57:BZ:140:VAL:HG23 | 2.06                     | 0.55              |
| 57:BZ:205:PHE:CZ   | 57:BZ:207:MET:CB   | 2.86                     | 0.55              |
| 57:BZ:398:GLU:CA   | 57:BZ:472:TYR:HD1  | 2.12                     | 0.55              |
| 57:BZ:514:HIS:CD2  | 57:BZ:515:GLY:CA   | 2.86                     | 0.55              |
| 1:AA:6:A:N3        | 1:AA:2898:U:C1'    | 2.70                     | 0.55              |
| 1:AA:61:G:O2'      | 1:AA:62:C:H5'      | 2.07                     | 0.55              |
| 1:AA:64:A:C2       | 19:AU:66:LEU:HB2   | 2.41                     | 0.55              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:71:A:N3     | 1:AA:73:A:N6      | 2.54                     | 0.55              |
| 1:AA:95:G:O3'    | 23:AY:40:SER:HA   | 2.07                     | 0.55              |
| 1:AA:124:G:H8    | 1:AA:124:G:O5'    | 1.90                     | 0.55              |
| 1:AA:154:G:C2'   | 1:AA:155:C:H5'    | 2.37                     | 0.55              |
| 1:AA:204:A:OP1   | 1:AA:204:A:C8     | 2.60                     | 0.55              |
| 1:AA:326:G:H22   | 1:AA:337:C:C1'    | 2.17                     | 0.55              |
| 1:AA:458:G:OP1   | 28:Ad:39:ARG:NH1  | 2.40                     | 0.55              |
| 1:AA:500:G:H2'   | 1:AA:501:A:H3'    | 1.89                     | 0.55              |
| 1:AA:569:U:OP1   | 1:AA:945:A:N6     | 2.40                     | 0.55              |
| 1:AA:582:G:C6    | 1:AA:1259:G:C6    | 2.94                     | 0.55              |
| 1:AA:833:U:C1'   | 11:AM:48:PRO:HD2  | 2.36                     | 0.55              |
| 1:AA:838:C:C4    | 1:AA:839:U:C4     | 2.94                     | 0.55              |
| 1:AA:852:G:C4    | 1:AA:853:G:C8     | 2.95                     | 0.55              |
| 1:AA:864:G:N2    | 1:AA:913:U:H1'    | 2.22                     | 0.55              |
| 1:AA:893:C:N1    | 1:AA:894:C:C6     | 2.75                     | 0.55              |
| 1:AA:930:U:HO2'  | 1:AA:931:G:P      | 2.28                     | 0.55              |
| 1:AA:954:G:C6    | 1:AA:964:C:C4     | 2.95                     | 0.55              |
| 1:AA:977:G:C5    | 1:AA:987:G:C2     | 2.94                     | 0.55              |
| 1:AA:1080:C:C4'  | 32:AJ:128:ALA:CA  | 2.83                     | 0.55              |
| 1:AA:1242:A:H3'  | 1:AA:1243:G:H8    | 1.72                     | 0.55              |
| 1:AA:1309:G:H1   | 1:AA:1605:C:H42   | 1.53                     | 0.55              |
| 1:AA:1434:A:C2   | 1:AA:1435:G:C1'   | 2.89                     | 0.55              |
| 1:AA:1470:G:C8   | 1:AA:1470:G:C3'   | 2.88                     | 0.55              |
| 1:AA:1477:A:C2   | 1:AA:1516:U:C2    | 2.94                     | 0.55              |
| 1:AA:1480:G:C6   | 1:AA:1514:U:O4    | 2.60                     | 0.55              |
| 1:AA:1491:G:H4'  | 4:AD:72:LYS:NZ    | 2.22                     | 0.55              |
| 1:AA:1566:A:C2   | 4:AD:215:LEU:HD22 | 2.41                     | 0.55              |
| 1:AA:1571:A:C8   | 1:AA:1571:A:OP2   | 2.60                     | 0.55              |
| 1:AA:1668:A:N1   | 1:AA:1993:U:C1'   | 2.59                     | 0.55              |
| 1:AA:1707:G:C2   | 1:AA:1756:G:N2    | 2.75                     | 0.55              |
| 1:AA:1935:G:O2'  | 1:AA:1936:A:OP2   | 2.25                     | 0.55              |
| 1:AA:1992:G:N1   | 1:AA:1995:U:O4    | 2.39                     | 0.55              |
| 1:AA:2066:C:C4   | 1:AA:2067:G:N7    | 2.74                     | 0.55              |
| 1:AA:2209:C:H3'  | 1:AA:2209:C:C6    | 2.42                     | 0.55              |
| 1:AA:2274:A:N7   | 1:AA:2276:G:C8    | 2.75                     | 0.55              |
| 1:AA:2314:C:C5'  | 7:AG:38:VAL:HG21  | 2.37                     | 0.55              |
| 1:AA:2481:G:HO2' | 1:AA:2482:G:C5'   | 2.20                     | 0.55              |
| 1:AA:2544:G:H4'  | 1:AA:2645:G:OP1   | 2.07                     | 0.55              |
| 1:AA:2586:C:N4   | 1:AA:2587:A:H62   | 2.05                     | 0.55              |
| 1:AA:2639:A:C4   | 1:AA:2778:A:N1    | 2.75                     | 0.55              |
| 1:AA:2646:C:H2'  | 1:AA:2647:U:H6    | 1.68                     | 0.55              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2694:G:C6     | 1:AA:2695:C:C5    | 2.95                     | 0.55              |
| 1:AA:2747:G:C2     | 1:AA:2754:U:N3    | 2.75                     | 0.55              |
| 1:AA:2779:U:H5''   | 1:AA:2780:G:H3'   | 1.87                     | 0.55              |
| 2:AB:7:G:O2'       | 2:AB:8:U:OP1      | 2.25                     | 0.55              |
| 2:AB:104:A:C2'     | 2:AB:105:G:O4'    | 2.53                     | 0.55              |
| 3:AC:161:ILE:C     | 3:AC:161:ILE:HD12 | 2.31                     | 0.55              |
| 4:AD:28:GLU:N      | 4:AD:29:PRO:CD    | 2.70                     | 0.55              |
| 4:AD:53:PHE:CD2    | 4:AD:221:VAL:HG13 | 2.42                     | 0.55              |
| 4:AD:132:PRO:HA    | 4:AD:190:TYR:CD1  | 2.42                     | 0.55              |
| 4:AD:157:ARG:O     | 4:AD:160:GLY:N    | 2.40                     | 0.55              |
| 4:AD:178:PRO:CG    | 4:AD:179:SER:H    | 2.14                     | 0.55              |
| 5:AE:103:ASP:CA    | 5:AE:170:LEU:HD21 | 2.37                     | 0.55              |
| 5:AE:165:VAL:HG12  | 5:AE:166:THR:N    | 2.17                     | 0.55              |
| 7:AG:125:PHE:CE2   | 7:AG:130:ASN:HB2  | 2.42                     | 0.55              |
| 8:AH:6:ARG:HD2     | 8:AH:66:GLY:CA    | 2.36                     | 0.55              |
| 8:AH:40:GLU:O      | 8:AH:55:PRO:HD3   | 2.07                     | 0.55              |
| 8:AH:98:LEU:N      | 8:AH:125:VAL:HG21 | 2.22                     | 0.55              |
| 9:AK:39:ARG:HB3    | 9:AK:48:MET:SD    | 2.46                     | 0.55              |
| 9:AK:56:ASN:HB3    | 9:AK:59:LYS:HD2   | 1.87                     | 0.55              |
| 9:AK:60:ILE:CG2    | 9:AK:61:ARG:N     | 2.70                     | 0.55              |
| 9:AK:115:ARG:O     | 9:AK:118:LYS:CB   | 2.52                     | 0.55              |
| 10:AL:97:ARG:C     | 10:AL:97:ARG:CD   | 2.80                     | 0.55              |
| 11:AM:27:HIS:CE1   | 17:AS:82:ARG:O    | 2.60                     | 0.55              |
| 11:AM:111:ARG:HH21 | 11:AM:129:ALA:CB  | 2.20                     | 0.55              |
| 11:AM:116:GLY:HA3  | 11:AM:121:LYS:HB3 | 1.89                     | 0.55              |
| 11:AM:130:PHE:HB3  | 11:AM:134:ALA:CB  | 2.37                     | 0.55              |
| 12:AN:43:THR:OG1   | 12:AN:45:GLN:HB2  | 2.07                     | 0.55              |
| 12:AN:68:ILE:HG23  | 12:AN:69:PHE:N    | 2.22                     | 0.55              |
| 13:AO:14:SER:HA    | 13:AO:17:ARG:NE   | 2.22                     | 0.55              |
| 13:AO:54:LEU:O     | 13:AO:80:PHE:CE1  | 2.60                     | 0.55              |
| 13:AO:85:PRO:O     | 13:AO:87:TYR:N    | 2.39                     | 0.55              |
| 13:AO:113:LEU:CD1  | 13:AO:114:VAL:N   | 2.70                     | 0.55              |
| 15:AQ:55:ASN:HD22  | 15:AQ:57:PHE:HE2  | 1.52                     | 0.55              |
| 15:AQ:76:PHE:CZ    | 15:AQ:78:LEU:HG   | 2.41                     | 0.55              |
| 16:AR:13:LYS:H     | 16:AR:13:LYS:CD   | 2.08                     | 0.55              |
| 16:AR:26:GLY:O     | 16:AR:27:LEU:HB2  | 2.06                     | 0.55              |
| 16:AR:32:PHE:HB3   | 16:AR:36:ARG:HH21 | 1.72                     | 0.55              |
| 16:AR:76:TYR:O     | 16:AR:77:SER:C    | 2.50                     | 0.55              |
| 16:AR:91:ASP:OD1   | 17:AS:10:LYS:HD3  | 2.07                     | 0.55              |
| 17:AS:30:GLY:O     | 17:AS:33:VAL:HG23 | 2.07                     | 0.55              |
| 19:AU:27:THR:CG2   | 19:AU:80:ILE:HD12 | 2.37                     | 0.55              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 21:AW:11:GLU:O     | 21:AW:15:PRO:HG3   | 2.07                     | 0.55              |
| 21:AW:57:ILE:C     | 21:AW:58:VAL:CG2   | 2.80                     | 0.55              |
| 21:AW:80:ARG:O     | 21:AW:81:ARG:HG3   | 2.07                     | 0.55              |
| 21:AW:104:PHE:CA   | 21:AW:139:VAL:O    | 2.53                     | 0.55              |
| 21:AW:110:GLY:HA3  | 21:AW:144:LEU:HD12 | 1.89                     | 0.55              |
| 22:AX:27:GLU:OE1   | 22:AX:28:GLY:N     | 2.39                     | 0.55              |
| 23:AY:39:LEU:O     | 23:AY:42:ASN:ND2   | 2.38                     | 0.55              |
| 24:AZ:10:LYS:HG2   | 24:AZ:12:PRO:CD    | 2.33                     | 0.55              |
| 24:AZ:38:GLU:HG2   | 24:AZ:40:THR:OG1   | 2.07                     | 0.55              |
| 24:AZ:52:HIS:NE2   | 24:AZ:53:LEU:HD21  | 2.22                     | 0.55              |
| 31:AI:124:ALA:HB3  | 31:AI:127:GLU:CB   | 2.37                     | 0.55              |
| 34:BA:9:G:P        | 38:BI:122:GLU:OE1  | 2.65                     | 0.55              |
| 34:BA:23:C:O2'     | 34:BA:24:U:H5'     | 2.06                     | 0.55              |
| 34:BA:27:G:C2      | 34:BA:557:G:N3     | 2.75                     | 0.55              |
| 34:BA:300:A:C2     | 34:BA:566:G:O6     | 2.59                     | 0.55              |
| 34:BA:435:C:C2'    | 34:BA:436:C:H5'    | 2.36                     | 0.55              |
| 34:BA:498:A:O2'    | 34:BA:500:G:C8     | 2.60                     | 0.55              |
| 34:BA:540:G:O6     | 34:BA:541:G:C6     | 2.60                     | 0.55              |
| 34:BA:574:A:H8     | 34:BA:574:A:O5'    | 1.89                     | 0.55              |
| 34:BA:691:G:N2     | 44:BO:51:LYS:NZ    | 2.55                     | 0.55              |
| 34:BA:778:G:C2'    | 34:BA:779:C:H5'    | 2.37                     | 0.55              |
| 34:BA:801:U:C2     | 34:BA:802:A:C8     | 2.95                     | 0.55              |
| 34:BA:1126:U:H1'   | 34:BA:1280:A:H62   | 1.67                     | 0.55              |
| 34:BA:1152:A:C2    | 34:BA:1153:C:C5    | 2.95                     | 0.55              |
| 34:BA:1201:A:C2'   | 34:BA:1202:G:OP2   | 2.55                     | 0.55              |
| 35:BF:124:SER:C    | 35:BF:126:GLU:H    | 2.15                     | 0.55              |
| 35:BF:150:SER:C    | 35:BF:153:ARG:HB2  | 2.32                     | 0.55              |
| 35:BF:171:ALA:O    | 35:BF:172:ILE:C    | 2.49                     | 0.55              |
| 35:BF:178:ARG:HE   | 35:BF:196:LEU:CD1  | 2.11                     | 0.55              |
| 36:BG:182:ILE:HG23 | 36:BG:202:ILE:C    | 2.32                     | 0.55              |
| 37:BH:15:GLU:CG    | 37:BH:63:LYS:HB3   | 2.35                     | 0.55              |
| 37:BH:107:ARG:CD   | 37:BH:174:LEU:HD11 | 2.37                     | 0.55              |
| 38:BI:122:GLU:O    | 38:BI:123:LEU:HD22 | 2.07                     | 0.55              |
| 40:BK:87:VAL:HB    | 40:BK:156:TRP:CH2  | 2.42                     | 0.55              |
| 41:BL:23:SER:O     | 41:BL:24:THR:HB    | 2.07                     | 0.55              |
| 41:BL:33:GLU:CA    | 41:BL:36:LEU:HD21  | 2.34                     | 0.55              |
| 41:BL:100:ILE:HB   | 41:BL:125:ARG:HH21 | 1.71                     | 0.55              |
| 41:BL:112:LEU:CB   | 41:BL:133:LEU:HA   | 2.37                     | 0.55              |
| 42:BM:11:LYS:N     | 42:BM:104:ARG:NH2  | 2.55                     | 0.55              |
| 42:BM:45:ALA:HB3   | 42:BM:74:ILE:HG21  | 1.88                     | 0.55              |
| 42:BM:100:GLY:C    | 42:BM:101:PHE:CD1  | 2.84                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 43:BN:8:LEU:HD12  | 43:BN:16:LEU:HA   | 1.89                     | 0.55              |
| 44:BO:24:SER:OG   | 44:BO:25:TYR:N    | 2.39                     | 0.55              |
| 45:BP:53:ARG:HB3  | 45:BP:69:TYR:CE1  | 2.41                     | 0.55              |
| 45:BP:126:LYS:HE3 | 45:BP:126:LYS:H   | 1.68                     | 0.55              |
| 52:BW:10:PHE:HA   | 52:BW:16:LEU:HD22 | 1.89                     | 0.55              |
| 53:BX:29:LYS:O    | 53:BX:30:LYS:C    | 2.50                     | 0.55              |
| 53:BX:86:ARG:HG2  | 53:BX:87:LYS:H    | 1.72                     | 0.55              |
| 56:BE:4:C:N3      | 56:BE:6:G:C8      | 2.65                     | 0.55              |
| 57:BZ:81:PHE:CD2  | 57:BZ:342:ASN:OD1 | 2.59                     | 0.55              |
| 57:BZ:205:PHE:CA  | 57:BZ:229:GLY:HA3 | 2.37                     | 0.55              |
| 57:BZ:205:PHE:CE1 | 57:BZ:230:LYS:HB3 | 2.42                     | 0.55              |
| 57:BZ:308:SER:HA  | 57:BZ:358:VAL:O   | 2.07                     | 0.55              |
| 1:AA:38:A:H2'     | 1:AA:39:C:H6      | 1.68                     | 0.55              |
| 1:AA:46:C:C6      | 1:AA:215:G:H8     | 2.24                     | 0.55              |
| 1:AA:271(B):G:C5' | 1:AA:271(C):U:O4' | 2.53                     | 0.55              |
| 1:AA:271(C):U:O4  | 1:AA:421:U:C4     | 2.60                     | 0.55              |
| 1:AA:339:U:H2'    | 1:AA:340:A:H8     | 1.67                     | 0.55              |
| 1:AA:563:G:O5'    | 1:AA:564:C:P      | 2.65                     | 0.55              |
| 1:AA:588:U:H2'    | 1:AA:589:C:C6     | 2.42                     | 0.55              |
| 1:AA:603:A:C6     | 1:AA:625:G:C5     | 2.95                     | 0.55              |
| 1:AA:714:U:O2     | 1:AA:715:G:H8     | 1.89                     | 0.55              |
| 1:AA:733:G:O6     | 1:AA:761:A:C8     | 2.60                     | 0.55              |
| 1:AA:763:G:C2'    | 1:AA:764:A:C5'    | 2.83                     | 0.55              |
| 1:AA:875:G:N2     | 1:AA:876:C:C2     | 2.75                     | 0.55              |
| 1:AA:1085:A:H1'   | 1:AA:1086:A:O4'   | 2.07                     | 0.55              |
| 1:AA:1089:G:H8    | 1:AA:1089:G:O5'   | 1.89                     | 0.55              |
| 1:AA:1106:G:O5'   | 1:AA:1106:G:H8    | 1.84                     | 0.55              |
| 1:AA:1183:G:H3'   | 1:AA:1183:G:P     | 2.47                     | 0.55              |
| 1:AA:1263:U:H5''  | 26:Ab:10:LYS:HZ2  | 1.69                     | 0.55              |
| 1:AA:1269:A:O5'   | 1:AA:1269:A:H8    | 1.90                     | 0.55              |
| 1:AA:1359:A:C8    | 1:AA:1359:A:O5'   | 2.60                     | 0.55              |
| 1:AA:1379:A:OP2   | 28:Ad:10:ARG:NH2  | 2.39                     | 0.55              |
| 1:AA:1416:G:OP2   | 1:AA:1416:G:H4'   | 2.07                     | 0.55              |
| 1:AA:1428:C:N4    | 1:AA:1569:A:H5''  | 2.22                     | 0.55              |
| 1:AA:1540:G:C2'   | 1:AA:1541:U:H5'   | 2.36                     | 0.55              |
| 1:AA:1670:C:H1'   | 1:AA:1994:C:H4'   | 1.89                     | 0.55              |
| 1:AA:1784:A:H4'   | 1:AA:1785:A:C8    | 2.42                     | 0.55              |
| 1:AA:1794:U:O2    | 1:AA:1795:C:C6    | 2.60                     | 0.55              |
| 1:AA:2092:U:H4'   | 1:AA:2225:A:C2    | 2.42                     | 0.55              |
| 1:AA:2121:G:H1'   | 3:AC:167:LYS:HZ3  | 1.55                     | 0.55              |
| 1:AA:2215:G:H8    | 1:AA:2215:G:O5'   | 1.90                     | 0.55              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2283:C:C4     | 1:AA:2389:G:C2    | 2.95                     | 0.55              |
| 1:AA:2311:A:H2     | 7:AG:45:GLU:CD    | 2.14                     | 0.55              |
| 1:AA:2520:C:H2'    | 1:AA:2521:C:H6    | 1.72                     | 0.55              |
| 1:AA:2525:G:HO2'   | 1:AA:2741:A:H2    | 1.53                     | 0.55              |
| 1:AA:2776:A:C4'    | 1:AA:2777:G:H5''  | 2.37                     | 0.55              |
| 59:AA:3002:8AN:P   | 56:BD:75:C:C1'    | 2.95                     | 0.55              |
| 2:AB:61:G:C2       | 2:AB:62:C:N3      | 2.75                     | 0.55              |
| 2:AB:90:C:O2'      | 2:AB:91:C:C5'     | 2.54                     | 0.55              |
| 3:AC:70:LYS:O      | 3:AC:71:GLN:HB3   | 2.07                     | 0.55              |
| 3:AC:71:GLN:HG2    | 3:AC:174:PRO:HD3  | 1.88                     | 0.55              |
| 3:AC:116:THR:HG23  | 3:AC:149:ILE:HB   | 1.88                     | 0.55              |
| 3:AC:131:LEU:HD13  | 3:AC:136:LEU:O    | 2.07                     | 0.55              |
| 5:AE:4:ILE:O       | 5:AE:4:ILE:CG1    | 2.55                     | 0.55              |
| 5:AE:53:PRO:O      | 5:AE:54:GLN:O     | 2.25                     | 0.55              |
| 6:AF:132:VAL:C     | 6:AF:134:GLY:N    | 2.60                     | 0.55              |
| 6:AF:156:LEU:CG    | 6:AF:173:VAL:HG23 | 2.32                     | 0.55              |
| 6:AF:184:TYR:O     | 6:AF:186:ILE:N    | 2.40                     | 0.55              |
| 7:AG:8:LYS:HE2     | 7:AG:100:TRP:CD1  | 2.42                     | 0.55              |
| 8:AH:7:LEU:HD13    | 8:AH:65:HIS:CE1   | 2.42                     | 0.55              |
| 9:AK:34:LEU:HB3    | 9:AK:116:LEU:CD2  | 2.36                     | 0.55              |
| 9:AK:99:LEU:CG     | 9:AK:100:GLU:N    | 2.69                     | 0.55              |
| 10:AL:97:ARG:CZ    | 10:AL:97:ARG:C    | 2.79                     | 0.55              |
| 11:AM:6:LEU:C      | 11:AM:7:ARG:HG3   | 2.32                     | 0.55              |
| 11:AM:138:LEU:HD13 | 11:AM:139:LYS:N   | 2.22                     | 0.55              |
| 12:AN:49:ALA:O     | 12:AN:50:ALA:C    | 2.48                     | 0.55              |
| 12:AN:63:LYS:HD2   | 12:AN:64:ILE:O    | 2.06                     | 0.55              |
| 13:AO:5:LYS:NZ     | 13:AO:5:LYS:C     | 2.65                     | 0.55              |
| 15:AQ:2:ASN:CG     | 15:AQ:3:ARG:H     | 2.08                     | 0.55              |
| 15:AQ:17:THR:HG21  | 15:AQ:20:PRO:HG3  | 1.88                     | 0.55              |
| 15:AQ:28:VAL:HG22  | 15:AQ:92:GLY:O    | 2.06                     | 0.55              |
| 15:AQ:52:ILE:CA    | 15:AQ:66:VAL:CG1  | 2.80                     | 0.55              |
| 16:AR:32:PHE:N     | 16:AR:32:PHE:HD1  | 2.03                     | 0.55              |
| 16:AR:83:LEU:O     | 16:AR:90:VAL:CG2  | 2.55                     | 0.55              |
| 17:AS:35:LEU:O     | 17:AS:61:VAL:CA   | 2.53                     | 0.55              |
| 19:AU:7:VAL:HB     | 23:AY:28:MET:HG2  | 1.89                     | 0.55              |
| 19:AU:32:PRO:HG3   | 19:AU:77:LYS:CB   | 2.37                     | 0.55              |
| 21:AW:51:ALA:HA    | 21:AW:53:ILE:O    | 2.06                     | 0.55              |
| 21:AW:168:GLU:OE1  | 21:AW:169:GLU:CA  | 2.55                     | 0.55              |
| 25:Aa:5:ILE:O      | 25:Aa:6:HIS:CB    | 2.55                     | 0.55              |
| 26:Ab:13:LYS:O     | 26:Ab:14:ALA:C    | 2.50                     | 0.55              |
| 30:Af:17:ILE:HB    | 30:Af:24:TYR:O    | 2.06                     | 0.55              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 30:Af:20:HIS:O     | 30:Af:22:ARG:N     | 2.40                     | 0.55              |
| 32:AJ:17:ALA:CB    | 32:AJ:42:ASN:CB    | 2.85                     | 0.55              |
| 34:BA:110:C:C2'    | 34:BA:111:G:H5'    | 2.37                     | 0.55              |
| 34:BA:179:A:H3'    | 34:BA:180:U:C6     | 2.41                     | 0.55              |
| 34:BA:848:C:C4     | 34:BA:849:C:C5     | 2.95                     | 0.55              |
| 34:BA:858:G:H8     | 34:BA:858:G:O5'    | 1.89                     | 0.55              |
| 34:BA:917:G:O2'    | 34:BA:918:A:C5'    | 2.54                     | 0.55              |
| 34:BA:944:G:H2'    | 34:BA:945:G:H5''   | 1.89                     | 0.55              |
| 34:BA:994:A:N3     | 47:BR:5:ALA:HA     | 2.22                     | 0.55              |
| 34:BA:1068:G:H2'   | 34:BA:1069:C:C6    | 2.41                     | 0.55              |
| 34:BA:1069:C:H1'   | 34:BA:1191:A:C2    | 2.40                     | 0.55              |
| 34:BA:1226:C:C6    | 46:BQ:104:ARG:CA   | 2.89                     | 0.55              |
| 34:BA:1238:A:N7    | 34:BA:1303:C:H1'   | 2.21                     | 0.55              |
| 34:BA:1270:C:C2'   | 34:BA:1313:U:C4'   | 2.76                     | 0.55              |
| 34:BA:1308:U:O4    | 34:BA:1309:G:N7    | 2.40                     | 0.55              |
| 34:BA:1452:C:H5'   | 34:BA:1453:G:N3    | 2.22                     | 0.55              |
| 34:BA:1498:U:H2'   | 34:BA:1498:U:O2    | 2.07                     | 0.55              |
| 35:BF:31:TYR:OH    | 35:BF:200:ILE:HD13 | 2.07                     | 0.55              |
| 35:BF:56:ARG:NH1   | 35:BF:56:ARG:CB    | 2.54                     | 0.55              |
| 35:BF:64:ARG:CD    | 35:BF:64:ARG:H     | 2.20                     | 0.55              |
| 35:BF:115:LEU:HD22 | 35:BF:145:LEU:HG   | 1.88                     | 0.55              |
| 35:BF:119:GLU:HA   | 35:BF:142:LEU:CD1  | 2.37                     | 0.55              |
| 36:BG:11:ARG:HH12  | 36:BG:180:ALA:N    | 2.05                     | 0.55              |
| 37:BH:20:TYR:HB2   | 37:BH:27:TYR:CA    | 2.36                     | 0.55              |
| 37:BH:39:PRO:O     | 37:BH:44:GLY:CA    | 2.55                     | 0.55              |
| 37:BH:93:PHE:O     | 37:BH:95:GLY:N     | 2.40                     | 0.55              |
| 38:BI:37:ARG:NH1   | 38:BI:112:LEU:N    | 2.55                     | 0.55              |
| 38:BI:37:ARG:NH1   | 38:BI:111:GLU:C    | 2.65                     | 0.55              |
| 38:BI:80:ILE:HA    | 38:BI:81:GLU:OE2   | 2.07                     | 0.55              |
| 39:BJ:12:PRO:CB    | 39:BJ:57:GLN:HE21  | 2.19                     | 0.55              |
| 41:BL:65:TYR:HA    | 41:BL:79:VAL:HG23  | 1.89                     | 0.55              |
| 41:BL:100:ILE:H    | 41:BL:100:ILE:CD1  | 2.05                     | 0.55              |
| 41:BL:112:LEU:HA   | 41:BL:134:ILE:H    | 1.72                     | 0.55              |
| 42:BM:81:ILE:O     | 42:BM:84:ALA:HB3   | 2.07                     | 0.55              |
| 43:BN:34:VAL:HG22  | 43:BN:74:ILE:CD1   | 2.36                     | 0.55              |
| 45:BP:60:LEU:HD13  | 45:BP:64:TYR:O     | 2.06                     | 0.55              |
| 47:BR:39:LEU:HB2   | 47:BR:44:LEU:HD13  | 1.88                     | 0.55              |
| 51:BV:71:LYS:O     | 51:BV:72:ARG:C     | 2.50                     | 0.55              |
| 52:BW:9:VAL:HA     | 52:BW:41:VAL:CG2   | 2.37                     | 0.55              |
| 55:BC:57:G:H2'     | 55:BC:57:G:N3      | 2.21                     | 0.55              |
| 56:BD:51:U:N3      | 56:BD:64:A:N1      | 2.50                     | 0.55              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 56:BD:52:G:N9      | 56:BD:63:G:N2      | 2.54                     | 0.55              |
| 57:BZ:27:GLN:CG    | 57:BZ:28:GLN:CB    | 2.83                     | 0.55              |
| 57:BZ:488:LEU:HD21 | 57:BZ:526:ILE:O    | 2.07                     | 0.55              |
| 1:AA:37:C:O2'      | 6:AF:50:SER:CB     | 2.55                     | 0.54              |
| 1:AA:98:G:O2'      | 1:AA:103:A:H1'     | 2.07                     | 0.54              |
| 1:AA:161:U:O2      | 1:AA:164:U:N3      | 2.38                     | 0.54              |
| 1:AA:641:C:N4      | 1:AA:646:A:N6      | 2.54                     | 0.54              |
| 1:AA:716:A:H2      | 48:BS:44:LYS:CA    | 2.20                     | 0.54              |
| 1:AA:771:G:N1      | 1:AA:772:C:C4      | 2.74                     | 0.54              |
| 1:AA:969:U:H2'     | 1:AA:970:C:C4'     | 2.36                     | 0.54              |
| 1:AA:996:A:C2      | 1:AA:997:G:N7      | 2.76                     | 0.54              |
| 1:AA:1042:G:C2     | 1:AA:1114:G:C6     | 2.95                     | 0.54              |
| 1:AA:1050:A:C5     | 1:AA:2751:G:H3'    | 2.42                     | 0.54              |
| 1:AA:1055:G:H4'    | 31:AI:33:PRO:CA    | 2.37                     | 0.54              |
| 1:AA:1246:A:OP2    | 11:AM:15:ARG:CZ    | 2.55                     | 0.54              |
| 1:AA:1256:G:C5     | 1:AA:1257:C:C5     | 2.95                     | 0.54              |
| 1:AA:1354:A:H62    | 1:AA:1377:G:H21    | 1.53                     | 0.54              |
| 1:AA:1367:A:H62    | 1:AA:1368:G:H1'    | 1.72                     | 0.54              |
| 1:AA:1477:A:H4'    | 1:AA:1478:G:OP2    | 2.08                     | 0.54              |
| 1:AA:1558:A:C2     | 1:AA:1560:G:C1'    | 2.90                     | 0.54              |
| 1:AA:1640:C:H2'    | 1:AA:1641:A:O4'    | 2.07                     | 0.54              |
| 1:AA:1680:U:O5'    | 1:AA:1680:U:H6     | 1.90                     | 0.54              |
| 1:AA:1699:G:C8     | 1:AA:1763:G:N2     | 2.74                     | 0.54              |
| 1:AA:1808:U:H2'    | 1:AA:1808:U:O2     | 2.07                     | 0.54              |
| 1:AA:1980:G:O2'    | 1:AA:1981:A:P      | 2.65                     | 0.54              |
| 1:AA:1996:C:C5'    | 1:AA:1996:C:C6     | 2.76                     | 0.54              |
| 1:AA:2051:A:H5''   | 1:AA:2578:G:C5'    | 2.33                     | 0.54              |
| 1:AA:2273:A:N7     | 1:AA:2274:A:C8     | 2.75                     | 0.54              |
| 1:AA:2357:U:C2'    | 1:AA:2358:G:O5'    | 2.55                     | 0.54              |
| 1:AA:2412:A:H2'    | 1:AA:2413:G:O4'    | 2.06                     | 0.54              |
| 1:AA:2460:U:H3'    | 1:AA:2461:C:C5     | 2.41                     | 0.54              |
| 1:AA:2553:G:C6     | 1:AA:2583:G:O2'    | 2.61                     | 0.54              |
| 1:AA:2583:G:N1     | 59:AA:3002:8AN:O2' | 2.41                     | 0.54              |
| 1:AA:2686:G:O2'    | 1:AA:2687:U:H5'    | 2.07                     | 0.54              |
| 1:AA:2748:A:N6     | 1:AA:2756:U:C2     | 2.74                     | 0.54              |
| 1:AA:2808:U:H2'    | 1:AA:2808:U:O2     | 2.06                     | 0.54              |
| 1:AA:2850:A:C4     | 1:AA:2869:G:H4'    | 2.42                     | 0.54              |
| 2:AB:29:A:C4       | 2:AB:56:G:N2       | 2.75                     | 0.54              |
| 3:AC:56:GLN:HG2    | 3:AC:201:PRO:CG    | 2.37                     | 0.54              |
| 4:AD:5:LYS:HE2     | 4:AD:29:PRO:HA     | 1.88                     | 0.54              |
| 4:AD:7:LYS:HG3     | 4:AD:26:LYS:C      | 2.32                     | 0.54              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 4:AD:58:HIS:CD2   | 4:AD:215:LEU:HA    | 2.42                     | 0.54              |
| 4:AD:91:ARG:NH2   | 4:AD:198:ASN:CG    | 2.66                     | 0.54              |
| 4:AD:117:VAL:CG1  | 4:AD:128:GLY:C     | 2.79                     | 0.54              |
| 4:AD:135:PHE:N    | 4:AD:135:PHE:HD1   | 2.04                     | 0.54              |
| 4:AD:175:LEU:O    | 4:AD:182:LEU:HD23  | 2.07                     | 0.54              |
| 5:AE:19:ARG:HB3   | 10:AL:73:ASP:CG    | 2.31                     | 0.54              |
| 5:AE:36:ARG:HB3   | 5:AE:41:LYS:CB     | 2.38                     | 0.54              |
| 5:AE:121:ASN:O    | 5:AE:122:PHE:O     | 2.25                     | 0.54              |
| 5:AE:164:ARG:HG2  | 5:AE:165:VAL:N     | 2.22                     | 0.54              |
| 6:AF:46:ARG:HG2   | 6:AF:46:ARG:HH21   | 1.71                     | 0.54              |
| 6:AF:122:LYS:HE3  | 6:AF:192:LEU:HB3   | 1.89                     | 0.54              |
| 7:AG:18:GLU:OE1   | 7:AG:18:GLU:C      | 2.50                     | 0.54              |
| 7:AG:36:LYS:HA    | 7:AG:95:ARG:O      | 2.07                     | 0.54              |
| 8:AH:38:SER:HB3   | 8:AH:41:MET:SD     | 2.46                     | 0.54              |
| 8:AH:94:TYR:HH    | 8:AH:128:PRO:HG2   | 1.68                     | 0.54              |
| 8:AH:157:TYR:CD1  | 8:AH:157:TYR:C     | 2.85                     | 0.54              |
| 10:AL:15:GLY:HA3  | 10:AL:52:VAL:HG21  | 1.84                     | 0.54              |
| 10:AL:43:VAL:HG22 | 10:AL:44:LYS:N     | 2.22                     | 0.54              |
| 11:AM:15:ARG:HG3  | 11:AM:16:ARG:N     | 2.21                     | 0.54              |
| 11:AM:56:SER:CB   | 29:Ae:13:ARG:NE    | 2.69                     | 0.54              |
| 11:AM:79:ARG:O    | 11:AM:83:VAL:HG22  | 2.07                     | 0.54              |
| 12:AN:22:LYS:CD   | 12:AN:23:GLY:N     | 2.70                     | 0.54              |
| 13:AO:32:GLY:C    | 13:AO:116:LEU:HD21 | 2.32                     | 0.54              |
| 14:AP:103:GLU:C   | 14:AP:106:ARG:HB3  | 2.32                     | 0.54              |
| 16:AR:5:LYS:C     | 16:AR:7:GLY:N      | 2.65                     | 0.54              |
| 16:AR:97:ASP:C    | 16:AR:101:ARG:NE   | 2.56                     | 0.54              |
| 18:AT:86:LEU:HB3  | 18:AT:87:PRO:HD2   | 1.88                     | 0.54              |
| 19:AU:73:ARG:NH2  | 19:AU:74:PRO:C     | 2.65                     | 0.54              |
| 20:AV:50:ARG:HB2  | 20:AV:54:LYS:CD    | 2.36                     | 0.54              |
| 20:AV:74:PRO:HB3  | 20:AV:101:LYS:O    | 2.07                     | 0.54              |
| 21:AW:47:VAL:O    | 21:AW:48:PHE:C     | 2.50                     | 0.54              |
| 21:AW:68:PRO:O    | 21:AW:90:VAL:HG12  | 2.07                     | 0.54              |
| 24:AZ:8:LEU:HD13  | 24:AZ:8:LEU:C      | 2.32                     | 0.54              |
| 24:AZ:44:ARG:O    | 24:AZ:47:VAL:N     | 2.40                     | 0.54              |
| 26:Ab:9:LYS:O     | 26:Ab:10:LYS:CG    | 2.56                     | 0.54              |
| 27:Ac:20:ASN:ND2  | 27:Ac:42:TRP:CD1   | 2.66                     | 0.54              |
| 27:Ac:20:ASN:CG   | 27:Ac:42:TRP:CD1   | 2.85                     | 0.54              |
| 29:Ae:25:MET:O    | 29:Ae:27:THR:N     | 2.40                     | 0.54              |
| 29:Ae:36:LYS:HE3  | 29:Ae:40:GLU:OE1   | 2.07                     | 0.54              |
| 31:AI:89:ALA:O    | 31:AI:90:ALA:HB2   | 2.05                     | 0.54              |
| 32:AJ:16:LYS:H    | 32:AJ:16:LYS:CD    | 2.20                     | 0.54              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 34:BA:49:U:C5     | 34:BA:361:G:C2    | 2.95                     | 0.54              |
| 34:BA:119:A:O2'   | 34:BA:120:A:OP2   | 2.13                     | 0.54              |
| 34:BA:191:G:C1'   | 53:BX:105:SER:HA  | 2.25                     | 0.54              |
| 34:BA:362:G:H2'   | 34:BA:364:A:OP2   | 2.07                     | 0.54              |
| 34:BA:378:G:H2'   | 34:BA:379:C:H6    | 1.71                     | 0.54              |
| 34:BA:425:G:N2    | 34:BA:426:G:C1'   | 2.70                     | 0.54              |
| 34:BA:557:G:H2'   | 34:BA:558:G:N9    | 2.23                     | 0.54              |
| 34:BA:664:G:H22   | 34:BA:741:G:H22   | 1.54                     | 0.54              |
| 34:BA:756:C:O2'   | 34:BA:823:G:H1'   | 2.07                     | 0.54              |
| 34:BA:812:C:O2'   | 34:BA:813:U:P     | 2.64                     | 0.54              |
| 34:BA:939:G:C2    | 34:BA:940:C:N3    | 2.75                     | 0.54              |
| 34:BA:954:G:N2    | 34:BA:1228:C:C4   | 2.75                     | 0.54              |
| 34:BA:968:A:H5''  | 34:BA:969:A:C5'   | 2.37                     | 0.54              |
| 34:BA:1167:A:C2   | 34:BA:1169:A:N3   | 2.75                     | 0.54              |
| 34:BA:1230:C:H5'  | 56:BE:30:G:O5'    | 2.08                     | 0.54              |
| 34:BA:1288:A:H8   | 34:BA:1288:A:O5'  | 1.89                     | 0.54              |
| 34:BA:1310:G:C5   | 34:BA:1327:C:N4   | 2.71                     | 0.54              |
| 35:BF:55:PHE:O    | 35:BF:58:ILE:HB   | 2.07                     | 0.54              |
| 36:BG:110:ASN:ND2 | 36:BG:140:ARG:O   | 2.40                     | 0.54              |
| 37:BH:64:LEU:HD13 | 37:BH:64:LEU:C    | 2.32                     | 0.54              |
| 38:BI:72:GLN:NE2  | 38:BI:145:LYS:H   | 2.02                     | 0.54              |
| 38:BI:140:ARG:HB2 | 38:BI:140:ARG:CZ  | 2.37                     | 0.54              |
| 40:BK:75:VAL:CG2  | 40:BK:88:PRO:HB3  | 2.37                     | 0.54              |
| 41:BL:10:LEU:C    | 41:BL:13:ILE:HB   | 2.29                     | 0.54              |
| 41:BL:85:ARG:NH1  | 41:BL:85:ARG:CG   | 2.66                     | 0.54              |
| 43:BN:40:LEU:HD12 | 43:BN:69:ASN:CB   | 2.37                     | 0.54              |
| 43:BN:59:SER:O    | 43:BN:60:ARG:O    | 2.25                     | 0.54              |
| 44:BO:85:ARG:HD2  | 44:BO:113:PRO:HD2 | 1.89                     | 0.54              |
| 45:BP:62:SER:C    | 45:BP:64:TYR:N    | 2.62                     | 0.54              |
| 46:BQ:86:CYS:O    | 52:BW:74:PHE:HA   | 2.07                     | 0.54              |
| 47:BR:27:CYS:SG   | 47:BR:42:ILE:CD1  | 2.96                     | 0.54              |
| 48:BS:15:PHE:O    | 48:BS:16:ALA:C    | 2.49                     | 0.54              |
| 48:BS:69:TYR:OH   | 48:BS:73:GLU:HG3  | 2.07                     | 0.54              |
| 51:BV:41:LYS:O    | 51:BV:43:PHE:N    | 2.36                     | 0.54              |
| 57:BZ:40:GLU:CG   | 57:BZ:41:ARG:HB2  | 2.36                     | 0.54              |
| 57:BZ:156:GLU:CA  | 57:BZ:157:GLN:CB  | 2.86                     | 0.54              |
| 57:BZ:172:ALA:HA  | 57:BZ:179:MET:HE1 | 1.87                     | 0.54              |
| 57:BZ:180:ALA:CB  | 57:BZ:181:GLU:HB3 | 2.35                     | 0.54              |
| 57:BZ:248:ASN:OD1 | 57:BZ:276:ILE:O   | 2.25                     | 0.54              |
| 57:BZ:390:ARG:CB  | 57:BZ:391:GLU:HB2 | 2.31                     | 0.54              |
| 57:BZ:400:TYR:CE1 | 57:BZ:444:PRO:HD3 | 2.35                     | 0.54              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 57:BZ:560:PRO:CA | 57:BZ:562:ARG:N   | 2.69                     | 0.54              |
| 1:AA:41:C:H2'    | 1:AA:43:G:H8      | 1.71                     | 0.54              |
| 1:AA:71:A:O2'    | 1:AA:72:U:P       | 2.65                     | 0.54              |
| 1:AA:83:G:C6     | 1:AA:102:G:H1'    | 2.42                     | 0.54              |
| 1:AA:214:G:H2'   | 1:AA:215:G:O4'    | 2.07                     | 0.54              |
| 1:AA:221:A:C4'   | 1:AA:222:A:H5'    | 2.10                     | 0.54              |
| 1:AA:270(Z):U:H3 | 1:AA:271(C):U:H1' | 1.73                     | 0.54              |
| 1:AA:278:A:H2'   | 1:AA:279:C:N1     | 2.21                     | 0.54              |
| 1:AA:641:C:H2'   | 1:AA:642:G:C4'    | 2.38                     | 0.54              |
| 1:AA:655:A:H5'   | 1:AA:656:G:OP1    | 2.07                     | 0.54              |
| 1:AA:687:C:C5'   | 28:Ad:4:THR:HB    | 2.22                     | 0.54              |
| 1:AA:827:U:H4'   | 1:AA:828:U:H3     | 1.70                     | 0.54              |
| 1:AA:846:C:H4'   | 1:AA:847:U:O5'    | 2.07                     | 0.54              |
| 1:AA:847:U:N3    | 1:AA:933:A:C2     | 2.65                     | 0.54              |
| 1:AA:859:G:O2'   | 1:AA:860:U:H5''   | 2.07                     | 0.54              |
| 1:AA:896:A:H2    | 1:AA:897:C:C1'    | 2.20                     | 0.54              |
| 1:AA:931:G:H21   | 24:AZ:24:LYS:CB   | 2.15                     | 0.54              |
| 1:AA:957:A:H4'   | 1:AA:958:U:OP2    | 2.04                     | 0.54              |
| 1:AA:1047:G:N3   | 1:AA:1110:G:C3'   | 2.68                     | 0.54              |
| 1:AA:1116:C:N4   | 1:AA:1117:G:O6    | 2.40                     | 0.54              |
| 1:AA:1127:A:N1   | 1:AA:2518:A:N3    | 2.55                     | 0.54              |
| 1:AA:1188:U:H2'  | 1:AA:1189:A:H5'   | 1.88                     | 0.54              |
| 1:AA:1291:C:H2'  | 1:AA:1292:U:C6    | 2.42                     | 0.54              |
| 1:AA:1340:U:C2   | 1:AA:1602:U:C5    | 2.95                     | 0.54              |
| 1:AA:1343:G:O6   | 1:AA:1404:C:N3    | 2.40                     | 0.54              |
| 1:AA:1349:A:H5'  | 1:AA:1350:C:H5''  | 1.88                     | 0.54              |
| 1:AA:1388:G:C2   | 1:AA:1400:G:C2    | 2.95                     | 0.54              |
| 1:AA:1471:A:H2'  | 1:AA:1472:A:C4'   | 2.37                     | 0.54              |
| 1:AA:1496:A:N3   | 1:AA:1498:C:N4    | 2.50                     | 0.54              |
| 1:AA:1534:G:O5'  | 1:AA:1534:G:H8    | 1.91                     | 0.54              |
| 1:AA:1581:G:O2'  | 1:AA:1582:C:H5'   | 2.07                     | 0.54              |
| 1:AA:1632:A:H8   | 1:AA:1632:A:O5'   | 1.90                     | 0.54              |
| 1:AA:1655:A:N3   | 1:AA:1656:C:H1'   | 2.22                     | 0.54              |
| 1:AA:1789:A:C8   | 1:AA:1790:C:C6    | 2.96                     | 0.54              |
| 1:AA:1802:A:N3   | 1:AA:1802:A:C2'   | 2.67                     | 0.54              |
| 1:AA:1803:A:C3'  | 4:AD:257:LEU:HD13 | 2.37                     | 0.54              |
| 1:AA:1931:U:H2'  | 1:AA:1932:A:C8    | 2.41                     | 0.54              |
| 1:AA:1936:A:C5   | 1:AA:1945:G:C6    | 2.95                     | 0.54              |
| 1:AA:1954:G:H2'  | 1:AA:1956:U:O4    | 2.06                     | 0.54              |
| 1:AA:1971:A:C2   | 4:AD:239:ARG:CA   | 2.90                     | 0.54              |
| 1:AA:2007:C:C4   | 1:AA:2008:C:C5    | 2.94                     | 0.54              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2055:C:C2'   | 1:AA:2504:U:H5'   | 2.33                     | 0.54              |
| 1:AA:2091:U:C3'   | 1:AA:2092:U:H5'   | 2.36                     | 0.54              |
| 1:AA:2173:A:N1    | 3:AC:219:GLY:CA   | 2.70                     | 0.54              |
| 1:AA:2207:C:C3'   | 1:AA:2208:U:H5''  | 2.34                     | 0.54              |
| 1:AA:2210:G:O6    | 4:AD:150:LYS:N    | 2.39                     | 0.54              |
| 1:AA:2285:C:H3'   | 1:AA:2285:C:C6    | 2.42                     | 0.54              |
| 1:AA:2364:C:H1'   | 22:AX:36:ILE:HD11 | 1.89                     | 0.54              |
| 1:AA:2412:A:C8    | 1:AA:2413:G:C8    | 2.94                     | 0.54              |
| 1:AA:2431:U:HO2'  | 1:AA:2432:A:H8    | 1.53                     | 0.54              |
| 1:AA:2491:U:H2'   | 1:AA:2492:U:H5''  | 1.89                     | 0.54              |
| 1:AA:2582:G:H2'   | 1:AA:2583:G:H5'   | 1.89                     | 0.54              |
| 1:AA:2754:U:H2'   | 1:AA:2756:U:OP1   | 2.06                     | 0.54              |
| 1:AA:2875:C:O2'   | 15:AQ:4:GLY:HA3   | 2.08                     | 0.54              |
| 1:AA:2882:A:C2    | 1:AA:2883:A:C8    | 2.95                     | 0.54              |
| 1:AA:2895:U:H2'   | 1:AA:2896:C:H6    | 1.71                     | 0.54              |
| 2:AB:45:A:C5      | 2:AB:46:A:C5      | 2.95                     | 0.54              |
| 4:AD:34:VAL:H     | 4:AD:104:TYR:HH   | 1.55                     | 0.54              |
| 4:AD:268:ARG:C    | 4:AD:269:PHE:CD1  | 2.85                     | 0.54              |
| 5:AE:7:VAL:HG13   | 5:AE:194:GLY:C    | 2.31                     | 0.54              |
| 5:AE:14:ILE:HG22  | 5:AE:19:ARG:CA    | 2.36                     | 0.54              |
| 5:AE:51:PHE:HE1   | 5:AE:76:ARG:H     | 1.55                     | 0.54              |
| 6:AF:8:GLN:HB3    | 6:AF:18:ARG:HA    | 1.88                     | 0.54              |
| 6:AF:75:HIS:NE2   | 6:AF:80:ALA:CB    | 2.69                     | 0.54              |
| 7:AG:40:ASN:O     | 7:AG:156:ASP:O    | 2.25                     | 0.54              |
| 8:AH:8:PRO:CB     | 8:AH:51:ARG:NH1   | 2.70                     | 0.54              |
| 8:AH:33:LEU:HD22  | 8:AH:35:VAL:HG22  | 1.88                     | 0.54              |
| 8:AH:35:VAL:CG2   | 8:AH:75:ALA:HB2   | 2.38                     | 0.54              |
| 8:AH:126:PRO:O    | 8:AH:127:GLU:CG   | 2.50                     | 0.54              |
| 9:AK:87:LEU:HA    | 9:AK:90:MET:CG    | 2.37                     | 0.54              |
| 10:AL:97:ARG:CD   | 10:AL:118:ALA:HB2 | 2.36                     | 0.54              |
| 11:AM:107:LYS:O   | 11:AM:108:LYS:C   | 2.51                     | 0.54              |
| 12:AN:45:GLN:C    | 12:AN:48:GLU:HG2  | 2.32                     | 0.54              |
| 12:AN:104:PHE:C   | 12:AN:105:GLU:CD  | 2.75                     | 0.54              |
| 13:AO:33:ARG:NH2  | 26:Ab:56:LYS:HE2  | 2.21                     | 0.54              |
| 13:AO:76:VAL:HG12 | 13:AO:77:ARG:N    | 2.22                     | 0.54              |
| 15:AQ:2:ASN:O     | 15:AQ:6:LEU:HD22  | 2.07                     | 0.54              |
| 15:AQ:80:SER:O    | 15:AQ:81:PRO:C    | 2.47                     | 0.54              |
| 16:AR:111:GLU:CG  | 16:AR:112:ARG:H   | 2.20                     | 0.54              |
| 16:AR:111:GLU:CG  | 16:AR:112:ARG:N   | 2.70                     | 0.54              |
| 17:AS:56:SER:O    | 17:AS:57:VAL:CG2  | 2.55                     | 0.54              |
| 18:AT:60:ASN:ND2  | 18:AT:61:ASN:ND2  | 2.55                     | 0.54              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 20:AV:7:VAL:CG1    | 20:AV:71:LYS:HB3  | 2.32                     | 0.54              |
| 21:AW:39:VAL:HG22  | 21:AW:44:PHE:HE2  | 1.65                     | 0.54              |
| 21:AW:80:ARG:C     | 21:AW:81:ARG:HG3  | 2.32                     | 0.54              |
| 21:AW:82:ARG:CG    | 21:AW:83:PRO:N    | 2.70                     | 0.54              |
| 21:AW:100:VAL:HG23 | 21:AW:102:LEU:CD2 | 2.37                     | 0.54              |
| 22:AX:56:ASP:C     | 22:AX:57:PHE:CD1  | 2.85                     | 0.54              |
| 23:AY:50:ARG:HB3   | 23:AY:54:ARG:HH22 | 1.72                     | 0.54              |
| 26:Ab:46:CYS:CB    | 26:Ab:47:PRO:HD2  | 2.26                     | 0.54              |
| 26:Ab:60:VAL:HG22  | 26:Ab:60:VAL:O    | 2.08                     | 0.54              |
| 27:Ac:12:GLU:CG    | 27:Ac:53:LYS:O    | 2.56                     | 0.54              |
| 27:Ac:16:CYS:CB    | 27:Ac:49:HIS:CA   | 2.67                     | 0.54              |
| 29:Ae:26:LYS:CB    | 29:Ae:44:LYS:HZ1  | 2.20                     | 0.54              |
| 32:AJ:23:VAL:CB    | 32:AJ:41:PHE:CE1  | 2.89                     | 0.54              |
| 32:AJ:28:GLY:O     | 32:AJ:29:GLN:HG2  | 2.08                     | 0.54              |
| 34:BA:9:G:C2       | 34:BA:26:A:C2     | 2.96                     | 0.54              |
| 34:BA:170:U:O2'    | 34:BA:171:A:H5'   | 2.07                     | 0.54              |
| 34:BA:182:U:H2'    | 34:BA:182:U:O2    | 2.06                     | 0.54              |
| 34:BA:232:G:C6     | 34:BA:233:C:N4    | 2.75                     | 0.54              |
| 34:BA:278:G:C1'    | 34:BA:282:A:H1'   | 2.38                     | 0.54              |
| 34:BA:327:A:C2     | 34:BA:329:A:C4    | 2.95                     | 0.54              |
| 34:BA:447:G:O5'    | 34:BA:447:G:C8    | 2.59                     | 0.54              |
| 34:BA:474:G:H5'    | 49:BT:81:ARG:CD   | 2.36                     | 0.54              |
| 34:BA:520:A:OP1    | 45:BP:52:LEU:HD21 | 2.07                     | 0.54              |
| 34:BA:580:U:H2'    | 34:BA:581:G:O4'   | 2.07                     | 0.54              |
| 34:BA:601:C:H2'    | 34:BA:602:A:O4'   | 2.07                     | 0.54              |
| 34:BA:652:U:O4     | 34:BA:752:G:H2'   | 2.08                     | 0.54              |
| 34:BA:1048:G:N2    | 34:BA:1210:C:H1'  | 2.22                     | 0.54              |
| 34:BA:1055:A:N1    | 34:BA:1056:U:H1'  | 2.23                     | 0.54              |
| 34:BA:1116:C:C2    | 34:BA:1185:G:N1   | 2.76                     | 0.54              |
| 34:BA:1145:C:O2'   | 34:BA:1146:A:H8   | 1.91                     | 0.54              |
| 34:BA:1440:C:C2    | 34:BA:1462:G:C2   | 2.96                     | 0.54              |
| 34:BA:1508:G:H2'   | 34:BA:1509:C:C6   | 2.43                     | 0.54              |
| 35:BF:82:ARG:HB2   | 35:BF:94:ASN:HD21 | 1.73                     | 0.54              |
| 35:BF:142:LEU:HD23 | 35:BF:142:LEU:C   | 2.31                     | 0.54              |
| 35:BF:149:LEU:O    | 35:BF:151:GLY:N   | 2.39                     | 0.54              |
| 36:BG:179:ARG:O    | 36:BG:179:ARG:HG2 | 2.08                     | 0.54              |
| 38:BI:8:GLU:CD     | 38:BI:8:GLU:O     | 2.50                     | 0.54              |
| 38:BI:43:LEU:CD2   | 38:BI:44:GLY:N    | 2.67                     | 0.54              |
| 38:BI:72:GLN:HG3   | 38:BI:77:PRO:HD3  | 1.88                     | 0.54              |
| 38:BI:122:GLU:HB3  | 38:BI:126:ARG:HG3 | 1.89                     | 0.54              |
| 39:BJ:48:LEU:CD1   | 39:BJ:50:TYR:O    | 2.55                     | 0.54              |

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| Atom-1             | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|------------------|--------------------------|-------------------|
| 39:BJ:75:LEU:O     | 39:BJ:76:ALA:C   | 2.50                     | 0.54              |
| 40:BK:18:TYR:O     | 40:BK:19:GLY:C   | 2.49                     | 0.54              |
| 40:BK:42:ILE:O     | 40:BK:43:PHE:C   | 2.48                     | 0.54              |
| 40:BK:66:VAL:O     | 40:BK:70:LYS:HG3 | 2.06                     | 0.54              |
| 41:BL:6:ILE:HD12   | 41:BL:7:ALA:N    | 2.23                     | 0.54              |
| 41:BL:63:LEU:HB2   | 41:BL:65:TYR:CE1 | 2.41                     | 0.54              |
| 43:BN:44:VAL:HG22  | 43:BN:66:ARG:CD  | 2.37                     | 0.54              |
| 44:BO:58:PRO:HB2   | 44:BO:93:GLN:CG  | 2.37                     | 0.54              |
| 44:BO:67:ASP:O     | 44:BO:68:ALA:C   | 2.50                     | 0.54              |
| 45:BP:27:LEU:HD22  | 45:BP:62:SER:OG  | 2.08                     | 0.54              |
| 45:BP:50:SER:O     | 45:BP:51:ALA:CB  | 2.55                     | 0.54              |
| 48:BS:29:VAL:O     | 48:BS:30:ALA:C   | 2.50                     | 0.54              |
| 49:BT:6:LEU:CD2    | 49:BT:17:TYR:CD2 | 2.85                     | 0.54              |
| 49:BT:20:VAL:HG11  | 49:BT:32:TYR:HB2 | 1.89                     | 0.54              |
| 50:BU:48:GLU:OE1   | 50:BU:50:LYS:HB2 | 2.07                     | 0.54              |
| 52:BW:9:VAL:HG13   | 52:BW:42:PRO:N   | 2.12                     | 0.54              |
| 57:BZ:13:HIS:HD2   | 57:BZ:106:MET:C  | 2.14                     | 0.54              |
| 57:BZ:27:GLN:OE1   | 57:BZ:28:GLN:NE2 | 2.41                     | 0.54              |
| 57:BZ:409:GLU:OE2  | 57:BZ:435:GLY:C  | 2.45                     | 0.54              |
| 57:BZ:480:VAL:HG22 | 57:BZ:480:VAL:O  | 2.08                     | 0.54              |
| 1:AA:140:A:N6      | 1:AA:1596:A:H4'  | 2.21                     | 0.54              |
| 1:AA:141:A:H2      | 1:AA:1597:A:H5'  | 1.71                     | 0.54              |
| 1:AA:141(A):C:O2'  | 1:AA:142:G:H5'   | 2.08                     | 0.54              |
| 1:AA:469:G:N1      | 28:Ad:40:TRP:NE1 | 2.52                     | 0.54              |
| 1:AA:530:G:O2'     | 1:AA:531:C:O3'   | 2.25                     | 0.54              |
| 1:AA:533:G:H5'     | 16:AR:24:TYR:HD2 | 1.72                     | 0.54              |
| 1:AA:572:A:H61     | 1:AA:2029:G:H1'  | 1.71                     | 0.54              |
| 1:AA:638:G:C2'     | 1:AA:639:U:H5'   | 2.37                     | 0.54              |
| 1:AA:671:C:H5'     | 1:AA:672:C:OP2   | 2.06                     | 0.54              |
| 1:AA:674:G:C4'     | 6:AF:74:ARG:CZ   | 2.78                     | 0.54              |
| 1:AA:678:C:O2'     | 1:AA:679:C:H5'   | 2.07                     | 0.54              |
| 1:AA:724:U:H2'     | 1:AA:725:G:H5'   | 1.88                     | 0.54              |
| 1:AA:729:G:H2'     | 1:AA:730:C:C3'   | 2.36                     | 0.54              |
| 1:AA:783:A:C6      | 1:AA:785:G:C8    | 2.95                     | 0.54              |
| 1:AA:820:A:N7      | 1:AA:973:A:C6    | 2.75                     | 0.54              |
| 1:AA:824:A:C2'     | 1:AA:825:C:C5    | 2.91                     | 0.54              |
| 1:AA:1105:U:C4'    | 1:AA:1106:G:C5'  | 2.67                     | 0.54              |
| 1:AA:1289:C:C2     | 1:AA:1290:C:C5   | 2.95                     | 0.54              |
| 1:AA:1493:C:O2     | 1:AA:1493:C:C2'  | 2.52                     | 0.54              |
| 1:AA:1524:G:C4     | 1:AA:1525:G:C8   | 2.95                     | 0.54              |
| 1:AA:1531:C:H2'    | 1:AA:1532:C:H5   | 1.68                     | 0.54              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 1:AA:1569:A:O2'  | 4:AD:39:LYS:NZ     | 2.38                     | 0.54              |
| 1:AA:1618:A:O2'  | 1:AA:1619:G:OP1    | 2.18                     | 0.54              |
| 1:AA:1650:G:O2'  | 1:AA:1651:G:O5'    | 2.26                     | 0.54              |
| 1:AA:1770:G:H2'  | 1:AA:1771:C:C6     | 2.39                     | 0.54              |
| 1:AA:1794:U:H5'  | 1:AA:1900:A:N6     | 2.21                     | 0.54              |
| 1:AA:1842:G:O2'  | 1:AA:1843:C:C5'    | 2.54                     | 0.54              |
| 1:AA:2118:U:OP1  | 1:AA:2147:G:C6     | 2.60                     | 0.54              |
| 1:AA:2305:A:H2'  | 7:AG:154:GLY:CA    | 2.32                     | 0.54              |
| 1:AA:2441:C:H2'  | 1:AA:2442:C:H6     | 1.71                     | 0.54              |
| 1:AA:2443:C:C2   | 1:AA:2444:G:C8     | 2.95                     | 0.54              |
| 1:AA:2459:A:C2   | 1:AA:2492:U:N3     | 2.73                     | 0.54              |
| 1:AA:2461:C:C1'  | 1:AA:2492:U:C5     | 2.81                     | 0.54              |
| 1:AA:2507:C:C5   | 59:AA:3002:8AN:O2' | 2.60                     | 0.54              |
| 1:AA:2552:U:O2   | 1:AA:2554:U:H5''   | 2.05                     | 0.54              |
| 1:AA:2552:U:C2   | 1:AA:2554:U:H5''   | 2.42                     | 0.54              |
| 1:AA:2556:C:C4'  | 57:BZ:550:GLY:CA   | 2.84                     | 0.54              |
| 1:AA:2638:G:N7   | 1:AA:2775:A:N1     | 2.55                     | 0.54              |
| 1:AA:2644:G:H1   | 1:AA:2645:G:N2     | 2.04                     | 0.54              |
| 1:AA:2656:U:H2'  | 1:AA:2656:U:O2     | 2.06                     | 0.54              |
| 1:AA:2687:U:O2   | 1:AA:2687:U:C2'    | 2.51                     | 0.54              |
| 1:AA:2731:G:C2   | 1:AA:2732:G:C2     | 2.96                     | 0.54              |
| 1:AA:2876:G:P    | 15:AQ:2:ASN:CB     | 2.96                     | 0.54              |
| 1:AA:2888:C:O2'  | 1:AA:2889:C:O4'    | 2.24                     | 0.54              |
| 2:AB:79:C:O2'    | 2:AB:80:U:H5'      | 2.07                     | 0.54              |
| 3:AC:113:VAL:CG1 | 3:AC:138:PRO:HG3   | 2.37                     | 0.54              |
| 4:AD:142:VAL:HB  | 4:AD:192:THR:O     | 2.08                     | 0.54              |
| 5:AE:55:ASN:ND2  | 5:AE:73:GLU:HG3    | 2.22                     | 0.54              |
| 5:AE:179:GLU:CB  | 5:AE:181:LEU:HD11  | 2.36                     | 0.54              |
| 6:AF:32:LEU:O    | 6:AF:35:GLU:HB2    | 2.07                     | 0.54              |
| 6:AF:145:GLU:C   | 6:AF:147:GLY:H     | 2.16                     | 0.54              |
| 7:AG:153:ARG:O   | 7:AG:155:MET:N     | 2.41                     | 0.54              |
| 8:AH:87:LEU:O    | 8:AH:132:ARG:HB3   | 2.08                     | 0.54              |
| 12:AN:22:LYS:CE  | 12:AN:23:GLY:H     | 2.20                     | 0.54              |
| 14:AP:99:LYS:O   | 14:AP:103:GLU:OE2  | 2.26                     | 0.54              |
| 16:AR:6:THR:O    | 16:AR:9:VAL:HB     | 2.07                     | 0.54              |
| 17:AS:3:ALA:O    | 17:AS:13:ARG:HA    | 2.07                     | 0.54              |
| 17:AS:12:TYR:CD1 | 17:AS:14:VAL:HG23  | 2.43                     | 0.54              |
| 17:AS:75:PHE:CD1 | 17:AS:75:PHE:N     | 2.76                     | 0.54              |
| 18:AT:16:LYS:HA  | 18:AT:19:LEU:HD12  | 1.88                     | 0.54              |
| 18:AT:88:ARG:HA  | 18:AT:88:ARG:HE    | 1.70                     | 0.54              |
| 20:AV:7:VAL:HG22 | 20:AV:71:LYS:HG3   | 1.88                     | 0.54              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 20:AV:26:LYS:NZ   | 20:AV:36:ALA:CB    | 2.70                     | 0.54              |
| 20:AV:53:PRO:O    | 20:AV:55:TYR:N     | 2.40                     | 0.54              |
| 21:AW:96:VAL:HG13 | 21:AW:128:VAL:HG13 | 1.88                     | 0.54              |
| 21:AW:122:ARG:HB2 | 21:AW:171:ILE:HD13 | 1.89                     | 0.54              |
| 22:AX:21:LEU:CD1  | 22:AX:41:ARG:HG2   | 2.35                     | 0.54              |
| 23:AY:12:SER:H    | 23:AY:15:GLU:CD    | 2.15                     | 0.54              |
| 24:AZ:22:ALA:HB1  | 24:AZ:46:ASN:CG    | 2.32                     | 0.54              |
| 25:Aa:29:PRO:O    | 25:Aa:31:ILE:N     | 2.39                     | 0.54              |
| 25:Aa:56:VAL:C    | 25:Aa:61:ARG:NH2   | 2.65                     | 0.54              |
| 26:Ab:15:ARG:O    | 26:Ab:18:ALA:N     | 2.40                     | 0.54              |
| 27:Ac:7:ILE:HG22  | 27:Ac:8:LYS:N      | 2.22                     | 0.54              |
| 27:Ac:25:LYS:C    | 27:Ac:26:ASN:ND2   | 2.66                     | 0.54              |
| 29:Ae:1:MET:H1    | 29:Ae:1:MET:HE2    | 1.72                     | 0.54              |
| 29:Ae:43:GLN:N    | 29:Ae:43:GLN:CD    | 2.63                     | 0.54              |
| 32:AJ:12:LEU:CD1  | 32:AJ:23:VAL:CG2   | 2.86                     | 0.54              |
| 32:AJ:51:ALA:CB   | 32:AJ:72:PRO:HB2   | 2.38                     | 0.54              |
| 34:BA:151:A:N6    | 34:BA:152:A:H2     | 2.06                     | 0.54              |
| 34:BA:352:C:C6    | 34:BA:352:C:OP1    | 2.60                     | 0.54              |
| 34:BA:389:A:C4    | 34:BA:390:C:O4'    | 2.61                     | 0.54              |
| 34:BA:521:G:O6    | 45:BP:49:ASN:ND2   | 2.40                     | 0.54              |
| 34:BA:657:G:C4'   | 48:BS:28:GLN:HE22  | 2.20                     | 0.54              |
| 34:BA:717:C:C2'   | 34:BA:718:G:OP2    | 2.55                     | 0.54              |
| 34:BA:806:C:O2'   | 34:BA:807:A:H5'    | 2.07                     | 0.54              |
| 34:BA:923:A:OP1   | 38:BI:21:ALA:CB    | 2.55                     | 0.54              |
| 34:BA:949:A:HO2'  | 34:BA:1364:U:H3    | 1.50                     | 0.54              |
| 34:BA:956:U:O2'   | 34:BA:957:U:C5'    | 2.55                     | 0.54              |
| 34:BA:968:A:H2'   | 34:BA:968:A:N3     | 2.22                     | 0.54              |
| 34:BA:974:A:OP2   | 47:BR:31:ARG:CG    | 2.49                     | 0.54              |
| 34:BA:974:A:H5'   | 34:BA:975:A:P      | 2.48                     | 0.54              |
| 34:BA:981:U:C6    | 34:BA:981:U:C3'    | 2.91                     | 0.54              |
| 34:BA:1064:G:OP1  | 34:BA:1386:G:H5'   | 2.07                     | 0.54              |
| 34:BA:1066:C:H5   | 34:BA:1067:A:H62   | 1.55                     | 0.54              |
| 34:BA:1363:A:H5'' | 34:BA:1364:U:P     | 2.47                     | 0.54              |
| 34:BA:1440:C:N3   | 34:BA:1462:G:C2    | 2.75                     | 0.54              |
| 34:BA:1448:C:C2   | 34:BA:1459:C:O2    | 2.60                     | 0.54              |
| 34:BA:1452:C:H4'  | 34:BA:1453:G:H5''  | 1.88                     | 0.54              |
| 35:BF:48:MET:O    | 35:BF:49:GLU:C     | 2.50                     | 0.54              |
| 35:BF:163:PHE:CZ  | 35:BF:186:ALA:C    | 2.86                     | 0.54              |
| 35:BF:173:ALA:HA  | 35:BF:176:GLU:CB   | 2.34                     | 0.54              |
| 36:BG:40:ARG:HG3  | 36:BG:40:ARG:HH11  | 1.72                     | 0.54              |
| 37:BH:63:LYS:CA   | 37:BH:66:ARG:HD2   | 2.37                     | 0.54              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 37:BH:99:SER:O    | 37:BH:140:VAL:HG23 | 2.08                     | 0.54              |
| 37:BH:110:PHE:CZ  | 37:BH:147:ALA:HB1  | 2.42                     | 0.54              |
| 37:BH:129:ASN:ND2 | 37:BH:144:ASP:OD1  | 2.41                     | 0.54              |
| 38:BI:94:ALA:HB1  | 38:BI:98:THR:CG2   | 2.31                     | 0.54              |
| 40:BK:45:ASP:HB2  | 40:BK:117:ALA:HB2  | 1.88                     | 0.54              |
| 40:BK:123:GLU:OE1 | 40:BK:134:ALA:HB2  | 2.06                     | 0.54              |
| 41:BL:72:PRO:O    | 41:BL:73:ASP:HB2   | 2.06                     | 0.54              |
| 42:BM:23:ASN:O    | 42:BM:59:PHE:N     | 2.41                     | 0.54              |
| 43:BN:27:ALA:CB   | 43:BN:85:LEU:HD11  | 2.36                     | 0.54              |
| 44:BO:122:LYS:O   | 44:BO:123:LYS:C    | 2.49                     | 0.54              |
| 48:BS:29:VAL:HG12 | 48:BS:85:LEU:HD21  | 1.89                     | 0.54              |
| 50:BU:60:ILE:HD11 | 50:BU:62:SER:HA    | 1.89                     | 0.54              |
| 55:BC:18:G:H1     | 55:BC:55:U:C1'     | 2.20                     | 0.54              |
| 56:BD:59:U:H2'    | 56:BD:60:U:H5'     | 1.88                     | 0.54              |
| 56:BE:7:A:N9      | 56:BE:49:C:OP2     | 2.40                     | 0.54              |
| 56:BE:21:A:C8     | 56:BE:46:G:C6      | 2.95                     | 0.54              |
| 57:BZ:233:PRO:CB  | 57:BZ:234:ASN:CB   | 2.85                     | 0.54              |
| 57:BZ:234:ASN:CA  | 57:BZ:235:GLN:CB   | 2.86                     | 0.54              |
| 57:BZ:398:GLU:OE1 | 57:BZ:444:PRO:HB3  | 2.08                     | 0.54              |
| 57:BZ:446:ARG:NH2 | 57:BZ:475:VAL:O    | 2.40                     | 0.54              |
| 57:BZ:500:ALA:HB2 | 57:BZ:540:GLY:N    | 2.22                     | 0.54              |
| 57:BZ:509:LYS:HZ3 | 57:BZ:561:ILE:HD11 | 0.71                     | 0.54              |
| 1:AA:14:A:N1      | 1:AA:526:A:C6      | 2.76                     | 0.54              |
| 1:AA:120:U:C1'    | 1:AA:149:A:N3      | 2.71                     | 0.54              |
| 1:AA:149:A:C8     | 1:AA:149:A:H3'     | 2.43                     | 0.54              |
| 1:AA:219:G:C2'    | 1:AA:220:G:H5'     | 2.38                     | 0.54              |
| 1:AA:497:A:H2'    | 1:AA:498:G:C8      | 2.43                     | 0.54              |
| 1:AA:527:C:C5     | 1:AA:2780:G:OP1    | 2.60                     | 0.54              |
| 1:AA:577:G:C5     | 1:AA:578:A:N7      | 2.76                     | 0.54              |
| 1:AA:606:U:O5'    | 1:AA:606:U:C6      | 2.52                     | 0.54              |
| 1:AA:666:G:H5'    | 11:AM:45:LEU:HD12  | 1.89                     | 0.54              |
| 1:AA:786:C:C5'    | 1:AA:1780:A:H8     | 2.20                     | 0.54              |
| 1:AA:819:A:C2     | 1:AA:943:U:O2      | 2.60                     | 0.54              |
| 1:AA:826:U:C2     | 1:AA:828:U:C6      | 2.95                     | 0.54              |
| 1:AA:848:G:N2     | 1:AA:933:A:H1'     | 2.22                     | 0.54              |
| 1:AA:856:C:H4'    | 22:AX:69:PHE:HB3   | 1.89                     | 0.54              |
| 1:AA:919:G:C2'    | 1:AA:920:G:O5'     | 2.55                     | 0.54              |
| 1:AA:1137:G:C8    | 1:AA:1138:G:C8     | 2.95                     | 0.54              |
| 1:AA:1178:C:O2'   | 1:AA:1179:C:O5'    | 2.24                     | 0.54              |
| 1:AA:1195:G:O2'   | 1:AA:1226:G:N2     | 2.39                     | 0.54              |
| 1:AA:1257:C:C4    | 1:AA:1258:C:N4     | 2.74                     | 0.54              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:1338:G:H21  | 1:AA:1393:A:H2    | 1.54                     | 0.54              |
| 1:AA:1364:G:N1   | 1:AA:1367:A:OP2   | 2.40                     | 0.54              |
| 1:AA:1374:G:C5   | 1:AA:1375:C:C5    | 2.96                     | 0.54              |
| 1:AA:1430:C:C2   | 1:AA:1431:U:C5    | 2.95                     | 0.54              |
| 1:AA:1538:G:N2   | 1:AA:1539:G:N3    | 2.55                     | 0.54              |
| 1:AA:1613:G:H2'  | 1:AA:1614:A:OP1   | 2.08                     | 0.54              |
| 1:AA:1650:G:C2   | 1:AA:1651:G:N9    | 2.75                     | 0.54              |
| 1:AA:1667:G:O5'  | 10:AL:7:TYR:CE1   | 2.60                     | 0.54              |
| 1:AA:1785:A:O5'  | 1:AA:1982:C:C4'   | 2.52                     | 0.54              |
| 1:AA:1791:A:H4'  | 4:AD:206:LEU:HD23 | 1.88                     | 0.54              |
| 1:AA:1818:U:C5   | 4:AD:156:ALA:HB3  | 2.42                     | 0.54              |
| 1:AA:1912:A:N1   | 1:AA:1919:A:C2    | 2.75                     | 0.54              |
| 1:AA:2011:U:C2'  | 1:AA:2012:G:C8    | 2.90                     | 0.54              |
| 1:AA:2065:C:C4   | 1:AA:2066:C:C4    | 2.96                     | 0.54              |
| 1:AA:2112:G:O4'  | 55:BC:19:G:H8     | 1.88                     | 0.54              |
| 1:AA:2127:G:N2   | 1:AA:2128:C:O2    | 2.40                     | 0.54              |
| 1:AA:2218:G:C6   | 1:AA:2219:G:N7    | 2.76                     | 0.54              |
| 1:AA:2266:A:H5'  | 1:AA:2267:A:C4    | 2.42                     | 0.54              |
| 1:AA:2300:G:O2'  | 1:AA:2301:C:H5'   | 2.07                     | 0.54              |
| 1:AA:2331:G:C5   | 1:AA:2332:U:N3    | 2.76                     | 0.54              |
| 1:AA:2392:A:C2   | 1:AA:2429:G:N3    | 2.75                     | 0.54              |
| 1:AA:2436:G:O2'  | 1:AA:2437:U:P     | 2.66                     | 0.54              |
| 1:AA:2462:U:C4   | 1:AA:2463:C:N4    | 2.76                     | 0.54              |
| 1:AA:2527:C:O2'  | 1:AA:2528:U:H5'   | 2.08                     | 0.54              |
| 1:AA:2781:A:H8   | 1:AA:2781:A:H5'   | 1.70                     | 0.54              |
| 1:AA:2817:G:H2'  | 1:AA:2818:G:H8    | 1.72                     | 0.54              |
| 1:AA:2825:C:H42  | 1:AA:2826:A:N6    | 2.05                     | 0.54              |
| 1:AA:2864:G:O2'  | 1:AA:2865:U:H5'   | 2.07                     | 0.54              |
| 2:AB:58:A:N7     | 2:AB:59:A:N7      | 2.55                     | 0.54              |
| 2:AB:71:C:C2'    | 2:AB:72:G:C5'     | 2.64                     | 0.54              |
| 2:AB:114:G:H1'   | 14:AP:38:GLN:HE21 | 1.72                     | 0.54              |
| 2:AB:115:G:H4'   | 14:AP:50:SER:OG   | 2.07                     | 0.54              |
| 3:AC:75:LEU:HD13 | 3:AC:110:PHE:CD2  | 2.42                     | 0.54              |
| 4:AD:79:VAL:HB   | 4:AD:114:GLY:H    | 1.73                     | 0.54              |
| 4:AD:267:SER:OG  | 4:AD:268:ARG:N    | 2.40                     | 0.54              |
| 5:AE:27:LEU:HD13 | 5:AE:76:ARG:NH1   | 2.23                     | 0.54              |
| 5:AE:47:VAL:CG2  | 5:AE:79:ARG:HB2   | 2.35                     | 0.54              |
| 5:AE:149:ARG:NH1 | 5:AE:150:VAL:O    | 2.40                     | 0.54              |
| 6:AF:45:ARG:CG   | 6:AF:46:ARG:H     | 2.20                     | 0.54              |
| 7:AG:19:LEU:HG   | 7:AG:22:ARG:NE    | 2.19                     | 0.54              |
| 9:AK:62:VAL:O    | 9:AK:64:GLY:N     | 2.36                     | 0.54              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:AK:122:VAL:C    | 9:AK:123:TYR:CG   | 2.85                     | 0.54              |
| 10:AL:35:VAL:HA   | 10:AL:61:VAL:HG12 | 1.89                     | 0.54              |
| 10:AL:64:ARG:NE   | 10:AL:67:LYS:N    | 2.55                     | 0.54              |
| 11:AM:23:PRO:CG   | 11:AM:29:LYS:H    | 2.20                     | 0.54              |
| 11:AM:114:ILE:HB  | 11:AM:131:SER:H   | 1.73                     | 0.54              |
| 12:AN:6:ARG:HH21  | 12:AN:8:LYS:H     | 1.55                     | 0.54              |
| 12:AN:35:VAL:O    | 12:AN:35:VAL:HG13 | 2.06                     | 0.54              |
| 12:AN:77:LYS:HD2  | 12:AN:77:LYS:N    | 2.22                     | 0.54              |
| 13:AO:5:LYS:HZ1   | 13:AO:6:SER:CA    | 2.20                     | 0.54              |
| 13:AO:22:ARG:HA   | 13:AO:47:PHE:HE2  | 1.72                     | 0.54              |
| 13:AO:31:HIS:HD2  | 13:AO:34:ILE:HD11 | 1.72                     | 0.54              |
| 15:AQ:17:THR:C    | 15:AQ:19:LEU:N    | 2.64                     | 0.54              |
| 15:AQ:20:PRO:HB3  | 15:AQ:22:PHE:HE1  | 1.73                     | 0.54              |
| 15:AQ:28:VAL:HG22 | 15:AQ:92:GLY:C    | 2.32                     | 0.54              |
| 16:AR:92:ARG:C    | 16:AR:93:LYS:HZ3  | 2.16                     | 0.54              |
| 17:AS:17:GLY:C    | 17:AS:19:LYS:H    | 2.15                     | 0.54              |
| 17:AS:60:GLU:OE1  | 17:AS:101:GLY:HA3 | 2.07                     | 0.54              |
| 18:AT:18:ARG:HH21 | 18:AT:18:ARG:CB   | 2.20                     | 0.54              |
| 18:AT:21:VAL:HG13 | 18:AT:75:TYR:CD2  | 2.42                     | 0.54              |
| 20:AV:65:ALA:CB   | 20:AV:66:PRO:CD   | 2.85                     | 0.54              |
| 24:AZ:50:VAL:O    | 24:AZ:52:HIS:CE1  | 2.61                     | 0.54              |
| 25:Aa:65:ASP:O    | 25:Aa:66:SER:C    | 2.49                     | 0.54              |
| 26:Ab:30:LEU:HD23 | 26:Ab:39:MET:SD   | 2.47                     | 0.54              |
| 28:Ad:5:TRP:CE3   | 28:Ad:5:TRP:HA    | 2.42                     | 0.54              |
| 32:AJ:72:PRO:CG   | 32:AJ:77:LEU:HD23 | 0.18                     | 0.54              |
| 32:AJ:98:ARG:NH1  | 32:AJ:101:TRP:HD1 | 2.06                     | 0.54              |
| 34:BA:272:C:C2'   | 34:BA:273:A:H8    | 2.17                     | 0.54              |
| 34:BA:355:C:C2    | 34:BA:356:A:N7    | 2.75                     | 0.54              |
| 34:BA:486:U:N3    | 34:BA:487:A:C8    | 2.76                     | 0.54              |
| 34:BA:568:G:N2    | 34:BA:883:C:H1'   | 2.22                     | 0.54              |
| 34:BA:586:C:OP1   | 50:BU:34:LYS:HE3  | 2.08                     | 0.54              |
| 34:BA:703:G:O5'   | 34:BA:703:G:C8    | 2.61                     | 0.54              |
| 34:BA:738:C:N4    | 34:BA:739:C:H41   | 2.05                     | 0.54              |
| 34:BA:859:A:N7    | 34:BA:860:A:C4    | 2.76                     | 0.54              |
| 34:BA:950:U:H1'   | 34:BA:971:G:N3    | 2.23                     | 0.54              |
| 34:BA:980:C:C4    | 34:BA:981:U:N3    | 2.75                     | 0.54              |
| 34:BA:1107:C:C3'  | 34:BA:1108:G:C5'  | 2.86                     | 0.54              |
| 34:BA:1227:A:C5'  | 52:BW:81:ARG:HE   | 2.21                     | 0.54              |
| 34:BA:1269:A:C4'  | 34:BA:1312:G:N2   | 2.66                     | 0.54              |
| 34:BA:1502:A:N3   | 34:BA:1502:A:H2'  | 2.23                     | 0.54              |
| 35:BF:52:GLU:OE1  | 35:BF:53:ARG:N    | 2.41                     | 0.54              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BF:61:LEU:N     | 35:BF:64:ARG:NH1   | 2.55                     | 0.54              |
| 35:BF:80:ILE:HB    | 35:BF:208:ILE:HD11 | 1.89                     | 0.54              |
| 35:BF:175:ARG:HD2  | 35:BF:179:LYS:CE   | 2.38                     | 0.54              |
| 35:BF:221:LEU:HD13 | 35:BF:222:ILE:N    | 2.21                     | 0.54              |
| 36:BG:29:TYR:CD1   | 47:BR:36:PHE:CZ    | 2.95                     | 0.54              |
| 36:BG:193:TYR:N    | 36:BG:193:TYR:CD2  | 2.75                     | 0.54              |
| 37:BH:122:ARG:HA   | 37:BH:134:ASP:O    | 2.07                     | 0.54              |
| 37:BH:200:GLU:HG3  | 37:BH:201:GLN:HE21 | 1.70                     | 0.54              |
| 38:BI:136:MET:CA   | 38:BI:139:LEU:HD12 | 2.38                     | 0.54              |
| 40:BK:38:LEU:HA    | 40:BK:41:ARG:CB    | 2.37                     | 0.54              |
| 40:BK:106:GLN:HA   | 40:BK:106:GLN:NE2  | 2.14                     | 0.54              |
| 41:BL:37:ARG:CD    | 41:BL:38:ILE:HD13  | 2.34                     | 0.54              |
| 41:BL:67:PRO:CD    | 41:BL:76:PRO:HB3   | 2.38                     | 0.54              |
| 41:BL:110:ALA:O    | 41:BL:120:THR:HA   | 2.08                     | 0.54              |
| 42:BM:11:LYS:C     | 42:BM:12:GLU:HG2   | 2.32                     | 0.54              |
| 43:BN:24:VAL:CA    | 43:BN:34:VAL:HG21  | 2.35                     | 0.54              |
| 43:BN:49:VAL:C     | 43:BN:60:ARG:HB3   | 2.32                     | 0.54              |
| 46:BQ:19:LEU:O     | 46:BQ:25:ILE:CD1   | 2.55                     | 0.54              |
| 46:BQ:22:ILE:HG21  | 46:BQ:67:GLU:OE1   | 2.08                     | 0.54              |
| 46:BQ:87:TYR:O     | 46:BQ:90:LEU:HB2   | 2.08                     | 0.54              |
| 47:BR:11:LYS:O     | 47:BR:13:THR:N     | 2.39                     | 0.54              |
| 48:BS:17:ARG:NH1   | 48:BS:77:ARG:CD    | 2.70                     | 0.54              |
| 52:BW:3:ARG:HH21   | 52:BW:45:VAL:HG22  | 1.71                     | 0.54              |
| 55:BC:33:U:H2'     | 55:BC:33:U:O2      | 2.07                     | 0.54              |
| 56:BD:1:G:N2       | 56:BD:2:C:C2       | 2.73                     | 0.54              |
| 56:BD:62:C:N4      | 56:BD:63:G:O6      | 2.41                     | 0.54              |
| 57:BZ:15:ASP:HB2   | 57:BZ:16:HIS:CA    | 2.37                     | 0.54              |
| 57:BZ:17:GLY:HA2   | 57:BZ:20:THR:HG21  | 1.89                     | 0.54              |
| 57:BZ:91:MET:CE    | 57:BZ:268:ALA:O    | 2.48                     | 0.54              |
| 57:BZ:150:ASN:O    | 57:BZ:151:LEU:HD13 | 2.07                     | 0.54              |
| 57:BZ:173:GLY:HA3  | 57:BZ:174:LEU:HB3  | 1.88                     | 0.54              |
| 57:BZ:215:ASN:O    | 57:BZ:217:TYR:N    | 2.36                     | 0.54              |
| 57:BZ:488:LEU:HD11 | 57:BZ:509:LYS:O    | 2.07                     | 0.54              |
| 57:BZ:563:MET:HA   | 57:BZ:563:MET:CE   | 2.29                     | 0.54              |
| 1:AA:64:A:O5'      | 1:AA:64:A:C8       | 2.60                     | 0.54              |
| 1:AA:308:G:N2      | 1:AA:329:G:C2      | 2.76                     | 0.54              |
| 1:AA:463:G:N2      | 1:AA:467:G:C5      | 2.76                     | 0.54              |
| 1:AA:493:G:H21     | 1:AA:494:G:H1'     | 1.71                     | 0.54              |
| 1:AA:544:C:O2'     | 1:AA:545:G:H5'     | 2.08                     | 0.54              |
| 1:AA:675:A:H2'     | 1:AA:676:A:C2      | 2.43                     | 0.54              |
| 1:AA:704:G:O2'     | 1:AA:705:A:OP2     | 2.16                     | 0.54              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:763:G:H5'    | 4:AD:211:ARG:CZ   | 2.38                     | 0.54              |
| 1:AA:781:A:C8     | 4:AD:220:HIS:CE1  | 2.96                     | 0.54              |
| 1:AA:860:U:H6     | 1:AA:2267:A:H4'   | 1.70                     | 0.54              |
| 1:AA:866:A:N7     | 1:AA:914:C:O2     | 2.40                     | 0.54              |
| 1:AA:873:G:C2     | 1:AA:905:U:C2     | 2.94                     | 0.54              |
| 1:AA:1127:A:C2    | 1:AA:2518:A:N3    | 2.76                     | 0.54              |
| 1:AA:1183:G:O2'   | 1:AA:1184:G:OP2   | 2.25                     | 0.54              |
| 1:AA:1348:G:N1    | 1:AA:1599:C:C2    | 2.76                     | 0.54              |
| 1:AA:1473:G:C2'   | 1:AA:1474:C:O4'   | 2.54                     | 0.54              |
| 1:AA:1555:G:H2'   | 1:AA:1556:C:C5    | 2.37                     | 0.54              |
| 1:AA:1582:C:C3'   | 1:AA:1583:A:O4'   | 2.56                     | 0.54              |
| 1:AA:1605:C:H3'   | 1:AA:1606:G:H8    | 1.72                     | 0.54              |
| 1:AA:1670:C:H3'   | 1:AA:1671:U:C5    | 2.43                     | 0.54              |
| 1:AA:1685:C:H2'   | 1:AA:1686:C:H6    | 1.72                     | 0.54              |
| 1:AA:1717:G:H1    | 1:AA:1718:G:N2    | 2.06                     | 0.54              |
| 1:AA:1743:G:OP1   | 1:AA:1743:G:C4'   | 2.54                     | 0.54              |
| 1:AA:1842:G:C4    | 1:AA:1843:C:C5    | 2.96                     | 0.54              |
| 1:AA:1882:C:H2'   | 1:AA:1883:G:C5'   | 2.37                     | 0.54              |
| 1:AA:1987:G:N3    | 1:AA:1988:C:C5    | 2.75                     | 0.54              |
| 1:AA:1988:C:C2'   | 1:AA:1989:G:O5'   | 2.56                     | 0.54              |
| 1:AA:2123:G:C2'   | 3:AC:215:THR:CG2  | 2.85                     | 0.54              |
| 1:AA:2152:G:O3'   | 3:AC:2:LYS:HD2    | 2.06                     | 0.54              |
| 1:AA:2157:G:OP2   | 1:AA:2157:G:N3    | 2.41                     | 0.54              |
| 1:AA:2226:C:O2'   | 1:AA:2227:A:H5'   | 2.08                     | 0.54              |
| 1:AA:2285:C:O2    | 1:AA:2384:G:N2    | 2.41                     | 0.54              |
| 1:AA:2421:G:C2'   | 1:AA:2422:A:H8    | 1.96                     | 0.54              |
| 1:AA:2584:U:C6    | 1:AA:2584:U:C3'   | 2.86                     | 0.54              |
| 59:AA:3003:8AN:C8 | 22:AX:4:LYS:HZ1   | 2.17                     | 0.54              |
| 3:AC:29:VAL:HG21  | 3:AC:41:VAL:CG1   | 2.37                     | 0.54              |
| 3:AC:87:GLU:CG    | 3:AC:94:VAL:HG21  | 2.24                     | 0.54              |
| 3:AC:156:ILE:CA   | 3:AC:160:ARG:N    | 2.69                     | 0.54              |
| 3:AC:184:LYS:O    | 3:AC:185:LEU:C    | 2.49                     | 0.54              |
| 3:AC:223:ARG:HG2  | 3:AC:224:ILE:N    | 2.22                     | 0.54              |
| 4:AD:7:LYS:HZ2    | 4:AD:91:ARG:CD    | 2.19                     | 0.54              |
| 5:AE:104:VAL:HG11 | 5:AE:198:VAL:HG22 | 1.89                     | 0.54              |
| 5:AE:117:MET:SD   | 5:AE:136:ARG:CG   | 2.78                     | 0.54              |
| 5:AE:173:VAL:CG2  | 5:AE:183:LEU:O    | 2.54                     | 0.54              |
| 6:AF:53:THR:OG1   | 6:AF:54:ARG:N     | 2.37                     | 0.54              |
| 6:AF:157:VAL:O    | 6:AF:158:THR:HB   | 2.07                     | 0.54              |
| 7:AG:165:THR:HG22 | 7:AG:167:GLU:OE1  | 2.07                     | 0.54              |
| 8:AH:6:ARG:N      | 8:AH:7:LEU:HD23   | 2.22                     | 0.54              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:AK:8:GLN:O      | 9:AK:9:VAL:C      | 2.50                     | 0.54              |
| 9:AK:74:ARG:NE    | 9:AK:82:LEU:HD11  | 2.20                     | 0.54              |
| 9:AK:126:PRO:O    | 9:AK:127:ASP:CB   | 2.53                     | 0.54              |
| 9:AK:127:ASP:O    | 9:AK:130:HIS:N    | 2.40                     | 0.54              |
| 10:AL:42:SER:HA   | 10:AL:56:ASP:HA   | 1.89                     | 0.54              |
| 12:AN:50:ALA:O    | 12:AN:51:ARG:C    | 2.50                     | 0.54              |
| 12:AN:62:GLY:CA   | 21:AW:177:PRO:HA  | 2.37                     | 0.54              |
| 12:AN:72:LYS:HE2  | 12:AN:96:VAL:HG21 | 1.89                     | 0.54              |
| 13:AO:22:ARG:O    | 13:AO:23:ASN:C    | 2.47                     | 0.54              |
| 13:AO:87:TYR:O    | 13:AO:89:ASP:N    | 2.41                     | 0.54              |
| 14:AP:12:PHE:CD1  | 14:AP:12:PHE:C    | 2.85                     | 0.54              |
| 14:AP:94:TYR:HB3  | 14:AP:99:LYS:HA   | 1.89                     | 0.54              |
| 17:AS:23:GLU:CA   | 17:AS:93:GLU:HB3  | 2.38                     | 0.54              |
| 17:AS:40:LEU:CA   | 17:AS:51:VAL:HG13 | 2.38                     | 0.54              |
| 18:AT:33:ARG:CD   | 18:AT:37:ARG:HD3  | 2.35                     | 0.54              |
| 19:AU:9:LEU:HD12  | 19:AU:9:LEU:H     | 1.72                     | 0.54              |
| 20:AV:19:LYS:HD2  | 20:AV:40:GLU:OE1  | 2.06                     | 0.54              |
| 21:AW:70:LEU:C    | 21:AW:70:LEU:HD12 | 2.32                     | 0.54              |
| 25:Aa:64:GLY:C    | 25:Aa:68:ARG:CZ   | 2.80                     | 0.54              |
| 27:Ac:16:CYS:SG   | 27:Ac:41:PRO:HG3  | 2.47                     | 0.54              |
| 34:BA:38:G:O2'    | 34:BA:39:G:H5''   | 2.07                     | 0.54              |
| 34:BA:124:G:C2'   | 34:BA:125:U:O4'   | 2.54                     | 0.54              |
| 34:BA:133:U:H4'   | 34:BA:134:A:OP1   | 2.08                     | 0.54              |
| 34:BA:151:A:H62   | 34:BA:152:A:H2    | 1.54                     | 0.54              |
| 34:BA:229:U:H2'   | 34:BA:230:G:H8    | 1.72                     | 0.54              |
| 34:BA:266:G:N2    | 34:BA:270:A:H62   | 2.05                     | 0.54              |
| 34:BA:306:G:C2'   | 34:BA:307:C:H5'   | 2.37                     | 0.54              |
| 34:BA:373:A:H1'   | 34:BA:481:G:C1'   | 2.24                     | 0.54              |
| 34:BA:397:A:C2    | 34:BA:548:G:C6    | 2.96                     | 0.54              |
| 34:BA:490:G:H2'   | 34:BA:491:G:H8    | 1.72                     | 0.54              |
| 34:BA:696:A:C6    | 34:BA:697:U:H1'   | 2.43                     | 0.54              |
| 34:BA:741:G:O2'   | 34:BA:742:G:H5'   | 2.08                     | 0.54              |
| 34:BA:979:C:OP2   | 34:BA:980:C:C5    | 2.61                     | 0.54              |
| 34:BA:1106:G:C2'  | 34:BA:1107:C:H6   | 2.13                     | 0.54              |
| 34:BA:1147:C:HO2' | 42:BM:5:TYR:HE1   | 0.63                     | 0.54              |
| 34:BA:1320:C:N3   | 52:BW:75:ALA:HB3  | 2.22                     | 0.54              |
| 34:BA:1371:G:C5   | 34:BA:1372:U:C5   | 2.96                     | 0.54              |
| 34:BA:1415:G:C6   | 34:BA:1416:G:N7   | 2.76                     | 0.54              |
| 34:BA:1513:A:N1   | 34:BA:1523:G:C6   | 2.76                     | 0.54              |
| 35:BF:187:LEU:CA  | 35:BF:201:ILE:O   | 2.45                     | 0.54              |
| 36:BG:17:ASP:OD2  | 36:BG:18:TRP:HZ3  | 1.90                     | 0.54              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 36:BG:134:ILE:HD12 | 36:BG:134:ILE:N    | 2.22                     | 0.54              |
| 37:BH:107:ARG:HD2  | 37:BH:174:LEU:HD11 | 1.89                     | 0.54              |
| 38:BI:106:PRO:CG   | 38:BI:122:GLU:OE2  | 2.56                     | 0.54              |
| 39:BJ:36:ARG:CZ    | 39:BJ:36:ARG:CB    | 2.85                     | 0.54              |
| 41:BL:87:SER:CB    | 41:BL:93:VAL:N     | 2.70                     | 0.54              |
| 43:BN:57:LYS:O     | 43:BN:58:ASP:CG    | 2.50                     | 0.54              |
| 43:BN:75:ILE:HG22  | 43:BN:76:ASN:ND2   | 2.22                     | 0.54              |
| 46:BQ:14:ARG:HE    | 46:BQ:42:ALA:CA    | 2.11                     | 0.54              |
| 48:BS:11:VAL:C     | 48:BS:13:GLN:N     | 2.62                     | 0.54              |
| 48:BS:31:LEU:HD12  | 48:BS:31:LEU:N     | 2.21                     | 0.54              |
| 48:BS:69:TYR:HA    | 48:BS:72:ARG:HB3   | 1.90                     | 0.54              |
| 51:BV:58:LEU:HD22  | 51:BV:62:GLU:CG    | 2.32                     | 0.54              |
| 56:BE:7:A:N3       | 56:BE:49:C:OP2     | 2.39                     | 0.54              |
| 56:BE:15:G:C2'     | 56:BE:16:U:C5'     | 2.86                     | 0.54              |
| 56:BE:30:G:C2'     | 56:BE:31:A:H5'     | 2.37                     | 0.54              |
| 56:BE:71:G:N2      | 56:BE:72:C:C2      | 2.76                     | 0.54              |
| 57:BZ:87:ARG:HH22  | 57:BZ:210:SER:CB   | 2.20                     | 0.54              |
| 57:BZ:156:GLU:HA   | 57:BZ:157:GLN:HB3  | 1.90                     | 0.54              |
| 57:BZ:206:GLN:HE21 | 57:BZ:227:LYS:HB3  | 1.73                     | 0.54              |
| 57:BZ:212:LEU:HD11 | 57:BZ:220:VAL:HG12 | 1.88                     | 0.54              |
| 57:BZ:311:PHE:CE1  | 57:BZ:358:VAL:HG21 | 2.42                     | 0.54              |
| 57:BZ:422:ARG:HD2  | 57:BZ:480:VAL:HG23 | 1.90                     | 0.54              |
| 1:AA:60:G:N3       | 1:AA:74:A:O4'      | 2.40                     | 0.54              |
| 1:AA:95:G:P        | 23:AY:39:LEU:HB3   | 2.48                     | 0.54              |
| 1:AA:139:G:O6      | 1:AA:1595:G:O2'    | 2.14                     | 0.54              |
| 1:AA:226:G:N1      | 1:AA:227:A:C2      | 2.76                     | 0.54              |
| 1:AA:270(Y):G:H5'' | 1:AA:270(Z):U:OP1  | 2.07                     | 0.54              |
| 1:AA:281:G:OP1     | 1:AA:281:G:N7      | 2.40                     | 0.54              |
| 1:AA:360:G:H2'     | 1:AA:361:G:C4'     | 2.38                     | 0.54              |
| 1:AA:443:A:N7      | 6:AF:45:ARG:HD3    | 2.23                     | 0.54              |
| 1:AA:534:U:HO2'    | 16:AR:49:HIS:HE2   | 1.48                     | 0.54              |
| 1:AA:558:G:H5''    | 9:AK:109:LYS:CD    | 2.37                     | 0.54              |
| 1:AA:627:A:OP1     | 1:AA:637:A:N6      | 2.41                     | 0.54              |
| 1:AA:636:G:C4'     | 1:AA:638:G:O2'     | 2.55                     | 0.54              |
| 1:AA:641:C:O2'     | 1:AA:642:G:H5'     | 2.06                     | 0.54              |
| 1:AA:676:A:O4'     | 1:AA:2443:C:O4'    | 2.26                     | 0.54              |
| 1:AA:728:G:C6      | 1:AA:762:U:C3'     | 2.90                     | 0.54              |
| 1:AA:754:C:N3      | 1:AA:755:C:C5      | 2.75                     | 0.54              |
| 1:AA:764:A:C4      | 1:AA:781:A:N6      | 2.76                     | 0.54              |
| 1:AA:775:G:O4'     | 1:AA:777:A:C2      | 2.60                     | 0.54              |
| 1:AA:813:U:H2'     | 1:AA:814:C:O4'     | 2.07                     | 0.54              |

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| Atom-1          | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-------------------|--------------------------|-------------------|
| 1:AA:840:C:H5'  | 1:AA:1192:G:H1'   | 1.89                     | 0.54              |
| 1:AA:850:C:H2'  | 1:AA:851:U:H6     | 1.72                     | 0.54              |
| 1:AA:951:C:C2'  | 1:AA:952:G:H5'    | 2.37                     | 0.54              |
| 1:AA:977:G:H4'  | 1:AA:1155:A:H5''  | 1.90                     | 0.54              |
| 1:AA:1083:U:H2' | 1:AA:1084:A:C5'   | 2.36                     | 0.54              |
| 1:AA:1160:G:N1  | 1:AA:1161:C:N4    | 2.55                     | 0.54              |
| 1:AA:1199:U:C2  | 1:AA:1200:C:C6    | 2.96                     | 0.54              |
| 1:AA:1419:A:C3' | 1:AA:1420:U:O4'   | 2.55                     | 0.54              |
| 1:AA:1492:G:N2  | 1:AA:1499:C:C5    | 2.75                     | 0.54              |
| 1:AA:1511:A:C3' | 1:AA:1512:G:H5''  | 2.37                     | 0.54              |
| 1:AA:1540:G:C4  | 1:AA:1541:U:H1'   | 2.41                     | 0.54              |
| 1:AA:1557:C:C2' | 1:AA:1558:A:H8    | 2.04                     | 0.54              |
| 1:AA:1621:U:H3' | 1:AA:1621:U:C6    | 2.43                     | 0.54              |
| 1:AA:1683:C:H2' | 1:AA:1684:C:C6    | 2.42                     | 0.54              |
| 1:AA:1696:G:H2' | 1:AA:1697:G:O4'   | 2.07                     | 0.54              |
| 1:AA:1775:U:C1' | 4:AD:208:LYS:HZ2  | 2.21                     | 0.54              |
| 1:AA:1806:C:C2  | 1:AA:1807:G:C8    | 2.96                     | 0.54              |
| 1:AA:1832:C:H2' | 1:AA:1833:U:C5'   | 2.37                     | 0.54              |
| 1:AA:1847:A:C2  | 1:AA:1851:U:O4    | 2.61                     | 0.54              |
| 1:AA:1857:G:H2' | 1:AA:1858:G:C5    | 2.42                     | 0.54              |
| 1:AA:1944:U:C1' | 1:AA:1955:U:H1'   | 2.38                     | 0.54              |
| 1:AA:2056:G:C4  | 1:AA:2577:A:C2    | 2.95                     | 0.54              |
| 1:AA:2075:U:C1' | 1:AA:2597:G:N2    | 2.70                     | 0.54              |
| 1:AA:2125:G:N2  | 1:AA:2172:U:H5'   | 2.23                     | 0.54              |
| 1:AA:2135:A:OP2 | 1:AA:2160:G:H5'   | 2.07                     | 0.54              |
| 1:AA:2190:G:C2  | 1:AA:2191:G:C8    | 2.96                     | 0.54              |
| 1:AA:2197:U:H3' | 1:AA:2197:U:OP2   | 2.07                     | 0.54              |
| 1:AA:2211:G:N3  | 1:AA:2211:G:C3'   | 2.64                     | 0.54              |
| 1:AA:2232:U:H2' | 1:AA:2233:U:O5'   | 2.07                     | 0.54              |
| 1:AA:2252:G:C4  | 59:AA:3003:8AN:C2 | 2.88                     | 0.54              |
| 1:AA:2303:G:C6  | 1:AA:2304:G:N7    | 2.76                     | 0.54              |
| 1:AA:2403:C:O2  | 1:AA:2404:C:C6    | 2.61                     | 0.54              |
| 1:AA:2458:G:C8  | 1:AA:2490:G:C6    | 2.96                     | 0.54              |
| 1:AA:2519:U:C1' | 1:AA:2542:A:N1    | 2.71                     | 0.54              |
| 1:AA:2523:G:H1' | 1:AA:2765:A:N6    | 2.21                     | 0.54              |
| 1:AA:2564:A:N1  | 1:AA:2647:U:C4'   | 2.71                     | 0.54              |
| 1:AA:2576:G:C5' | 1:AA:2577:A:OP1   | 2.54                     | 0.54              |
| 1:AA:2626:C:H2' | 1:AA:2627:G:O4'   | 2.08                     | 0.54              |
| 1:AA:2703:C:C2' | 1:AA:2704:C:O5'   | 2.56                     | 0.54              |
| 1:AA:2703:C:H2' | 1:AA:2704:C:O5'   | 2.08                     | 0.54              |
| 1:AA:2714:G:C5  | 1:AA:2715:C:C5    | 2.95                     | 0.54              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2788:C:C2    | 1:AA:2789:C:C2     | 2.96                     | 0.54              |
| 1:AA:2808:U:C5    | 1:AA:2892:A:N6     | 2.74                     | 0.54              |
| 1:AA:2828:C:N3    | 1:AA:2829:C:C5     | 2.76                     | 0.54              |
| 1:AA:2884:U:H3    | 26:Ab:40:LYS:HZ3   | 1.54                     | 0.54              |
| 2:AB:7:G:C4'      | 14:AP:29:PHE:CE2   | 2.84                     | 0.54              |
| 2:AB:51:G:OP1     | 14:AP:60:GLY:O     | 2.25                     | 0.54              |
| 2:AB:63:G:H2'     | 2:AB:64:C:H6       | 1.73                     | 0.54              |
| 4:AD:29:PRO:O     | 4:AD:31:LYS:N      | 2.39                     | 0.54              |
| 4:AD:150:LYS:O    | 4:AD:152:GLY:N     | 2.39                     | 0.54              |
| 5:AE:38:THR:CB    | 5:AE:39:PRO:HD3    | 2.36                     | 0.54              |
| 5:AE:53:PRO:HD2   | 5:AE:74:PRO:C      | 2.33                     | 0.54              |
| 5:AE:144:ARG:HG2  | 5:AE:144:ARG:O     | 2.07                     | 0.54              |
| 7:AG:57:ALA:H     | 7:AG:68:PRO:HB2    | 1.73                     | 0.54              |
| 7:AG:125:PHE:CD1  | 7:AG:131:TYR:N     | 2.76                     | 0.54              |
| 8:AH:7:LEU:HB2    | 8:AH:52:VAL:O      | 2.06                     | 0.54              |
| 8:AH:85:LYS:HZ3   | 8:AH:142:GLY:CA    | 2.20                     | 0.54              |
| 8:AH:121:ILE:HG13 | 8:AH:133:VAL:CG2   | 2.33                     | 0.54              |
| 8:AH:122:THR:HB   | 8:AH:134:SER:HG    | 1.73                     | 0.54              |
| 9:AK:99:LEU:HD12  | 9:AK:103:VAL:CG1   | 2.37                     | 0.54              |
| 11:AM:91:PHE:O    | 11:AM:95:VAL:CB    | 2.52                     | 0.54              |
| 12:AN:27:VAL:CG1  | 12:AN:102:VAL:HG21 | 2.38                     | 0.54              |
| 12:AN:42:ILE:CD1  | 12:AN:43:THR:O     | 2.55                     | 0.54              |
| 12:AN:51:ARG:HH21 | 12:AN:55:VAL:HG21  | 1.73                     | 0.54              |
| 13:AO:37:THR:HG23 | 13:AO:40:LYS:CD    | 2.37                     | 0.54              |
| 13:AO:50:HIS:CE1  | 13:AO:54:LEU:HD11  | 2.42                     | 0.54              |
| 13:AO:88:ARG:O    | 13:AO:89:ASP:CB    | 2.55                     | 0.54              |
| 14:AP:57:LYS:NZ   | 14:AP:62:LYS:HG3   | 2.17                     | 0.54              |
| 15:AQ:49:VAL:O    | 15:AQ:50:ILE:HG23  | 2.07                     | 0.54              |
| 17:AS:6:LYS:HD3   | 17:AS:10:LYS:CB    | 2.37                     | 0.54              |
| 18:AT:11:ARG:HH21 | 18:AT:11:ARG:CB    | 2.20                     | 0.54              |
| 18:AT:59:VAL:HG21 | 18:AT:66:GLU:CG    | 2.37                     | 0.54              |
| 19:AU:32:PRO:HG3  | 19:AU:77:LYS:HB2   | 1.89                     | 0.54              |
| 20:AV:75:ILE:HG23 | 20:AV:75:ILE:O     | 2.07                     | 0.54              |
| 22:AX:20:ARG:HB3  | 22:AX:24:LYS:HZ1   | 1.73                     | 0.54              |
| 23:AY:13:PRO:O    | 23:AY:17:GLU:HG3   | 2.08                     | 0.54              |
| 25:Aa:23:GLU:O    | 25:Aa:25:TYR:N     | 2.32                     | 0.54              |
| 32:AJ:12:LEU:HD11 | 32:AJ:57:ILE:CG2   | 2.36                     | 0.54              |
| 32:AJ:103:GLN:C   | 32:AJ:106:GLU:HG3  | 2.32                     | 0.54              |
| 34:BA:46:G:C2     | 34:BA:396:G:C6     | 2.96                     | 0.54              |
| 34:BA:88:C:H2'    | 34:BA:89:U:OP2     | 2.07                     | 0.54              |
| 34:BA:198:G:H2'   | 34:BA:199:G:O5'    | 2.08                     | 0.54              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:366:C:HO2'  | 34:BA:367:U:P      | 2.30                     | 0.54              |
| 34:BA:393:A:OP2   | 49:BT:12:LYS:HE3   | 2.08                     | 0.54              |
| 34:BA:407:G:H5''  | 37:BH:115:ARG:HD2  | 1.90                     | 0.54              |
| 34:BA:432:A:H3'   | 34:BA:432:A:H8     | 1.71                     | 0.54              |
| 34:BA:450:G:H5'   | 49:BT:43:LYS:HZ2   | 1.73                     | 0.54              |
| 34:BA:780:A:OP1   | 44:BO:122:LYS:HA   | 2.08                     | 0.54              |
| 34:BA:855:G:O2'   | 34:BA:856:C:H5'    | 2.08                     | 0.54              |
| 34:BA:1005:A:C6   | 34:BA:1026:G:N2    | 2.76                     | 0.54              |
| 34:BA:1108:G:H2'  | 34:BA:1109:C:H6    | 1.70                     | 0.54              |
| 34:BA:1138:G:H3'  | 34:BA:1138:G:N3    | 2.23                     | 0.54              |
| 34:BA:1277:C:H2'  | 34:BA:1278:U:O4'   | 2.06                     | 0.54              |
| 34:BA:1347:G:H2'  | 42:BM:107:ARG:O    | 2.07                     | 0.54              |
| 34:BA:1363:A:H5'' | 34:BA:1364:U:C5    | 2.43                     | 0.54              |
| 34:BA:1403:C:H1'  | 34:BA:1500:A:N1    | 2.23                     | 0.54              |
| 35:BF:100:GLY:O   | 35:BF:104:ASN:ND2  | 2.41                     | 0.54              |
| 35:BF:184:VAL:HB  | 35:BF:198:ASP:CG   | 2.33                     | 0.54              |
| 35:BF:208:ILE:CA  | 35:BF:211:ILE:HB   | 2.35                     | 0.54              |
| 36:BG:72:LYS:O    | 36:BG:76:VAL:CG2   | 2.56                     | 0.54              |
| 36:BG:142:MET:SD  | 36:BG:146:ALA:HB3  | 2.48                     | 0.54              |
| 37:BH:32:ALA:C    | 37:BH:34:GLU:N     | 2.63                     | 0.54              |
| 37:BH:129:ASN:ND2 | 37:BH:145:GLU:HG2  | 2.22                     | 0.54              |
| 37:BH:155:LEU:N   | 37:BH:158:ILE:HG13 | 2.17                     | 0.54              |
| 37:BH:161:ASN:O   | 37:BH:165:MET:HB3  | 2.08                     | 0.54              |
| 37:BH:165:MET:O   | 37:BH:166:LYS:C    | 2.50                     | 0.54              |
| 38:BI:11:ILE:O    | 38:BI:12:LEU:C     | 2.50                     | 0.54              |
| 39:BJ:77:ARG:N    | 39:BJ:80:ARG:CZ    | 2.71                     | 0.54              |
| 39:BJ:98:LEU:HD21 | 51:BV:28:GLU:HA    | 1.90                     | 0.54              |
| 40:BK:69:VAL:C    | 40:BK:138:LYS:HD2  | 2.32                     | 0.54              |
| 41:BL:41:ARG:HB3  | 41:BL:41:ARG:CZ    | 2.38                     | 0.54              |
| 41:BL:95:VAL:CG1  | 41:BL:133:LEU:HD11 | 2.37                     | 0.54              |
| 41:BL:124:ALA:O   | 41:BL:125:ARG:C    | 2.51                     | 0.54              |
| 42:BM:15:ALA:HB3  | 42:BM:76:ALA:C     | 2.33                     | 0.54              |
| 42:BM:22:GLY:C    | 42:BM:58:HIS:O     | 2.51                     | 0.54              |
| 42:BM:63:ILE:N    | 42:BM:63:ILE:CD1   | 2.64                     | 0.54              |
| 44:BO:84:VAL:CG2  | 51:BV:88:LYS:HD3   | 2.32                     | 0.54              |
| 44:BO:100:ALA:C   | 44:BO:102:GLY:N    | 2.59                     | 0.54              |
| 45:BP:48:PRO:HG2  | 45:BP:49:ASN:N     | 2.21                     | 0.54              |
| 45:BP:62:SER:OG   | 45:BP:64:TYR:CG    | 2.57                     | 0.54              |
| 49:BT:39:TYR:CD1  | 49:BT:39:TYR:C     | 2.85                     | 0.54              |
| 49:BT:81:ARG:HG2  | 49:BT:83:GLU:HG2   | 1.90                     | 0.54              |
| 52:BW:27:GLU:HG2  | 52:BW:29:ARG:N     | 2.11                     | 0.54              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 52:BW:44:MET:O     | 52:BW:62:ILE:HG21  | 2.08                     | 0.54              |
| 53:BX:43:LEU:CD1   | 53:BX:51:GLU:HB2   | 2.37                     | 0.54              |
| 55:BC:39:U:H2'     | 55:BC:40:C:C5'     | 2.36                     | 0.54              |
| 55:BC:39:U:H3'     | 55:BC:40:C:H5'     | 1.88                     | 0.54              |
| 55:BC:52:G:H2'     | 55:BC:53:G:H8      | 1.71                     | 0.54              |
| 56:BD:68:C:O2'     | 56:BD:69:G:H5'     | 2.08                     | 0.54              |
| 57:BZ:18:LYS:HB2   | 60:BZ:701:GCP:O1B  | 2.03                     | 0.54              |
| 57:BZ:19:THR:CA    | 57:BZ:20:THR:CB    | 2.85                     | 0.54              |
| 57:BZ:64:ILE:H     | 57:BZ:65:LYS:CB    | 2.19                     | 0.54              |
| 57:BZ:64:ILE:N     | 57:BZ:65:LYS:HG2   | 2.22                     | 0.54              |
| 57:BZ:78:HIS:O     | 57:BZ:80:ASP:HB2   | 2.07                     | 0.54              |
| 57:BZ:89:MET:HG2   | 57:BZ:119:TYR:OH   | 2.08                     | 0.54              |
| 57:BZ:180:ALA:CB   | 57:BZ:181:GLU:CB   | 2.85                     | 0.54              |
| 57:BZ:205:PHE:CE1  | 57:BZ:226:ILE:HG21 | 2.42                     | 0.54              |
| 57:BZ:250:LYS:H    | 57:BZ:275:ALA:HB2  | 1.72                     | 0.54              |
| 57:BZ:306:THR:HG23 | 57:BZ:307:VAL:HG23 | 1.90                     | 0.54              |
| 57:BZ:496:ALA:HB2  | 57:BZ:516:ALA:HB3  | 1.88                     | 0.54              |
| 1:AA:85:G:C4       | 1:AA:103:A:H2      | 2.25                     | 0.54              |
| 1:AA:96:G:H4'      | 23:AY:43:HIS:CD2   | 2.42                     | 0.54              |
| 1:AA:154:G:N1      | 1:AA:173:G:N1      | 2.56                     | 0.54              |
| 1:AA:271:G:N3      | 1:AA:272:G:C8      | 2.75                     | 0.54              |
| 1:AA:304:G:C2      | 1:AA:305:U:H1'     | 2.43                     | 0.54              |
| 1:AA:446:G:H4'     | 1:AA:449:A:N7      | 2.23                     | 0.54              |
| 1:AA:522:G:C6      | 1:AA:523:C:C4      | 2.96                     | 0.54              |
| 1:AA:581:C:H5''    | 16:AR:32:PHE:CD1   | 2.43                     | 0.54              |
| 1:AA:617:G:H2'     | 1:AA:618:G:C8      | 2.43                     | 0.54              |
| 1:AA:674:G:C5'     | 6:AF:74:ARG:NH1    | 2.65                     | 0.54              |
| 1:AA:685:A:H1'     | 1:AA:688:U:O4      | 2.07                     | 0.54              |
| 1:AA:760:G:C2      | 1:AA:761:A:H1'     | 2.43                     | 0.54              |
| 1:AA:780:G:C5      | 1:AA:782:A:N6      | 2.76                     | 0.54              |
| 1:AA:822:U:OP2     | 1:AA:945:A:O3'     | 2.26                     | 0.54              |
| 1:AA:837:C:O2'     | 1:AA:838:C:H5'     | 2.08                     | 0.54              |
| 1:AA:945:A:C2'     | 1:AA:946:G:O5'     | 2.55                     | 0.54              |
| 1:AA:1093:G:N2     | 1:AA:1098:A:H62    | 2.06                     | 0.54              |
| 1:AA:1100:C:C6     | 1:AA:1100:C:O5'    | 2.61                     | 0.54              |
| 1:AA:1105:U:H2'    | 1:AA:1107:G:C5     | 2.40                     | 0.54              |
| 1:AA:1165:U:C2'    | 1:AA:1166:C:C6     | 2.91                     | 0.54              |
| 1:AA:1225:C:N3     | 1:AA:1226:G:N1     | 2.56                     | 0.54              |
| 1:AA:1264:G:H3'    | 1:AA:1264:G:C8     | 2.42                     | 0.54              |
| 1:AA:1357:U:N3     | 1:AA:1358:G:N3     | 2.55                     | 0.54              |
| 1:AA:1407:C:O2'    | 1:AA:1408:C:C5'    | 2.55                     | 0.54              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:1519:G:C2'  | 1:AA:1520:U:O4'   | 2.55                     | 0.54              |
| 1:AA:1684:C:C4   | 1:AA:1705:G:C2    | 2.96                     | 0.54              |
| 1:AA:1725:G:N2   | 1:AA:1726:G:O4'   | 2.40                     | 0.54              |
| 1:AA:1759:A:H5'  | 1:AA:2715:C:H1'   | 1.88                     | 0.54              |
| 1:AA:1820:U:C2'  | 4:AD:202:LYS:CG   | 2.83                     | 0.54              |
| 1:AA:1826:G:H2'  | 1:AA:1827:C:C5'   | 2.36                     | 0.54              |
| 1:AA:1919:A:H4'  | 1:AA:1920:C:OP2   | 2.06                     | 0.54              |
| 1:AA:2018:G:C1'  | 16:AR:34:LYS:HZ1  | 2.21                     | 0.54              |
| 1:AA:2093:G:N3   | 1:AA:2198:A:N1    | 2.55                     | 0.54              |
| 1:AA:2181:G:N2   | 1:AA:2182:G:H22   | 2.05                     | 0.54              |
| 1:AA:2227:A:C6   | 1:AA:2228:G:N7    | 2.76                     | 0.54              |
| 1:AA:2311:A:C3'  | 1:AA:2312:U:C5    | 2.80                     | 0.54              |
| 1:AA:2399:G:C2   | 1:AA:2400:G:C1'   | 2.89                     | 0.54              |
| 1:AA:2514:U:C2   | 1:AA:2515:C:C5    | 2.95                     | 0.54              |
| 1:AA:2612:C:O2'  | 26:Ab:4:HIS:HB3   | 2.07                     | 0.54              |
| 1:AA:2737:G:H1   | 1:AA:2768:C:N4    | 2.06                     | 0.54              |
| 1:AA:2746:U:C4'  | 8:AH:139:GLN:HA   | 2.38                     | 0.54              |
| 1:AA:2752:C:OP1  | 1:AA:2752:C:H6    | 1.90                     | 0.54              |
| 1:AA:2776:A:N7   | 1:AA:2781:A:C5    | 2.76                     | 0.54              |
| 1:AA:2779:U:C6   | 1:AA:2779:U:C3'   | 2.91                     | 0.54              |
| 1:AA:2786:U:H2'  | 1:AA:2787:C:H6    | 1.72                     | 0.54              |
| 1:AA:2788:C:C2   | 1:AA:2789:C:N3    | 2.75                     | 0.54              |
| 1:AA:2799:A:H1'  | 1:AA:2802:G:C6    | 2.42                     | 0.54              |
| 1:AA:2808:U:C3'  | 1:AA:2810:A:OP1   | 2.56                     | 0.54              |
| 1:AA:2816:C:C2   | 1:AA:2817:G:C8    | 2.96                     | 0.54              |
| 2:AB:31:C:N3     | 2:AB:32:C:H5      | 2.06                     | 0.54              |
| 2:AB:58:A:H62    | 2:AB:59:A:N6      | 2.06                     | 0.54              |
| 3:AC:192:PHE:O   | 3:AC:196:LEU:HB2  | 2.08                     | 0.54              |
| 4:AD:5:LYS:O     | 4:AD:27:THR:HG22  | 2.08                     | 0.54              |
| 4:AD:27:THR:HG21 | 4:AD:82:ILE:HG22  | 1.90                     | 0.54              |
| 4:AD:118:VAL:N   | 4:AD:129:ASN:ND2  | 2.51                     | 0.54              |
| 4:AD:159:ALA:HA  | 4:AD:196:VAL:HG11 | 1.88                     | 0.54              |
| 4:AD:167:GLY:C   | 4:AD:174:ILE:HD13 | 2.33                     | 0.54              |
| 5:AE:38:THR:HG22 | 5:AE:39:PRO:N     | 2.23                     | 0.54              |
| 5:AE:49:LEU:CD2  | 5:AE:75:VAL:C     | 2.79                     | 0.54              |
| 5:AE:73:GLU:N    | 5:AE:74:PRO:HD3   | 2.22                     | 0.54              |
| 7:AG:125:PHE:HD2 | 7:AG:129:GLY:H    | 1.53                     | 0.54              |
| 8:AH:8:PRO:HA    | 8:AH:51:ARG:CZ    | 2.38                     | 0.54              |
| 8:AH:33:LEU:HD11 | 8:AH:74:ASN:HD21  | 1.72                     | 0.54              |
| 8:AH:38:SER:CB   | 8:AH:41:MET:HG3   | 2.13                     | 0.54              |
| 8:AH:74:ASN:CG   | 8:AH:75:ALA:N     | 2.66                     | 0.54              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AH:105:LEU:HD23  | 8:AH:105:LEU:H     | 1.68                     | 0.54              |
| 10:AL:64:ARG:NE    | 10:AL:67:LYS:C     | 2.66                     | 0.54              |
| 11:AM:76:LYS:HG3   | 11:AM:77:ARG:N     | 2.22                     | 0.54              |
| 12:AN:42:ILE:CG1   | 12:AN:46:GLN:NE2   | 2.67                     | 0.54              |
| 12:AN:67:ARG:HH21  | 12:AN:103:MET:C    | 2.15                     | 0.54              |
| 12:AN:118:LEU:CB   | 12:AN:131:ILE:HD13 | 2.37                     | 0.54              |
| 14:AP:76:LYS:HG2   | 14:AP:77:ALA:N     | 2.20                     | 0.54              |
| 15:AQ:57:PHE:O     | 15:AQ:58:ASN:HB3   | 2.08                     | 0.54              |
| 16:AR:19:LYS:HB2   | 16:AR:19:LYS:HZ3   | 1.68                     | 0.54              |
| 18:AT:8:ARG:CZ     | 18:AT:102:HIS:ND1  | 2.71                     | 0.54              |
| 18:AT:21:VAL:HG11  | 18:AT:75:TYR:HA    | 1.90                     | 0.54              |
| 18:AT:40:ASN:O     | 18:AT:41:LYS:CB    | 2.56                     | 0.54              |
| 19:AU:89:ILE:HG22  | 19:AU:89:ILE:O     | 2.08                     | 0.54              |
| 20:AV:72:VAL:HG21  | 20:AV:96:ILE:HG21  | 1.89                     | 0.54              |
| 26:Ab:39:MET:HE3   | 26:Ab:39:MET:O     | 2.08                     | 0.54              |
| 29:Ae:15:LYS:HE2   | 29:Ae:15:LYS:HA    | 1.89                     | 0.54              |
| 29:Ae:25:MET:HE3   | 29:Ae:44:LYS:CD    | 2.38                     | 0.54              |
| 32:AJ:62:ASP:HB3   | 32:AJ:63:ARG:CA    | 2.37                     | 0.54              |
| 33:Ag:335:UNK:CB   | 33:Ag:345:UNK:C    | 2.86                     | 0.54              |
| 34:BA:46:G:N2      | 34:BA:366:C:H1'    | 2.23                     | 0.54              |
| 34:BA:66:G:C5'     | 34:BA:173:U:O4     | 2.55                     | 0.54              |
| 34:BA:110:C:H2'    | 34:BA:111:G:C5'    | 2.37                     | 0.54              |
| 34:BA:186(A):C:H1' | 53:BX:104:LEU:HD21 | 1.84                     | 0.54              |
| 34:BA:251:G:C2     | 34:BA:266:G:O6     | 2.61                     | 0.54              |
| 34:BA:505:G:C8     | 34:BA:535:A:H1'    | 2.43                     | 0.54              |
| 34:BA:595:G:N7     | 34:BA:641:U:C2     | 2.75                     | 0.54              |
| 34:BA:660:G:H2'    | 34:BA:661:G:H8     | 1.72                     | 0.54              |
| 34:BA:687:A:H2     | 34:BA:700:G:H21    | 1.56                     | 0.54              |
| 34:BA:728:A:H8     | 48:BS:54:ARG:NH2   | 2.06                     | 0.54              |
| 34:BA:755:G:OP2    | 48:BS:65:ARG:CD    | 2.56                     | 0.54              |
| 34:BA:789:U:H2'    | 34:BA:790:A:H3'    | 1.90                     | 0.54              |
| 34:BA:811:C:H3'    | 34:BA:811:C:C6     | 2.43                     | 0.54              |
| 34:BA:1021:G:H2'   | 34:BA:1022:G:H1'   | 1.89                     | 0.54              |
| 34:BA:1026:G:N7    | 34:BA:1027:C:C6    | 2.76                     | 0.54              |
| 34:BA:1058:G:H8    | 34:BA:1058:G:O5'   | 1.91                     | 0.54              |
| 34:BA:1161:C:C2    | 34:BA:1162:C:H5    | 2.26                     | 0.54              |
| 34:BA:1187:G:O2'   | 47:BR:61:TRP:OXT   | 2.22                     | 0.54              |
| 34:BA:1405:G:C4    | 34:BA:1406:U:C5    | 2.96                     | 0.54              |
| 34:BA:1462:G:H2'   | 34:BA:1463:C:C6    | 2.42                     | 0.54              |
| 34:BA:1514:C:C2    | 34:BA:1515:C:C5    | 2.95                     | 0.54              |
| 35:BF:47:THR:CG2   | 35:BF:51:LEU:HD21  | 2.37                     | 0.54              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BF:58:ILE:CG2   | 35:BF:221:LEU:HD12 | 2.38                     | 0.54              |
| 35:BF:61:LEU:HD23  | 35:BF:62:ALA:H     | 1.72                     | 0.54              |
| 36:BG:18:TRP:CZ2   | 47:BR:57:ARG:HB2   | 2.43                     | 0.54              |
| 36:BG:67:THR:CG2   | 36:BG:104:GLN:CG   | 2.85                     | 0.54              |
| 36:BG:132:ARG:HB3  | 36:BG:136:GLN:HE22 | 1.73                     | 0.54              |
| 36:BG:190:ARG:O    | 36:BG:191:THR:C    | 2.51                     | 0.54              |
| 36:BG:205:GLY:O    | 36:BG:206:GLU:CB   | 2.54                     | 0.54              |
| 37:BH:6:GLY:O      | 37:BH:8:VAL:HG22   | 2.07                     | 0.54              |
| 37:BH:31:CYS:C     | 37:BH:33:MET:N     | 2.64                     | 0.54              |
| 37:BH:105:VAL:HG21 | 37:BH:121:VAL:HG21 | 1.88                     | 0.54              |
| 38:BI:50:GLU:HB2   | 38:BI:53:LEU:CD2   | 2.38                     | 0.54              |
| 38:BI:78:HIS:HB3   | 41:BL:104:ARG:HB3  | 1.90                     | 0.54              |
| 38:BI:109:ILE:HG23 | 38:BI:110:LEU:H    | 1.73                     | 0.54              |
| 40:BK:63:LYS:HA    | 40:BK:63:LYS:CE    | 2.33                     | 0.54              |
| 41:BL:69:ARG:HG3   | 41:BL:69:ARG:HH11  | 1.72                     | 0.54              |
| 41:BL:112:LEU:HD11 | 41:BL:114:THR:HG22 | 1.89                     | 0.54              |
| 42:BM:11:LYS:HB2   | 42:BM:108:VAL:HG12 | 1.88                     | 0.54              |
| 42:BM:70:LYS:H     | 42:BM:70:LYS:HD2   | 1.72                     | 0.54              |
| 43:BN:39:PRO:O     | 43:BN:40:LEU:CB    | 2.56                     | 0.54              |
| 43:BN:46:ARG:NH1   | 47:BR:59:ALA:HB1   | 2.22                     | 0.54              |
| 44:BO:99:GLN:O     | 44:BO:105:VAL:HG21 | 2.07                     | 0.54              |
| 45:BP:24:VAL:HG13  | 45:BP:26:ALA:N     | 2.23                     | 0.54              |
| 45:BP:26:ALA:O     | 45:BP:27:LEU:HB3   | 2.06                     | 0.54              |
| 47:BR:23:ARG:NH1   | 47:BR:29:ARG:N     | 2.55                     | 0.54              |
| 47:BR:41:ARG:HA    | 47:BR:44:LEU:HD23  | 1.90                     | 0.54              |
| 48:BS:36:ILE:O     | 48:BS:40:SER:OG    | 2.20                     | 0.54              |
| 48:BS:61:GLY:O     | 48:BS:62:GLN:C     | 2.50                     | 0.54              |
| 50:BU:29:HIS:HE1   | 50:BU:31:LEU:HB3   | 1.72                     | 0.54              |
| 50:BU:33:GLY:O     | 50:BU:34:LYS:C     | 2.50                     | 0.54              |
| 50:BU:81:ARG:HG3   | 50:BU:84:LEU:CG    | 2.38                     | 0.54              |
| 52:BW:30:LEU:HD12  | 52:BW:59:PRO:CB    | 2.37                     | 0.54              |
| 53:BX:43:LEU:HD12  | 53:BX:55:ILE:CD1   | 2.24                     | 0.54              |
| 55:BC:21:A:H5'     | 55:BC:21:A:H8      | 1.73                     | 0.54              |
| 56:BE:5:G:H4'      | 56:BE:6:G:OP1      | 2.07                     | 0.54              |
| 57:BZ:101:ALA:HB2  | 57:BZ:127:ILE:CG2  | 2.38                     | 0.54              |
| 57:BZ:166:SER:HB3  | 57:BZ:170:GLY:HA3  | 1.88                     | 0.54              |
| 57:BZ:390:ARG:CB   | 57:BZ:391:GLU:CA   | 2.86                     | 0.54              |
| 57:BZ:405:LEU:C    | 57:BZ:407:VAL:HG13 | 2.31                     | 0.54              |
| 1:AA:35:G:C6       | 1:AA:446:G:N2      | 2.75                     | 0.54              |
| 1:AA:67:U:O5'      | 1:AA:67:U:C6       | 2.61                     | 0.54              |
| 1:AA:188:G:OP2     | 25:Aa:13:ARG:NH2   | 2.40                     | 0.54              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 1:AA:205:G:HO2'  | 1:AA:206:U:P       | 2.27                     | 0.54              |
| 1:AA:285:C:C2    | 1:AA:286:C:C5      | 2.95                     | 0.54              |
| 1:AA:308:G:C2    | 1:AA:309:G:C1'     | 2.81                     | 0.54              |
| 1:AA:364:C:C4    | 1:AA:365:C:N4      | 2.76                     | 0.54              |
| 1:AA:487:C:H3'   | 1:AA:487:C:C6      | 2.42                     | 0.54              |
| 1:AA:531:C:H2'   | 1:AA:531:C:O2      | 2.07                     | 0.54              |
| 1:AA:623:G:P     | 11:AM:105:LEU:HD11 | 2.48                     | 0.54              |
| 1:AA:747:U:O2    | 1:AA:2613:U:O4     | 2.25                     | 0.54              |
| 1:AA:749:C:C6    | 1:AA:749:C:C3'     | 2.90                     | 0.54              |
| 1:AA:768:G:O2'   | 1:AA:769:G:H5'     | 2.07                     | 0.54              |
| 1:AA:832:G:H8    | 1:AA:944:G:H21     | 1.56                     | 0.54              |
| 1:AA:873:G:C2    | 1:AA:905:U:O2      | 2.61                     | 0.54              |
| 1:AA:988:A:OP1   | 24:AZ:10:LYS:CD    | 2.56                     | 0.54              |
| 1:AA:988:A:O3'   | 24:AZ:10:LYS:CE    | 2.56                     | 0.54              |
| 1:AA:1031:G:C5   | 1:AA:1032:A:N7     | 2.75                     | 0.54              |
| 1:AA:1037:G:N2   | 1:AA:1119:C:C2     | 2.75                     | 0.54              |
| 1:AA:1061:U:H5'' | 32:AJ:52:ILE:HD11  | 1.87                     | 0.54              |
| 1:AA:1237:A:HO2' | 1:AA:1238:G:C4'    | 2.14                     | 0.54              |
| 1:AA:1556:C:C2   | 1:AA:1557:C:C5     | 2.96                     | 0.54              |
| 1:AA:1579:A:H2'  | 1:AA:1580:A:H4'    | 1.90                     | 0.54              |
| 1:AA:1655:A:N6   | 1:AA:2005:A:C1'    | 2.70                     | 0.54              |
| 1:AA:1664:A:C8   | 1:AA:1664:A:C3'    | 2.86                     | 0.54              |
| 1:AA:1688:U:H3   | 1:AA:1700:A:H5''   | 1.73                     | 0.54              |
| 1:AA:1752:C:H5'' | 1:AA:2862:G:OP1    | 2.08                     | 0.54              |
| 1:AA:1827:C:H1'  | 1:AA:1970:A:C2     | 2.40                     | 0.54              |
| 1:AA:1861:G:O2'  | 1:AA:1862:G:H5'    | 2.08                     | 0.54              |
| 1:AA:2049:G:C2'  | 1:AA:2050:C:O5'    | 2.55                     | 0.54              |
| 1:AA:2055:C:H2'  | 1:AA:2055:C:O2     | 2.08                     | 0.54              |
| 1:AA:2160:G:O2'  | 1:AA:2161:C:O4'    | 2.26                     | 0.54              |
| 1:AA:2166:G:H2'  | 1:AA:2167:U:C6     | 2.43                     | 0.54              |
| 1:AA:2166:G:H2'  | 1:AA:2167:U:H6     | 1.72                     | 0.54              |
| 1:AA:2244:U:C1'  | 1:AA:2434:A:C6     | 2.89                     | 0.54              |
| 1:AA:2285:C:C2   | 1:AA:2384:G:N2     | 2.75                     | 0.54              |
| 1:AA:2286:A:C2   | 27:Ac:27:LYS:CB    | 2.73                     | 0.54              |
| 1:AA:2384:G:OP2  | 1:AA:2384:G:C8     | 2.54                     | 0.54              |
| 1:AA:2394:C:N4   | 1:AA:2422:A:C6     | 2.76                     | 0.54              |
| 1:AA:2468:G:H8   | 1:AA:2476:A:N1     | 2.06                     | 0.54              |
| 1:AA:2510:C:N4   | 1:AA:2511:U:C4     | 2.76                     | 0.54              |
| 1:AA:2529:G:H5'' | 1:AA:2530:A:C5'    | 2.37                     | 0.54              |
| 1:AA:2665:A:H2'  | 1:AA:2666:C:C2     | 2.41                     | 0.54              |
| 1:AA:2670:A:N3   | 1:AA:2670:A:H2'    | 2.22                     | 0.54              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:2674:G:C6     | 1:AA:2675:A:C6     | 2.96                     | 0.54              |
| 1:AA:2688:U:O2'    | 1:AA:2689:U:OP2    | 2.25                     | 0.54              |
| 1:AA:2699:C:C2'    | 1:AA:2700:C:H5'    | 2.37                     | 0.54              |
| 1:AA:2765:A:O2'    | 1:AA:2766:G:OP1    | 2.19                     | 0.54              |
| 3:AC:93:TYR:HD1    | 3:AC:107:TRP:HZ2   | 1.55                     | 0.54              |
| 3:AC:103:ILE:HA    | 3:AC:107:TRP:O     | 2.07                     | 0.54              |
| 4:AD:45:ASN:C      | 4:AD:46:GLN:CG     | 2.81                     | 0.54              |
| 4:AD:242:ARG:O     | 4:AD:244:ARG:HG2   | 2.08                     | 0.54              |
| 4:AD:273:ARG:O     | 4:AD:273:ARG:CZ    | 2.55                     | 0.54              |
| 5:AE:27:LEU:CD1    | 5:AE:76:ARG:HH12   | 2.21                     | 0.54              |
| 5:AE:91:VAL:HG13   | 5:AE:92:THR:H      | 1.73                     | 0.54              |
| 5:AE:119:ARG:CZ    | 5:AE:155:LYS:CB    | 2.81                     | 0.54              |
| 5:AE:142:GLY:O     | 5:AE:143:ASN:CB    | 2.56                     | 0.54              |
| 5:AE:151:TYR:CD2   | 5:AE:152:LYS:N     | 2.75                     | 0.54              |
| 5:AE:176:ILE:O     | 5:AE:176:ILE:HD13  | 2.08                     | 0.54              |
| 6:AF:154:VAL:HG21  | 6:AF:193:VAL:HG21  | 1.88                     | 0.54              |
| 7:AG:20:ILE:HG22   | 7:AG:21:ARG:N      | 2.22                     | 0.54              |
| 7:AG:26:GLN:CD     | 7:AG:29:TRP:HE3    | 2.16                     | 0.54              |
| 7:AG:56:ALA:HB1    | 7:AG:68:PRO:HG2    | 1.90                     | 0.54              |
| 7:AG:135:LEU:CD2   | 7:AG:137:GLU:H     | 2.21                     | 0.54              |
| 9:AK:16:ILE:CB     | 9:AK:54:VAL:HG23   | 2.29                     | 0.54              |
| 9:AK:51:PHE:CD1    | 9:AK:119:ARG:HB2   | 2.43                     | 0.54              |
| 10:AL:1:MET:HG3    | 10:AL:2:ILE:H      | 1.72                     | 0.54              |
| 10:AL:19:ILE:O     | 10:AL:19:ILE:CD1   | 2.53                     | 0.54              |
| 10:AL:84:ALA:HB3   | 10:AL:114:ILE:HD11 | 1.89                     | 0.54              |
| 11:AM:88:LEU:CD2   | 11:AM:124:LYS:HZ1  | 2.21                     | 0.54              |
| 11:AM:111:ARG:HH21 | 11:AM:129:ALA:HB2  | 1.73                     | 0.54              |
| 12:AN:85:LYS:NZ    | 22:AX:10:THR:OG1   | 2.37                     | 0.54              |
| 13:AO:54:LEU:HA    | 13:AO:57:ARG:CG    | 2.34                     | 0.54              |
| 15:AQ:57:PHE:HA    | 15:AQ:61:PHE:HD2   | 1.72                     | 0.54              |
| 15:AQ:112:ARG:O    | 15:AQ:113:LYS:C    | 2.50                     | 0.54              |
| 16:AR:8:VAL:HA     | 16:AR:11:ARG:NE    | 2.23                     | 0.54              |
| 16:AR:41:ALA:O     | 16:AR:42:ALA:C     | 2.51                     | 0.54              |
| 16:AR:48:ALA:C     | 16:AR:52:ARG:HE    | 2.16                     | 0.54              |
| 18:AT:38:TYR:N     | 18:AT:38:TYR:CD1   | 2.75                     | 0.54              |
| 19:AU:39:ILE:HD12  | 19:AU:54:VAL:HG12  | 1.89                     | 0.54              |
| 20:AV:12:THR:HG21  | 20:AV:71:LYS:HA    | 1.89                     | 0.54              |
| 21:AW:141:VAL:HG12 | 21:AW:142:SER:N    | 2.22                     | 0.54              |
| 25:Aa:43:TYR:CA    | 25:Aa:61:ARG:HH22  | 2.07                     | 0.54              |
| 25:Aa:56:VAL:C     | 25:Aa:61:ARG:CZ    | 2.80                     | 0.54              |
| 26:Ab:41:PRO:O     | 26:Ab:42:PRO:C     | 2.49                     | 0.54              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 28:Ad:17:GLY:N     | 28:Ad:21:ARG:NH2   | 2.45                     | 0.54              |
| 34:BA:50:A:O2'     | 34:BA:52:G:C5      | 2.61                     | 0.54              |
| 34:BA:152:A:H3'    | 34:BA:152:A:H8     | 1.71                     | 0.54              |
| 34:BA:153:C:C2     | 34:BA:154:C:C5     | 2.96                     | 0.54              |
| 34:BA:235:C:OP1    | 50:BU:70:ARG:HG3   | 2.07                     | 0.54              |
| 34:BA:522:C:H1'    | 34:BA:536:C:C5'    | 2.37                     | 0.54              |
| 34:BA:557:G:C3'    | 34:BA:558:G:C8     | 2.88                     | 0.54              |
| 34:BA:577:G:OP1    | 34:BA:577:G:H8     | 1.91                     | 0.54              |
| 34:BA:620:C:C1'    | 37:BH:135:LEU:HD13 | 2.38                     | 0.54              |
| 34:BA:728:A:N1     | 34:BA:729:A:C4     | 2.76                     | 0.54              |
| 34:BA:832:C:C2     | 34:BA:833:U:C5     | 2.95                     | 0.54              |
| 34:BA:1041:A:C2    | 34:BA:1042:G:C8    | 2.96                     | 0.54              |
| 34:BA:1057:G:OP1   | 36:BG:155:GLY:CA   | 2.56                     | 0.54              |
| 34:BA:1099:G:C5    | 34:BA:1100:C:C5    | 2.96                     | 0.54              |
| 34:BA:1107:C:H2'   | 34:BA:1108:G:C5'   | 2.38                     | 0.54              |
| 34:BA:1126:U:H2'   | 34:BA:1127:G:O4'   | 2.08                     | 0.54              |
| 34:BA:1172:C:H2'   | 34:BA:1173:G:O4'   | 2.08                     | 0.54              |
| 34:BA:1215:G:C2    | 34:BA:1216:G:N7    | 2.76                     | 0.54              |
| 34:BA:1223:C:O5'   | 34:BA:1224:G:H5''  | 2.08                     | 0.54              |
| 34:BA:1239:A:H1'   | 34:BA:1241:G:C5    | 2.42                     | 0.54              |
| 34:BA:1302:U:H2'   | 34:BA:1303:C:H5'   | 1.87                     | 0.54              |
| 34:BA:1311:G:C2    | 34:BA:1326:C:H2'   | 2.42                     | 0.54              |
| 34:BA:1332:A:H2'   | 34:BA:1332:A:N3    | 2.21                     | 0.54              |
| 36:BG:112:SER:OG   | 36:BG:115:LEU:HD12 | 2.08                     | 0.54              |
| 36:BG:131:ARG:HH12 | 38:BI:51:VAL:CG2   | 2.19                     | 0.54              |
| 36:BG:132:ARG:C    | 36:BG:136:GLN:HE21 | 2.15                     | 0.54              |
| 36:BG:135:LYS:NZ   | 38:BI:52:PRO:HG2   | 2.22                     | 0.54              |
| 37:BH:50:ARG:CG    | 37:BH:51:PRO:HD2   | 2.23                     | 0.54              |
| 37:BH:107:ARG:HH11 | 37:BH:107:ARG:CA   | 2.07                     | 0.54              |
| 38:BI:45:PHE:CD1   | 38:BI:45:PHE:O     | 2.61                     | 0.54              |
| 38:BI:79:GLU:O     | 38:BI:80:ILE:HG23  | 2.07                     | 0.54              |
| 38:BI:105:VAL:O    | 38:BI:106:PRO:C    | 2.51                     | 0.54              |
| 39:BJ:14:LEU:CD1   | 39:BJ:15:ASP:O     | 2.55                     | 0.54              |
| 39:BJ:97:PHE:HE2   | 51:BV:62:GLU:OE2   | 1.91                     | 0.54              |
| 40:BK:72:ARG:NH2   | 40:BK:138:LYS:HZ3  | 2.03                     | 0.54              |
| 41:BL:103:VAL:CB   | 41:BL:108:GLY:C    | 2.81                     | 0.54              |
| 44:BO:78:GLN:CD    | 44:BO:78:GLN:N     | 2.66                     | 0.54              |
| 44:BO:115:PRO:O    | 44:BO:116:HIS:ND1  | 2.40                     | 0.54              |
| 45:BP:53:ARG:NH2   | 45:BP:92:ASP:OD2   | 2.41                     | 0.54              |
| 48:BS:32:LEU:HD12  | 48:BS:59:MET:HG2   | 1.89                     | 0.54              |
| 50:BU:4:LYS:CD     | 50:BU:5:VAL:N      | 2.63                     | 0.54              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 50:BU:40:LYS:HB3  | 50:BU:42:TYR:HE1  | 1.73                     | 0.54              |
| 50:BU:56:VAL:C    | 50:BU:57:VAL:CG1  | 2.79                     | 0.54              |
| 50:BU:66:SER:HB3  | 50:BU:69:LYS:NZ   | 2.23                     | 0.54              |
| 53:BX:22:ARG:O    | 53:BX:26:ASN:OD1  | 2.26                     | 0.54              |
| 57:BZ:15:ASP:HA   | 60:BZ:701:GCP:O1G | 2.08                     | 0.54              |
| 57:BZ:139:TRP:CH2 | 57:BZ:143:GLN:HG3 | 2.42                     | 0.54              |
| 57:BZ:150:ASN:ND2 | 57:BZ:151:LEU:CD2 | 2.70                     | 0.54              |
| 57:BZ:211:GLN:O   | 57:BZ:212:LEU:HB2 | 2.08                     | 0.54              |
| 57:BZ:374:ARG:O   | 57:BZ:582:PRO:CB  | 2.53                     | 0.54              |
| 57:BZ:397:GLN:C   | 57:BZ:472:TYR:CG  | 2.81                     | 0.54              |
| 57:BZ:407:VAL:CA  | 57:BZ:408:GLU:CB  | 2.86                     | 0.54              |
| 1:AA:55:G:H2'     | 1:AA:56:A:H8      | 1.72                     | 0.54              |
| 1:AA:61:G:H2'     | 1:AA:62:C:H6      | 1.71                     | 0.54              |
| 1:AA:112:U:H3'    | 1:AA:113:G:C4'    | 2.38                     | 0.54              |
| 1:AA:188:G:H2'    | 1:AA:189:G:H8     | 1.73                     | 0.54              |
| 1:AA:201:C:C2'    | 1:AA:202:U:H5'    | 2.37                     | 0.54              |
| 1:AA:218:A:C2     | 1:AA:235:U:H4'    | 2.43                     | 0.54              |
| 1:AA:265:A:C2     | 1:AA:281:G:O5'    | 2.60                     | 0.54              |
| 1:AA:307:G:H2'    | 1:AA:309:G:C8     | 2.43                     | 0.54              |
| 1:AA:449:A:C2'    | 1:AA:450:G:O4'    | 2.53                     | 0.54              |
| 1:AA:522:G:H2'    | 1:AA:523:C:C6     | 2.43                     | 0.54              |
| 1:AA:568:U:O4     | 1:AA:973:A:OP2    | 2.26                     | 0.54              |
| 1:AA:569:U:C5'    | 1:AA:946:G:H1'    | 2.33                     | 0.54              |
| 1:AA:598:G:H1'    | 11:AM:14:LYS:HG2  | 1.90                     | 0.54              |
| 1:AA:602:G:H2'    | 1:AA:655:A:C6     | 2.42                     | 0.54              |
| 1:AA:621:A:C8     | 1:AA:622:G:H5'    | 2.42                     | 0.54              |
| 1:AA:624:C:H3'    | 1:AA:624:C:H6     | 1.69                     | 0.54              |
| 1:AA:648:G:C2'    | 1:AA:649:G:H8     | 2.21                     | 0.54              |
| 1:AA:696:G:N3     | 1:AA:697:C:C6     | 2.76                     | 0.54              |
| 1:AA:746:A:HO2'   | 1:AA:747:U:P      | 2.20                     | 0.54              |
| 1:AA:975:G:C6     | 1:AA:976:C:H5     | 2.24                     | 0.54              |
| 1:AA:987:G:C6     | 1:AA:988:A:C5     | 2.96                     | 0.54              |
| 1:AA:1051:G:N9    | 1:AA:2752:C:OP2   | 2.40                     | 0.54              |
| 1:AA:1213:A:C6    | 1:AA:1237:A:H1'   | 2.42                     | 0.54              |
| 1:AA:1404:C:O2    | 1:AA:1405:U:C6    | 2.61                     | 0.54              |
| 1:AA:1409:C:H2'   | 1:AA:1410:G:O4'   | 2.07                     | 0.54              |
| 1:AA:1451:C:H2'   | 1:AA:1457:A:C6    | 2.43                     | 0.54              |
| 1:AA:1563:G:O2'   | 1:AA:1564:C:H5'   | 2.07                     | 0.54              |
| 1:AA:1565:C:C4    | 1:AA:1567:A:H1'   | 2.42                     | 0.54              |
| 1:AA:1613:G:OP1   | 28:Ad:5:TRP:CD1   | 2.61                     | 0.54              |
| 1:AA:1670:C:O5'   | 1:AA:1671:U:C5    | 2.61                     | 0.54              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 1:AA:1678:G:H22   | 1:AA:1989:G:N2   | 2.05                     | 0.54              |
| 1:AA:1703:G:H2'   | 1:AA:1704:G:C5'  | 2.38                     | 0.54              |
| 1:AA:1735:C:H42   | 1:AA:1741:C:N4   | 2.05                     | 0.54              |
| 1:AA:1771:C:O2'   | 1:AA:1772:G:H5'  | 2.07                     | 0.54              |
| 1:AA:1781:C:O2'   | 1:AA:2609:U:O4   | 2.16                     | 0.54              |
| 1:AA:1790:C:P     | 4:AD:220:HIS:HB3 | 2.48                     | 0.54              |
| 1:AA:1802:A:OP1   | 1:AA:1814:G:N2   | 2.26                     | 0.54              |
| 1:AA:2004:G:C5    | 1:AA:2005:A:C5   | 2.96                     | 0.54              |
| 1:AA:2043:C:OP1   | 1:AA:2043:C:C6   | 2.54                     | 0.54              |
| 1:AA:2196:C:H2'   | 1:AA:2196:C:O2   | 2.08                     | 0.54              |
| 1:AA:2293:C:H2'   | 1:AA:2294:C:H6   | 1.73                     | 0.54              |
| 1:AA:2323:G:C6    | 1:AA:2324:C:N4   | 2.76                     | 0.54              |
| 1:AA:2393:A:O3'   | 11:AM:57:THR:HA  | 2.08                     | 0.54              |
| 1:AA:2425:A:H2'   | 1:AA:2425:A:N3   | 2.23                     | 0.54              |
| 1:AA:2498:C:C2'   | 1:AA:2498:C:O2   | 2.56                     | 0.54              |
| 1:AA:2538:C:H2'   | 1:AA:2539:C:C5   | 2.43                     | 0.54              |
| 1:AA:2564:A:C6    | 1:AA:2647:U:C4'  | 2.91                     | 0.54              |
| 1:AA:2606:C:O2    | 1:AA:2607:G:C8   | 2.61                     | 0.54              |
| 1:AA:2731:G:H4'   | 5:AE:168:MET:CE  | 2.38                     | 0.54              |
| 1:AA:2734:A:H2'   | 1:AA:2735:G:O4'  | 2.07                     | 0.54              |
| 1:AA:2764:A:N7    | 1:AA:2766:G:C5   | 2.75                     | 0.54              |
| 2:AB:79:C:N4      | 2:AB:80:U:C4     | 2.76                     | 0.54              |
| 2:AB:80:U:O2      | 2:AB:81:G:N7     | 2.41                     | 0.54              |
| 3:AC:39:GLU:HB3   | 3:AC:178:ALA:CB  | 2.38                     | 0.54              |
| 3:AC:100:ILE:HD13 | 3:AC:123:VAL:N   | 2.23                     | 0.54              |
| 3:AC:142:ALA:O    | 3:AC:143:GLY:C   | 2.50                     | 0.54              |
| 4:AD:37:LEU:CD1   | 4:AD:62:TYR:O    | 2.56                     | 0.54              |
| 4:AD:79:VAL:CG1   | 4:AD:113:VAL:HA  | 2.37                     | 0.54              |
| 4:AD:79:VAL:HG11  | 4:AD:113:VAL:HA  | 1.89                     | 0.54              |
| 4:AD:111:LEU:HB3  | 4:AD:115:GLN:CD  | 2.32                     | 0.54              |
| 4:AD:183:ARG:HG2  | 4:AD:268:ARG:CD  | 2.37                     | 0.54              |
| 4:AD:230:ASP:O    | 4:AD:232:PRO:N   | 2.41                     | 0.54              |
| 5:AE:115:GLY:O    | 5:AE:117:MET:N   | 2.41                     | 0.54              |
| 5:AE:133:LYS:HB3  | 5:AE:137:HIS:CD2 | 2.42                     | 0.54              |
| 5:AE:176:ILE:CG2  | 5:AE:181:LEU:O   | 2.56                     | 0.54              |
| 5:AE:176:ILE:CD1  | 5:AE:179:GLU:O   | 2.53                     | 0.54              |
| 6:AF:74:ARG:CZ    | 6:AF:75:HIS:N    | 2.69                     | 0.54              |
| 6:AF:74:ARG:CZ    | 6:AF:75:HIS:HA   | 2.38                     | 0.54              |
| 6:AF:78:ILE:CD1   | 6:AF:79:GLY:H    | 2.20                     | 0.54              |
| 6:AF:126:VAL:HG23 | 6:AF:197:ASP:OD1 | 2.08                     | 0.54              |
| 7:AG:76:SER:C     | 7:AG:78:SER:N    | 2.62                     | 0.54              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AH:76:VAL:HA    | 8:AH:79:VAL:CG2    | 2.36                     | 0.54              |
| 8:AH:117:PRO:HB3  | 8:AH:123:PHE:CE2   | 2.43                     | 0.54              |
| 9:AK:47:ALA:O     | 9:AK:48:MET:C      | 2.51                     | 0.54              |
| 9:AK:69:GLN:OE1   | 9:AK:87:LEU:HD13   | 2.08                     | 0.54              |
| 9:AK:98:VAL:O     | 9:AK:99:LEU:C      | 2.50                     | 0.54              |
| 10:AL:31:LYS:HB3  | 10:AL:32:TYR:CE2   | 2.43                     | 0.54              |
| 10:AL:68:GLU:O    | 10:AL:68:GLU:CG    | 2.52                     | 0.54              |
| 10:AL:70:LYS:HB3  | 10:AL:107:ARG:HH12 | 1.73                     | 0.54              |
| 10:AL:106:LEU:HA  | 10:AL:111:PHE:CE1  | 2.42                     | 0.54              |
| 11:AM:16:ARG:HG3  | 11:AM:19:VAL:CG2   | 2.38                     | 0.54              |
| 11:AM:32:THR:OG1  | 11:AM:35:HIS:CE1   | 2.61                     | 0.54              |
| 12:AN:27:VAL:CG1  | 12:AN:104:PHE:CE2  | 2.91                     | 0.54              |
| 13:AO:61:HIS:O    | 13:AO:62:ALA:C     | 2.51                     | 0.54              |
| 14:AP:9:ARG:NH1   | 14:AP:9:ARG:N      | 2.53                     | 0.54              |
| 16:AR:106:PHE:O   | 16:AR:107:ALA:C    | 2.51                     | 0.54              |
| 17:AS:23:GLU:HA   | 17:AS:93:GLU:HB3   | 1.90                     | 0.54              |
| 17:AS:28:GLU:OE1  | 17:AS:94:LEU:HG    | 2.07                     | 0.54              |
| 17:AS:40:LEU:HA   | 17:AS:54:GLY:CA    | 2.27                     | 0.54              |
| 18:AT:24:ILE:O    | 18:AT:25:ARG:O     | 2.26                     | 0.54              |
| 19:AU:7:VAL:HB    | 23:AY:28:MET:CG    | 2.38                     | 0.54              |
| 19:AU:82:GLN:HG2  | 19:AU:83:VAL:N     | 2.23                     | 0.54              |
| 25:Aa:12:ALA:N    | 25:Aa:40:HIS:NE2   | 2.56                     | 0.54              |
| 25:Aa:38:LYS:HG2  | 25:Aa:40:HIS:HD1   | 1.71                     | 0.54              |
| 27:Ac:12:GLU:HG3  | 27:Ac:53:LYS:O     | 2.07                     | 0.54              |
| 27:Ac:17:LYS:HZ3  | 27:Ac:50:ARG:CA    | 2.20                     | 0.54              |
| 27:Ac:19:ARG:HH12 | 27:Ac:43:CYS:CB    | 2.05                     | 0.54              |
| 27:Ac:22:ALA:C    | 27:Ac:23:THR:HG23  | 2.32                     | 0.54              |
| 32:AJ:64:SER:CA   | 32:AJ:65:PHE:HB3   | 2.38                     | 0.54              |
| 32:AJ:71:THR:CB   | 32:AJ:72:PRO:CD    | 2.86                     | 0.54              |
| 34:BA:132:C:O2'   | 34:BA:133:U:O4'    | 2.26                     | 0.54              |
| 34:BA:263:A:C2'   | 34:BA:264:U:C5'    | 2.75                     | 0.54              |
| 34:BA:377:G:C2    | 34:BA:378:G:N7     | 2.76                     | 0.54              |
| 34:BA:429:U:O2'   | 34:BA:430:A:H5''   | 2.07                     | 0.54              |
| 34:BA:521:G:C2    | 34:BA:522:C:C2     | 2.96                     | 0.54              |
| 34:BA:541:G:H2'   | 34:BA:542:G:H8     | 1.72                     | 0.54              |
| 34:BA:594:G:H2'   | 34:BA:595:G:C1'    | 2.38                     | 0.54              |
| 34:BA:657:G:C6    | 34:BA:658:G:N7     | 2.76                     | 0.54              |
| 34:BA:667:G:H5''  | 48:BS:51:HIS:CE1   | 2.43                     | 0.54              |
| 34:BA:673:G:H2'   | 34:BA:674:G:N7     | 2.23                     | 0.54              |
| 34:BA:735:C:O5'   | 34:BA:735:C:H6     | 1.90                     | 0.54              |
| 34:BA:821:G:O2'   | 34:BA:822:C:C5'    | 2.56                     | 0.54              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BA:900:A:N7     | 34:BA:901:A:N7    | 2.56                     | 0.54              |
| 34:BA:950:U:C2'    | 34:BA:951:G:H5'   | 2.38                     | 0.54              |
| 34:BA:1056:U:O2    | 34:BA:1056:U:H2'  | 2.07                     | 0.54              |
| 34:BA:1104:G:C4    | 34:BA:1105:A:C8   | 2.96                     | 0.54              |
| 34:BA:1117:G:C6    | 34:BA:1184:G:N7   | 2.73                     | 0.54              |
| 34:BA:1238:A:N7    | 34:BA:1301:U:O4   | 2.41                     | 0.54              |
| 34:BA:1251:A:C2    | 34:BA:1354:C:H1'  | 2.43                     | 0.54              |
| 34:BA:1318:A:N9    | 52:BW:37:ARG:CB   | 2.68                     | 0.54              |
| 34:BA:1411:C:N3    | 34:BA:1412:C:C5   | 2.75                     | 0.54              |
| 35:BF:8:LYS:O      | 35:BF:9:GLU:HB2   | 2.06                     | 0.54              |
| 35:BF:57:PHE:C     | 35:BF:57:PHE:CD2  | 2.86                     | 0.54              |
| 35:BF:72:GLY:C     | 35:BF:74:LYS:N    | 2.63                     | 0.54              |
| 36:BG:164:ARG:CG   | 36:BG:165:THR:N   | 2.71                     | 0.54              |
| 37:BH:6:GLY:O      | 37:BH:8:VAL:CG2   | 2.56                     | 0.54              |
| 37:BH:78:LEU:CD2   | 37:BH:96:LEU:HD22 | 2.37                     | 0.54              |
| 38:BI:34:VAL:HG21  | 38:BI:62:ALA:HB1  | 1.89                     | 0.54              |
| 38:BI:152:ARG:HH21 | 41:BL:44:PHE:N    | 2.05                     | 0.54              |
| 41:BL:28:ALA:O     | 41:BL:29:SER:OG   | 2.20                     | 0.54              |
| 42:BM:49:PRO:HD3   | 42:BM:78:LYS:CG   | 2.33                     | 0.54              |
| 42:BM:70:LYS:HD2   | 42:BM:70:LYS:N    | 2.22                     | 0.54              |
| 42:BM:111:ARG:HG2  | 42:BM:112:LYS:N   | 2.21                     | 0.54              |
| 42:BM:114:TYR:CE1  | 43:BN:60:ARG:NH1  | 2.74                     | 0.54              |
| 46:BQ:25:ILE:HG23  | 46:BQ:29:ARG:HB3  | 1.90                     | 0.54              |
| 48:BS:13:GLN:O     | 48:BS:14:GLU:C    | 2.50                     | 0.54              |
| 48:BS:31:LEU:N     | 48:BS:31:LEU:CD1  | 2.71                     | 0.54              |
| 50:BU:3:LYS:HD3    | 50:BU:60:ILE:HD11 | 1.90                     | 0.54              |
| 50:BU:51:TYR:CD2   | 50:BU:57:VAL:HG11 | 2.43                     | 0.54              |
| 52:BW:39:THR:O     | 52:BW:40:ILE:C    | 2.50                     | 0.54              |
| 52:BW:51:VAL:HG23  | 52:BW:60:VAL:CG2  | 2.37                     | 0.54              |
| 55:BC:36:A:C3'     | 55:BC:37:A:H5''   | 2.37                     | 0.54              |
| 57:BZ:73:VAL:CG2   | 57:BZ:88:VAL:CG2  | 2.83                     | 0.54              |
| 57:BZ:209:ILE:HG22 | 57:BZ:209:ILE:O   | 2.07                     | 0.54              |
| 57:BZ:446:ARG:NH1  | 57:BZ:480:VAL:N   | 2.56                     | 0.54              |
| 57:BZ:541:LYS:CB   | 57:BZ:542:LYS:HB3 | 2.38                     | 0.54              |
| 1:AA:7:G:C6        | 1:AA:2896:C:N3    | 2.76                     | 0.54              |
| 1:AA:140:A:H61     | 1:AA:1596:A:C4'   | 2.20                     | 0.54              |
| 1:AA:143:C:O2      | 1:AA:144:C:C5     | 2.61                     | 0.54              |
| 1:AA:310:A:OP1     | 20:AV:16:ALA:HB1  | 2.08                     | 0.54              |
| 1:AA:451:C:H5      | 1:AA:453:C:C5'    | 2.19                     | 0.54              |
| 1:AA:460:A:C8      | 1:AA:461:C:C5     | 2.96                     | 0.54              |
| 1:AA:564:C:H5''    | 17:AS:80:GLN:HA   | 1.90                     | 0.54              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:748:G:OP1   | 18:AT:88:ARG:HD3  | 2.08                     | 0.54              |
| 1:AA:823:G:C3'   | 1:AA:824:A:H8     | 2.20                     | 0.54              |
| 1:AA:884:C:C1'   | 1:AA:885:C:C5'    | 2.86                     | 0.54              |
| 1:AA:941:A:C2    | 1:AA:942:G:N3     | 2.76                     | 0.54              |
| 1:AA:1009:A:N3   | 1:AA:1153:C:O2'   | 2.33                     | 0.54              |
| 1:AA:1024:G:C6   | 1:AA:1025:G:H8    | 2.26                     | 0.54              |
| 1:AA:1128:A:O2'  | 1:AA:1129:A:H5'   | 2.07                     | 0.54              |
| 1:AA:1142:U:H3'  | 1:AA:1142(A):A:C8 | 2.42                     | 0.54              |
| 1:AA:1168:G:O6   | 1:AA:1169:G:C6    | 2.61                     | 0.54              |
| 1:AA:1183:G:OP2  | 24:AZ:30:ARG:NH1  | 2.41                     | 0.54              |
| 1:AA:1221:C:H2'  | 1:AA:1222:C:O5'   | 2.07                     | 0.54              |
| 1:AA:1364:G:O6   | 25:Aa:2:LYS:NZ    | 2.40                     | 0.54              |
| 1:AA:1401:G:C6   | 1:AA:1402:C:C4    | 2.95                     | 0.54              |
| 1:AA:1559:G:H2'  | 1:AA:1559:G:N3    | 2.23                     | 0.54              |
| 1:AA:1642:G:C2   | 1:AA:1643:G:C8    | 2.95                     | 0.54              |
| 1:AA:1820:U:H2'  | 4:AD:202:LYS:NZ   | 2.22                     | 0.54              |
| 1:AA:1939:U:H2'  | 1:AA:1940:U:OP1   | 2.07                     | 0.54              |
| 1:AA:2033:A:HO2' | 1:AA:2034:U:P     | 2.31                     | 0.54              |
| 1:AA:2093:G:H1'  | 1:AA:2198:A:N1    | 2.23                     | 0.54              |
| 1:AA:2134:A:C2   | 1:AA:2135:A:N1    | 2.76                     | 0.54              |
| 1:AA:2224:G:O2'  | 1:AA:2226:C:C5    | 2.57                     | 0.54              |
| 1:AA:2335:A:HO2' | 1:AA:2336:A:H8    | 1.56                     | 0.54              |
| 1:AA:2491:U:C5   | 1:AA:2492:U:H5'   | 2.41                     | 0.54              |
| 1:AA:2571:C:O2'  | 5:AE:146:THR:HG23 | 2.08                     | 0.54              |
| 1:AA:2686:G:O2'  | 1:AA:2687:U:C5'   | 2.56                     | 0.54              |
| 1:AA:2749:A:OP2  | 1:AA:2751:G:OP2   | 2.26                     | 0.54              |
| 1:AA:2793:G:N2   | 1:AA:2794:C:C2    | 2.76                     | 0.54              |
| 2:AB:37:C:O2     | 14:AP:95:HIS:CD2  | 2.61                     | 0.54              |
| 3:AC:47:LEU:HA   | 3:AC:210:ARG:N    | 2.10                     | 0.54              |
| 3:AC:52:ARG:CG   | 3:AC:53:ARG:HG3   | 2.38                     | 0.54              |
| 3:AC:83:ILE:HD11 | 3:AC:95:GLY:HA2   | 1.88                     | 0.54              |
| 3:AC:225:ASN:OD1 | 3:AC:227:HIS:HB2  | 2.08                     | 0.54              |
| 4:AD:50:THR:O    | 4:AD:51:VAL:HG22  | 2.07                     | 0.54              |
| 5:AE:92:THR:HG23 | 5:AE:96:PHE:N     | 2.22                     | 0.54              |
| 5:AE:102:VAL:HA  | 5:AE:202:LYS:HZ1  | 1.73                     | 0.54              |
| 6:AF:36:VAL:CG1  | 6:AF:183:VAL:HB   | 2.37                     | 0.54              |
| 7:AG:18:GLU:OE1  | 7:AG:19:LEU:N     | 2.40                     | 0.54              |
| 7:AG:33:ARG:NH2  | 7:AG:33:ARG:C     | 2.66                     | 0.54              |
| 7:AG:47:LYS:NZ   | 7:AG:73:ALA:HB3   | 2.23                     | 0.54              |
| 8:AH:74:ASN:ND2  | 8:AH:75:ALA:H     | 2.05                     | 0.54              |
| 9:AK:3:THR:CG2   | 9:AK:4:TYR:H      | 2.07                     | 0.54              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 9:AK:85:ILE:HD12   | 9:AK:85:ILE:H     | 1.73                     | 0.54              |
| 10:AL:86:ILE:HG12  | 10:AL:90:GLN:O    | 2.07                     | 0.54              |
| 10:AL:105:GLU:O    | 10:AL:108:GLU:N   | 2.41                     | 0.54              |
| 12:AN:35:VAL:CG2   | 12:AN:101:ARG:O   | 2.53                     | 0.54              |
| 13:AO:73:VAL:O     | 13:AO:76:VAL:HB   | 2.07                     | 0.54              |
| 17:AS:59:ALA:O     | 17:AS:60:GLU:OE2  | 2.26                     | 0.54              |
| 18:AT:76:VAL:CG2   | 18:AT:102:HIS:O   | 2.56                     | 0.54              |
| 19:AU:31:HIS:CE1   | 19:AU:33:LYS:HB3  | 2.43                     | 0.54              |
| 20:AV:52:SER:O     | 20:AV:53:PRO:C    | 2.48                     | 0.54              |
| 21:AW:139:VAL:HG12 | 21:AW:140:ASP:N   | 2.23                     | 0.54              |
| 22:AX:53:MET:HE3   | 22:AX:58:THR:N    | 2.23                     | 0.54              |
| 22:AX:54:GLY:C     | 22:AX:56:ASP:N    | 2.66                     | 0.54              |
| 22:AX:78:TYR:CD1   | 22:AX:78:TYR:N    | 2.75                     | 0.54              |
| 23:AY:63:ARG:HB3   | 23:AY:63:ARG:NH2  | 2.22                     | 0.54              |
| 28:Ad:5:TRP:HZ3    | 28:Ad:12:ARG:NH1  | 2.04                     | 0.54              |
| 28:Ad:22:MET:C     | 28:Ad:28:ARG:HG2  | 2.33                     | 0.54              |
| 28:Ad:35:ARG:NH1   | 28:Ad:35:ARG:HB2  | 2.22                     | 0.54              |
| 29:Ae:29:LYS:NZ    | 29:Ae:36:LYS:HZ3  | 2.05                     | 0.54              |
| 30:Af:22:ARG:HB3   | 30:Af:24:TYR:CE1  | 2.42                     | 0.54              |
| 32:AJ:74:ALA:CB    | 32:AJ:126:MET:HE2 | 2.38                     | 0.54              |
| 33:Ag:3:UNK:O      | 33:Ag:144:UNK:N   | 2.41                     | 0.54              |
| 33:Ag:11:UNK:CB    | 33:Ag:152:UNK:N   | 2.71                     | 0.54              |
| 33:Ag:339:UNK:CB   | 33:Ag:345:UNK:CB  | 2.85                     | 0.54              |
| 34:BA:49:U:N1      | 34:BA:364:A:N6    | 2.54                     | 0.54              |
| 34:BA:192:U:H4'    | 53:BX:103:GLY:N   | 2.23                     | 0.54              |
| 34:BA:246:A:HO2'   | 34:BA:247:G:C1'   | 2.17                     | 0.54              |
| 34:BA:450:G:H5''   | 34:BA:451:A:H3'   | 1.90                     | 0.54              |
| 34:BA:519:C:C4     | 34:BA:520:A:N3    | 2.76                     | 0.54              |
| 34:BA:553:A:C2     | 34:BA:554:C:C2    | 2.96                     | 0.54              |
| 34:BA:597:G:C5     | 34:BA:644:G:C2    | 2.96                     | 0.54              |
| 34:BA:635:G:C6     | 34:BA:636:U:C4    | 2.96                     | 0.54              |
| 34:BA:647:C:O2'    | 34:BA:648:A:H5'   | 2.08                     | 0.54              |
| 34:BA:1037:C:C4    | 34:BA:1038:C:N4   | 2.76                     | 0.54              |
| 34:BA:1053:G:O6    | 34:BA:1199:U:H2'  | 2.08                     | 0.54              |
| 34:BA:1145:C:O2'   | 34:BA:1146:A:C8   | 2.61                     | 0.54              |
| 34:BA:1240:U:O2'   | 34:BA:1241:G:OP1  | 2.22                     | 0.54              |
| 34:BA:1300:G:O2'   | 34:BA:1301:U:P    | 2.66                     | 0.54              |
| 34:BA:1345:U:N3    | 34:BA:1377:A:C6   | 2.75                     | 0.54              |
| 34:BA:1346:A:N6    | 34:BA:1375:A:OP2  | 2.40                     | 0.54              |
| 34:BA:1353:G:C4    | 34:BA:1370:G:N2   | 2.76                     | 0.54              |
| 34:BA:1373:G:H4'   | 40:BK:34:GLY:O    | 2.08                     | 0.54              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1468:A:H2'   | 34:BA:1469:G:H5'   | 1.89                     | 0.54              |
| 34:BA:1512:U:C2    | 34:BA:1513:A:N7    | 2.76                     | 0.54              |
| 35:BF:82:ARG:HA    | 35:BF:92:TYR:OH    | 2.08                     | 0.54              |
| 36:BG:28:GLN:C     | 36:BG:30:ARG:HD3   | 2.33                     | 0.54              |
| 36:BG:35:GLU:O     | 36:BG:39:ILE:HG13  | 2.07                     | 0.54              |
| 36:BG:151:VAL:HG13 | 36:BG:200:ALA:HB2  | 1.90                     | 0.54              |
| 36:BG:182:ILE:HG22 | 36:BG:183:ASP:N    | 2.22                     | 0.54              |
| 37:BH:80:GLU:O     | 37:BH:81:GLU:C     | 2.51                     | 0.54              |
| 38:BI:5:ASP:O      | 38:BI:36:ASP:HA    | 2.07                     | 0.54              |
| 38:BI:9:LYS:HB2    | 38:BI:33:VAL:CB    | 2.32                     | 0.54              |
| 38:BI:43:LEU:N     | 38:BI:65:ASN:ND2   | 2.48                     | 0.54              |
| 38:BI:76:ILE:HG23  | 38:BI:77:PRO:HD2   | 1.89                     | 0.54              |
| 38:BI:149:GLU:O    | 38:BI:150:ARG:C    | 2.51                     | 0.54              |
| 39:BJ:80:ARG:CB    | 39:BJ:88:VAL:HG21  | 2.38                     | 0.54              |
| 41:BL:111:ILE:HG23 | 41:BL:119:LEU:O    | 2.07                     | 0.54              |
| 42:BM:9:ARG:CD     | 42:BM:14:VAL:HG13  | 2.38                     | 0.54              |
| 42:BM:15:ALA:HB3   | 42:BM:76:ALA:HB3   | 1.88                     | 0.54              |
| 42:BM:15:ALA:HB2   | 42:BM:73:GLN:O     | 2.07                     | 0.54              |
| 43:BN:23:ILE:O     | 43:BN:27:ALA:HB3   | 2.08                     | 0.54              |
| 45:BP:7:ILE:HG22   | 45:BP:8:ASN:N      | 2.23                     | 0.54              |
| 45:BP:34:ARG:HA    | 45:BP:84:LEU:HB2   | 1.89                     | 0.54              |
| 46:BQ:15:VAL:O     | 46:BQ:18:ALA:HB3   | 2.06                     | 0.54              |
| 46:BQ:16:ASP:HB3   | 46:BQ:34:LEU:HD12  | 0.54                     | 0.54              |
| 46:BQ:96:LEU:CB    | 46:BQ:97:PRO:CD    | 2.86                     | 0.54              |
| 47:BR:13:THR:C     | 47:BR:15:LYS:N     | 2.66                     | 0.54              |
| 53:BX:83:ARG:HA    | 53:BX:86:ARG:CD    | 2.38                     | 0.54              |
| 56:BD:51:U:N3      | 56:BD:64:A:C2      | 2.76                     | 0.54              |
| 56:BE:2:C:O2       | 56:BE:71:G:C1'     | 2.41                     | 0.54              |
| 57:BZ:6:ARG:NH1    | 57:BZ:196:ALA:CB   | 2.71                     | 0.54              |
| 57:BZ:61:THR:HG22  | 57:BZ:65:LYS:CB    | 2.25                     | 0.54              |
| 57:BZ:69:ARG:NH1   | 57:BZ:253:LYS:HZ3  | 2.01                     | 0.54              |
| 57:BZ:316:SER:CB   | 57:BZ:317:PRO:CD   | 2.86                     | 0.54              |
| 57:BZ:488:LEU:CD1  | 57:BZ:525:GLY:HA3  | 2.22                     | 0.54              |
| 57:BZ:495:LYS:H    | 57:BZ:538:LEU:HD11 | 1.73                     | 0.54              |
| 57:BZ:576:GLU:CA   | 57:BZ:588:ARG:O    | 2.55                     | 0.54              |
| 1:AA:71:A:H2       | 1:AA:73:A:N1       | 2.06                     | 0.53              |
| 1:AA:143:C:H2'     | 1:AA:144:C:H6      | 1.71                     | 0.53              |
| 1:AA:164:U:H2'     | 1:AA:172:C:O4'     | 2.08                     | 0.53              |
| 1:AA:237:C:C2      | 1:AA:238:C:C5      | 2.96                     | 0.53              |
| 1:AA:247:G:H1      | 29:Ae:8:LYS:HD2    | 1.72                     | 0.53              |
| 1:AA:498:G:C2'     | 1:AA:499:U:H5'     | 2.38                     | 0.53              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:527:C:H2'   | 9:AK:114:ARG:NH1  | 2.23                     | 0.53              |
| 1:AA:543:C:C2    | 1:AA:544:C:C5     | 2.95                     | 0.53              |
| 1:AA:849:A:C4    | 1:AA:850:C:C6     | 2.95                     | 0.53              |
| 1:AA:858:U:H3'   | 1:AA:859:G:N3     | 2.23                     | 0.53              |
| 1:AA:945:A:OP1   | 1:AA:945:A:C4'    | 2.54                     | 0.53              |
| 1:AA:956:G:H3'   | 1:AA:956:G:C8     | 2.44                     | 0.53              |
| 1:AA:957:A:C2    | 1:AA:2459:A:C5'   | 2.91                     | 0.53              |
| 1:AA:1311:G:C8   | 28:Ad:48:LYS:HD3  | 2.43                     | 0.53              |
| 1:AA:1351:C:O2'  | 1:AA:1571:A:C8    | 2.59                     | 0.53              |
| 1:AA:1353:A:H2'  | 1:AA:1354:A:O4'   | 2.07                     | 0.53              |
| 1:AA:1432:C:O2'  | 1:AA:1433:U:H5'   | 2.08                     | 0.53              |
| 1:AA:1475:G:N3   | 1:AA:1475:G:C2'   | 2.71                     | 0.53              |
| 1:AA:1566:A:C2   | 4:AD:215:LEU:CD1  | 2.77                     | 0.53              |
| 1:AA:1566:A:C5   | 4:AD:215:LEU:HD22 | 2.42                     | 0.53              |
| 1:AA:1604:C:O2'  | 1:AA:1605:C:C5'   | 2.55                     | 0.53              |
| 1:AA:1607:C:C2'  | 1:AA:1607:C:O2    | 2.56                     | 0.53              |
| 1:AA:1656:C:H5'  | 5:AE:136:ARG:NH1  | 2.23                     | 0.53              |
| 1:AA:1672:C:C2'  | 1:AA:1673:U:H5''  | 2.39                     | 0.53              |
| 1:AA:1681:G:C6   | 1:AA:1762:A:N7    | 2.76                     | 0.53              |
| 1:AA:1691:C:N3   | 1:AA:1697:G:N2    | 2.56                     | 0.53              |
| 1:AA:1759:A:OP2  | 1:AA:1759:A:H3'   | 2.08                     | 0.53              |
| 1:AA:1772:G:H21  | 1:AA:1774:C:C5'   | 2.21                     | 0.53              |
| 1:AA:1773:A:C6   | 1:AA:1829:A:C1'   | 2.88                     | 0.53              |
| 1:AA:1784:A:C8   | 1:AA:1981:A:C5    | 2.96                     | 0.53              |
| 1:AA:1818:U:O4   | 4:AD:67:PHE:CE1   | 2.61                     | 0.53              |
| 1:AA:1906:G:H2'  | 1:AA:1907:G:H8    | 1.72                     | 0.53              |
| 1:AA:1997:G:C2   | 1:AA:1998:G:C4    | 2.96                     | 0.53              |
| 1:AA:2051:A:H1'  | 5:AE:141:ILE:HD11 | 1.88                     | 0.53              |
| 1:AA:2059:A:C2   | 1:AA:2503:A:N6    | 2.65                     | 0.53              |
| 1:AA:2134:A:C6   | 1:AA:2135:A:H2    | 2.26                     | 0.53              |
| 1:AA:2263:C:H4'  | 1:AA:2329:G:H4'   | 1.90                     | 0.53              |
| 1:AA:2523:G:C1'  | 1:AA:2765:A:N7    | 2.71                     | 0.53              |
| 1:AA:2661:G:OP1  | 57:BZ:14:VAL:HG11 | 2.07                     | 0.53              |
| 1:AA:2766:G:C2   | 1:AA:2767:C:C5    | 2.96                     | 0.53              |
| 2:AB:89:G:C8     | 2:AB:89(A):A:N7   | 2.76                     | 0.53              |
| 3:AC:43:VAL:HG13 | 3:AC:213:TYR:CA   | 2.38                     | 0.53              |
| 4:AD:46:GLN:O    | 4:AD:47:GLY:C     | 2.50                     | 0.53              |
| 4:AD:53:PHE:C    | 4:AD:54:ARG:O     | 2.50                     | 0.53              |
| 4:AD:253:GLN:O   | 4:AD:254:THR:HG23 | 2.07                     | 0.53              |
| 5:AE:51:PHE:HD1  | 5:AE:76:ARG:HG2   | 1.73                     | 0.53              |
| 5:AE:151:TYR:OH  | 5:AE:152:LYS:HG3  | 2.08                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:AG:99:MET:O     | 7:AG:102:PHE:CB   | 2.57                     | 0.53              |
| 9:AK:30:ILE:C     | 9:AK:33:LEU:HB3   | 2.33                     | 0.53              |
| 9:AK:55:VAL:O     | 9:AK:56:ASN:C     | 2.50                     | 0.53              |
| 11:AM:49:ARG:HG3  | 29:Ae:52:LYS:CG   | 2.38                     | 0.53              |
| 12:AN:56:ARG:HD2  | 12:AN:56:ARG:C    | 2.33                     | 0.53              |
| 12:AN:99:PRO:CG   | 12:AN:101:ARG:NE  | 2.69                     | 0.53              |
| 14:AP:28:VAL:CG1  | 14:AP:90:GLY:HA2  | 2.39                     | 0.53              |
| 14:AP:42:ASP:C    | 14:AP:44:LYS:N    | 2.59                     | 0.53              |
| 14:AP:57:LYS:NZ   | 14:AP:65:VAL:CA   | 2.67                     | 0.53              |
| 14:AP:59:LYS:H    | 14:AP:59:LYS:HE2  | 1.73                     | 0.53              |
| 14:AP:74:ALA:CB   | 14:AP:108:GLY:HA3 | 2.35                     | 0.53              |
| 16:AR:47:TYR:OH   | 17:AS:77:ALA:CA   | 2.57                     | 0.53              |
| 16:AR:88:ILE:HB   | 17:AS:52:VAL:CA   | 2.38                     | 0.53              |
| 16:AR:112:ARG:NH1 | 17:AS:50:PRO:CG   | 2.54                     | 0.53              |
| 17:AS:3:ALA:CB    | 17:AS:44:LYS:NZ   | 2.70                     | 0.53              |
| 18:AT:42:ARG:HG3  | 18:AT:43:GLY:H    | 1.70                     | 0.53              |
| 18:AT:74:ALA:HB2  | 18:AT:106:ILE:H   | 1.74                     | 0.53              |
| 23:AY:30:LEU:HD11 | 23:AY:48:LEU:CD2  | 2.39                     | 0.53              |
| 23:AY:54:ARG:HH21 | 23:AY:54:ARG:CG   | 2.19                     | 0.53              |
| 25:Aa:22:ILE:N    | 25:Aa:22:ILE:HD12 | 2.23                     | 0.53              |
| 26:Ab:51:TYR:CD1  | 26:Ab:55:ARG:N    | 2.74                     | 0.53              |
| 27:Ac:50:ARG:CZ   | 27:Ac:52:VAL:CG2  | 2.83                     | 0.53              |
| 28:Ad:8:ASN:ND2   | 28:Ad:10:ARG:N    | 2.56                     | 0.53              |
| 29:Ae:33:ASN:C    | 29:Ae:34:TRP:CG   | 2.83                     | 0.53              |
| 31:AI:38:HIS:O    | 31:AI:42:GLN:CB   | 2.56                     | 0.53              |
| 32:AJ:17:ALA:CB   | 32:AJ:41:PHE:CA   | 2.86                     | 0.53              |
| 34:BA:36:C:O3'    | 45:BP:123:LYS:HA  | 2.09                     | 0.53              |
| 34:BA:145:G:N1    | 34:BA:178:C:C4    | 2.76                     | 0.53              |
| 34:BA:265:G:C4    | 34:BA:267:C:C6    | 2.96                     | 0.53              |
| 34:BA:321:A:H2'   | 34:BA:322:C:C6    | 2.43                     | 0.53              |
| 34:BA:509:A:OP1   | 37:BH:52:SER:HB3  | 2.08                     | 0.53              |
| 34:BA:559:A:C8    | 34:BA:561:U:C5    | 2.96                     | 0.53              |
| 34:BA:607:A:C4    | 34:BA:608:A:C8    | 2.96                     | 0.53              |
| 34:BA:622:A:H2'   | 34:BA:623:C:C5'   | 2.37                     | 0.53              |
| 34:BA:628:G:H2'   | 34:BA:629:G:O4'   | 2.08                     | 0.53              |
| 34:BA:855:G:O5'   | 34:BA:871:U:O4    | 2.25                     | 0.53              |
| 34:BA:876:G:H1'   | 41:BL:11:THR:HG21 | 1.90                     | 0.53              |
| 34:BA:960:U:N3    | 34:BA:1225:A:C5   | 2.75                     | 0.53              |
| 34:BA:991:U:O2'   | 34:BA:993:G:H8    | 1.91                     | 0.53              |
| 34:BA:1057:G:C5   | 34:BA:1204:A:C2   | 2.96                     | 0.53              |
| 34:BA:1133:G:C6   | 34:BA:1134:G:N7   | 2.77                     | 0.53              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1134:G:C6   | 34:BA:1135:U:C1'   | 2.90                     | 0.53              |
| 34:BA:1228:C:OP1  | 46:BQ:108:ARG:NH2  | 2.41                     | 0.53              |
| 34:BA:1342:C:H2'  | 34:BA:1343:G:H8    | 1.73                     | 0.53              |
| 34:BA:1350:A:P    | 42:BM:118:LYS:HG3  | 2.48                     | 0.53              |
| 34:BA:1490:C:OP2  | 58:BA:1601:NMY:N19 | 2.41                     | 0.53              |
| 35:BF:35:GLU:HG2  | 35:BF:39:ILE:C     | 2.33                     | 0.53              |
| 35:BF:69:LEU:HD22 | 35:BF:92:TYR:N     | 2.22                     | 0.53              |
| 35:BF:80:ILE:HD13 | 35:BF:211:ILE:HG21 | 1.90                     | 0.53              |
| 35:BF:84:GLU:OE1  | 35:BF:233:SER:OG   | 2.23                     | 0.53              |
| 35:BF:102:LEU:CB  | 35:BF:176:GLU:OE1  | 2.52                     | 0.53              |
| 36:BG:40:ARG:NH1  | 36:BG:40:ARG:HG3   | 2.21                     | 0.53              |
| 36:BG:66:VAL:HG12 | 36:BG:66:VAL:O     | 2.08                     | 0.53              |
| 36:BG:140:ARG:HB3 | 36:BG:140:ARG:CZ   | 2.38                     | 0.53              |
| 36:BG:142:MET:HB3 | 36:BG:149:ALA:HB2  | 1.90                     | 0.53              |
| 37:BH:159:ARG:HG2 | 37:BH:159:ARG:HH11 | 1.73                     | 0.53              |
| 38:BI:44:GLY:HA3  | 38:BI:61:TYR:HB2   | 1.90                     | 0.53              |
| 38:BI:141:GLN:OE1 | 38:BI:141:GLN:CA   | 2.55                     | 0.53              |
| 39:BJ:19:LEU:HG   | 39:BJ:23:LYS:HD3   | 1.89                     | 0.53              |
| 39:BJ:20:ALA:O    | 39:BJ:24:GLU:HG3   | 2.08                     | 0.53              |
| 39:BJ:46:ARG:NH2  | 51:BV:37:VAL:CG2   | 2.68                     | 0.53              |
| 39:BJ:79:LEU:O    | 39:BJ:85:VAL:HG21  | 2.07                     | 0.53              |
| 40:BK:29:LYS:NZ   | 40:BK:102:ARG:HB2  | 2.12                     | 0.53              |
| 40:BK:71:PRO:C    | 40:BK:96:GLN:HE21  | 2.16                     | 0.53              |
| 40:BK:107:ALA:CB  | 40:BK:123:GLU:OE1  | 2.56                     | 0.53              |
| 41:BL:10:LEU:CA   | 41:BL:13:ILE:HD12  | 2.37                     | 0.53              |
| 41:BL:18:ARG:H    | 41:BL:18:ARG:CD    | 2.21                     | 0.53              |
| 41:BL:34:GLU:C    | 41:BL:37:ARG:HB3   | 2.32                     | 0.53              |
| 41:BL:96:GLY:O    | 41:BL:97:VAL:C     | 2.51                     | 0.53              |
| 41:BL:126:LYS:HZ1 | 41:BL:127:LEU:HB2  | 1.73                     | 0.53              |
| 44:BO:91:ARG:HD2  | 44:BO:95:ILE:HD11  | 1.90                     | 0.53              |
| 46:BQ:65:LYS:CA   | 46:BQ:66:LEU:CB    | 2.86                     | 0.53              |
| 46:BQ:105:THR:O   | 46:BQ:106:ASN:HB2  | 2.08                     | 0.53              |
| 47:BR:27:CYS:N    | 47:BR:43:CYS:HB3   | 2.23                     | 0.53              |
| 47:BR:35:ARG:C    | 47:BR:37:PHE:N     | 2.67                     | 0.53              |
| 47:BR:42:ILE:HG13 | 47:BR:43:CYS:H     | 1.72                     | 0.53              |
| 48:BS:26:GLU:OE2  | 48:BS:26:GLU:CA    | 2.56                     | 0.53              |
| 48:BS:35:ARG:CZ   | 48:BS:35:ARG:HB3   | 2.37                     | 0.53              |
| 49:BT:75:ARG:CG   | 49:BT:80:PHE:CB    | 2.81                     | 0.53              |
| 53:BX:27:LYS:C    | 53:BX:27:LYS:CD    | 2.79                     | 0.53              |
| 55:BC:34:G:C3'    | 55:BC:35:A:C5'     | 2.86                     | 0.53              |
| 55:BC:38:A:N1     | 55:BC:39:U:C5      | 2.76                     | 0.53              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 57:BZ:6:ARG:NE   | 57:BZ:195:PRO:C   | 2.66                     | 0.53              |
| 57:BZ:29:SER:OG  | 57:BZ:58:ALA:CB   | 2.55                     | 0.53              |
| 57:BZ:81:PHE:C   | 57:BZ:361:ARG:HB3 | 2.28                     | 0.53              |
| 57:BZ:128:ASN:C  | 57:BZ:130:VAL:H   | 2.14                     | 0.53              |
| 1:AA:184:C:H2'   | 1:AA:185:U:C5     | 2.41                     | 0.53              |
| 1:AA:248:G:OP1   | 25:Aa:28:LYS:CE   | 2.56                     | 0.53              |
| 1:AA:265:A:C6    | 1:AA:428:A:N7     | 2.76                     | 0.53              |
| 1:AA:269:U:N3    | 1:AA:424:G:C6     | 2.76                     | 0.53              |
| 1:AA:269:U:N3    | 1:AA:424:G:N1     | 2.56                     | 0.53              |
| 1:AA:278:A:H2'   | 1:AA:279:C:C2     | 2.44                     | 0.53              |
| 1:AA:280:C:H41   | 1:AA:283:A:N6     | 2.01                     | 0.53              |
| 1:AA:318:C:O2'   | 1:AA:319:C:H5'    | 2.08                     | 0.53              |
| 1:AA:412:A:H2'   | 1:AA:413:C:C5'    | 2.38                     | 0.53              |
| 1:AA:514:A:H2'   | 1:AA:515:A:H5'    | 1.91                     | 0.53              |
| 1:AA:775:G:C2'   | 1:AA:794:G:C8     | 2.89                     | 0.53              |
| 1:AA:1007:C:H2'  | 1:AA:1008:C:H5    | 1.70                     | 0.53              |
| 1:AA:1031:G:N1   | 1:AA:1032:A:C6    | 2.75                     | 0.53              |
| 1:AA:1058:G:C2   | 1:AA:1059:G:N7    | 2.76                     | 0.53              |
| 1:AA:1076:C:H2'  | 1:AA:1077:A:O4'   | 2.08                     | 0.53              |
| 1:AA:1291:C:H2'  | 1:AA:1292:U:O4'   | 2.09                     | 0.53              |
| 1:AA:1314:C:N3   | 1:AA:1315:C:C5    | 2.76                     | 0.53              |
| 1:AA:1427:A:O2'  | 1:AA:1428:C:OP2   | 2.27                     | 0.53              |
| 1:AA:1534:G:N2   | 1:AA:1538:G:C8    | 2.77                     | 0.53              |
| 1:AA:1608:A:C4'  | 1:AA:1609:A:OP1   | 2.56                     | 0.53              |
| 1:AA:1660:C:C4   | 1:AA:2001:A:N6    | 2.76                     | 0.53              |
| 1:AA:1693:U:O2   | 1:AA:1693:U:C2'   | 2.56                     | 0.53              |
| 1:AA:1779:U:C6   | 1:AA:1779:U:C3'   | 2.91                     | 0.53              |
| 1:AA:1789:A:C8   | 1:AA:1790:C:C5    | 2.97                     | 0.53              |
| 1:AA:1803:A:C8   | 1:AA:1803:A:OP2   | 2.60                     | 0.53              |
| 1:AA:1839:G:C8   | 1:AA:1927:A:H5'   | 2.43                     | 0.53              |
| 1:AA:1856:G:C2'  | 1:AA:1857:G:H5'   | 2.33                     | 0.53              |
| 1:AA:1909:C:H2'  | 1:AA:1910:G:C8    | 2.42                     | 0.53              |
| 1:AA:1952:A:C5   | 1:AA:1953:A:N1    | 2.76                     | 0.53              |
| 1:AA:1965:C:C5'  | 1:AA:1966:A:H3'   | 2.39                     | 0.53              |
| 1:AA:2045:C:O2'  | 26:Ab:22:HIS:HB2  | 2.09                     | 0.53              |
| 1:AA:2118:U:OP1  | 1:AA:2147:G:N1    | 2.40                     | 0.53              |
| 1:AA:2273:A:C8   | 1:AA:2274:A:O4'   | 2.62                     | 0.53              |
| 1:AA:2350:C:HO2' | 1:AA:2351:G:P     | 2.31                     | 0.53              |
| 1:AA:2623:G:H21  | 26:Ab:22:HIS:CE1  | 2.23                     | 0.53              |
| 1:AA:2675:A:C4'  | 10:AL:29:ASN:OD1  | 2.47                     | 0.53              |
| 1:AA:2690:C:C2'  | 1:AA:2691:C:OP2   | 2.56                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2704:C:H2'   | 1:AA:2705:A:N9    | 2.23                     | 0.53              |
| 1:AA:2720:U:C3'   | 1:AA:2721:A:H8    | 2.21                     | 0.53              |
| 1:AA:2849:U:C2'   | 1:AA:2850:A:OP2   | 2.57                     | 0.53              |
| 2:AB:59:A:C5      | 2:AB:60:C:C6      | 2.96                     | 0.53              |
| 2:AB:85:G:N3      | 2:AB:86:G:C8      | 2.76                     | 0.53              |
| 3:AC:126:LYS:O    | 3:AC:130:ILE:HD13 | 2.07                     | 0.53              |
| 4:AD:5:LYS:HD3    | 4:AD:31:LYS:NZ    | 2.23                     | 0.53              |
| 4:AD:45:ASN:O     | 4:AD:46:GLN:HG3   | 2.08                     | 0.53              |
| 4:AD:199:ALA:O    | 4:AD:202:LYS:N    | 2.40                     | 0.53              |
| 4:AD:234:GLY:CA   | 4:AD:241:PRO:HG3  | 2.38                     | 0.53              |
| 5:AE:47:VAL:CA    | 5:AE:48:GLN:NE2   | 2.71                     | 0.53              |
| 5:AE:51:PHE:HE1   | 5:AE:76:ARG:N     | 2.06                     | 0.53              |
| 5:AE:103:ASP:C    | 5:AE:104:VAL:CG2  | 2.81                     | 0.53              |
| 5:AE:185:LYS:HD3  | 5:AE:185:LYS:O    | 2.09                     | 0.53              |
| 6:AF:156:LEU:O    | 6:AF:176:LEU:O    | 2.26                     | 0.53              |
| 7:AG:26:GLN:HE22  | 7:AG:31:VAL:HG22  | 1.74                     | 0.53              |
| 7:AG:26:GLN:O     | 7:AG:27:ASN:HB2   | 2.09                     | 0.53              |
| 8:AH:73:ALA:O     | 8:AH:76:VAL:CG2   | 2.47                     | 0.53              |
| 8:AH:85:LYS:NZ    | 8:AH:142:GLY:CA   | 2.72                     | 0.53              |
| 8:AH:94:TYR:HE2   | 8:AH:96:ALA:CB    | 2.19                     | 0.53              |
| 8:AH:122:THR:O    | 8:AH:133:VAL:CG2  | 2.56                     | 0.53              |
| 8:AH:148:ILE:HG23 | 8:AH:162:ILE:HD13 | 1.89                     | 0.53              |
| 8:AH:149:ARG:CA   | 8:AH:162:ILE:HD13 | 2.37                     | 0.53              |
| 9:AK:42:TRP:C     | 9:AK:43:THR:OG1   | 2.51                     | 0.53              |
| 10:AL:6:THR:CA    | 10:AL:7:TYR:HD1   | 2.21                     | 0.53              |
| 10:AL:77:ILE:HG12 | 15:AQ:75:ILE:HD11 | 1.91                     | 0.53              |
| 11:AM:48:PRO:O    | 11:AM:51:PHE:HB2  | 2.08                     | 0.53              |
| 11:AM:57:THR:HG21 | 29:Ae:31:HIS:HD2  | 1.73                     | 0.53              |
| 12:AN:6:ARG:CG    | 12:AN:70:PRO:HB3  | 2.38                     | 0.53              |
| 12:AN:42:ILE:O    | 12:AN:94:VAL:CG2  | 2.57                     | 0.53              |
| 13:AO:5:LYS:C     | 13:AO:5:LYS:HZ3   | 2.17                     | 0.53              |
| 14:AP:28:VAL:HB   | 14:AP:101:LEU:HG  | 1.90                     | 0.53              |
| 15:AQ:28:VAL:HG13 | 15:AQ:92:GLY:N    | 2.24                     | 0.53              |
| 15:AQ:48:ILE:HG12 | 15:AQ:49:VAL:N    | 2.22                     | 0.53              |
| 16:AR:50:ARG:NE   | 17:AS:75:PHE:HE2  | 2.02                     | 0.53              |
| 16:AR:113:ALA:HA  | 16:AR:116:ALA:HB2 | 1.90                     | 0.53              |
| 17:AS:14:VAL:CG1  | 17:AS:19:LYS:HE2  | 2.38                     | 0.53              |
| 17:AS:15:GLU:CD   | 17:AS:16:PRO:CD   | 2.79                     | 0.53              |
| 17:AS:33:VAL:O    | 17:AS:63:GLY:HA2  | 2.08                     | 0.53              |
| 18:AT:33:ARG:O    | 18:AT:34:ASN:C    | 2.51                     | 0.53              |
| 19:AU:30:VAL:HG23 | 19:AU:77:LYS:HD3  | 1.89                     | 0.53              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 20:AV:14:LEU:HB2   | 20:AV:20:TYR:H     | 1.72                     | 0.53              |
| 20:AV:37:VAL:HG13  | 20:AV:39:VAL:HG23  | 1.89                     | 0.53              |
| 21:AW:20:ARG:HG3   | 21:AW:20:ARG:HH11  | 1.74                     | 0.53              |
| 21:AW:153:SER:N    | 21:AW:168:GLU:HB2  | 2.24                     | 0.53              |
| 22:AX:72:ARG:HD3   | 22:AX:75:LEU:HD22  | 1.89                     | 0.53              |
| 24:AZ:39:ASP:C     | 24:AZ:44:ARG:HD3   | 2.32                     | 0.53              |
| 25:Aa:21:VAL:CG1   | 25:Aa:22:ILE:N     | 2.63                     | 0.53              |
| 27:Ac:41:PRO:HD2   | 27:Ac:47:THR:OG1   | 2.08                     | 0.53              |
| 28:Ad:5:TRP:CE3    | 28:Ad:5:TRP:C      | 2.86                     | 0.53              |
| 28:Ad:11:LYS:HD2   | 28:Ad:15:THR:HG23  | 1.90                     | 0.53              |
| 29:Ae:27:THR:H     | 29:Ae:44:LYS:HZ1   | 1.56                     | 0.53              |
| 32:AJ:34:ILE:HD13  | 32:AJ:35:MET:O     | 2.07                     | 0.53              |
| 34:BA:20:U:O4'     | 34:BA:572:A:N1     | 2.40                     | 0.53              |
| 34:BA:51:A:C2'     | 34:BA:52:G:OP2     | 2.56                     | 0.53              |
| 34:BA:114:U:H2'    | 34:BA:115:G:H8     | 1.68                     | 0.53              |
| 34:BA:294:U:O2     | 34:BA:295:C:C5     | 2.61                     | 0.53              |
| 34:BA:328:C:H3'    | 34:BA:328:C:O2     | 2.08                     | 0.53              |
| 34:BA:429:U:H1'    | 34:BA:430:A:H5''   | 1.90                     | 0.53              |
| 34:BA:591:U:H2'    | 34:BA:592:G:H8     | 1.71                     | 0.53              |
| 34:BA:691:G:N2     | 44:BO:51:LYS:HZ3   | 2.06                     | 0.53              |
| 34:BA:754:C:O2     | 34:BA:755:G:H5'    | 2.08                     | 0.53              |
| 34:BA:891:U:C5     | 34:BA:906:G:C2     | 2.95                     | 0.53              |
| 34:BA:998(A):C:H2' | 34:BA:998(A):C:O2  | 2.08                     | 0.53              |
| 34:BA:1003:G:OP2   | 34:BA:1004:A:N3    | 2.41                     | 0.53              |
| 34:BA:1036:G:N7    | 34:BA:1037:C:C5    | 2.76                     | 0.53              |
| 34:BA:1039:C:C4    | 34:BA:1040:U:C5    | 2.96                     | 0.53              |
| 34:BA:1106:G:C2    | 34:BA:1107:C:C2    | 2.96                     | 0.53              |
| 34:BA:1256:A:N6    | 34:BA:1278:U:O2'   | 2.42                     | 0.53              |
| 34:BA:1284:C:N3    | 34:BA:1285:A:N6    | 2.56                     | 0.53              |
| 34:BA:1365:G:C6    | 34:BA:1366:C:C4    | 2.95                     | 0.53              |
| 34:BA:1392:G:H2'   | 34:BA:1393:U:H6    | 1.73                     | 0.53              |
| 34:BA:1464:G:C2    | 34:BA:1465:C:N3    | 2.76                     | 0.53              |
| 35:BF:75:LYS:NZ    | 35:BF:75:LYS:CA    | 2.69                     | 0.53              |
| 35:BF:79:ASP:O     | 35:BF:83:MET:HG2   | 2.08                     | 0.53              |
| 35:BF:80:ILE:HD13  | 35:BF:212:GLN:HE21 | 1.73                     | 0.53              |
| 35:BF:82:ARG:HB2   | 35:BF:94:ASN:HD22  | 1.68                     | 0.53              |
| 35:BF:208:ILE:HD12 | 35:BF:239:VAL:HG11 | 1.91                     | 0.53              |
| 36:BG:43:LEU:HD11  | 36:BG:55:VAL:HG11  | 1.89                     | 0.53              |
| 36:BG:110:ASN:CG   | 36:BG:144:SER:OG   | 2.51                     | 0.53              |
| 36:BG:126:ARG:O    | 36:BG:127:ARG:CB   | 2.56                     | 0.53              |
| 37:BH:19:LEU:N     | 37:BH:33:MET:HE1   | 2.09                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 39:BJ:76:ALA:C    | 39:BJ:80:ARG:CZ   | 2.81                     | 0.53              |
| 40:BK:12:LEU:HD22 | 40:BK:24:THR:CG2  | 2.38                     | 0.53              |
| 40:BK:49:ILE:HD12 | 40:BK:49:ILE:H    | 1.72                     | 0.53              |
| 40:BK:78:ARG:HE   | 40:BK:80:VAL:CG2  | 2.21                     | 0.53              |
| 40:BK:108:ALA:HA  | 40:BK:111:ARG:HG3 | 1.90                     | 0.53              |
| 41:BL:69:ARG:NH2  | 41:BL:75:ARG:O    | 2.41                     | 0.53              |
| 41:BL:70:GLN:HE21 | 41:BL:70:GLN:HA   | 1.72                     | 0.53              |
| 43:BN:60:ARG:HB2  | 43:BN:60:ARG:NH1  | 2.23                     | 0.53              |
| 46:BQ:46:LYS:O    | 46:BQ:47:ASP:HB2  | 2.09                     | 0.53              |
| 46:BQ:92:HIS:HA   | 46:BQ:110:ARG:NH2 | 2.23                     | 0.53              |
| 47:BR:10:ALA:C    | 47:BR:12:ARG:N    | 2.64                     | 0.53              |
| 48:BS:55:GLY:O    | 48:BS:56:LEU:C    | 2.51                     | 0.53              |
| 48:BS:79:ARG:HA   | 48:BS:82:ILE:CG1  | 2.38                     | 0.53              |
| 49:BT:12:LYS:O    | 49:BT:13:HIS:HB2  | 2.08                     | 0.53              |
| 50:BU:88:TYR:HA   | 50:BU:91:ARG:NH2  | 2.23                     | 0.53              |
| 52:BW:3:ARG:HH21  | 52:BW:3:ARG:HG2   | 1.73                     | 0.53              |
| 53:BX:21:LYS:HA   | 53:BX:24:LEU:CD1  | 2.36                     | 0.53              |
| 55:BC:38:A:H3'    | 55:BC:39:U:C5'    | 2.29                     | 0.53              |
| 55:BC:41:C:H2'    | 55:BC:41:C:O2     | 2.08                     | 0.53              |
| 56:BE:5:G:O6      | 56:BE:67:C:O2     | 2.24                     | 0.53              |
| 57:BZ:8:ILE:HD11  | 57:BZ:96:LEU:HD11 | 1.88                     | 0.53              |
| 57:BZ:81:PHE:CA   | 57:BZ:365:HIS:HD2 | 2.07                     | 0.53              |
| 57:BZ:240:ILE:N   | 57:BZ:286:ASP:CB  | 2.60                     | 0.53              |
| 57:BZ:320:GLY:N   | 57:BZ:321:LYS:HA  | 2.23                     | 0.53              |
| 57:BZ:363:GLU:CD  | 57:BZ:453:SER:OG  | 2.52                     | 0.53              |
| 57:BZ:502:PHE:CZ  | 57:BZ:555:VAL:CB  | 2.75                     | 0.53              |
| 1:AA:6:A:N3       | 1:AA:2898:U:H1'   | 2.23                     | 0.53              |
| 1:AA:112:U:C6     | 1:AA:112:U:OP2    | 2.60                     | 0.53              |
| 1:AA:228:A:H2'    | 1:AA:229:A:C5'    | 2.32                     | 0.53              |
| 1:AA:243:U:H5'    | 29:Ae:5:LYS:NZ    | 2.24                     | 0.53              |
| 1:AA:270(L):U:C6  | 1:AA:270(L):U:OP2 | 2.61                     | 0.53              |
| 1:AA:291:C:N4     | 1:AA:292:C:N4     | 2.56                     | 0.53              |
| 1:AA:510:C:P      | 1:AA:512:G:N1     | 2.74                     | 0.53              |
| 1:AA:531:C:O2     | 16:AR:28:ARG:CZ   | 2.57                     | 0.53              |
| 1:AA:531:C:O4'    | 1:AA:532:A:N3     | 2.41                     | 0.53              |
| 1:AA:601:C:O4'    | 6:AF:104:LYS:NZ   | 2.40                     | 0.53              |
| 1:AA:616:A:C4'    | 1:AA:617:G:OP1    | 2.54                     | 0.53              |
| 1:AA:834:C:O5'    | 1:AA:834:C:H6     | 1.91                     | 0.53              |
| 1:AA:1223:C:N1    | 1:AA:1227:A:N1    | 2.57                     | 0.53              |
| 1:AA:1406:U:C2'   | 1:AA:1407:C:O5'   | 2.56                     | 0.53              |
| 1:AA:1422:G:C2    | 1:AA:1423:G:C8    | 2.96                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1508:A:C5'   | 1:AA:1510:A:C5    | 2.90                     | 0.53              |
| 1:AA:1543:A:N7    | 1:AA:1544:C:H1'   | 2.23                     | 0.53              |
| 1:AA:1566:A:C2'   | 1:AA:1567:A:H5'   | 2.35                     | 0.53              |
| 1:AA:1689:A:C5    | 1:AA:1700:A:C5    | 2.96                     | 0.53              |
| 1:AA:1764:G:C6    | 1:AA:1989:G:C2    | 2.96                     | 0.53              |
| 1:AA:1813:G:H5''  | 1:AA:1814:G:OP2   | 2.09                     | 0.53              |
| 1:AA:1819:A:O2'   | 1:AA:1820:U:C5'   | 2.55                     | 0.53              |
| 1:AA:2045:C:O2'   | 1:AA:2046:G:H5'   | 2.08                     | 0.53              |
| 1:AA:2092:U:H5    | 1:AA:2227:A:C6    | 2.26                     | 0.53              |
| 1:AA:2095:C:H2'   | 1:AA:2096:U:O4'   | 2.08                     | 0.53              |
| 1:AA:2114:A:N6    | 1:AA:2170:A:H61   | 2.06                     | 0.53              |
| 1:AA:2126:A:N1    | 1:AA:2162:G:O2'   | 2.40                     | 0.53              |
| 1:AA:2166:G:C2    | 1:AA:2172:U:O4    | 2.61                     | 0.53              |
| 1:AA:2206:C:C2    | 1:AA:2207:C:C6    | 2.97                     | 0.53              |
| 1:AA:2312:U:P     | 7:AG:86:MET:HE2   | 2.48                     | 0.53              |
| 1:AA:2416:C:OP1   | 11:AM:59:LEU:C    | 2.52                     | 0.53              |
| 1:AA:2459:A:C6    | 1:AA:2493:U:O4    | 2.61                     | 0.53              |
| 1:AA:2496:C:C6    | 1:AA:2497:A:H2    | 2.26                     | 0.53              |
| 1:AA:2508:G:H5'   | 56:BD:75:C:H42    | 1.74                     | 0.53              |
| 1:AA:2596:U:H2'   | 4:AD:242:ARG:NH2  | 2.16                     | 0.53              |
| 1:AA:2720:U:O2    | 1:AA:2720:U:C2'   | 2.53                     | 0.53              |
| 1:AA:2787:C:O2'   | 5:AE:61:ARG:NH2   | 2.42                     | 0.53              |
| 1:AA:2834:G:H3'   | 1:AA:2834:G:C8    | 2.42                     | 0.53              |
| 2:AB:72:G:H5''    | 2:AB:73:A:OP1     | 2.09                     | 0.53              |
| 3:AC:29:VAL:CG1   | 3:AC:30:LYS:N     | 2.71                     | 0.53              |
| 4:AD:90:ALA:C     | 4:AD:91:ARG:NH1   | 2.66                     | 0.53              |
| 4:AD:133:LEU:HD12 | 4:AD:187:GLY:CA   | 2.39                     | 0.53              |
| 4:AD:134:ARG:CA   | 4:AD:168:ARG:HH22 | 2.21                     | 0.53              |
| 4:AD:244:ARG:HB3  | 4:AD:252:TRP:CD1  | 2.44                     | 0.53              |
| 5:AE:26:ILE:HG13  | 5:AE:181:LEU:HD23 | 1.91                     | 0.53              |
| 5:AE:97:LYS:HG3   | 5:AE:100:GLU:CD   | 2.33                     | 0.53              |
| 6:AF:46:ARG:HG2   | 6:AF:46:ARG:NH2   | 2.23                     | 0.53              |
| 6:AF:74:ARG:HH12  | 6:AF:76:GLY:H     | 1.55                     | 0.53              |
| 8:AH:98:LEU:HD21  | 8:AH:123:PHE:HD2  | 1.73                     | 0.53              |
| 9:AK:4:TYR:HB3    | 16:AR:64:ARG:HH22 | 1.73                     | 0.53              |
| 9:AK:99:LEU:HD12  | 9:AK:103:VAL:HG11 | 1.91                     | 0.53              |
| 10:AL:49:ARG:CZ   | 34:BA:1423:G:OP1  | 2.56                     | 0.53              |
| 11:AM:36:LYS:HZ2  | 11:AM:42:SER:CB   | 2.20                     | 0.53              |
| 11:AM:111:ARG:HD2 | 11:AM:129:ALA:HB2 | 1.89                     | 0.53              |
| 12:AN:106:VAL:O   | 12:AN:107:ALA:CB  | 2.56                     | 0.53              |
| 13:AO:53:HIS:HA   | 13:AO:56:LYS:CD   | 2.38                     | 0.53              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 14:AP:62:LYS:O     | 14:AP:65:VAL:HG13  | 2.07                     | 0.53              |
| 15:AQ:33:LYS:HG3   | 15:AQ:45:PHE:CE2   | 2.43                     | 0.53              |
| 15:AQ:105:LEU:HG   | 15:AQ:106:SER:N    | 2.23                     | 0.53              |
| 17:AS:67:GLY:HA2   | 17:AS:93:GLU:C     | 2.34                     | 0.53              |
| 17:AS:88:ARG:HG2   | 17:AS:89:GLN:N     | 2.22                     | 0.53              |
| 18:AT:5:ALA:O      | 18:AT:105:VAL:HG13 | 2.08                     | 0.53              |
| 18:AT:6:ILE:HG12   | 18:AT:104:THR:CA   | 2.29                     | 0.53              |
| 18:AT:8:ARG:O      | 18:AT:10:VAL:HG22  | 2.08                     | 0.53              |
| 19:AU:32:PRO:O     | 19:AU:33:LYS:CB    | 2.57                     | 0.53              |
| 19:AU:73:ARG:HH22  | 19:AU:74:PRO:C     | 2.16                     | 0.53              |
| 20:AV:32:PRO:C     | 20:AV:34:LYS:N     | 2.65                     | 0.53              |
| 21:AW:18:LEU:HB3   | 21:AW:23:LYS:C     | 2.32                     | 0.53              |
| 21:AW:25:PRO:CG    | 21:AW:84:GLU:O     | 2.56                     | 0.53              |
| 21:AW:98:MET:HG3   | 21:AW:133:ILE:CG2  | 2.24                     | 0.53              |
| 21:AW:163:LEU:HD12 | 21:AW:163:LEU:H    | 1.73                     | 0.53              |
| 22:AX:44:ARG:O     | 22:AX:77:ARG:CB    | 2.53                     | 0.53              |
| 23:AY:20:VAL:HG23  | 23:AY:55:LEU:CD2   | 2.38                     | 0.53              |
| 23:AY:27:LEU:HD12  | 23:AY:27:LEU:N     | 2.24                     | 0.53              |
| 25:Aa:50:VAL:C     | 25:Aa:51:ASP:CG    | 2.76                     | 0.53              |
| 27:Ac:9:LEU:O      | 27:Ac:10:LEU:HD23  | 2.08                     | 0.53              |
| 27:Ac:17:LYS:HZ2   | 27:Ac:50:ARG:HG3   | 1.73                     | 0.53              |
| 32:AJ:72:PRO:CA    | 32:AJ:77:LEU:HD23  | 2.26                     | 0.53              |
| 32:AJ:81:ALA:O     | 32:AJ:107:ILE:HD11 | 2.09                     | 0.53              |
| 34:BA:120:A:C8     | 34:BA:122:G:C6     | 2.97                     | 0.53              |
| 34:BA:300:A:C2'    | 34:BA:301:G:H5'    | 2.38                     | 0.53              |
| 34:BA:570:G:O2'    | 34:BA:819:A:H8     | 1.85                     | 0.53              |
| 34:BA:735:C:C4'    | 51:BV:75:ILE:HD11  | 2.38                     | 0.53              |
| 34:BA:818:G:C2'    | 34:BA:819:A:OP1    | 2.56                     | 0.53              |
| 34:BA:822:C:C2     | 34:BA:823:G:C8     | 2.96                     | 0.53              |
| 34:BA:1003:G:C2    | 34:BA:1004:A:O2'   | 2.53                     | 0.53              |
| 34:BA:1055:A:N7    | 34:BA:1206:G:C2    | 2.76                     | 0.53              |
| 34:BA:1059:C:O2'   | 43:BN:53:PRO:CD    | 2.56                     | 0.53              |
| 34:BA:1064:G:N2    | 34:BA:1192:C:N3    | 2.56                     | 0.53              |
| 34:BA:1155:G:H22   | 34:BA:1179:A:N6    | 2.04                     | 0.53              |
| 34:BA:1158:C:H1'   | 35:BF:133:LYS:HE3  | 1.89                     | 0.53              |
| 34:BA:1316:G:H5''  | 47:BR:17:LYS:HZ2   | 1.72                     | 0.53              |
| 34:BA:1338:G:O2'   | 56:BE:42:C:H4'     | 2.07                     | 0.53              |
| 34:BA:1440:C:O2    | 34:BA:1462:G:C2    | 2.61                     | 0.53              |
| 36:BG:17:ASP:O     | 36:BG:18:TRP:C     | 2.51                     | 0.53              |
| 37:BH:146:ILE:O    | 37:BH:146:ILE:CD1  | 2.56                     | 0.53              |
| 37:BH:191:ARG:C    | 37:BH:191:ARG:CD   | 2.81                     | 0.53              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 38:BI:60:TYR:HD1   | 38:BI:64:ARG:HD2  | 1.73                     | 0.53              |
| 38:BI:106:PRO:HG3  | 38:BI:122:GLU:OE2 | 2.07                     | 0.53              |
| 40:BK:21:VAL:HG23  | 40:BK:22:LEU:CD2  | 2.38                     | 0.53              |
| 43:BN:82:ILE:O     | 43:BN:86:MET:CB   | 2.56                     | 0.53              |
| 44:BO:63:LEU:O     | 44:BO:66:LEU:CB   | 2.57                     | 0.53              |
| 44:BO:71:LYS:O     | 44:BO:74:ALA:N    | 2.41                     | 0.53              |
| 45:BP:18:VAL:O     | 45:BP:19:ARG:CB   | 2.55                     | 0.53              |
| 51:BV:29:PHE:CE1   | 51:BV:36:ASN:OD1  | 2.62                     | 0.53              |
| 52:BW:3:ARG:NH2    | 52:BW:45:VAL:HG22 | 1.89                     | 0.53              |
| 52:BW:9:VAL:CA     | 52:BW:41:VAL:HG23 | 2.37                     | 0.53              |
| 53:BX:87:LYS:O     | 53:BX:91:LEU:HG   | 2.08                     | 0.53              |
| 56:BD:62:C:O2      | 56:BD:62:C:H2'    | 2.08                     | 0.53              |
| 57:BZ:106:MET:HB3  | 57:BZ:108:GLN:CD  | 2.34                     | 0.53              |
| 57:BZ:220:VAL:HG11 | 57:BZ:279:LEU:HB3 | 1.84                     | 0.53              |
| 57:BZ:363:GLU:OE2  | 57:BZ:453:SER:OG  | 2.25                     | 0.53              |
| 57:BZ:565:LEU:H    | 57:BZ:566:GLU:CG  | 2.08                     | 0.53              |
| 1:AA:48:G:H4'      | 1:AA:52:A:O4'     | 2.09                     | 0.53              |
| 1:AA:161:U:N3      | 1:AA:164:U:N3     | 2.54                     | 0.53              |
| 1:AA:322:A:O4'     | 1:AA:341:G:H5'    | 2.08                     | 0.53              |
| 1:AA:454:A:H8      | 1:AA:454:A:H3'    | 1.74                     | 0.53              |
| 1:AA:460:A:H3'     | 1:AA:461:C:H6     | 1.69                     | 0.53              |
| 1:AA:482:A:N3      | 1:AA:482:A:C2'    | 2.64                     | 0.53              |
| 1:AA:504:U:H5'     | 1:AA:506:G:OP1    | 2.09                     | 0.53              |
| 1:AA:586:A:OP1     | 6:AF:89:VAL:HG23  | 2.08                     | 0.53              |
| 1:AA:600:G:H1'     | 6:AF:105:VAL:HG21 | 1.91                     | 0.53              |
| 1:AA:873:G:C6      | 1:AA:874:G:N7     | 2.77                     | 0.53              |
| 1:AA:903:C:C6      | 1:AA:903:C:P      | 3.01                     | 0.53              |
| 1:AA:988:A:P       | 24:AZ:10:LYS:HZ2  | 2.31                     | 0.53              |
| 1:AA:1021:A:H2     | 1:AA:1122:G:H4'   | 1.73                     | 0.53              |
| 1:AA:1038:C:C5'    | 1:AA:1039:G:OP1   | 2.56                     | 0.53              |
| 1:AA:1248:G:H4'    | 1:AA:1249:U:OP1   | 2.07                     | 0.53              |
| 1:AA:1562:A:O2'    | 1:AA:1563:G:H5'   | 2.07                     | 0.53              |
| 1:AA:1591:G:H2'    | 1:AA:1592:C:H6    | 1.73                     | 0.53              |
| 1:AA:1753:G:C8     | 1:AA:1753:G:H3'   | 2.43                     | 0.53              |
| 1:AA:1764:G:H2'    | 1:AA:1765:C:O5'   | 2.08                     | 0.53              |
| 1:AA:1818:U:OP1    | 4:AD:158:ALA:HA   | 2.08                     | 0.53              |
| 1:AA:1909:C:H2'    | 1:AA:1910:G:H8    | 1.74                     | 0.53              |
| 1:AA:1972:A:H2'    | 1:AA:1973:G:C8    | 2.44                     | 0.53              |
| 1:AA:2097:C:C2'    | 1:AA:2098:U:C5'   | 2.86                     | 0.53              |
| 1:AA:2230:G:N2     | 1:AA:2231:C:C2    | 2.77                     | 0.53              |
| 1:AA:2269:A:O2'    | 1:AA:2270:G:H5'   | 2.08                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2278:A:C6    | 1:AA:2279:G:N7    | 2.77                     | 0.53              |
| 1:AA:2306:C:C5    | 1:AA:2311:A:N1    | 2.76                     | 0.53              |
| 1:AA:2589:A:HO2'  | 1:AA:2590:A:H5'   | 1.73                     | 0.53              |
| 1:AA:2618:G:N3    | 1:AA:2619:C:C6    | 2.77                     | 0.53              |
| 1:AA:2637:U:H3    | 1:AA:2782:G:N2    | 2.07                     | 0.53              |
| 1:AA:2677:G:C2'   | 1:AA:2678:C:H5'   | 2.38                     | 0.53              |
| 1:AA:2734:A:N7    | 1:AA:2735:G:C4    | 2.76                     | 0.53              |
| 1:AA:2771:C:C2    | 1:AA:2772:C:C5    | 2.97                     | 0.53              |
| 1:AA:2781:A:H2'   | 1:AA:2782:G:H4'   | 1.89                     | 0.53              |
| 1:AA:2868:A:C4    | 1:AA:2869:G:C8    | 2.97                     | 0.53              |
| 2:AB:15:A:H5'     | 2:AB:16:G:O5'     | 2.08                     | 0.53              |
| 2:AB:56:G:H4'     | 2:AB:57:A:H5''    | 1.89                     | 0.53              |
| 2:AB:65:C:C2      | 2:AB:108:C:N4     | 2.77                     | 0.53              |
| 3:AC:21:THR:HG1   | 3:AC:24:GLU:CD    | 2.16                     | 0.53              |
| 3:AC:48:GLY:N     | 3:AC:208:PHE:O    | 2.36                     | 0.53              |
| 3:AC:67:GLY:CA    | 3:AC:184:LYS:HZ2  | 2.19                     | 0.53              |
| 3:AC:89:ALA:HB2   | 3:AC:154:ARG:HH11 | 1.72                     | 0.53              |
| 3:AC:97:GLU:HB3   | 3:AC:126:LYS:HZ2  | 1.71                     | 0.53              |
| 4:AD:29:PRO:CB    | 4:AD:31:LYS:NZ    | 2.70                     | 0.53              |
| 4:AD:57:GLY:O     | 4:AD:217:ARG:HB2  | 2.08                     | 0.53              |
| 4:AD:65:ILE:HD12  | 4:AD:104:TYR:CB   | 2.38                     | 0.53              |
| 5:AE:2:LYS:HZ2    | 5:AE:83:ASP:HB2   | 1.66                     | 0.53              |
| 5:AE:27:LEU:HG    | 5:AE:27:LEU:O     | 2.08                     | 0.53              |
| 5:AE:67:PHE:O     | 5:AE:68:ALA:C     | 2.51                     | 0.53              |
| 6:AF:158:THR:HG22 | 6:AF:160:ASN:H    | 1.74                     | 0.53              |
| 7:AG:50:ALA:CA    | 7:AG:70:VAL:HG13  | 2.38                     | 0.53              |
| 7:AG:59:GLU:HB3   | 7:AG:152:LEU:HD13 | 1.89                     | 0.53              |
| 7:AG:77:ILE:HB    | 7:AG:83:ARG:HH11  | 1.73                     | 0.53              |
| 7:AG:120:LEU:HA   | 7:AG:181:ARG:HG2  | 1.89                     | 0.53              |
| 8:AH:35:VAL:HG12  | 8:AH:71:LEU:CD2   | 2.38                     | 0.53              |
| 8:AH:103:LEU:O    | 8:AH:104:GLU:O    | 2.26                     | 0.53              |
| 9:AK:82:LEU:O     | 9:AK:83:LYS:C     | 2.50                     | 0.53              |
| 10:AL:10:VAL:CG1  | 10:AL:11:ALA:H    | 1.88                     | 0.53              |
| 10:AL:89:ASN:ND2  | 10:AL:91:LEU:CB   | 2.66                     | 0.53              |
| 10:AL:121:VAL:O   | 10:AL:122:LEU:CB  | 2.56                     | 0.53              |
| 11:AM:8:PRO:O     | 11:AM:9:ASN:O     | 2.27                     | 0.53              |
| 11:AM:105:LEU:O   | 11:AM:106:LEU:CG  | 2.53                     | 0.53              |
| 12:AN:8:LYS:HZ3   | 12:AN:11:LYS:HE2  | 1.72                     | 0.53              |
| 12:AN:77:LYS:O    | 12:AN:78:PRO:O    | 2.26                     | 0.53              |
| 13:AO:65:LEU:O    | 13:AO:68:ARG:HB3  | 2.08                     | 0.53              |
| 15:AQ:17:THR:HG21 | 15:AQ:20:PRO:HA   | 1.90                     | 0.53              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AS:40:LEU:HB3   | 17:AS:51:VAL:HG13  | 1.91                     | 0.53              |
| 18:AT:33:ARG:CA    | 18:AT:33:ARG:NE    | 2.68                     | 0.53              |
| 18:AT:36:LEU:CD2   | 18:AT:51:LEU:HD11  | 2.39                     | 0.53              |
| 18:AT:90:ARG:HH21  | 18:AT:90:ARG:CA    | 2.20                     | 0.53              |
| 19:AU:49:VAL:HG12  | 19:AU:88:LYS:HB2   | 1.90                     | 0.53              |
| 21:AW:37:VAL:C     | 21:AW:38:TYR:HD2   | 2.16                     | 0.53              |
| 21:AW:39:VAL:CG1   | 21:AW:41:LEU:HD23  | 2.38                     | 0.53              |
| 21:AW:157:LEU:HD22 | 21:AW:161:VAL:HG22 | 1.90                     | 0.53              |
| 22:AX:59:LEU:HD21  | 22:AX:79:VAL:HG21  | 1.90                     | 0.53              |
| 23:AY:21:ARG:O     | 23:AY:24:LYS:HB2   | 2.08                     | 0.53              |
| 23:AY:59:LEU:HD11  | 23:AY:63:ARG:HE    | 1.74                     | 0.53              |
| 24:AZ:19:GLN:HE22  | 24:AZ:50:VAL:HA    | 1.73                     | 0.53              |
| 34:BA:581:G:C2'    | 34:BA:582:U:OP2    | 2.57                     | 0.53              |
| 34:BA:738:C:N4     | 34:BA:739:C:N4     | 2.56                     | 0.53              |
| 34:BA:748:C:O2'    | 34:BA:749:C:C6     | 2.54                     | 0.53              |
| 34:BA:763:G:H2'    | 34:BA:764:C:O5'    | 2.07                     | 0.53              |
| 34:BA:765:G:H8     | 34:BA:765:G:O5'    | 1.92                     | 0.53              |
| 34:BA:769:G:C5'    | 34:BA:1513:A:H4'   | 2.37                     | 0.53              |
| 34:BA:979:C:H2'    | 34:BA:980:C:C5'    | 2.38                     | 0.53              |
| 34:BA:1068:G:O6    | 34:BA:1108:G:C2    | 2.61                     | 0.53              |
| 34:BA:1085:U:H5''  | 34:BA:1086:U:C5    | 2.43                     | 0.53              |
| 34:BA:1112:C:C2    | 36:BG:179:ARG:NH2  | 2.71                     | 0.53              |
| 34:BA:1191:A:P     | 36:BG:4:LYS:NZ     | 2.81                     | 0.53              |
| 34:BA:1193:G:C8    | 34:BA:1193:G:H3'   | 2.42                     | 0.53              |
| 34:BA:1202:G:H21   | 34:BA:1203:C:H1'   | 1.70                     | 0.53              |
| 34:BA:1506:U:H4'   | 34:BA:1507:A:OP2   | 2.08                     | 0.53              |
| 35:BF:70:PHE:CA    | 35:BF:163:PHE:O    | 2.57                     | 0.53              |
| 35:BF:77:ALA:O     | 35:BF:78:GLN:C     | 2.51                     | 0.53              |
| 35:BF:99:GLY:HA3   | 35:BF:101:MET:SD   | 2.48                     | 0.53              |
| 36:BG:24:ALA:CB    | 36:BG:32:LEU:HD12  | 2.38                     | 0.53              |
| 36:BG:29:TYR:HD2   | 36:BG:29:TYR:C     | 2.15                     | 0.53              |
| 36:BG:48:TYR:CD2   | 36:BG:48:TYR:C     | 2.87                     | 0.53              |
| 36:BG:83:ARG:C     | 36:BG:85:ARG:N     | 2.67                     | 0.53              |
| 37:BH:30:LYS:HG2   | 37:BH:35:ARG:CG    | 2.38                     | 0.53              |
| 38:BI:80:ILE:HG22  | 41:BL:104:ARG:NH2  | 2.24                     | 0.53              |
| 38:BI:107:ARG:O    | 38:BI:108:ALA:C    | 2.50                     | 0.53              |
| 39:BJ:12:PRO:HG2   | 39:BJ:13:ASN:H     | 1.74                     | 0.53              |
| 39:BJ:47:ARG:O     | 51:BV:78:LEU:HD22  | 2.09                     | 0.53              |
| 40:BK:123:GLU:O    | 40:BK:124:LEU:C    | 2.50                     | 0.53              |
| 41:BL:35:ILE:O     | 41:BL:36:LEU:C     | 2.52                     | 0.53              |
| 41:BL:109:ILE:O    | 41:BL:109:ILE:CG1  | 2.56                     | 0.53              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 41:BL:123:GLU:O    | 41:BL:124:ALA:C   | 2.51                     | 0.53              |
| 42:BM:70:LYS:H     | 42:BM:70:LYS:CD   | 2.20                     | 0.53              |
| 43:BN:48:THR:HG23  | 43:BN:61:GLU:C    | 2.33                     | 0.53              |
| 45:BP:80:HIS:O     | 57:BZ:328:SER:N   | 2.41                     | 0.53              |
| 46:BQ:70:LEU:CD1   | 46:BQ:74:VAL:HG21 | 2.39                     | 0.53              |
| 50:BU:15:MET:H     | 50:BU:15:MET:HE3  | 1.73                     | 0.53              |
| 51:BV:37:VAL:CG1   | 51:BV:41:LYS:NZ   | 2.70                     | 0.53              |
| 51:BV:87:ARG:O     | 51:BV:88:LYS:OXT  | 2.26                     | 0.53              |
| 53:BX:72:LEU:HD13  | 53:BX:77:ALA:CA   | 2.38                     | 0.53              |
| 55:BC:2:C:C2'      | 55:BC:3:C:H5'     | 2.38                     | 0.53              |
| 55:BC:41:C:H2'     | 55:BC:42:C:H5'    | 1.91                     | 0.53              |
| 56:BD:7:A:O2'      | 56:BD:49:C:H6     | 1.92                     | 0.53              |
| 57:BZ:59:LYS:HB2   | 57:BZ:66:TRP:HH2  | 1.72                     | 0.53              |
| 57:BZ:171:ILE:CA   | 57:BZ:179:MET:HG3 | 2.37                     | 0.53              |
| 57:BZ:288:VAL:HG12 | 57:BZ:289:CYS:N   | 2.23                     | 0.53              |
| 57:BZ:392:ILE:O    | 57:BZ:394:GLY:HA3 | 2.09                     | 0.53              |
| 1:AA:5:A:C4        | 1:AA:6:A:C8       | 2.97                     | 0.53              |
| 1:AA:6:A:C6        | 1:AA:2898:U:C6    | 2.67                     | 0.53              |
| 1:AA:97:C:O5'      | 1:AA:97:C:H6      | 1.90                     | 0.53              |
| 1:AA:140:A:N3      | 1:AA:1408:C:H1'   | 2.22                     | 0.53              |
| 1:AA:181:A:C2      | 1:AA:434:U:O2'    | 2.62                     | 0.53              |
| 1:AA:253:C:O2'     | 1:AA:254:G:H5'    | 2.09                     | 0.53              |
| 1:AA:270(F):U:H2'  | 1:AA:270(G):C:O4' | 2.08                     | 0.53              |
| 1:AA:328:U:H6      | 1:AA:328:U:O5'    | 1.90                     | 0.53              |
| 1:AA:388:G:C5'     | 25:Aa:23:GLU:HB3  | 2.38                     | 0.53              |
| 1:AA:394:A:C6      | 1:AA:395:U:C4     | 2.96                     | 0.53              |
| 1:AA:438:G:O2'     | 1:AA:439:G:H5'    | 2.08                     | 0.53              |
| 1:AA:462:C:C4      | 1:AA:468:G:C2     | 2.96                     | 0.53              |
| 1:AA:581:C:OP1     | 16:AR:32:PHE:HB2  | 2.09                     | 0.53              |
| 1:AA:665:C:OP2     | 1:AA:665:C:C6     | 2.58                     | 0.53              |
| 1:AA:712:G:C4      | 1:AA:713:G:C8     | 2.97                     | 0.53              |
| 1:AA:714:U:C2'     | 1:AA:715:G:C8     | 2.88                     | 0.53              |
| 1:AA:720:C:C2      | 1:AA:721:C:C5     | 2.96                     | 0.53              |
| 1:AA:721:C:H2'     | 1:AA:722:A:H8     | 1.74                     | 0.53              |
| 1:AA:736:C:C4      | 1:AA:737:C:C5     | 2.97                     | 0.53              |
| 1:AA:959:A:C4      | 1:AA:960:A:N7     | 2.76                     | 0.53              |
| 1:AA:968:G:H2'     | 1:AA:969:U:C6     | 2.43                     | 0.53              |
| 1:AA:972:G:O4'     | 1:AA:972:G:OP2    | 2.27                     | 0.53              |
| 1:AA:1036:G:N1     | 1:AA:1120:G:C5    | 2.74                     | 0.53              |
| 1:AA:1122:G:C2     | 1:AA:1123:C:C6    | 2.96                     | 0.53              |
| 1:AA:1142(A):A:N3  | 1:AA:1143:A:H5''  | 2.24                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1249:U:O4    | 11:AM:21:ARG:NH2  | 2.42                     | 0.53              |
| 1:AA:1334:G:C4    | 1:AA:1335:U:C5    | 2.95                     | 0.53              |
| 1:AA:1433:U:O2    | 1:AA:1561:G:N2    | 2.42                     | 0.53              |
| 1:AA:1450:C:H2'   | 1:AA:1451:C:OP2   | 2.07                     | 0.53              |
| 1:AA:1492:G:N3    | 1:AA:1493:C:C4    | 2.77                     | 0.53              |
| 1:AA:1521:G:H3'   | 1:AA:1522:G:H5'   | 1.90                     | 0.53              |
| 1:AA:1637:A:C6    | 1:AA:1638:C:N4    | 2.76                     | 0.53              |
| 1:AA:1660:C:O2'   | 1:AA:1661:G:H5'   | 2.09                     | 0.53              |
| 1:AA:1787:A:O5'   | 1:AA:1787:A:H8    | 1.91                     | 0.53              |
| 1:AA:1818:U:O2    | 1:AA:1818:U:C2'   | 2.55                     | 0.53              |
| 1:AA:1842:G:N3    | 1:AA:1843:C:C6    | 2.77                     | 0.53              |
| 1:AA:1944:U:O2    | 1:AA:1955:U:H6    | 1.91                     | 0.53              |
| 1:AA:1950:G:C5    | 1:AA:1951:U:H5    | 2.27                     | 0.53              |
| 1:AA:1951:U:C2    | 1:AA:1953:A:H5'   | 2.43                     | 0.53              |
| 1:AA:2127:G:C6    | 1:AA:2162:G:C6    | 2.96                     | 0.53              |
| 1:AA:2246:G:H1'   | 1:AA:2426:A:H2    | 1.73                     | 0.53              |
| 1:AA:2320:A:N6    | 14:AP:4:LEU:CD1   | 2.69                     | 0.53              |
| 1:AA:2387:U:C2    | 22:AX:41:ARG:NH2  | 2.77                     | 0.53              |
| 1:AA:2455:G:C4    | 1:AA:2456:C:C5    | 2.95                     | 0.53              |
| 1:AA:2792:G:C2    | 1:AA:2804:C:N3    | 2.75                     | 0.53              |
| 1:AA:2848:G:N9    | 15:AQ:99:LEU:HD21 | 2.23                     | 0.53              |
| 2:AB:5:C:H2'      | 2:AB:6:C:C6       | 2.43                     | 0.53              |
| 4:AD:5:LYS:CE     | 4:AD:31:LYS:HZ2   | 2.21                     | 0.53              |
| 4:AD:154:LYS:O    | 4:AD:154:LYS:CG   | 2.56                     | 0.53              |
| 5:AE:92:THR:N     | 5:AE:95:ILE:HD13  | 2.20                     | 0.53              |
| 5:AE:149:ARG:NE   | 5:AE:150:VAL:O    | 2.40                     | 0.53              |
| 5:AE:152:LYS:HE2  | 9:AK:77:GLY:O     | 2.08                     | 0.53              |
| 6:AF:123:LEU:CD1  | 6:AF:193:VAL:HG22 | 2.27                     | 0.53              |
| 6:AF:133:ASN:HB3  | 6:AF:165:ARG:NH2  | 2.24                     | 0.53              |
| 6:AF:196:LEU:HD22 | 6:AF:199:TRP:CD1  | 2.44                     | 0.53              |
| 7:AG:19:LEU:HA    | 7:AG:22:ARG:CG    | 2.38                     | 0.53              |
| 7:AG:86:MET:N     | 7:AG:87:PRO:CD    | 2.72                     | 0.53              |
| 8:AH:54:ARG:C     | 8:AH:56:SER:H     | 2.16                     | 0.53              |
| 9:AK:23:LEU:HD12  | 9:AK:63:THR:N     | 2.21                     | 0.53              |
| 10:AL:3:GLN:CD    | 10:AL:3:GLN:C     | 2.76                     | 0.53              |
| 10:AL:12:ASP:O    | 10:AL:94:ARG:HD2  | 2.09                     | 0.53              |
| 10:AL:59:LYS:HE2  | 10:AL:59:LYS:CA   | 2.37                     | 0.53              |
| 11:AM:95:VAL:C    | 11:AM:97:PRO:CD   | 2.79                     | 0.53              |
| 12:AN:85:LYS:HG3  | 12:AN:86:GLY:N    | 2.23                     | 0.53              |
| 12:AN:122:GLY:HA2 | 12:AN:125:LEU:CD1 | 2.39                     | 0.53              |
| 13:AO:25:ALA:CB   | 13:AO:48:VAL:HG22 | 2.37                     | 0.53              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 13:AO:26:LYS:HE2 | 13:AO:70:LEU:CB    | 2.39                     | 0.53              |
| 13:AO:56:LYS:C   | 13:AO:58:GLY:N     | 2.66                     | 0.53              |
| 14:AP:95:HIS:CG  | 14:AP:96:GLY:N     | 2.73                     | 0.53              |
| 17:AS:36:PRO:HB3 | 17:AS:61:VAL:CG2   | 2.38                     | 0.53              |
| 18:AT:89:ALA:C   | 18:AT:91:GLY:N     | 2.63                     | 0.53              |
| 19:AU:20:GLY:O   | 19:AU:25:LYS:O     | 2.27                     | 0.53              |
| 20:AV:13:VAL:HA  | 20:AV:73:ARG:NH1   | 2.23                     | 0.53              |
| 21:AW:69:THR:OG1 | 21:AW:89:PHE:O     | 2.27                     | 0.53              |
| 21:AW:120:ILE:HB | 21:AW:123:ASP:OD1  | 2.09                     | 0.53              |
| 22:AX:32:ARG:HB2 | 22:AX:32:ARG:CZ    | 2.38                     | 0.53              |
| 23:AY:38:GLN:H   | 23:AY:41:GLN:HE21  | 1.51                     | 0.53              |
| 23:AY:41:GLN:O   | 23:AY:44:LYS:N     | 2.39                     | 0.53              |
| 27:Ac:17:LYS:HZ2 | 27:Ac:50:ARG:HB2   | 1.74                     | 0.53              |
| 29:Ae:6:THR:HG23 | 29:Ae:9:GLY:CA     | 2.39                     | 0.53              |
| 29:Ae:29:LYS:O   | 29:Ae:30:ARG:O     | 2.26                     | 0.53              |
| 29:Ae:50:LEU:C   | 29:Ae:53:PRO:HD2   | 2.33                     | 0.53              |
| 34:BA:67:C:C4'   | 34:BA:172:A:H1'    | 2.39                     | 0.53              |
| 34:BA:131:C:C4   | 34:BA:232:G:C2     | 2.97                     | 0.53              |
| 34:BA:269:C:H2'  | 34:BA:270:A:C8     | 2.43                     | 0.53              |
| 34:BA:292:G:C2   | 34:BA:309:G:C2     | 2.96                     | 0.53              |
| 34:BA:352:C:OP1  | 34:BA:352:C:H6     | 1.92                     | 0.53              |
| 34:BA:465:A:C8   | 34:BA:467:G:C6     | 2.96                     | 0.53              |
| 34:BA:519:C:H5'  | 45:BP:51:ALA:HB2   | 1.90                     | 0.53              |
| 34:BA:585:G:O2'  | 34:BA:879:C:H5''   | 2.08                     | 0.53              |
| 34:BA:587:G:C2   | 34:BA:755:G:C6     | 2.96                     | 0.53              |
| 34:BA:593:G:C6   | 34:BA:594:G:C5     | 2.97                     | 0.53              |
| 34:BA:745:C:H2'  | 34:BA:746:A:C8     | 2.44                     | 0.53              |
| 34:BA:789:U:C6   | 34:BA:789:U:C3'    | 2.90                     | 0.53              |
| 34:BA:791:G:C8   | 34:BA:792:A:N7     | 2.76                     | 0.53              |
| 34:BA:821:G:H2'  | 34:BA:822:C:C6     | 2.42                     | 0.53              |
| 34:BA:876:G:O2'  | 41:BL:11:THR:CG2   | 2.56                     | 0.53              |
| 34:BA:978:A:H3'  | 34:BA:978:A:C8     | 2.44                     | 0.53              |
| 34:BA:1161:C:O2' | 34:BA:1162:C:H5'   | 2.09                     | 0.53              |
| 34:BA:1286:A:OP1 | 54:BY:25:LYS:HG3   | 2.08                     | 0.53              |
| 34:BA:1405:G:O4' | 34:BA:1519:A:C4'   | 2.56                     | 0.53              |
| 34:BA:1422:G:C2  | 34:BA:1423:G:C5    | 2.97                     | 0.53              |
| 34:BA:1479:C:H2' | 34:BA:1480:G:H8    | 1.73                     | 0.53              |
| 34:BA:1495:U:H2' | 34:BA:1495:U:O2    | 2.07                     | 0.53              |
| 34:BA:1517:G:H2' | 34:BA:1517:G:N3    | 2.23                     | 0.53              |
| 35:BF:53:ARG:NH1 | 35:BF:200:ILE:HD12 | 2.21                     | 0.53              |
| 35:BF:170:GLU:C  | 35:BF:174:VAL:HG23 | 2.34                     | 0.53              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BF:181:PHE:HE1  | 41:BL:72:PRO:HD2   | 1.73                     | 0.53              |
| 36:BG:24:ALA:CB    | 36:BG:28:GLN:HE22  | 2.20                     | 0.53              |
| 38:BI:23:GLY:HA3   | 38:BI:25:ARG:HH12  | 1.71                     | 0.53              |
| 38:BI:35:GLY:HA3   | 38:BI:41:VAL:HG12  | 1.89                     | 0.53              |
| 38:BI:76:ILE:HD12  | 38:BI:142:LEU:HD12 | 1.89                     | 0.53              |
| 38:BI:78:HIS:CG    | 41:BL:104:ARG:HD3  | 2.43                     | 0.53              |
| 39:BJ:45:LEU:HD23  | 39:BJ:59:TYR:CA    | 2.39                     | 0.53              |
| 39:BJ:68:PRO:O     | 39:BJ:69:GLU:C     | 2.51                     | 0.53              |
| 39:BJ:89:MET:HE2   | 51:BV:75:ILE:HG21  | 1.90                     | 0.53              |
| 40:BK:76:ARG:HD3   | 40:BK:156:TRP:CD1  | 2.43                     | 0.53              |
| 40:BK:88:PRO:HG2   | 40:BK:152:ALA:CB   | 2.37                     | 0.53              |
| 40:BK:111:ARG:HD2  | 40:BK:123:GLU:CB   | 2.36                     | 0.53              |
| 42:BM:31:GLN:N     | 42:BM:31:GLN:OE1   | 2.41                     | 0.53              |
| 43:BN:10:GLY:CA    | 43:BN:16:LEU:HD21  | 2.38                     | 0.53              |
| 44:BO:50:TYR:CZ    | 44:BO:54:ARG:HB3   | 2.44                     | 0.53              |
| 44:BO:57:THR:C     | 44:BO:59:TYR:N     | 2.60                     | 0.53              |
| 44:BO:99:GLN:HA    | 44:BO:105:VAL:CG1  | 2.37                     | 0.53              |
| 45:BP:21:LYS:O     | 45:BP:22:SER:O     | 2.27                     | 0.53              |
| 46:BQ:4:ILE:HD12   | 46:BQ:57:ARG:CB    | 2.34                     | 0.53              |
| 46:BQ:19:LEU:CD2   | 46:BQ:30:ALA:HA    | 2.38                     | 0.53              |
| 48:BS:36:ILE:HD11  | 48:BS:60:VAL:CB    | 2.37                     | 0.53              |
| 48:BS:60:VAL:HA    | 48:BS:63:ARG:CD    | 2.34                     | 0.53              |
| 49:BT:14:ASN:OD1   | 49:BT:14:ASN:C     | 2.51                     | 0.53              |
| 50:BU:10:VAL:CG2   | 50:BU:55:ASP:O     | 2.49                     | 0.53              |
| 52:BW:47:HIS:H     | 52:BW:62:ILE:HG22  | 1.73                     | 0.53              |
| 52:BW:62:ILE:CG1   | 52:BW:67:VAL:HG22  | 2.38                     | 0.53              |
| 52:BW:64:GLU:HG2   | 52:BW:65:ASN:N     | 2.23                     | 0.53              |
| 53:BX:40:ALA:CB    | 53:BX:55:ILE:HG21  | 2.38                     | 0.53              |
| 55:BC:34:G:OP1     | 55:BC:35:A:N6      | 2.41                     | 0.53              |
| 57:BZ:9:ALA:O      | 57:BZ:96:LEU:N     | 2.41                     | 0.53              |
| 57:BZ:79:ALA:CA    | 57:BZ:80:ASP:HB2   | 2.38                     | 0.53              |
| 57:BZ:99:VAL:HG13  | 57:BZ:104:GLY:C    | 2.34                     | 0.53              |
| 57:BZ:209:ILE:HA   | 57:BZ:223:ILE:O    | 2.08                     | 0.53              |
| 57:BZ:249:ALA:N    | 57:BZ:276:ILE:N    | 2.55                     | 0.53              |
| 57:BZ:287:THR:HG21 | 57:BZ:297:LEU:O    | 2.09                     | 0.53              |
| 57:BZ:395:ARG:CA   | 57:BZ:474:ASP:CB   | 2.64                     | 0.53              |
| 57:BZ:509:LYS:HG2  | 57:BZ:561:ILE:CG2  | 2.39                     | 0.53              |
| 1:AA:223:A:C4      | 1:AA:422:A:C8      | 2.97                     | 0.53              |
| 1:AA:387:U:O2'     | 1:AA:388:G:C8      | 2.62                     | 0.53              |
| 1:AA:511:U:H5      | 1:AA:512:G:C2      | 2.26                     | 0.53              |
| 1:AA:539:G:H2'     | 1:AA:540:G:C8      | 2.44                     | 0.53              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:734:A:C2'   | 1:AA:735:A:O5'    | 2.55                     | 0.53              |
| 1:AA:796:C:O5'   | 1:AA:796:C:H6     | 1.92                     | 0.53              |
| 1:AA:844:C:OP2   | 1:AA:844:C:C6     | 2.62                     | 0.53              |
| 1:AA:848:G:H2'   | 1:AA:849:A:N7     | 2.23                     | 0.53              |
| 1:AA:857:C:O2'   | 22:AX:23:VAL:HB   | 2.09                     | 0.53              |
| 1:AA:910:A:C5    | 12:AN:17:LEU:HD11 | 2.43                     | 0.53              |
| 1:AA:957:A:N6    | 1:AA:959:A:C5     | 2.77                     | 0.53              |
| 1:AA:991:C:O2'   | 1:AA:992:C:H5'    | 2.09                     | 0.53              |
| 1:AA:1101:U:H2'  | 1:AA:1102:C:H6    | 1.73                     | 0.53              |
| 1:AA:1174:A:H2   | 1:AA:1176:G:O5'   | 1.91                     | 0.53              |
| 1:AA:1249:U:C4   | 11:AM:21:ARG:CZ   | 2.92                     | 0.53              |
| 1:AA:1250:G:C4'  | 16:AR:6:THR:HG21  | 2.39                     | 0.53              |
| 1:AA:1309:G:C6   | 1:AA:1310:G:N7    | 2.76                     | 0.53              |
| 1:AA:1326:U:H2'  | 1:AA:1326:U:O2    | 2.09                     | 0.53              |
| 1:AA:1365:A:C8   | 1:AA:1366:A:N7    | 2.77                     | 0.53              |
| 1:AA:1538:G:N1   | 1:AA:1539:G:C2    | 2.77                     | 0.53              |
| 1:AA:1541:U:O2   | 1:AA:1541:U:C2'   | 2.51                     | 0.53              |
| 1:AA:1683:C:O2   | 1:AA:1684:C:C5    | 2.60                     | 0.53              |
| 1:AA:1731:G:H3'  | 1:AA:1731:G:N3    | 2.24                     | 0.53              |
| 1:AA:1746:G:C6   | 1:AA:1747:G:C5    | 2.96                     | 0.53              |
| 1:AA:1801:G:C8   | 1:AA:1801:G:OP1   | 2.61                     | 0.53              |
| 1:AA:1869:G:N3   | 1:AA:1878:G:C6    | 2.77                     | 0.53              |
| 1:AA:1900:A:H2   | 1:AA:1970:A:C6    | 2.24                     | 0.53              |
| 1:AA:2132:U:O2   | 1:AA:2134:A:C5    | 2.62                     | 0.53              |
| 1:AA:2136:C:C2   | 1:AA:2137:C:C6    | 2.97                     | 0.53              |
| 1:AA:2210:G:O6   | 4:AD:150:LYS:CA   | 2.55                     | 0.53              |
| 1:AA:2239:G:H4'  | 4:AD:249:PRO:HG3  | 1.91                     | 0.53              |
| 1:AA:2245:U:O2   | 1:AA:2435:A:H3'   | 2.09                     | 0.53              |
| 1:AA:2246:G:N9   | 1:AA:2426:A:C2    | 2.77                     | 0.53              |
| 1:AA:2355:C:C5   | 1:AA:2356:C:C4    | 2.97                     | 0.53              |
| 1:AA:2384:G:H5'' | 1:AA:2386:C:OP1   | 2.09                     | 0.53              |
| 1:AA:2460:U:H2'  | 1:AA:2492:U:O4    | 2.09                     | 0.53              |
| 1:AA:2556:C:C5'  | 57:BZ:550:GLY:CA  | 2.87                     | 0.53              |
| 1:AA:2625:G:C2'  | 1:AA:2626:C:O5'   | 2.57                     | 0.53              |
| 1:AA:2709:G:H2'  | 1:AA:2710:C:C5'   | 2.23                     | 0.53              |
| 1:AA:2728:U:H2'  | 1:AA:2729:G:C8    | 2.44                     | 0.53              |
| 1:AA:2803:C:H2'  | 1:AA:2803:C:O2    | 2.09                     | 0.53              |
| 1:AA:2813:A:H2'  | 1:AA:2814:C:C6    | 2.43                     | 0.53              |
| 1:AA:2841:C:C2   | 1:AA:2842:G:C8    | 2.97                     | 0.53              |
| 2:AB:11:C:H3'    | 22:AX:74:ARG:NH1  | 2.24                     | 0.53              |
| 3:AC:66:HIS:CE1  | 3:AC:181:PRO:HB2  | 2.43                     | 0.53              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 3:AC:94:VAL:C      | 3:AC:99:ILE:HD12   | 2.32                     | 0.53              |
| 3:AC:156:ILE:CG2   | 3:AC:160:ARG:HB2   | 2.39                     | 0.53              |
| 4:AD:33:LEU:HD12   | 4:AD:61:LEU:HD21   | 1.91                     | 0.53              |
| 4:AD:89:SER:C      | 4:AD:159:ALA:HB2   | 2.34                     | 0.53              |
| 4:AD:136:ILE:H     | 4:AD:168:ARG:HH22  | 1.56                     | 0.53              |
| 5:AE:202:LYS:C     | 5:AE:204:ALA:N     | 2.64                     | 0.53              |
| 6:AF:3:GLU:OE1     | 6:AF:21:ALA:HA     | 2.08                     | 0.53              |
| 7:AG:85:GLY:O      | 7:AG:86:MET:HB2    | 2.09                     | 0.53              |
| 8:AH:87:LEU:N      | 8:AH:132:ARG:CB    | 2.71                     | 0.53              |
| 8:AH:137:ASP:HB3   | 8:AH:140:LYS:CD    | 2.39                     | 0.53              |
| 9:AK:23:LEU:HD23   | 9:AK:60:ILE:HG21   | 1.90                     | 0.53              |
| 9:AK:53:VAL:CA     | 9:AK:121:LYS:O     | 2.45                     | 0.53              |
| 9:AK:53:VAL:HG11   | 9:AK:123:TYR:HE2   | 1.73                     | 0.53              |
| 9:AK:127:ASP:O     | 9:AK:128:HIS:C     | 2.50                     | 0.53              |
| 10:AL:81:ASP:C     | 10:AL:82:ASN:OD1   | 2.51                     | 0.53              |
| 14:AP:38:GLN:CD    | 14:AP:40:ILE:HD11  | 2.33                     | 0.53              |
| 16:AR:61:TRP:CZ3   | 16:AR:93:LYS:C     | 2.87                     | 0.53              |
| 17:AS:21:ARG:N     | 17:AS:93:GLU:OE2   | 2.40                     | 0.53              |
| 18:AT:64:MET:CB    | 18:AT:109:GLU:HG3  | 2.38                     | 0.53              |
| 19:AU:33:LYS:HB2   | 19:AU:33:LYS:HZ2   | 1.72                     | 0.53              |
| 20:AV:26:LYS:HE3   | 20:AV:36:ALA:HB3   | 1.91                     | 0.53              |
| 22:AX:19:LYS:CG    | 22:AX:20:ARG:N     | 2.71                     | 0.53              |
| 22:AX:21:LEU:HD11  | 22:AX:40:GLN:CA    | 2.39                     | 0.53              |
| 25:Aa:42:PHE:H     | 25:Aa:58:ARG:HG3   | 1.74                     | 0.53              |
| 32:AJ:21:PRO:N     | 32:AJ:22:PRO:HD3   | 2.24                     | 0.53              |
| 32:AJ:23:VAL:HG13  | 32:AJ:27:LEU:HD12  | 1.90                     | 0.53              |
| 32:AJ:64:SER:HB3   | 32:AJ:65:PHE:HB3   | 1.88                     | 0.53              |
| 32:AJ:118:THR:HG22 | 32:AJ:119:ASP:N    | 2.23                     | 0.53              |
| 34:BA:69:G:C2      | 34:BA:101:A:C2     | 2.96                     | 0.53              |
| 34:BA:130:A:C6     | 34:BA:264:U:H1'    | 2.43                     | 0.53              |
| 34:BA:190:G:H4'    | 34:BA:191(A):G:OP2 | 2.08                     | 0.53              |
| 34:BA:277:C:OP1    | 50:BU:68:ARG:NH1   | 2.41                     | 0.53              |
| 34:BA:290:C:C2'    | 34:BA:291:C:H5'    | 2.38                     | 0.53              |
| 34:BA:498:A:O2'    | 34:BA:500:G:O4'    | 2.26                     | 0.53              |
| 34:BA:563:A:C5     | 34:BA:567:G:H1'    | 2.42                     | 0.53              |
| 34:BA:600:C:H5'    | 41:BL:129:VAL:CA   | 2.38                     | 0.53              |
| 34:BA:642:A:N3     | 41:BL:113:SER:OG   | 2.31                     | 0.53              |
| 34:BA:795:C:O2'    | 34:BA:1506:U:C1'   | 2.55                     | 0.53              |
| 34:BA:815:A:H1'    | 34:BA:817:C:H42    | 1.67                     | 0.53              |
| 34:BA:857:C:C2     | 34:BA:858:G:C1'    | 2.92                     | 0.53              |
| 34:BA:875:C:C2'    | 34:BA:876:G:O5'    | 2.56                     | 0.53              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1117:G:C2    | 34:BA:1184:G:H1'   | 2.41                     | 0.53              |
| 34:BA:1178:G:H21   | 34:BA:1180:A:H3'   | 1.74                     | 0.53              |
| 34:BA:1212:U:O2'   | 34:BA:1213:A:H8    | 1.92                     | 0.53              |
| 34:BA:1342:C:O2'   | 42:BM:124:GLN:CB   | 2.52                     | 0.53              |
| 35:BF:58:ILE:O     | 35:BF:59:GLU:C     | 2.51                     | 0.53              |
| 37:BH:128:VAL:O    | 37:BH:130:GLY:N    | 2.42                     | 0.53              |
| 38:BI:34:VAL:O     | 38:BI:41:VAL:HA    | 2.09                     | 0.53              |
| 38:BI:110:LEU:HD22 | 38:BI:139:LEU:HD21 | 1.91                     | 0.53              |
| 39:BJ:46:ARG:HH22  | 51:BV:37:VAL:HG13  | 1.74                     | 0.53              |
| 41:BL:41:ARG:HH11  | 41:BL:41:ARG:C     | 2.17                     | 0.53              |
| 42:BM:7:THR:O      | 42:BM:83:ARG:CZ    | 2.56                     | 0.53              |
| 42:BM:23:ASN:ND2   | 42:BM:24:GLY:N     | 2.57                     | 0.53              |
| 44:BO:65:ALA:CB    | 44:BO:98:LEU:HD23  | 2.32                     | 0.53              |
| 45:BP:69:TYR:O     | 45:BP:100:ILE:CD1  | 2.57                     | 0.53              |
| 46:BQ:40:ASN:O     | 46:BQ:43:THR:OG1   | 2.25                     | 0.53              |
| 48:BS:12:ILE:HG12  | 48:BS:31:LEU:HD11  | 1.91                     | 0.53              |
| 48:BS:79:ARG:HH11  | 48:BS:79:ARG:HB3   | 1.73                     | 0.53              |
| 49:BT:27:LYS:O     | 49:BT:30:GLY:N     | 2.36                     | 0.53              |
| 50:BU:63:ARG:CG    | 50:BU:64:PRO:HD2   | 2.38                     | 0.53              |
| 51:BV:20:ALA:HB1   | 51:BV:55:ARG:NH2   | 2.24                     | 0.53              |
| 52:BW:6:LYS:CB     | 52:BW:41:VAL:HG12  | 2.35                     | 0.53              |
| 52:BW:14:HIS:HB3   | 52:BW:15:LEU:HD23  | 1.91                     | 0.53              |
| 54:BY:21:TYR:O     | 54:BY:22:ARG:HB2   | 2.07                     | 0.53              |
| 55:BC:26:A:C5      | 55:BC:27:G:N7      | 2.77                     | 0.53              |
| 57:BZ:29:SER:HG    | 57:BZ:58:ALA:HB1   | 1.74                     | 0.53              |
| 57:BZ:59:LYS:HB2   | 57:BZ:59:LYS:HZ2   | 1.70                     | 0.53              |
| 57:BZ:119:TYR:CB   | 57:BZ:120:GLY:CA   | 2.86                     | 0.53              |
| 57:BZ:205:PHE:N    | 57:BZ:229:GLY:HA3  | 2.24                     | 0.53              |
| 57:BZ:483:ARG:HG3  | 57:BZ:573:ASP:HB2  | 1.87                     | 0.53              |
| 1:AA:61:G:C5       | 1:AA:62:C:C4       | 2.96                     | 0.53              |
| 1:AA:247:G:H1      | 29:Ae:8:LYS:CD     | 2.21                     | 0.53              |
| 1:AA:303:U:C2      | 1:AA:315:G:N2      | 2.76                     | 0.53              |
| 1:AA:412:A:C8      | 1:AA:2412:A:N3     | 2.76                     | 0.53              |
| 1:AA:506:G:C2'     | 1:AA:507:A:OP2     | 2.57                     | 0.53              |
| 1:AA:608:A:H2'     | 1:AA:609:A:H5'     | 1.90                     | 0.53              |
| 1:AA:660:G:H5''    | 6:AF:99:TYR:CE1    | 2.43                     | 0.53              |
| 1:AA:673:C:C4      | 1:AA:808:G:N2      | 2.77                     | 0.53              |
| 1:AA:699:A:H1'     | 1:AA:1634:A:N7     | 2.24                     | 0.53              |
| 1:AA:802:A:H3'     | 1:AA:803:U:C5      | 2.42                     | 0.53              |
| 1:AA:811:U:O2'     | 1:AA:812:C:OP1     | 2.24                     | 0.53              |
| 1:AA:946:G:H2'     | 1:AA:947:G:C8      | 2.44                     | 0.53              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 1:AA:946:G:C6     | 1:AA:972:G:N2    | 2.76                     | 0.53              |
| 1:AA:969:U:H6     | 1:AA:969:U:O5'   | 1.92                     | 0.53              |
| 1:AA:989:G:HO2'   | 1:AA:990:A:P     | 2.31                     | 0.53              |
| 1:AA:1077:A:H3'   | 1:AA:1078:U:H5'  | 1.90                     | 0.53              |
| 1:AA:1180:C:C2'   | 1:AA:1181:C:C6   | 2.89                     | 0.53              |
| 1:AA:1189:A:H5''  | 11:AM:29:LYS:NZ  | 2.24                     | 0.53              |
| 1:AA:1287:A:H5'   | 13:AO:104:ARG:CG | 2.38                     | 0.53              |
| 1:AA:1416:G:O2'   | 1:AA:1417:C:C6   | 2.57                     | 0.53              |
| 1:AA:1599:C:OP2   | 19:AU:36:LYS:NZ  | 2.41                     | 0.53              |
| 1:AA:1627:G:N3    | 1:AA:1627:G:H2'  | 2.24                     | 0.53              |
| 1:AA:1671:U:O2'   | 5:AE:129:HIS:HE1 | 1.92                     | 0.53              |
| 1:AA:1742:C:C3'   | 1:AA:1743:G:C5'  | 2.86                     | 0.53              |
| 1:AA:1787:A:O2'   | 1:AA:1788:C:H5'  | 2.08                     | 0.53              |
| 1:AA:1993:U:N3    | 1:AA:1994:C:N4   | 2.56                     | 0.53              |
| 1:AA:1997:G:C6    | 1:AA:1998:G:C6   | 2.97                     | 0.53              |
| 1:AA:2025:C:H2'   | 1:AA:2026:C:C5   | 2.37                     | 0.53              |
| 1:AA:2285:C:C5    | 27:Ac:27:LYS:NZ  | 2.72                     | 0.53              |
| 1:AA:2305:A:C6    | 7:AG:42:GLY:HA2  | 2.43                     | 0.53              |
| 1:AA:2375:G:H21   | 1:AA:2378:A:H61  | 1.45                     | 0.53              |
| 1:AA:2375:G:H1'   | 1:AA:2377:A:N7   | 2.22                     | 0.53              |
| 1:AA:2546:U:O4'   | 1:AA:2565:A:H2   | 1.92                     | 0.53              |
| 1:AA:2574:G:H2'   | 1:AA:2575:C:C6   | 2.43                     | 0.53              |
| 1:AA:2586:C:H6    | 1:AA:2586:C:H3'  | 1.74                     | 0.53              |
| 1:AA:2675:A:OP1   | 10:AL:32:TYR:HE2 | 1.92                     | 0.53              |
| 1:AA:2731:G:C4'   | 5:AE:168:MET:SD  | 2.94                     | 0.53              |
| 1:AA:2732:G:H8    | 1:AA:2732:G:OP2  | 1.91                     | 0.53              |
| 1:AA:2737:G:N1    | 1:AA:2768:C:N4   | 2.56                     | 0.53              |
| 1:AA:2767:C:N3    | 1:AA:2768:C:N4   | 2.57                     | 0.53              |
| 1:AA:2794:C:H2'   | 1:AA:2794:C:O2   | 2.08                     | 0.53              |
| 1:AA:2854:G:C6    | 1:AA:2855:C:C4   | 2.97                     | 0.53              |
| 2:AB:12:C:C4      | 22:AX:74:ARG:O   | 2.62                     | 0.53              |
| 2:AB:97:G:H2'     | 2:AB:98:G:C5'    | 2.33                     | 0.53              |
| 3:AC:210:ARG:HH11 | 3:AC:210:ARG:HG2 | 1.73                     | 0.53              |
| 4:AD:239:ARG:N    | 4:AD:239:ARG:CD  | 2.70                     | 0.53              |
| 5:AE:85:ASN:C     | 5:AE:87:GLU:N    | 2.67                     | 0.53              |
| 5:AE:91:VAL:HG23  | 5:AE:180:ASN:CG  | 2.34                     | 0.53              |
| 5:AE:195:LEU:HD13 | 5:AE:195:LEU:C   | 2.30                     | 0.53              |
| 6:AF:39:TRP:HZ3   | 6:AF:43:LYS:HD2  | 1.74                     | 0.53              |
| 6:AF:118:ALA:CA   | 6:AF:122:LYS:HB2 | 2.38                     | 0.53              |
| 7:AG:147:ASP:O    | 7:AG:148:MET:CB  | 2.56                     | 0.53              |
| 8:AH:126:PRO:HG3  | 8:AH:132:ARG:NH1 | 2.22                     | 0.53              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AH:149:ARG:O    | 8:AH:153:LYS:CB    | 2.57                     | 0.53              |
| 8:AH:153:LYS:HA   | 8:AH:162:ILE:H     | 1.74                     | 0.53              |
| 9:AK:17:ASP:OD1   | 9:AK:17:ASP:C      | 2.51                     | 0.53              |
| 9:AK:87:LEU:HD23  | 9:AK:88:GLU:CD     | 2.34                     | 0.53              |
| 10:AL:117:LEU:C   | 10:AL:117:LEU:CD2  | 2.72                     | 0.53              |
| 11:AM:33:ARG:HG3  | 11:AM:35:HIS:CD2   | 2.43                     | 0.53              |
| 11:AM:123:LEU:HB3 | 11:AM:130:PHE:CE1  | 2.44                     | 0.53              |
| 13:AO:17:ARG:O    | 13:AO:18:LEU:C     | 2.52                     | 0.53              |
| 13:AO:32:GLY:O    | 13:AO:116:LEU:CD2  | 2.57                     | 0.53              |
| 15:AQ:23:ARG:CZ   | 15:AQ:88:ILE:O     | 2.57                     | 0.53              |
| 15:AQ:104:ASN:HA  | 15:AQ:108:ARG:HH12 | 1.74                     | 0.53              |
| 16:AR:14:HIS:O    | 16:AR:15:LYS:C     | 2.50                     | 0.53              |
| 17:AS:4:ILE:O     | 17:AS:40:LEU:O     | 2.26                     | 0.53              |
| 17:AS:7:THR:O     | 17:AS:11:GLN:NE2   | 2.41                     | 0.53              |
| 17:AS:13:ARG:C    | 17:AS:14:VAL:CG2   | 2.82                     | 0.53              |
| 18:AT:12:ILE:HD13 | 18:AT:12:ILE:N     | 2.24                     | 0.53              |
| 19:AU:23:GLU:OE1  | 19:AU:23:GLU:C     | 2.51                     | 0.53              |
| 20:AV:47:LYS:HB2  | 20:AV:49:VAL:CG1   | 2.38                     | 0.53              |
| 22:AX:52:GLY:HA3  | 22:AX:60:PHE:CE1   | 2.44                     | 0.53              |
| 23:AY:16:LEU:CD2  | 23:AY:58:VAL:HG22  | 2.39                     | 0.53              |
| 23:AY:27:LEU:HD11 | 23:AY:48:LEU:HG    | 1.90                     | 0.53              |
| 29:Ae:2:PRO:HB2   | 29:Ae:4:MET:CE     | 2.39                     | 0.53              |
| 29:Ae:5:LYS:HA    | 29:Ae:59:LYS:O     | 2.08                     | 0.53              |
| 29:Ae:16:ILE:HG22 | 29:Ae:57:ARG:HH22  | 1.72                     | 0.53              |
| 29:Ae:42:ARG:C    | 29:Ae:43:GLN:CD    | 2.77                     | 0.53              |
| 29:Ae:52:LYS:HZ2  | 29:Ae:52:LYS:HB2   | 1.74                     | 0.53              |
| 31:AI:52:PHE:C    | 31:AI:86:PRO:CA    | 2.79                     | 0.53              |
| 31:AI:140:GLY:N   | 33:Ag:137:UNK:HA   | 2.11                     | 0.53              |
| 32:AJ:83:GLY:C    | 32:AJ:85:GLU:H     | 2.16                     | 0.53              |
| 34:BA:33:A:N3     | 45:BP:32:PHE:HZ    | 2.07                     | 0.53              |
| 34:BA:35:G:C6     | 34:BA:36:C:C4      | 2.97                     | 0.53              |
| 34:BA:38:G:N2     | 34:BA:397:A:C8     | 2.75                     | 0.53              |
| 34:BA:81:G:C6     | 34:BA:82:U:O4      | 2.62                     | 0.53              |
| 34:BA:196:A:H1'   | 34:BA:222:U:C1'    | 2.38                     | 0.53              |
| 34:BA:382:A:C2'   | 34:BA:383:A:O5'    | 2.57                     | 0.53              |
| 34:BA:426:G:O3'   | 37:BH:41:GLY:O     | 2.26                     | 0.53              |
| 34:BA:474:G:O2'   | 34:BA:475:G:H5'    | 2.09                     | 0.53              |
| 34:BA:539:A:OP1   | 45:BP:114:LYS:CE   | 2.56                     | 0.53              |
| 34:BA:563:A:H1'   | 34:BA:566:G:C2'    | 2.39                     | 0.53              |
| 34:BA:596:C:H2'   | 34:BA:596:C:O2     | 2.07                     | 0.53              |
| 34:BA:679:C:H2'   | 34:BA:680:C:C6     | 2.40                     | 0.53              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:689:C:H2'    | 34:BA:690:G:H1'    | 1.91                     | 0.53              |
| 34:BA:756:C:H4'    | 34:BA:823:G:O2'    | 2.08                     | 0.53              |
| 34:BA:955:U:N3     | 34:BA:956:U:C5     | 2.77                     | 0.53              |
| 34:BA:1003:G:N2    | 34:BA:1038:C:H1'   | 2.24                     | 0.53              |
| 34:BA:1009:G:H2'   | 34:BA:1010:G:H8    | 1.73                     | 0.53              |
| 34:BA:1072:G:C6    | 34:BA:1104:G:C6    | 2.96                     | 0.53              |
| 34:BA:1073:U:O2'   | 34:BA:1074:G:C5'   | 2.57                     | 0.53              |
| 34:BA:1230:C:H5'   | 42:BM:127:LYS:HE3  | 1.91                     | 0.53              |
| 34:BA:1240:U:C1'   | 40:BK:42:ILE:HD11  | 2.39                     | 0.53              |
| 34:BA:1251:A:C2'   | 34:BA:1252:A:C8    | 2.88                     | 0.53              |
| 34:BA:1273:G:H2'   | 34:BA:1274:G:O4'   | 2.09                     | 0.53              |
| 34:BA:1326:C:O2'   | 34:BA:1327:C:H5'   | 2.08                     | 0.53              |
| 34:BA:1376:U:C2    | 34:BA:1377:A:N7    | 2.77                     | 0.53              |
| 34:BA:1418:A:C2'   | 34:BA:1419:G:H5'   | 2.38                     | 0.53              |
| 34:BA:1504:G:OP1   | 34:BA:1504:G:O3'   | 2.26                     | 0.53              |
| 35:BF:72:GLY:HA2   | 35:BF:165:VAL:HG22 | 1.91                     | 0.53              |
| 36:BG:11:ARG:O     | 36:BG:12:LEU:C     | 2.52                     | 0.53              |
| 37:BH:10:ARG:NH1   | 37:BH:11:LEU:HD23  | 2.23                     | 0.53              |
| 37:BH:38:TYR:CE1   | 37:BH:45:GLN:NE2   | 2.70                     | 0.53              |
| 37:BH:106:TYR:CD2  | 37:BH:114:ARG:N    | 2.77                     | 0.53              |
| 37:BH:128:VAL:HG21 | 37:BH:133:VAL:CG2  | 2.38                     | 0.53              |
| 37:BH:193:ASP:C    | 37:BH:194:LEU:HD22 | 2.34                     | 0.53              |
| 38:BI:48:ALA:HB3   | 38:BI:53:LEU:CB    | 2.26                     | 0.53              |
| 38:BI:96:PRO:C     | 38:BI:98:THR:H     | 2.17                     | 0.53              |
| 38:BI:105:VAL:HG21 | 38:BI:132:ALA:HB2  | 1.89                     | 0.53              |
| 40:BK:15:ASP:HB2   | 40:BK:23:VAL:HB    | 1.90                     | 0.53              |
| 40:BK:45:ASP:O     | 40:BK:49:ILE:HD12  | 2.07                     | 0.53              |
| 41:BL:19:VAL:O     | 41:BL:20:TYR:HB2   | 2.09                     | 0.53              |
| 42:BM:37:PHE:HD1   | 42:BM:43:ALA:HA    | 1.72                     | 0.53              |
| 45:BP:85:ILE:HG13  | 45:BP:87:GLY:N     | 2.14                     | 0.53              |
| 46:BQ:97:PRO:CB    | 46:BQ:101:GLN:HE21 | 2.21                     | 0.53              |
| 49:BT:6:LEU:CA     | 49:BT:18:ARG:O     | 2.56                     | 0.53              |
| 50:BU:38:ARG:HG3   | 50:BU:39:SER:H     | 1.72                     | 0.53              |
| 51:BV:58:LEU:O     | 51:BV:59:SER:O     | 2.27                     | 0.53              |
| 52:BW:9:VAL:CG1    | 52:BW:44:MET:CG    | 2.81                     | 0.53              |
| 53:BX:72:LEU:CD2   | 53:BX:76:ALA:CB    | 2.86                     | 0.53              |
| 57:BZ:551:ALA:CA   | 57:BZ:552:ASP:CB   | 2.86                     | 0.53              |
| 1:AA:154:G:N2      | 1:AA:155:C:C2      | 2.76                     | 0.53              |
| 1:AA:182:A:O2'     | 1:AA:183:C:H5'     | 2.09                     | 0.53              |
| 1:AA:295:G:N2      | 1:AA:344:G:H1'     | 2.23                     | 0.53              |
| 1:AA:450:G:P       | 6:AF:52:LYS:HD3    | 2.49                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:509:C:H2'    | 1:AA:510:C:OP2    | 2.08                     | 0.53              |
| 1:AA:731:C:H2'    | 1:AA:732:C:O5'    | 2.09                     | 0.53              |
| 1:AA:786:C:C2'    | 1:AA:787:U:C5'    | 2.87                     | 0.53              |
| 1:AA:817:C:O2     | 1:AA:839:U:C5'    | 2.57                     | 0.53              |
| 1:AA:910:A:O2'    | 1:AA:911:A:H5'    | 2.09                     | 0.53              |
| 1:AA:1050:A:C6    | 1:AA:2751:G:H3'   | 2.43                     | 0.53              |
| 1:AA:1080:C:C4'   | 32:AJ:125:ARG:O   | 2.57                     | 0.53              |
| 1:AA:1139:G:N7    | 9:AK:65:LYS:HE2   | 2.24                     | 0.53              |
| 1:AA:1152:C:O4'   | 16:AR:77:SER:HA   | 2.09                     | 0.53              |
| 1:AA:1437:C:O3'   | 1:AA:1517:G:H5'   | 2.08                     | 0.53              |
| 1:AA:1582:C:H3'   | 1:AA:1583:A:O4'   | 2.09                     | 0.53              |
| 1:AA:1605:C:H3'   | 1:AA:1606:G:C8    | 2.44                     | 0.53              |
| 1:AA:1655:A:C5'   | 5:AE:113:PHE:C    | 2.82                     | 0.53              |
| 1:AA:1692:U:C1'   | 1:AA:1696:G:H22   | 2.22                     | 0.53              |
| 1:AA:1820:U:H2'   | 4:AD:202:LYS:CG   | 2.29                     | 0.53              |
| 1:AA:2095:C:O2'   | 1:AA:2096:U:H5'   | 2.08                     | 0.53              |
| 1:AA:2177:C:C5'   | 3:AC:223:ARG:CZ   | 2.85                     | 0.53              |
| 1:AA:2232:U:H2'   | 1:AA:2233:U:C5'   | 2.39                     | 0.53              |
| 1:AA:2246:G:N2    | 1:AA:2247:A:C6    | 2.77                     | 0.53              |
| 1:AA:2253:G:C4    | 1:AA:2254:C:C5    | 2.97                     | 0.53              |
| 1:AA:2435:A:C2'   | 1:AA:2436:G:O5'   | 2.57                     | 0.53              |
| 1:AA:2497:A:O2'   | 1:AA:2498:C:P     | 2.67                     | 0.53              |
| 1:AA:2505:G:O6    | 1:AA:2576:G:N9    | 2.42                     | 0.53              |
| 1:AA:2793:G:C6    | 1:AA:2794:C:N4    | 2.76                     | 0.53              |
| 1:AA:2793:G:C2    | 1:AA:2803:C:N3    | 2.77                     | 0.53              |
| 1:AA:2817:G:C2    | 1:AA:2830:G:N3    | 2.77                     | 0.53              |
| 1:AA:2838:G:O2'   | 1:AA:2839:G:H5'   | 2.08                     | 0.53              |
| 2:AB:50:G:OP1     | 14:AP:63:THR:OG1  | 2.24                     | 0.53              |
| 2:AB:113:C:H2'    | 2:AB:114:G:H8     | 1.74                     | 0.53              |
| 3:AC:26:ALA:O     | 3:AC:29:VAL:HG12  | 2.08                     | 0.53              |
| 4:AD:5:LYS:HB2    | 4:AD:82:ILE:CD1   | 2.39                     | 0.53              |
| 4:AD:9:TYR:OH     | 4:AD:91:ARG:CZ    | 2.56                     | 0.53              |
| 4:AD:72:LYS:CD    | 4:AD:75:ILE:HD12  | 2.38                     | 0.53              |
| 4:AD:117:VAL:HG22 | 4:AD:129:ASN:OD1  | 2.08                     | 0.53              |
| 4:AD:234:GLY:CA   | 4:AD:241:PRO:CG   | 2.87                     | 0.53              |
| 6:AF:11:VAL:HG22  | 6:AF:126:VAL:HG12 | 1.89                     | 0.53              |
| 6:AF:15:SER:OG    | 6:AF:16:GLY:N     | 2.41                     | 0.53              |
| 6:AF:80:ALA:HB3   | 6:AF:83:PHE:CE2   | 2.44                     | 0.53              |
| 8:AH:35:VAL:CG1   | 8:AH:75:ALA:HB2   | 2.39                     | 0.53              |
| 9:AK:34:LEU:CA    | 9:AK:49:GLY:HA2   | 2.39                     | 0.53              |
| 9:AK:58:ASP:O     | 9:AK:59:LYS:C     | 2.52                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 10:AL:92:GLU:CD   | 10:AL:113:LYS:HB3 | 2.34                     | 0.53              |
| 11:AM:81:GLN:HA   | 11:AM:86:LYS:HG2  | 1.89                     | 0.53              |
| 11:AM:97:PRO:HD3  | 11:AM:102:ARG:NH2 | 2.24                     | 0.53              |
| 11:AM:117:GLU:CD  | 11:AM:117:GLU:N   | 2.67                     | 0.53              |
| 12:AN:42:ILE:C    | 12:AN:94:VAL:HG21 | 2.34                     | 0.53              |
| 13:AO:54:LEU:N    | 13:AO:54:LEU:CD1  | 2.71                     | 0.53              |
| 13:AO:67:LEU:HD23 | 13:AO:76:VAL:HG22 | 1.91                     | 0.53              |
| 15:AQ:58:ASN:N    | 15:AQ:61:PHE:CE2  | 2.77                     | 0.53              |
| 17:AS:28:GLU:CG   | 17:AS:94:LEU:HB2  | 2.39                     | 0.53              |
| 17:AS:45:THR:O    | 17:AS:46:VAL:CB   | 2.57                     | 0.53              |
| 17:AS:73:SER:OG   | 17:AS:89:GLN:CB   | 2.56                     | 0.53              |
| 18:AT:74:ALA:CB   | 18:AT:105:VAL:HA  | 2.38                     | 0.53              |
| 18:AT:87:PRO:C    | 18:AT:94:ASP:OD1  | 2.52                     | 0.53              |
| 19:AU:12:VAL:HG13 | 19:AU:14:SER:CB   | 2.39                     | 0.53              |
| 22:AX:27:GLU:CA   | 22:AX:69:PHE:CE1  | 2.92                     | 0.53              |
| 23:AY:30:LEU:O    | 23:AY:33:GLN:HB2  | 2.09                     | 0.53              |
| 24:AZ:50:VAL:HG12 | 24:AZ:51:ALA:O    | 2.08                     | 0.53              |
| 25:Aa:20:ASN:HB2  | 25:Aa:30:GLU:CG   | 2.39                     | 0.53              |
| 25:Aa:39:CYS:O    | 25:Aa:40:HIS:CG   | 2.62                     | 0.53              |
| 27:Ac:19:ARG:HD3  | 27:Ac:19:ARG:N    | 2.14                     | 0.53              |
| 27:Ac:31:PRO:O    | 27:Ac:34:LEU:HG   | 2.09                     | 0.53              |
| 28:Ad:9:ARG:O     | 28:Ad:13:ALA:HB3  | 2.08                     | 0.53              |
| 29:Ae:9:GLY:O     | 29:Ae:10:ALA:C    | 2.50                     | 0.53              |
| 32:AJ:23:VAL:CG1  | 32:AJ:37:PHE:CG   | 2.92                     | 0.53              |
| 32:AJ:52:ILE:HD11 | 32:AJ:76:TYR:HD1  | 1.74                     | 0.53              |
| 34:BA:86:U:OP2    | 34:BA:87:A:N1     | 2.42                     | 0.53              |
| 34:BA:167:G:H2'   | 34:BA:168:G:C8    | 2.43                     | 0.53              |
| 34:BA:186:C:O2'   | 53:BX:85:MET:SD   | 2.56                     | 0.53              |
| 34:BA:199:G:H2'   | 34:BA:200:G:H8    | 1.73                     | 0.53              |
| 34:BA:299:G:C2'   | 34:BA:300:A:C8    | 2.92                     | 0.53              |
| 34:BA:314:C:O3'   | 34:BA:315:A:O4'   | 2.27                     | 0.53              |
| 34:BA:328:C:H4'   | 34:BA:329:A:O5'   | 2.09                     | 0.53              |
| 34:BA:399:G:C4    | 34:BA:400:C:C5    | 2.96                     | 0.53              |
| 34:BA:574:A:O3'   | 34:BA:575:G:H4'   | 2.06                     | 0.53              |
| 34:BA:587:G:H4'   | 41:BL:3:THR:O     | 2.09                     | 0.53              |
| 34:BA:601:C:C2    | 34:BA:638:G:C2    | 2.96                     | 0.53              |
| 34:BA:689:C:C5    | 34:BA:690:G:N7    | 2.76                     | 0.53              |
| 34:BA:758:G:H4'   | 34:BA:880:C:H4'   | 1.90                     | 0.53              |
| 34:BA:799:G:N2    | 34:BA:800:G:H1'   | 2.23                     | 0.53              |
| 34:BA:828:A:C8    | 34:BA:829:G:C8    | 2.97                     | 0.53              |
| 34:BA:832:C:C2    | 34:BA:855:G:N1    | 2.77                     | 0.53              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:868:C:H3'   | 34:BA:869:G:H8     | 1.73                     | 0.53              |
| 34:BA:899:C:H2'   | 34:BA:900:A:O4'    | 2.09                     | 0.53              |
| 34:BA:942:G:N2    | 42:BM:124:GLN:NE2  | 2.49                     | 0.53              |
| 34:BA:1110:A:C6   | 34:BA:1111:A:C5    | 2.96                     | 0.53              |
| 34:BA:1185:G:C2'  | 34:BA:1186:G:H5'   | 2.39                     | 0.53              |
| 34:BA:1197:G:H3'  | 34:BA:1197:G:P     | 2.49                     | 0.53              |
| 34:BA:1361:G:H3'  | 34:BA:1361:G:C8    | 2.43                     | 0.53              |
| 34:BA:1386:G:O2'  | 34:BA:1387:G:H5'   | 2.09                     | 0.53              |
| 34:BA:1406:U:H2'  | 34:BA:1407:C:O5'   | 2.09                     | 0.53              |
| 35:BF:46:LYS:HA   | 35:BF:46:LYS:CE    | 2.34                     | 0.53              |
| 35:BF:58:ILE:HG22 | 35:BF:221:LEU:CD1  | 2.38                     | 0.53              |
| 35:BF:74:LYS:O    | 35:BF:75:LYS:C     | 2.50                     | 0.53              |
| 35:BF:85:ALA:O    | 35:BF:86:GLU:C     | 2.50                     | 0.53              |
| 35:BF:104:ASN:OD1 | 35:BF:108:ILE:CG1  | 2.53                     | 0.53              |
| 35:BF:187:LEU:HB2 | 35:BF:201:ILE:CG2  | 2.38                     | 0.53              |
| 36:BG:12:LEU:CD1  | 36:BG:18:TRP:CH2   | 2.92                     | 0.53              |
| 36:BG:84:ILE:HG13 | 36:BG:101:LEU:CD1  | 2.35                     | 0.53              |
| 37:BH:18:LYS:HE2  | 37:BH:20:TYR:CD2   | 2.44                     | 0.53              |
| 37:BH:31:CYS:O    | 37:BH:33:MET:CG    | 2.53                     | 0.53              |
| 37:BH:128:VAL:HA  | 37:BH:146:ILE:CG2  | 2.39                     | 0.53              |
| 38:BI:149:GLU:O   | 38:BI:152:ARG:N    | 2.42                     | 0.53              |
| 39:BJ:75:LEU:CD2  | 39:BJ:79:LEU:HD21  | 2.30                     | 0.53              |
| 40:BK:72:ARG:HG2  | 40:BK:142:GLU:CD   | 2.33                     | 0.53              |
| 41:BL:7:ALA:O     | 41:BL:10:LEU:N     | 2.41                     | 0.53              |
| 42:BM:55:ALA:HB1  | 42:BM:58:HIS:HD1   | 1.72                     | 0.53              |
| 43:BN:44:VAL:HG22 | 43:BN:66:ARG:HD3   | 1.91                     | 0.53              |
| 44:BO:99:GLN:HA   | 44:BO:105:VAL:HG13 | 1.91                     | 0.53              |
| 45:BP:5:PRO:O     | 45:BP:6:THR:CB     | 2.57                     | 0.53              |
| 45:BP:106:ASP:O   | 45:BP:107:ALA:C    | 2.51                     | 0.53              |
| 46:BQ:25:ILE:HD11 | 46:BQ:66:LEU:CD2   | 2.36                     | 0.53              |
| 47:BR:14:PRO:HB2  | 47:BR:17:LYS:HA    | 1.91                     | 0.53              |
| 49:BT:32:TYR:N    | 49:BT:32:TYR:HD1   | 2.07                     | 0.53              |
| 50:BU:7:THR:HG23  | 50:BU:8:GLY:H      | 1.74                     | 0.53              |
| 51:BV:68:LYS:O    | 51:BV:72:ARG:HG3   | 2.08                     | 0.53              |
| 51:BV:75:ILE:HG22 | 51:BV:76:LEU:HD13  | 1.89                     | 0.53              |
| 52:BW:22:LEU:HA   | 52:BW:25:LYS:NZ    | 2.23                     | 0.53              |
| 53:BX:54:LYS:O    | 53:BX:57:ARG:CB    | 2.56                     | 0.53              |
| 55:BC:4:C:C2      | 55:BC:5:G:N7       | 2.76                     | 0.53              |
| 55:BC:8:U:C6      | 55:BC:13:C:N4      | 2.77                     | 0.53              |
| 55:BC:37:A:H2'    | 55:BC:38:A:C5'     | 2.39                     | 0.53              |
| 56:BD:33:U:C3'    | 56:BD:34:G:H5''    | 2.38                     | 0.53              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 56:BE:21:A:N1      | 56:BE:46:G:N3     | 2.38                     | 0.53              |
| 57:BZ:165:ALA:HA   | 57:BZ:171:ILE:CB  | 2.30                     | 0.53              |
| 57:BZ:273:ILE:HD12 | 57:BZ:274:VAL:H   | 1.74                     | 0.53              |
| 1:AA:91:A:H2       | 1:AA:92:G:H5'     | 1.73                     | 0.53              |
| 1:AA:197:A:H5''    | 1:AA:2068:U:C4    | 2.44                     | 0.53              |
| 1:AA:270(W):G:N2   | 1:AA:273:G:H4'    | 2.23                     | 0.53              |
| 1:AA:278:A:N7      | 1:AA:359:A:C2     | 2.77                     | 0.53              |
| 1:AA:350:U:C6      | 1:AA:350:U:OP2    | 2.61                     | 0.53              |
| 1:AA:424:G:C2      | 1:AA:425:G:C8     | 2.97                     | 0.53              |
| 1:AA:447:A:N1      | 1:AA:454:A:N7     | 2.57                     | 0.53              |
| 1:AA:483:A:N6      | 1:AA:497:A:C2     | 2.76                     | 0.53              |
| 1:AA:515:A:H5''    | 16:AR:32:PHE:HZ   | 1.72                     | 0.53              |
| 1:AA:556:G:C2'     | 1:AA:557:U:O5'    | 2.57                     | 0.53              |
| 1:AA:691:C:O2'     | 1:AA:692:C:H5'    | 2.08                     | 0.53              |
| 1:AA:733:G:C6      | 1:AA:761:A:C4     | 2.97                     | 0.53              |
| 1:AA:808:G:H2'     | 1:AA:809:G:H8     | 1.70                     | 0.53              |
| 1:AA:869:G:C6      | 1:AA:909:A:N6     | 2.77                     | 0.53              |
| 1:AA:950:G:C6      | 1:AA:951:C:N4     | 2.77                     | 0.53              |
| 1:AA:973:A:O2'     | 1:AA:974:G:H5'    | 2.08                     | 0.53              |
| 1:AA:1129:A:N3     | 1:AA:2516:G:H1'   | 2.23                     | 0.53              |
| 1:AA:1273:U:H4'    | 1:AA:1275:A:OP1   | 2.09                     | 0.53              |
| 1:AA:1451:C:C3'    | 1:AA:1453:A:H4'   | 2.38                     | 0.53              |
| 1:AA:1483:G:C1'    | 1:AA:1507:A:C2    | 2.91                     | 0.53              |
| 1:AA:1485:G:H2'    | 1:AA:1486:A:H8    | 1.74                     | 0.53              |
| 1:AA:1657:C:N3     | 1:AA:2004:G:N2    | 2.56                     | 0.53              |
| 1:AA:1790:C:N3     | 1:AA:1791:A:N6    | 2.57                     | 0.53              |
| 1:AA:1807:G:N3     | 1:AA:1809:A:H5'   | 2.24                     | 0.53              |
| 1:AA:1819:A:O2'    | 1:AA:1820:U:H5'   | 2.09                     | 0.53              |
| 1:AA:1915:U:H2'    | 1:AA:1915:U:O2    | 2.07                     | 0.53              |
| 1:AA:1921:G:O6     | 58:AA:3001:NMY:N6 | 2.42                     | 0.53              |
| 1:AA:1945:G:C4     | 1:AA:1946:U:C5    | 2.97                     | 0.53              |
| 1:AA:1949:G:C5     | 1:AA:1950:G:C8    | 2.96                     | 0.53              |
| 1:AA:2004:G:C8     | 1:AA:2005:A:C8    | 2.97                     | 0.53              |
| 1:AA:2051:A:C2     | 1:AA:2614:A:C6    | 2.97                     | 0.53              |
| 1:AA:2067:G:C6     | 1:AA:2069:G:N7    | 2.77                     | 0.53              |
| 1:AA:2078:C:H2'    | 1:AA:2079:U:C6    | 2.44                     | 0.53              |
| 1:AA:2124:G:O2'    | 3:AC:216:THR:CG2  | 2.49                     | 0.53              |
| 1:AA:2132:U:O2     | 1:AA:2133:G:H5''  | 2.09                     | 0.53              |
| 1:AA:2155:G:H2'    | 1:AA:2156:G:O5'   | 2.09                     | 0.53              |
| 1:AA:2182:G:C2     | 1:AA:2183:C:C2    | 2.97                     | 0.53              |
| 1:AA:2436:G:O2'    | 1:AA:2437:U:OP1   | 2.27                     | 0.53              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:2636:U:P      | 5:AE:79:ARG:HB3    | 2.48                     | 0.53              |
| 1:AA:2652:C:H3'    | 1:AA:2653:U:C5     | 2.43                     | 0.53              |
| 1:AA:2666:C:C3'    | 1:AA:2667:C:C5'    | 2.86                     | 0.53              |
| 2:AB:30:C:C1'      | 2:AB:58:A:H2       | 2.21                     | 0.53              |
| 2:AB:50:G:C4'      | 14:AP:61:ASN:OD1   | 2.51                     | 0.53              |
| 3:AC:75:LEU:CD2    | 3:AC:77:ILE:HD11   | 2.32                     | 0.53              |
| 3:AC:86:ALA:O      | 3:AC:89:ALA:HB3    | 2.09                     | 0.53              |
| 3:AC:209:LEU:HG    | 3:AC:212:VAL:CG2   | 2.39                     | 0.53              |
| 4:AD:5:LYS:O       | 4:AD:29:PRO:HD3    | 2.09                     | 0.53              |
| 4:AD:6:PHE:C       | 4:AD:28:GLU:OE1    | 2.52                     | 0.53              |
| 4:AD:117:VAL:C     | 4:AD:118:VAL:CG2   | 2.81                     | 0.53              |
| 4:AD:240:ALA:O     | 4:AD:241:PRO:O     | 2.26                     | 0.53              |
| 5:AE:158:GLY:O     | 5:AE:160:TYR:CD1   | 2.51                     | 0.53              |
| 6:AF:37:VAL:O      | 6:AF:184:TYR:OH    | 2.27                     | 0.53              |
| 6:AF:125:LEU:C     | 6:AF:127:GLU:N     | 2.53                     | 0.53              |
| 7:AG:21:ARG:O      | 7:AG:22:ARG:C      | 2.52                     | 0.53              |
| 8:AH:44:VAL:HG22   | 8:AH:45:VAL:N      | 2.23                     | 0.53              |
| 9:AK:55:VAL:HB     | 9:AK:130:HIS:NE2   | 2.23                     | 0.53              |
| 9:AK:66:LYS:C      | 9:AK:69:GLN:OE1    | 2.52                     | 0.53              |
| 9:AK:107:LEU:HD11  | 9:AK:113:GLY:C     | 2.33                     | 0.53              |
| 10:AL:22:ILE:HG13  | 10:AL:40:VAL:HG13  | 1.91                     | 0.53              |
| 11:AM:63:PRO:O     | 11:AM:65:ARG:HG3   | 2.08                     | 0.53              |
| 11:AM:126:VAL:HB   | 11:AM:146:VAL:H    | 1.74                     | 0.53              |
| 12:AN:51:ARG:CD    | 12:AN:52:VAL:N     | 2.70                     | 0.53              |
| 12:AN:97:VAL:HG11  | 12:AN:103:MET:HE3  | 1.91                     | 0.53              |
| 12:AN:126:PRO:O    | 12:AN:127:ILE:HG13 | 2.09                     | 0.53              |
| 13:AO:44:LEU:HD13  | 13:AO:48:VAL:HG23  | 1.91                     | 0.53              |
| 14:AP:29:PHE:C     | 14:AP:30:ARG:HG2   | 2.34                     | 0.53              |
| 15:AQ:3:ARG:HA     | 15:AQ:6:LEU:HD21   | 1.89                     | 0.53              |
| 15:AQ:67:SER:CB    | 15:AQ:75:ILE:HG23  | 2.39                     | 0.53              |
| 15:AQ:97:ALA:O     | 15:AQ:99:LEU:N     | 2.42                     | 0.53              |
| 16:AR:74:LEU:C     | 16:AR:78:THR:OG1   | 2.52                     | 0.53              |
| 18:AT:104:THR:HG23 | 18:AT:104:THR:O    | 2.09                     | 0.53              |
| 19:AU:5:TYR:O      | 19:AU:7:VAL:N      | 2.42                     | 0.53              |
| 19:AU:8:ILE:C      | 19:AU:9:LEU:CG     | 2.76                     | 0.53              |
| 19:AU:34:ALA:HB1   | 19:AU:38:GLU:HB3   | 1.90                     | 0.53              |
| 20:AV:35:TYR:CD1   | 20:AV:64:GLU:O     | 2.62                     | 0.53              |
| 21:AW:24:LEU:HD12  | 21:AW:41:LEU:CD1   | 2.38                     | 0.53              |
| 21:AW:29:TYR:CE2   | 21:AW:72:ARG:NH1   | 2.76                     | 0.53              |
| 21:AW:43:GLU:HA    | 21:AW:46:LYS:CD    | 2.38                     | 0.53              |
| 23:AY:6:GLU:CD     | 23:AY:6:GLU:N      | 2.66                     | 0.53              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 24:AZ:26:LEU:CG    | 24:AZ:35:ARG:HH11 | 2.21                     | 0.53              |
| 25:Aa:24:THR:O     | 25:Aa:25:TYR:HD2  | 1.91                     | 0.53              |
| 26:Ab:10:LYS:HD2   | 26:Ab:15:ARG:NH1  | 2.24                     | 0.53              |
| 29:Ae:60:LEU:O     | 29:Ae:63:PRO:HD3  | 2.09                     | 0.53              |
| 32:AJ:87:GLY:C     | 32:AJ:89:HIS:H    | 2.16                     | 0.53              |
| 33:Ag:309:UNK:CA   | 57:BZ:142:ASP:HA  | 2.36                     | 0.53              |
| 33:Ag:315:UNK:O    | 33:Ag:320:UNK:N   | 2.41                     | 0.53              |
| 34:BA:67:C:H2'     | 34:BA:68:G:C8     | 2.44                     | 0.53              |
| 34:BA:193:C:H2'    | 34:BA:194:C:H6    | 1.73                     | 0.53              |
| 34:BA:216:G:H2'    | 34:BA:217:C:C6    | 2.44                     | 0.53              |
| 34:BA:229:U:C2     | 34:BA:230:G:C8    | 2.96                     | 0.53              |
| 34:BA:241:C:C2'    | 34:BA:242:C:O5'   | 2.57                     | 0.53              |
| 34:BA:362:G:O5'    | 45:BP:34:ARG:NH2  | 2.41                     | 0.53              |
| 34:BA:433:C:C4     | 34:BA:434:U:O4    | 2.62                     | 0.53              |
| 34:BA:716:A:C2'    | 34:BA:717:C:H5'   | 2.39                     | 0.53              |
| 34:BA:754:C:H1'    | 48:BS:69:TYR:CG   | 2.44                     | 0.53              |
| 34:BA:864:A:C6     | 34:BA:865:A:N1    | 2.76                     | 0.53              |
| 34:BA:947:G:C2     | 34:BA:948:C:C6    | 2.97                     | 0.53              |
| 34:BA:1101:A:O2'   | 34:BA:1102:A:P    | 2.67                     | 0.53              |
| 34:BA:1234:C:C4    | 34:BA:1235:U:C4   | 2.97                     | 0.53              |
| 34:BA:1307:U:H2'   | 34:BA:1308:U:O4'  | 2.09                     | 0.53              |
| 34:BA:1309:G:C8    | 34:BA:1330:U:N3   | 2.77                     | 0.53              |
| 34:BA:1449:C:H2'   | 34:BA:1449:C:O2   | 2.08                     | 0.53              |
| 34:BA:1496:C:H3'   | 34:BA:1496:C:H6   | 1.74                     | 0.53              |
| 35:BF:15:VAL:CG2   | 35:BF:209:ARG:NE  | 2.66                     | 0.53              |
| 35:BF:132:LYS:N    | 35:BF:132:LYS:HZ3 | 2.07                     | 0.53              |
| 35:BF:209:ARG:HD2  | 35:BF:209:ARG:C   | 2.33                     | 0.53              |
| 35:BF:213:LEU:CD2  | 35:BF:213:LEU:C   | 2.82                     | 0.53              |
| 36:BG:110:ASN:HD21 | 36:BG:140:ARG:CD  | 2.22                     | 0.53              |
| 37:BH:8:VAL:C      | 37:BH:10:ARG:H    | 2.15                     | 0.53              |
| 37:BH:78:LEU:HD13  | 37:BH:96:LEU:CB   | 2.38                     | 0.53              |
| 38:BI:9:LYS:HD2    | 38:BI:111:GLU:OE1 | 2.09                     | 0.53              |
| 38:BI:76:ILE:CG2   | 38:BI:78:HIS:CD2  | 2.91                     | 0.53              |
| 40:BK:10:ARG:HB2   | 40:BK:10:ARG:HH11 | 1.74                     | 0.53              |
| 40:BK:44:TYR:O     | 40:BK:45:ASP:C    | 2.52                     | 0.53              |
| 40:BK:115:ARG:CB   | 40:BK:118:VAL:CG2 | 2.77                     | 0.53              |
| 41:BL:26:VAL:HG13  | 41:BL:27:PRO:HD2  | 1.91                     | 0.53              |
| 41:BL:36:LEU:C     | 41:BL:39:LEU:HB2  | 2.33                     | 0.53              |
| 41:BL:48:TYR:CD1   | 41:BL:49:GLU:N    | 2.77                     | 0.53              |
| 42:BM:50:LEU:CD2   | 42:BM:51:ARG:NH1  | 2.72                     | 0.53              |
| 43:BN:31:GLY:HA2   | 43:BN:81:THR:OG1  | 2.08                     | 0.53              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 45:BP:12:ARG:CZ    | 45:BP:12:ARG:CB    | 2.87                     | 0.53              |
| 45:BP:102:ARG:CZ   | 45:BP:109:GLY:C    | 2.82                     | 0.53              |
| 47:BR:45:ARG:CB    | 47:BR:45:ARG:NH1   | 2.54                     | 0.53              |
| 48:BS:70:LEU:HD21  | 48:BS:81:LEU:HD13  | 1.90                     | 0.53              |
| 51:BV:36:ASN:O     | 51:BV:37:VAL:C     | 2.52                     | 0.53              |
| 51:BV:62:GLU:C     | 51:BV:66:LEU:HG    | 2.31                     | 0.53              |
| 54:BY:8:THR:HG22   | 54:BY:21:TYR:CE2   | 2.44                     | 0.53              |
| 55:BC:28:G:H8      | 55:BC:28:G:O5'     | 1.92                     | 0.53              |
| 56:BD:54:U:O2'     | 56:BD:55:U:H5'     | 2.08                     | 0.53              |
| 57:BZ:68:TYR:N     | 57:BZ:68:TYR:CD1   | 2.76                     | 0.53              |
| 57:BZ:85:VAL:O     | 57:BZ:88:VAL:HG23  | 2.09                     | 0.53              |
| 57:BZ:129:LYS:NZ   | 60:BZ:701:GCP:N9   | 2.56                     | 0.53              |
| 57:BZ:162:ILE:HG22 | 57:BZ:162:ILE:O    | 2.08                     | 0.53              |
| 57:BZ:233:PRO:CB   | 57:BZ:234:ASN:CA   | 2.86                     | 0.53              |
| 57:BZ:258:LEU:HD13 | 57:BZ:260:LEU:CD1  | 2.39                     | 0.53              |
| 57:BZ:381:ALA:HA   | 57:BZ:578:VAL:C    | 2.34                     | 0.53              |
| 57:BZ:488:LEU:CD1  | 57:BZ:525:GLY:CA   | 2.76                     | 0.53              |
| 1:AA:6:A:C4'       | 9:AK:132:ALA:O     | 2.55                     | 0.53              |
| 1:AA:52:A:C4       | 1:AA:53:A:C8       | 2.97                     | 0.53              |
| 1:AA:265:A:H2'     | 1:AA:266:G:C4'     | 2.39                     | 0.53              |
| 1:AA:322:A:O2'     | 1:AA:340:A:C5      | 2.62                     | 0.53              |
| 1:AA:624:C:OP2     | 11:AM:105:LEU:HD23 | 2.08                     | 0.53              |
| 1:AA:637:A:C2      | 1:AA:651:G:C4'     | 2.92                     | 0.53              |
| 1:AA:820:A:C2      | 1:AA:943:U:O2'     | 2.62                     | 0.53              |
| 1:AA:972:G:C8      | 1:AA:972:G:OP2     | 2.62                     | 0.53              |
| 1:AA:1027:A:C6     | 1:AA:1126:A:C4     | 2.96                     | 0.53              |
| 1:AA:1064:C:H2'    | 1:AA:1064:C:O2     | 2.08                     | 0.53              |
| 1:AA:1077:A:H5''   | 1:AA:1078:U:C2     | 2.44                     | 0.53              |
| 1:AA:1255:U:C5'    | 1:AA:1256:G:C5'    | 2.69                     | 0.53              |
| 1:AA:1288:U:C2     | 1:AA:1327:C:C2     | 2.97                     | 0.53              |
| 1:AA:1360:A:C8     | 1:AA:1361:G:C8     | 2.97                     | 0.53              |
| 1:AA:1441:G:N2     | 1:AA:1442:G:H1'    | 2.24                     | 0.53              |
| 1:AA:1489:U:O2'    | 1:AA:1490:A:OP2    | 2.24                     | 0.53              |
| 1:AA:1497:U:O4     | 1:AA:1577:C:H4'    | 2.08                     | 0.53              |
| 1:AA:1524:G:C5     | 1:AA:1525:G:N7     | 2.77                     | 0.53              |
| 1:AA:1539:G:O6     | 1:AA:1540:G:C6     | 2.62                     | 0.53              |
| 1:AA:1559:G:C6     | 1:AA:1560:G:C4'    | 2.91                     | 0.53              |
| 1:AA:1665:A:H1'    | 10:AL:1:MET:HG2    | 1.90                     | 0.53              |
| 1:AA:1676:A:N7     | 1:AA:1677:A:N7     | 2.56                     | 0.53              |
| 1:AA:1710:C:O2'    | 1:AA:2858:C:N4     | 2.41                     | 0.53              |
| 1:AA:1728:G:H1     | 1:AA:1733:G:H22    | 1.56                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1764:G:C2'   | 1:AA:1765:C:O5'   | 2.57                     | 0.53              |
| 1:AA:1794:U:H2'   | 1:AA:1795:C:H6    | 1.73                     | 0.53              |
| 1:AA:1818:U:C4    | 4:AD:156:ALA:CB   | 2.92                     | 0.53              |
| 1:AA:1819:A:H2'   | 1:AA:1820:U:OP2   | 2.09                     | 0.53              |
| 1:AA:1914:C:H2'   | 1:AA:1914:C:O2    | 2.09                     | 0.53              |
| 1:AA:1931:U:O2'   | 1:AA:1932:A:C5'   | 2.57                     | 0.53              |
| 1:AA:1967:C:O2    | 1:AA:1967:C:C2'   | 2.53                     | 0.53              |
| 1:AA:1970:A:O2'   | 1:AA:1971:A:OP2   | 2.27                     | 0.53              |
| 1:AA:1980:G:C2'   | 1:AA:1981:A:H5''  | 2.39                     | 0.53              |
| 1:AA:2191:G:N2    | 1:AA:2192:G:H1'   | 2.24                     | 0.53              |
| 1:AA:2244:U:H2'   | 1:AA:2245:U:O5'   | 2.09                     | 0.53              |
| 1:AA:2415:G:C5'   | 11:AM:61:ARG:HD2  | 2.37                     | 0.53              |
| 1:AA:2470:G:O6    | 1:AA:2481:G:C2    | 2.62                     | 0.53              |
| 1:AA:2472:G:H2'   | 1:AA:2475:C:H42   | 1.73                     | 0.53              |
| 1:AA:2563:U:H4'   | 10:AL:28:SER:HG   | 1.71                     | 0.53              |
| 1:AA:2626:C:O2'   | 1:AA:2627:G:O4'   | 2.25                     | 0.53              |
| 1:AA:2749:A:OP2   | 1:AA:2749:A:C8    | 2.62                     | 0.53              |
| 1:AA:2834:G:C4    | 1:AA:2879:C:C4    | 2.96                     | 0.53              |
| 1:AA:2857:G:H3'   | 1:AA:2857:G:C8    | 2.43                     | 0.53              |
| 2:AB:48:A:C2      | 2:AB:49:C:C2      | 2.96                     | 0.53              |
| 2:AB:85:G:C4      | 2:AB:92:G:N2      | 2.77                     | 0.53              |
| 3:AC:90:GLY:CA    | 3:AC:157:LYS:HB2  | 2.38                     | 0.53              |
| 4:AD:52:ARG:N     | 4:AD:52:ARG:CD    | 2.72                     | 0.53              |
| 4:AD:157:ARG:CB   | 4:AD:160:GLY:O    | 2.56                     | 0.53              |
| 5:AE:84:PHE:C     | 5:AE:85:ASN:ND2   | 2.64                     | 0.53              |
| 5:AE:121:ASN:O    | 5:AE:122:PHE:C    | 2.52                     | 0.53              |
| 7:AG:8:LYS:HD3    | 7:AG:8:LYS:O      | 2.09                     | 0.53              |
| 7:AG:54:GLU:O     | 7:AG:57:ALA:CB    | 2.45                     | 0.53              |
| 7:AG:102:PHE:HD2  | 7:AG:106:LEU:HD12 | 1.71                     | 0.53              |
| 7:AG:177:GLY:O    | 7:AG:178:PHE:CB   | 2.56                     | 0.53              |
| 10:AL:6:THR:HG23  | 10:AL:21:CYS:HB3  | 1.90                     | 0.53              |
| 12:AN:34:LEU:CD1  | 12:AN:67:ARG:NH2  | 2.72                     | 0.53              |
| 13:AO:25:ALA:O    | 13:AO:29:LEU:CG   | 2.36                     | 0.53              |
| 13:AO:53:HIS:ND1  | 13:AO:56:LYS:HE2  | 2.24                     | 0.53              |
| 13:AO:55:ALA:HA   | 13:AO:80:PHE:HD1  | 1.74                     | 0.53              |
| 13:AO:75:LEU:HD23 | 13:AO:78:LYS:HG2  | 1.91                     | 0.53              |
| 14:AP:31:SER:HB3  | 14:AP:34:HIS:CB   | 2.39                     | 0.53              |
| 19:AU:12:VAL:C    | 19:AU:14:SER:N    | 2.65                     | 0.53              |
| 20:AV:50:ARG:CA   | 20:AV:54:LYS:HA   | 2.31                     | 0.53              |
| 23:AY:23:LYS:O    | 23:AY:26:GLU:CB   | 2.52                     | 0.53              |
| 24:AZ:3:ARG:HH12  | 24:AZ:59:VAL:CG2  | 2.21                     | 0.53              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 24:AZ:50:VAL:HG12 | 24:AZ:51:ALA:N     | 2.23                     | 0.53              |
| 26:Ab:47:PRO:O    | 26:Ab:58:LEU:HG    | 2.08                     | 0.53              |
| 29:Ae:36:LYS:O    | 29:Ae:37:SER:HB3   | 2.08                     | 0.53              |
| 31:AI:140:GLY:O   | 33:Ag:137:UNK:N    | 2.41                     | 0.53              |
| 34:BA:37:U:O2     | 34:BA:548:G:N1     | 2.42                     | 0.53              |
| 34:BA:112:G:N2    | 34:BA:113:G:N9     | 2.57                     | 0.53              |
| 34:BA:166:G:C2    | 34:BA:167:G:C8     | 2.97                     | 0.53              |
| 34:BA:263:A:H5'   | 53:BX:75:ASN:HD21  | 1.75                     | 0.53              |
| 34:BA:363:A:N1    | 34:BA:364:A:N3     | 2.57                     | 0.53              |
| 34:BA:375:U:H2'   | 34:BA:376:G:C5'    | 2.39                     | 0.53              |
| 34:BA:407:G:H1'   | 37:BH:119:GLN:OE1  | 2.08                     | 0.53              |
| 34:BA:598:U:C2    | 34:BA:599:C:C6     | 2.97                     | 0.53              |
| 34:BA:646:U:H2'   | 34:BA:647:C:H6     | 1.73                     | 0.53              |
| 34:BA:671:G:C2    | 34:BA:672:U:H1'    | 2.44                     | 0.53              |
| 34:BA:790:A:C2'   | 34:BA:791:G:O5'    | 2.57                     | 0.53              |
| 34:BA:854:G:H5''  | 34:BA:871:U:N3     | 2.20                     | 0.53              |
| 34:BA:965:A:C8    | 34:BA:969:A:N3     | 2.76                     | 0.53              |
| 34:BA:980:C:H3'   | 34:BA:981:U:C5     | 2.44                     | 0.53              |
| 34:BA:1105:A:H2'  | 34:BA:1106:G:C8    | 2.39                     | 0.53              |
| 34:BA:1145:C:C1'  | 34:BA:1146:A:C8    | 2.89                     | 0.53              |
| 34:BA:1192:C:N4   | 34:BA:1193:G:N7    | 2.57                     | 0.53              |
| 34:BA:1222:G:C2   | 34:BA:1223:C:N3    | 2.76                     | 0.53              |
| 34:BA:1263:C:O2'  | 34:BA:1264:C:H5'   | 2.09                     | 0.53              |
| 34:BA:1284:C:H2'  | 34:BA:1285:A:C8    | 2.44                     | 0.53              |
| 34:BA:1311:G:C2   | 34:BA:1327:C:C1'   | 2.92                     | 0.53              |
| 35:BF:16:HIS:O    | 35:BF:204:ASN:CB   | 2.55                     | 0.53              |
| 35:BF:32:ILE:HD12 | 35:BF:190:THR:HG22 | 1.90                     | 0.53              |
| 35:BF:135:GLN:C   | 35:BF:139:LYS:NZ   | 2.59                     | 0.53              |
| 35:BF:144:ARG:HD3 | 35:BF:148:TYR:OH   | 2.09                     | 0.53              |
| 35:BF:218:ALA:O   | 35:BF:219:VAL:C    | 2.52                     | 0.53              |
| 37:BH:60:GLU:HA   | 37:BH:63:LYS:CD    | 2.37                     | 0.53              |
| 37:BH:87:GLY:O    | 37:BH:88:VAL:C     | 2.51                     | 0.53              |
| 37:BH:159:ARG:HD2 | 37:BH:163:GLU:CD   | 2.34                     | 0.53              |
| 37:BH:187:ARG:HD2 | 37:BH:188:LEU:H    | 1.73                     | 0.53              |
| 37:BH:201:GLN:O   | 37:BH:202:LEU:C    | 2.52                     | 0.53              |
| 38:BI:115:VAL:CG2 | 38:BI:118:ILE:HD12 | 2.36                     | 0.53              |
| 39:BJ:72:VAL:HG23 | 39:BJ:73:ASN:N     | 2.11                     | 0.53              |
| 40:BK:146:GLU:O   | 40:BK:149:ARG:N    | 2.42                     | 0.53              |
| 41:BL:49:GLU:OE1  | 41:BL:60:ARG:HB3   | 2.09                     | 0.53              |
| 43:BN:7:LYS:HZ2   | 43:BN:71:LEU:HD21  | 1.73                     | 0.53              |
| 43:BN:23:ILE:CD1  | 43:BN:85:LEU:HB3   | 2.39                     | 0.53              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 44:BO:66:LEU:O    | 44:BO:70:LYS:HD2   | 2.08                     | 0.53              |
| 45:BP:82:VAL:O    | 45:BP:83:VAL:HB    | 2.09                     | 0.53              |
| 45:BP:126:LYS:HE3 | 45:BP:126:LYS:CA   | 2.39                     | 0.53              |
| 46:BQ:8:GLU:HG3   | 46:BQ:22:ILE:N     | 2.23                     | 0.53              |
| 46:BQ:78:ILE:HG22 | 46:BQ:78:ILE:O     | 2.09                     | 0.53              |
| 46:BQ:97:PRO:CG   | 46:BQ:101:GLN:CG   | 2.86                     | 0.53              |
| 48:BS:36:ILE:HG13 | 48:BS:59:MET:SD    | 2.49                     | 0.53              |
| 55:BC:4:C:O2      | 55:BC:4:C:H2'      | 2.08                     | 0.53              |
| 55:BC:20:U:H2'    | 55:BC:21:A:C4'     | 2.36                     | 0.53              |
| 56:BD:52:G:C2     | 56:BD:63:G:N3      | 2.76                     | 0.53              |
| 56:BD:70:G:H8     | 56:BD:70:G:O5'     | 1.92                     | 0.53              |
| 56:BE:16:U:O2     | 56:BE:60:U:C2      | 2.62                     | 0.53              |
| 56:BE:18:G:N2     | 56:BE:58:A:O4'     | 2.42                     | 0.53              |
| 57:BZ:69:ARG:CG   | 57:BZ:71:ASN:CB    | 2.86                     | 0.53              |
| 57:BZ:119:TYR:HB3 | 57:BZ:121:LEU:N    | 2.23                     | 0.53              |
| 57:BZ:124:ILE:O   | 57:BZ:126:VAL:HG23 | 2.09                     | 0.53              |
| 57:BZ:127:ILE:N   | 57:BZ:163:VAL:O    | 2.34                     | 0.53              |
| 57:BZ:231:VAL:O   | 57:BZ:231:VAL:HG13 | 2.09                     | 0.53              |
| 57:BZ:448:LEU:O   | 57:BZ:451:PHE:HB2  | 2.09                     | 0.53              |
| 57:BZ:509:LYS:HG2 | 57:BZ:561:ILE:HG23 | 1.91                     | 0.53              |
| 1:AA:61:G:H5'     | 23:AY:45:ILE:CG1   | 2.39                     | 0.52              |
| 1:AA:126:A:C2     | 28:Ad:18:PHE:HB3   | 2.44                     | 0.52              |
| 1:AA:143:C:C2     | 1:AA:144:C:H5      | 2.27                     | 0.52              |
| 1:AA:149:A:C5     | 1:AA:150:C:C4      | 2.97                     | 0.52              |
| 1:AA:223:A:N6     | 1:AA:408:G:O4'     | 2.42                     | 0.52              |
| 1:AA:223:A:C6     | 1:AA:408:G:O4'     | 2.62                     | 0.52              |
| 1:AA:244:A:C6     | 1:AA:245:G:H1'     | 2.44                     | 0.52              |
| 1:AA:274:G:N3     | 1:AA:274:G:C3'     | 2.70                     | 0.52              |
| 1:AA:320:A:H3'    | 6:AF:136:THR:OG1   | 2.09                     | 0.52              |
| 1:AA:328:U:O4'    | 20:AV:1:MET:HE1    | 2.09                     | 0.52              |
| 1:AA:330:A:HO2'   | 1:AA:1210:A:N6     | 2.06                     | 0.52              |
| 1:AA:420:C:H2'    | 1:AA:421:U:O4'     | 2.09                     | 0.52              |
| 1:AA:534:U:OP1    | 16:AR:24:TYR:CE2   | 2.62                     | 0.52              |
| 1:AA:565:C:C1'    | 1:AA:1252:G:O6     | 2.56                     | 0.52              |
| 1:AA:599:G:H5'    | 6:AF:31:HIS:NE2    | 2.24                     | 0.52              |
| 1:AA:733:G:N2     | 1:AA:734:A:N7      | 2.57                     | 0.52              |
| 1:AA:805:G:O6     | 1:AA:2068:U:OP1    | 2.26                     | 0.52              |
| 1:AA:1013:C:P     | 1:AA:1142:U:O2     | 2.67                     | 0.52              |
| 1:AA:1212:G:C5    | 1:AA:1236:G:N1     | 2.77                     | 0.52              |
| 1:AA:1277:G:HO2'  | 13:AO:24:GLN:HG2   | 1.75                     | 0.52              |
| 1:AA:1322:A:N7    | 1:AA:1323:U:C5     | 2.77                     | 0.52              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1326:U:H6    | 1:AA:2010:G:H21    | 1.51                     | 0.52              |
| 1:AA:1472:A:N7    | 1:AA:1474:C:N4     | 2.57                     | 0.52              |
| 1:AA:1477:A:H2'   | 1:AA:1478:G:H1'    | 1.90                     | 0.52              |
| 1:AA:1531:C:C2    | 1:AA:1532:C:C5     | 2.97                     | 0.52              |
| 1:AA:1754:C:H2'   | 1:AA:1755:A:C1'    | 2.38                     | 0.52              |
| 1:AA:1829:A:C2    | 1:AA:1830:C:C1'    | 2.91                     | 0.52              |
| 1:AA:1944:U:C1'   | 1:AA:1955:U:C1'    | 2.86                     | 0.52              |
| 1:AA:1961:C:C5'   | 34:BA:1484:C:O2'   | 2.57                     | 0.52              |
| 1:AA:2165:G:C8    | 1:AA:2166:G:C8     | 2.96                     | 0.52              |
| 1:AA:2215:G:H2'   | 1:AA:2216:G:C8     | 2.44                     | 0.52              |
| 1:AA:2216:G:N3    | 4:AD:150:LYS:NZ    | 2.57                     | 0.52              |
| 1:AA:2304:G:OP1   | 7:AG:132:ASN:ND2   | 2.42                     | 0.52              |
| 1:AA:2312:U:C2    | 1:AA:2313:C:C5     | 2.97                     | 0.52              |
| 1:AA:2327:A:N7    | 1:AA:2388:A:N6     | 2.57                     | 0.52              |
| 1:AA:2369:A:N6    | 1:AA:2382:G:N2     | 2.57                     | 0.52              |
| 1:AA:2466:C:C4    | 1:AA:2485:G:C6     | 2.97                     | 0.52              |
| 1:AA:2521:C:H2'   | 1:AA:2522:U:O5'    | 2.09                     | 0.52              |
| 1:AA:2658:C:H41   | 1:AA:2664:G:N2     | 2.05                     | 0.52              |
| 1:AA:2740:A:C6    | 1:AA:2764:A:C4     | 2.97                     | 0.52              |
| 1:AA:2811:G:N2    | 1:AA:2891:G:H1'    | 2.24                     | 0.52              |
| 1:AA:2856:C:H2'   | 1:AA:2857:G:O5'    | 2.08                     | 0.52              |
| 2:AB:32:C:C3'     | 2:AB:33:G:H8       | 2.21                     | 0.52              |
| 2:AB:75:G:N2      | 21:AW:87:ASP:CG    | 2.66                     | 0.52              |
| 2:AB:99:A:C6      | 2:AB:100:G:C6      | 2.97                     | 0.52              |
| 2:AB:117:G:N3     | 2:AB:118:G:C8      | 2.77                     | 0.52              |
| 5:AE:146:THR:CB   | 5:AE:147:PRO:CD    | 2.78                     | 0.52              |
| 6:AF:153:SER:OG   | 6:AF:190:GLU:CG    | 2.56                     | 0.52              |
| 7:AG:53:LEU:CD2   | 7:AG:71:THR:H      | 2.08                     | 0.52              |
| 7:AG:96:ARG:O     | 7:AG:100:TRP:HE3   | 1.89                     | 0.52              |
| 7:AG:107:LEU:HD23 | 7:AG:177:GLY:HA3   | 1.91                     | 0.52              |
| 8:AH:32:GLU:O     | 8:AH:33:LEU:C      | 2.52                     | 0.52              |
| 8:AH:101:ARG:O    | 8:AH:116:GLU:HA    | 2.09                     | 0.52              |
| 9:AK:73:THR:OG1   | 9:AK:83:LYS:HD3    | 2.09                     | 0.52              |
| 10:AL:10:VAL:CG2  | 10:AL:12:ASP:OD1   | 2.55                     | 0.52              |
| 10:AL:47:ILE:HG12 | 10:AL:48:PRO:O     | 2.09                     | 0.52              |
| 10:AL:103:ALA:O   | 10:AL:105:GLU:N    | 2.42                     | 0.52              |
| 11:AM:99:LEU:HD23 | 11:AM:100:LEU:H    | 1.74                     | 0.52              |
| 11:AM:122:PRO:CB  | 11:AM:138:LEU:CA   | 2.87                     | 0.52              |
| 11:AM:126:VAL:CB  | 11:AM:146:VAL:H    | 2.22                     | 0.52              |
| 11:AM:127:ALA:O   | 11:AM:147:LEU:HD13 | 2.09                     | 0.52              |
| 12:AN:6:ARG:CZ    | 12:AN:8:LYS:HG3    | 2.39                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:AO:61:HIS:CE1  | 13:AO:64:ARG:CZ   | 2.92                     | 0.52              |
| 14:AP:30:ARG:HD2  | 14:AP:91:PRO:HB2  | 1.91                     | 0.52              |
| 14:AP:33:LYS:CG   | 14:AP:54:LEU:HD21 | 2.39                     | 0.52              |
| 15:AQ:64:ARG:NH1  | 15:AQ:78:LEU:H    | 2.07                     | 0.52              |
| 16:AR:74:LEU:O    | 16:AR:75:ASN:O    | 2.27                     | 0.52              |
| 17:AS:6:LYS:N     | 17:AS:12:TYR:HB3  | 2.24                     | 0.52              |
| 17:AS:11:GLN:NE2  | 17:AS:24:LYS:NZ   | 2.37                     | 0.52              |
| 17:AS:43:GLU:N    | 17:AS:44:LYS:HZ1  | 2.00                     | 0.52              |
| 17:AS:67:GLY:O    | 17:AS:68:LYS:CB   | 2.47                     | 0.52              |
| 17:AS:79:VAL:CB   | 17:AS:81:TYR:HD1  | 2.23                     | 0.52              |
| 18:AT:24:ILE:HG22 | 18:AT:32:ALA:CB   | 2.39                     | 0.52              |
| 21:AW:168:GLU:OE1 | 21:AW:169:GLU:N   | 2.41                     | 0.52              |
| 22:AX:22:GLY:O    | 22:AX:38:VAL:CG1  | 2.56                     | 0.52              |
| 22:AX:56:ASP:CG   | 22:AX:58:THR:HB   | 2.34                     | 0.52              |
| 23:AY:54:ARG:O    | 23:AY:57:THR:N    | 2.42                     | 0.52              |
| 24:AZ:35:ARG:HH22 | 24:AZ:47:VAL:HG11 | 1.74                     | 0.52              |
| 25:Aa:6:HIS:NE2   | 25:Aa:55:ARG:CD   | 2.62                     | 0.52              |
| 25:Aa:59:PHE:CD1  | 25:Aa:60:GLN:HG2  | 2.41                     | 0.52              |
| 29:Ae:1:MET:N     | 29:Ae:2:PRO:CD    | 2.72                     | 0.52              |
| 29:Ae:13:ARG:CD   | 29:Ae:24:ALA:HB1  | 2.35                     | 0.52              |
| 31:AI:52:PHE:N    | 31:AI:86:PRO:CB   | 2.73                     | 0.52              |
| 34:BA:57:G:N2     | 34:BA:388:G:N7    | 2.58                     | 0.52              |
| 34:BA:68:G:H5'    | 34:BA:171:A:O2'   | 2.08                     | 0.52              |
| 34:BA:151:A:C5    | 34:BA:152:A:C2    | 2.97                     | 0.52              |
| 34:BA:192:U:H5'   | 53:BX:102:GLY:HA2 | 1.91                     | 0.52              |
| 34:BA:246:A:O2'   | 34:BA:247:G:O5'   | 2.27                     | 0.52              |
| 34:BA:258:G:C6    | 34:BA:259:G:C6    | 2.97                     | 0.52              |
| 34:BA:290:C:O5'   | 34:BA:290:C:C6    | 2.55                     | 0.52              |
| 34:BA:587:G:N3    | 34:BA:755:G:N1    | 2.58                     | 0.52              |
| 34:BA:828:A:C2'   | 34:BA:829:G:O5'   | 2.57                     | 0.52              |
| 34:BA:918:A:HO2'  | 34:BA:919:A:P     | 2.30                     | 0.52              |
| 34:BA:939:G:H4'   | 34:BA:1375:A:O2'  | 2.08                     | 0.52              |
| 34:BA:945:G:N1    | 34:BA:946:A:N7    | 2.57                     | 0.52              |
| 34:BA:993:G:C6    | 34:BA:1046:A:C6   | 2.97                     | 0.52              |
| 34:BA:1056:U:H5'  | 36:BG:163:ALA:HB3 | 1.90                     | 0.52              |
| 34:BA:1189:C:OP1  | 36:BG:5:ILE:HG21  | 2.09                     | 0.52              |
| 34:BA:1203:C:C2   | 34:BA:1204:A:C8   | 2.97                     | 0.52              |
| 34:BA:1311:G:C2   | 34:BA:1327:C:O4'  | 2.62                     | 0.52              |
| 34:BA:1376:U:H3   | 34:BA:1377:A:N6   | 2.08                     | 0.52              |
| 34:BA:1384:C:H2'  | 34:BA:1385:G:O4'  | 2.09                     | 0.52              |
| 34:BA:1411:C:O5'  | 34:BA:1411:C:H6   | 1.92                     | 0.52              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1422:G:N1    | 34:BA:1423:G:C5    | 2.78                     | 0.52              |
| 34:BA:1504:G:H3'   | 34:BA:1504:G:P     | 2.49                     | 0.52              |
| 35:BF:107:THR:HA   | 35:BF:110:GLN:OE1  | 2.09                     | 0.52              |
| 35:BF:186:ALA:O    | 35:BF:201:ILE:HD13 | 2.09                     | 0.52              |
| 36:BG:114:PRO:HD3  | 36:BG:183:ASP:CG   | 2.34                     | 0.52              |
| 37:BH:51:PRO:O     | 37:BH:52:SER:C     | 2.50                     | 0.52              |
| 37:BH:70:ILE:CD1   | 37:BH:100:ARG:HH21 | 2.18                     | 0.52              |
| 37:BH:126:ILE:HG21 | 37:BH:133:VAL:O    | 2.08                     | 0.52              |
| 37:BH:127:THR:OG1  | 37:BH:149:ALA:HA   | 2.09                     | 0.52              |
| 37:BH:128:VAL:N    | 37:BH:146:ILE:HG22 | 2.25                     | 0.52              |
| 38:BI:71:LEU:HD21  | 38:BI:74:GLY:N     | 2.24                     | 0.52              |
| 38:BI:107:ARG:NH1  | 38:BI:107:ARG:CB   | 2.72                     | 0.52              |
| 38:BI:147:ASP:O    | 38:BI:150:ARG:HB3  | 2.09                     | 0.52              |
| 40:BK:150:ALA:HB2  | 44:BO:59:TYR:CD2   | 2.45                     | 0.52              |
| 42:BM:7:THR:CG2    | 42:BM:9:ARG:HH11   | 2.22                     | 0.52              |
| 44:BO:63:LEU:C     | 44:BO:63:LEU:CD2   | 2.81                     | 0.52              |
| 44:BO:63:LEU:HG    | 44:BO:66:LEU:HD12  | 1.91                     | 0.52              |
| 45:BP:36:VAL:HG23  | 45:BP:81:SER:O     | 2.08                     | 0.52              |
| 48:BS:36:ILE:CD1   | 48:BS:60:VAL:HG22  | 2.36                     | 0.52              |
| 50:BU:65:ILE:O     | 50:BU:69:LYS:O     | 2.27                     | 0.52              |
| 53:BX:13:LEU:CB    | 53:BX:17:ARG:HH21  | 2.13                     | 0.52              |
| 53:BX:22:ARG:C     | 53:BX:26:ASN:OD1   | 2.52                     | 0.52              |
| 54:BY:3:LYS:HD2    | 54:BY:14:TRP:HB2   | 1.90                     | 0.52              |
| 56:BD:47:U:H3'     | 56:BD:48:C:C5'     | 2.39                     | 0.52              |
| 56:BE:53:G:H2'     | 56:BE:54:U:H6      | 1.73                     | 0.52              |
| 57:BZ:230:LYS:C    | 57:BZ:230:LYS:HD2  | 2.33                     | 0.52              |
| 57:BZ:233:PRO:HG2  | 57:BZ:248:ASN:CB   | 2.38                     | 0.52              |
| 57:BZ:374:ARG:NH2  | 57:BZ:581:THR:H    | 2.07                     | 0.52              |
| 57:BZ:558:VAL:HG12 | 57:BZ:559:PRO:HD2  | 1.91                     | 0.52              |
| 57:BZ:564:THR:HB   | 57:BZ:567:GLN:CB   | 2.39                     | 0.52              |
| 1:AA:270(H):C:H2'  | 1:AA:270(I):G:C8   | 2.40                     | 0.52              |
| 1:AA:270(J):G:C2   | 1:AA:270(K):C:C2   | 2.97                     | 0.52              |
| 1:AA:523:C:C2'     | 1:AA:524:U:H5'     | 2.38                     | 0.52              |
| 1:AA:526:A:OP1     | 1:AA:527:C:OP2     | 2.27                     | 0.52              |
| 1:AA:624:C:C3'     | 1:AA:624:C:H6      | 2.22                     | 0.52              |
| 1:AA:672:C:H2'     | 1:AA:673:C:C5      | 2.44                     | 0.52              |
| 1:AA:705:A:N7      | 1:AA:727:A:C8      | 2.77                     | 0.52              |
| 1:AA:744:G:O6      | 1:AA:745:G:O6      | 2.27                     | 0.52              |
| 1:AA:788:A:H4'     | 1:AA:789:A:O5'     | 2.09                     | 0.52              |
| 1:AA:858:U:C6      | 1:AA:859:G:N2      | 2.77                     | 0.52              |
| 1:AA:975:G:N7      | 1:AA:1186:G:N2     | 2.45                     | 0.52              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:AA:999:U:O2    | 1:AA:1157:G:C2   | 2.62                     | 0.52              |
| 1:AA:1011:G:C5'  | 1:AA:1012:U:OP2  | 2.57                     | 0.52              |
| 1:AA:1034:G:C5   | 1:AA:1122:G:O6   | 2.61                     | 0.52              |
| 1:AA:1037:G:N2   | 1:AA:1119:C:C1'  | 2.71                     | 0.52              |
| 1:AA:1273:U:H5'' | 1:AA:1646:C:H41  | 1.72                     | 0.52              |
| 1:AA:1364:G:O6   | 25:Aa:2:LYS:HG3  | 2.08                     | 0.52              |
| 1:AA:1378:A:O2'  | 1:AA:1379:A:P    | 2.67                     | 0.52              |
| 1:AA:1388:G:H4'  | 1:AA:1524:G:O2'  | 2.10                     | 0.52              |
| 1:AA:1499:C:H3'  | 1:AA:1500:G:C8   | 2.43                     | 0.52              |
| 1:AA:1567:A:N1   | 4:AD:85:ASP:N    | 2.57                     | 0.52              |
| 1:AA:1633:G:N7   | 1:AA:1635:G:N1   | 2.55                     | 0.52              |
| 1:AA:1677:A:C2   | 1:AA:1678:G:C4   | 2.97                     | 0.52              |
| 1:AA:1746:G:H2'  | 1:AA:1747:G:O4'  | 2.09                     | 0.52              |
| 1:AA:1784:A:C4'  | 1:AA:1785:A:C8   | 2.92                     | 0.52              |
| 1:AA:1813:G:H2'  | 1:AA:1813:G:N3   | 2.24                     | 0.52              |
| 1:AA:1814:G:C2'  | 1:AA:1815:A:C8   | 2.90                     | 0.52              |
| 1:AA:1902:C:N1   | 1:AA:1903:G:C8   | 2.77                     | 0.52              |
| 1:AA:1952:A:C4   | 1:AA:1953:A:C2   | 2.96                     | 0.52              |
| 1:AA:1991:U:H2'  | 1:AA:1992:G:OP2  | 2.09                     | 0.52              |
| 1:AA:2018:G:C2'  | 1:AA:2019:A:O4'  | 2.57                     | 0.52              |
| 1:AA:2107:C:H5   | 1:AA:2181:G:O6   | 1.86                     | 0.52              |
| 1:AA:2227:A:H4'  | 4:AD:262:ARG:CG  | 2.34                     | 0.52              |
| 1:AA:2246:G:H1'  | 1:AA:2426:A:C2   | 2.45                     | 0.52              |
| 1:AA:2259:G:H5'  | 1:AA:2427:C:C3'  | 2.38                     | 0.52              |
| 1:AA:2265:U:O2   | 1:AA:2266:A:N7   | 2.41                     | 0.52              |
| 1:AA:2519:U:O2   | 1:AA:2519:U:H2'  | 2.08                     | 0.52              |
| 1:AA:2525:G:O2'  | 1:AA:2741:A:C2   | 2.62                     | 0.52              |
| 1:AA:2615:U:C2   | 1:AA:2616:C:C5   | 2.97                     | 0.52              |
| 1:AA:2648:C:O2   | 1:AA:2648:C:H2'  | 2.09                     | 0.52              |
| 1:AA:2815:C:O2'  | 1:AA:2816:C:C5'  | 2.52                     | 0.52              |
| 1:AA:2844:G:H3'  | 1:AA:2845:G:H8   | 1.73                     | 0.52              |
| 1:AA:2848:G:C2   | 1:AA:2867:G:N3   | 2.76                     | 0.52              |
| 2:AB:62:C:O2     | 2:AB:63:G:C8     | 2.62                     | 0.52              |
| 3:AC:177:LYS:CB  | 3:AC:180:PHE:HB2 | 2.36                     | 0.52              |
| 4:AD:34:VAL:C    | 4:AD:36:PRO:HD2  | 2.34                     | 0.52              |
| 4:AD:176:ARG:HA  | 4:AD:181:GLU:O   | 2.09                     | 0.52              |
| 4:AD:188:GLU:CD  | 4:AD:188:GLU:H   | 2.15                     | 0.52              |
| 5:AE:5:LEU:HD23  | 5:AE:7:VAL:N     | 2.24                     | 0.52              |
| 5:AE:38:THR:HA   | 5:AE:42:ASP:HA   | 1.91                     | 0.52              |
| 5:AE:85:ASN:ND2  | 5:AE:85:ASN:N    | 2.56                     | 0.52              |
| 5:AE:195:LEU:CD1 | 5:AE:196:VAL:N   | 2.52                     | 0.52              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 7:AG:34:LEU:O     | 7:AG:34:LEU:HD12   | 2.09                     | 0.52              |
| 7:AG:75:LYS:CB    | 7:AG:84:LYS:HB2    | 2.39                     | 0.52              |
| 7:AG:105:LYS:HA   | 7:AG:109:VAL:CG1   | 2.40                     | 0.52              |
| 7:AG:130:ASN:O    | 7:AG:161:THR:HG23  | 2.08                     | 0.52              |
| 8:AH:35:VAL:HB    | 8:AH:72:ILE:HG12   | 1.90                     | 0.52              |
| 8:AH:38:SER:CB    | 8:AH:41:MET:HE2    | 2.39                     | 0.52              |
| 8:AH:85:LYS:HB2   | 8:AH:85:LYS:HZ2    | 1.75                     | 0.52              |
| 8:AH:102:ALA:HB1  | 8:AH:115:VAL:N     | 2.25                     | 0.52              |
| 9:AK:74:ARG:HG2   | 9:AK:76:SER:HB2    | 1.90                     | 0.52              |
| 11:AM:45:LEU:CD1  | 29:Ae:3:LYS:HZ3    | 2.22                     | 0.52              |
| 11:AM:101:VAL:CG2 | 11:AM:112:LEU:HD22 | 2.36                     | 0.52              |
| 11:AM:114:ILE:HB  | 11:AM:130:PHE:HA   | 1.91                     | 0.52              |
| 12:AN:48:GLU:HA   | 12:AN:51:ARG:CG    | 2.39                     | 0.52              |
| 12:AN:74:TYR:HD2  | 12:AN:74:TYR:H     | 1.54                     | 0.52              |
| 14:AP:78:LEU:HD13 | 14:AP:79:ALA:CB    | 2.39                     | 0.52              |
| 16:AR:15:LYS:O    | 16:AR:16:LYS:C     | 2.52                     | 0.52              |
| 19:AU:12:VAL:CG2  | 19:AU:28:PHE:HA    | 2.36                     | 0.52              |
| 19:AU:21:PHE:HA   | 19:AU:26:TYR:CD2   | 2.43                     | 0.52              |
| 21:AW:99:TYR:CD1  | 21:AW:126:VAL:HG23 | 2.44                     | 0.52              |
| 21:AW:123:ASP:H   | 21:AW:171:ILE:HD13 | 1.74                     | 0.52              |
| 21:AW:152:ALA:HB3 | 21:AW:168:GLU:N    | 2.23                     | 0.52              |
| 23:AY:30:LEU:O    | 23:AY:31:ARG:C     | 2.52                     | 0.52              |
| 24:AZ:40:THR:HG22 | 24:AZ:42:ALA:HB3   | 1.91                     | 0.52              |
| 25:Aa:15:ILE:HG13 | 25:Aa:36:CYS:SG    | 2.50                     | 0.52              |
| 25:Aa:57:GLU:CA   | 25:Aa:61:ARG:CZ    | 2.85                     | 0.52              |
| 26:Ab:10:LYS:HD2  | 26:Ab:15:ARG:NH2   | 2.24                     | 0.52              |
| 26:Ab:34:PRO:CD   | 26:Ab:40:LYS:HD2   | 2.29                     | 0.52              |
| 30:Af:9:ARG:NH2   | 30:Af:16:VAL:CG1   | 2.72                     | 0.52              |
| 31:AI:136:ALA:C   | 31:AI:138:LEU:H    | 2.15                     | 0.52              |
| 32:AJ:122:ALA:CA  | 32:AJ:126:MET:CB   | 2.87                     | 0.52              |
| 34:BA:56:U:H2'    | 34:BA:57:G:C8      | 2.44                     | 0.52              |
| 34:BA:160:A:C2    | 34:BA:343:U:H1'    | 2.45                     | 0.52              |
| 34:BA:283:C:O2    | 34:BA:284:G:O4'    | 2.28                     | 0.52              |
| 34:BA:286:G:H2'   | 34:BA:287:U:H6     | 1.73                     | 0.52              |
| 34:BA:295:C:H2'   | 34:BA:296:U:O5'    | 2.09                     | 0.52              |
| 34:BA:498:A:H1'   | 34:BA:500:G:O4'    | 2.09                     | 0.52              |
| 34:BA:562:C:H2'   | 45:BP:15:ARG:HB3   | 1.91                     | 0.52              |
| 34:BA:568:G:C4    | 34:BA:569:C:C5     | 2.97                     | 0.52              |
| 34:BA:583:A:H2'   | 34:BA:584:G:C8     | 2.44                     | 0.52              |
| 34:BA:637:G:O2'   | 34:BA:638:G:H5'    | 2.09                     | 0.52              |
| 34:BA:669:U:O4'   | 48:BS:46:HIS:HE1   | 1.92                     | 0.52              |

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| Atom-1            | Atom-2              | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|---------------------|--------------------------|-------------------|
| 34:BA:736:C:OP1   | 51:BV:72:ARG:NH2    | 2.42                     | 0.52              |
| 34:BA:737:A:H5'   | 39:BJ:90:VAL:HG13   | 1.90                     | 0.52              |
| 34:BA:766:A:C8    | 34:BA:814:A:C6      | 2.97                     | 0.52              |
| 34:BA:775:G:N3    | 34:BA:776:G:C8      | 2.77                     | 0.52              |
| 34:BA:889:A:OP1   | 34:BA:891:U:H1'     | 2.09                     | 0.52              |
| 34:BA:913:A:O2'   | 34:BA:914:A:P       | 2.66                     | 0.52              |
| 34:BA:922:G:H2'   | 34:BA:923:A:O4'     | 2.09                     | 0.52              |
| 34:BA:1107:C:H2'  | 34:BA:1107:C:O2     | 2.08                     | 0.52              |
| 34:BA:1108:G:C5   | 34:BA:1109:C:N4     | 2.77                     | 0.52              |
| 34:BA:1239:A:H5'' | 34:BA:1240:U:OP1    | 2.09                     | 0.52              |
| 34:BA:1283:G:H2'  | 34:BA:1284:C:H5'    | 1.90                     | 0.52              |
| 34:BA:1323:G:C4   | 34:BA:1324:A:N7     | 2.78                     | 0.52              |
| 34:BA:1451:A:N3   | 34:BA:1451:A:H2'    | 2.23                     | 0.52              |
| 34:BA:1497:G:O2'  | 34:BA:1498:U:H5'    | 2.09                     | 0.52              |
| 58:BA:1601:NMY:N2 | 58:BA:1601:NMY:H171 | 2.24                     | 0.52              |
| 35:BF:82:ARG:CB   | 35:BF:94:ASN:ND2    | 2.70                     | 0.52              |
| 35:BF:238:LEU:O   | 35:BF:238:LEU:HD23  | 2.09                     | 0.52              |
| 36:BG:87:LEU:HD12 | 36:BG:101:LEU:HD11  | 1.91                     | 0.52              |
| 37:BH:11:LEU:HA   | 37:BH:14:ARG:CB     | 2.32                     | 0.52              |
| 37:BH:166:LYS:HD3 | 37:BH:178:VAL:CG1   | 2.39                     | 0.52              |
| 38:BI:78:HIS:HE2  | 38:BI:142:LEU:HB3   | 1.75                     | 0.52              |
| 38:BI:112:LEU:O   | 38:BI:113:ALA:C     | 2.52                     | 0.52              |
| 39:BJ:11:ASN:CB   | 39:BJ:84:ASN:HB3    | 2.39                     | 0.52              |
| 39:BJ:76:ALA:HB1  | 39:BJ:80:ARG:CZ     | 2.39                     | 0.52              |
| 40:BK:38:LEU:C    | 40:BK:41:ARG:HB2    | 2.34                     | 0.52              |
| 40:BK:68:ASN:O    | 40:BK:135:VAL:HG13  | 2.09                     | 0.52              |
| 40:BK:78:ARG:C    | 40:BK:84:ASN:HA     | 2.25                     | 0.52              |
| 40:BK:103:TRP:CH2 | 40:BK:138:LYS:CA    | 2.73                     | 0.52              |
| 41:BL:62:TYR:O    | 41:BL:63:LEU:O      | 2.26                     | 0.52              |
| 41:BL:101:PRO:HG2 | 41:BL:102:ARG:H     | 1.74                     | 0.52              |
| 41:BL:104:ARG:O   | 41:BL:105:ARG:C     | 2.51                     | 0.52              |
| 42:BM:7:THR:O     | 42:BM:83:ARG:NH1    | 2.42                     | 0.52              |
| 42:BM:16:ARG:O    | 42:BM:63:ILE:HG23   | 2.10                     | 0.52              |
| 44:BO:57:THR:OG1  | 44:BO:59:TYR:CB     | 2.57                     | 0.52              |
| 45:BP:41:ARG:CG   | 45:BP:42:THR:H      | 2.21                     | 0.52              |
| 48:BS:49:ASP:O    | 48:BS:50:HIS:C      | 2.53                     | 0.52              |
| 48:BS:64:ARG:HG2  | 48:BS:65:ARG:N      | 2.22                     | 0.52              |
| 49:BT:52:ASP:OD1  | 49:BT:55:ARG:CG     | 2.57                     | 0.52              |
| 49:BT:60:LEU:O    | 49:BT:61:SER:C      | 2.53                     | 0.52              |
| 49:BT:82:GLN:O    | 49:BT:82:GLN:CG     | 2.57                     | 0.52              |
| 50:BU:7:THR:HG23  | 50:BU:8:GLY:N       | 2.24                     | 0.52              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 51:BV:39:VAL:O   | 51:BV:43:PHE:CE1  | 2.62                     | 0.52              |
| 52:BW:11:VAL:CG1 | 52:BW:15:LEU:HD12 | 2.39                     | 0.52              |
| 53:BX:67:ALA:O   | 53:BX:68:LYS:C    | 2.52                     | 0.52              |
| 56:BE:7:A:C4     | 56:BE:49:C:P      | 3.03                     | 0.52              |
| 57:BZ:67:ASP:H   | 57:BZ:68:TYR:HB3  | 1.75                     | 0.52              |
| 57:BZ:560:PRO:C  | 57:BZ:562:ARG:H   | 2.17                     | 0.52              |
| 1:AA:175:G:N2    | 1:AA:176:G:C4     | 2.77                     | 0.52              |
| 1:AA:247:G:O2'   | 1:AA:386:G:N2     | 2.42                     | 0.52              |
| 1:AA:563:G:H2'   | 1:AA:563:G:N3     | 2.23                     | 0.52              |
| 1:AA:565:C:H5''  | 17:AS:82:ARG:HE   | 1.75                     | 0.52              |
| 1:AA:605:C:H4'   | 6:AF:102:PRO:HG3  | 1.91                     | 0.52              |
| 1:AA:612:G:N2    | 1:AA:617:G:C6     | 2.68                     | 0.52              |
| 1:AA:714:U:O2    | 1:AA:717:G:N7     | 2.42                     | 0.52              |
| 1:AA:809:G:O4'   | 1:AA:1254:A:H1'   | 2.10                     | 0.52              |
| 1:AA:820:A:H2'   | 1:AA:820:A:N3     | 2.24                     | 0.52              |
| 1:AA:862:G:N3    | 1:AA:863:A:H1'    | 2.23                     | 0.52              |
| 1:AA:872:A:O2'   | 12:AN:66:ILE:HG12 | 2.09                     | 0.52              |
| 1:AA:896:A:C2    | 1:AA:897:C:C6     | 2.98                     | 0.52              |
| 1:AA:945:A:C3'   | 1:AA:946:G:C5'    | 2.87                     | 0.52              |
| 1:AA:954:G:C2'   | 1:AA:955:C:H5'    | 2.39                     | 0.52              |
| 1:AA:1037:G:H22  | 1:AA:1119:C:H1'   | 1.74                     | 0.52              |
| 1:AA:1055:G:H4'  | 31:AI:32:LEU:O    | 2.08                     | 0.52              |
| 1:AA:1113:U:O5'  | 1:AA:1113:U:C6    | 2.55                     | 0.52              |
| 1:AA:1143:A:O2'  | 1:AA:1144:G:H5'   | 2.09                     | 0.52              |
| 1:AA:1194:A:C6   | 1:AA:1195:G:N7    | 2.78                     | 0.52              |
| 1:AA:1236:G:O2'  | 1:AA:1237:A:O4'   | 2.20                     | 0.52              |
| 1:AA:1266:G:O4'  | 18:AT:15:ARG:NH2  | 2.43                     | 0.52              |
| 1:AA:1290:C:C2   | 1:AA:1291:C:C5    | 2.98                     | 0.52              |
| 1:AA:1343:G:H2'  | 1:AA:1384:A:H2    | 1.73                     | 0.52              |
| 1:AA:1344:G:C5   | 1:AA:1385:G:C8    | 2.97                     | 0.52              |
| 1:AA:1475:G:N7   | 1:AA:1517:G:C2    | 2.77                     | 0.52              |
| 1:AA:1505:C:O2   | 1:AA:1505:C:H2'   | 2.09                     | 0.52              |
| 1:AA:1510:A:N3   | 1:AA:1511:A:C2    | 2.77                     | 0.52              |
| 1:AA:1534:G:C8   | 1:AA:1534:G:H3'   | 2.45                     | 0.52              |
| 1:AA:1672:C:H3'  | 1:AA:1673:U:C5'   | 2.36                     | 0.52              |
| 1:AA:1742:C:C2'  | 1:AA:1743:G:H4'   | 2.38                     | 0.52              |
| 1:AA:1754:C:C5   | 15:AQ:98:LYS:HD3  | 2.45                     | 0.52              |
| 1:AA:1789:A:OP1  | 4:AD:222:ARG:CG   | 2.50                     | 0.52              |
| 1:AA:1858:G:H22  | 1:AA:1884:A:C1'   | 2.22                     | 0.52              |
| 1:AA:1889:A:N1   | 1:AA:1890:A:C6    | 2.77                     | 0.52              |
| 1:AA:1928:A:H8   | 1:AA:1929:G:N3    | 2.07                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1956:U:C6    | 1:AA:1956:U:O5'   | 2.63                     | 0.52              |
| 1:AA:2096:U:H2'   | 1:AA:2097:C:C6    | 2.44                     | 0.52              |
| 1:AA:2126:A:H4'   | 1:AA:2127:G:O5'   | 2.08                     | 0.52              |
| 1:AA:2143:C:C4    | 1:AA:2144:U:O4    | 2.63                     | 0.52              |
| 1:AA:2168:G:N1    | 1:AA:2171:A:OP2   | 2.38                     | 0.52              |
| 1:AA:2186:G:N1    | 1:AA:2187:G:O6    | 2.42                     | 0.52              |
| 1:AA:2309:A:N3    | 1:AA:2309:A:C2'   | 2.72                     | 0.52              |
| 1:AA:2393:A:H2'   | 1:AA:2394:C:O4'   | 2.09                     | 0.52              |
| 1:AA:2449:U:OP1   | 1:AA:2449:U:O4'   | 2.26                     | 0.52              |
| 1:AA:2459:A:N3    | 1:AA:2460:U:C2'   | 2.73                     | 0.52              |
| 1:AA:2481:G:HO2'  | 1:AA:2482:G:H8    | 1.56                     | 0.52              |
| 1:AA:2512:C:H3'   | 1:AA:2512:C:C6    | 2.45                     | 0.52              |
| 1:AA:2585:U:O4    | 59:AA:3002:8AN:C8 | 2.57                     | 0.52              |
| 1:AA:2603:G:OP2   | 22:AX:1:MET:SD    | 2.67                     | 0.52              |
| 1:AA:2667:C:C3'   | 1:AA:2668:G:H5'   | 2.39                     | 0.52              |
| 1:AA:2848:G:O4'   | 15:AQ:99:LEU:HD11 | 2.10                     | 0.52              |
| 1:AA:2892:A:H2'   | 1:AA:2893:G:H1'   | 1.91                     | 0.52              |
| 2:AB:11:C:P       | 22:AX:74:ARG:HH12 | 2.32                     | 0.52              |
| 3:AC:43:VAL:HG23  | 3:AC:189:ILE:HD11 | 1.90                     | 0.52              |
| 3:AC:113:VAL:HG12 | 3:AC:138:PRO:CG   | 2.38                     | 0.52              |
| 3:AC:115:ALA:CB   | 3:AC:120:MET:SD   | 2.85                     | 0.52              |
| 4:AD:27:THR:CG2   | 4:AD:29:PRO:HD2   | 2.36                     | 0.52              |
| 4:AD:40:THR:HG22  | 4:AD:41:GLY:O     | 2.09                     | 0.52              |
| 4:AD:85:ASP:C     | 4:AD:87:ASN:N     | 2.66                     | 0.52              |
| 4:AD:124:PRO:O    | 4:AD:126:GLN:N    | 2.33                     | 0.52              |
| 4:AD:130:ALA:O    | 4:AD:131:LEU:CD1  | 2.55                     | 0.52              |
| 5:AE:13:ARG:HD2   | 5:AE:13:ARG:O     | 2.09                     | 0.52              |
| 5:AE:30:PRO:HB2   | 5:AE:48:GLN:CB    | 2.30                     | 0.52              |
| 5:AE:38:THR:HG1   | 5:AE:44:TYR:CB    | 2.23                     | 0.52              |
| 6:AF:31:HIS:CG    | 11:AM:14:LYS:HZ2  | 2.25                     | 0.52              |
| 6:AF:37:VAL:O     | 6:AF:41:LEU:HD23  | 2.08                     | 0.52              |
| 6:AF:155:LEU:HD22 | 6:AF:157:VAL:CG1  | 2.40                     | 0.52              |
| 7:AG:15:VAL:O     | 7:AG:18:GLU:CB    | 2.54                     | 0.52              |
| 7:AG:26:GLN:NE2   | 7:AG:31:VAL:HG22  | 2.23                     | 0.52              |
| 7:AG:35:GLU:O     | 7:AG:160:VAL:HB   | 2.09                     | 0.52              |
| 7:AG:104:GLU:HG3  | 7:AG:105:LYS:H    | 1.74                     | 0.52              |
| 8:AH:23:ARG:NH2   | 8:AH:36:PRO:N     | 2.57                     | 0.52              |
| 9:AK:18:ALA:H     | 9:AK:21:LYS:HD2   | 1.74                     | 0.52              |
| 9:AK:58:ASP:HB3   | 9:AK:124:ALA:HB1  | 1.90                     | 0.52              |
| 9:AK:69:GLN:N     | 9:AK:70:LYS:HE2   | 2.24                     | 0.52              |
| 10:AL:63:VAL:CG2  | 10:AL:80:ASP:O    | 2.57                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 10:AL:63:VAL:CG1  | 10:AL:99:PHE:CZ   | 2.92                     | 0.52              |
| 10:AL:77:ILE:CG2  | 15:AQ:75:ILE:HD12 | 2.33                     | 0.52              |
| 10:AL:80:ASP:CG   | 10:AL:82:ASN:OD1  | 2.53                     | 0.52              |
| 11:AM:113:LYS:HG2 | 11:AM:114:ILE:N   | 2.25                     | 0.52              |
| 12:AN:7:MET:O     | 12:AN:69:PHE:CE1  | 2.62                     | 0.52              |
| 12:AN:42:ILE:O    | 12:AN:94:VAL:CB   | 2.57                     | 0.52              |
| 12:AN:125:LEU:HB3 | 12:AN:126:PRO:HD3 | 1.91                     | 0.52              |
| 12:AN:134:ARG:NE  | 12:AN:137:TYR:H   | 2.06                     | 0.52              |
| 13:AO:96:ARG:CG   | 13:AO:98:LEU:CD1  | 2.83                     | 0.52              |
| 15:AQ:30:VAL:CG2  | 15:AQ:32:TYR:CE2  | 2.85                     | 0.52              |
| 15:AQ:33:LYS:HG3  | 15:AQ:45:PHE:CZ   | 2.44                     | 0.52              |
| 15:AQ:56:GLY:O    | 15:AQ:61:PHE:CB   | 2.57                     | 0.52              |
| 17:AS:62:LEU:CD1  | 17:AS:98:GLU:HA   | 2.40                     | 0.52              |
| 20:AV:13:VAL:HG23 | 20:AV:14:LEU:N    | 2.24                     | 0.52              |
| 21:AW:95:PRO:HD2  | 21:AW:130:PRO:HA  | 1.91                     | 0.52              |
| 22:AX:7:LEU:HB2   | 56:BE:74:C:H42    | 1.74                     | 0.52              |
| 22:AX:42:GLY:O    | 22:AX:57:PHE:HD2  | 1.92                     | 0.52              |
| 23:AY:10:LYS:HB2  | 23:AY:11:LEU:HD12 | 1.92                     | 0.52              |
| 27:Ac:42:TRP:CD1  | 27:Ac:42:TRP:C    | 2.87                     | 0.52              |
| 28:Ad:5:TRP:CZ3   | 28:Ad:12:ARG:NH1  | 2.77                     | 0.52              |
| 28:Ad:8:ASN:ND2   | 28:Ad:10:ARG:H    | 2.08                     | 0.52              |
| 29:Ae:25:MET:HE3  | 29:Ae:44:LYS:HE2  | 1.91                     | 0.52              |
| 32:AJ:62:ASP:CB   | 32:AJ:63:ARG:CA   | 2.88                     | 0.52              |
| 32:AJ:65:PHE:CD1  | 32:AJ:65:PHE:N    | 2.76                     | 0.52              |
| 34:BA:14:U:C6     | 34:BA:16:A:OP2    | 2.62                     | 0.52              |
| 34:BA:230:G:C2    | 34:BA:231:G:C4    | 2.98                     | 0.52              |
| 34:BA:254:G:N1    | 34:BA:273:A:C6    | 2.78                     | 0.52              |
| 34:BA:280:C:H1'   | 50:BU:38:ARG:CZ   | 2.38                     | 0.52              |
| 34:BA:280:C:N3    | 50:BU:39:SER:CB   | 2.73                     | 0.52              |
| 34:BA:350:G:H2'   | 34:BA:350:G:N3    | 2.23                     | 0.52              |
| 34:BA:503:C:C2    | 34:BA:504:C:C5    | 2.98                     | 0.52              |
| 34:BA:527:G:N2    | 34:BA:528:C:C2    | 2.77                     | 0.52              |
| 34:BA:551:U:O2'   | 45:BP:86:ARG:HD2  | 2.09                     | 0.52              |
| 34:BA:559:A:O2'   | 34:BA:560:U:OP2   | 2.23                     | 0.52              |
| 34:BA:620:C:C6    | 34:BA:621:A:C8    | 2.98                     | 0.52              |
| 34:BA:658:G:O2'   | 34:BA:659:U:H5'   | 2.08                     | 0.52              |
| 34:BA:687:A:C4    | 34:BA:704:A:N6    | 2.77                     | 0.52              |
| 34:BA:739:C:O2'   | 34:BA:740:U:H5'   | 2.09                     | 0.52              |
| 34:BA:801:U:O2    | 34:BA:801:U:C2'   | 2.58                     | 0.52              |
| 34:BA:861:G:H2'   | 34:BA:862:C:C6    | 2.43                     | 0.52              |
| 34:BA:944:G:C3'   | 34:BA:945:G:C5'   | 2.82                     | 0.52              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:953:G:O2'   | 34:BA:954:G:H5'    | 2.09                     | 0.52              |
| 34:BA:976:G:C2    | 34:BA:1362:C:C2    | 2.96                     | 0.52              |
| 34:BA:978:A:C8    | 34:BA:980:C:N4     | 2.78                     | 0.52              |
| 34:BA:1026:G:H2'  | 34:BA:1027:C:C5'   | 2.38                     | 0.52              |
| 34:BA:1053:G:N7   | 34:BA:1200:C:OP2   | 2.42                     | 0.52              |
| 34:BA:1131:G:OP2  | 42:BM:20:ARG:HD3   | 2.09                     | 0.52              |
| 34:BA:1161:C:H2'  | 34:BA:1162:C:C5    | 2.45                     | 0.52              |
| 34:BA:1190:G:P    | 36:BG:5:ILE:HG13   | 2.50                     | 0.52              |
| 34:BA:1285:A:O4'  | 34:BA:1286:A:N7    | 2.42                     | 0.52              |
| 34:BA:1309:G:C8   | 34:BA:1330:U:C4    | 2.97                     | 0.52              |
| 34:BA:1338:G:N3   | 56:BE:42:C:O4'     | 2.43                     | 0.52              |
| 34:BA:1475:G:O2'  | 34:BA:1476:G:H5'   | 2.10                     | 0.52              |
| 35:BF:52:GLU:O    | 35:BF:53:ARG:C     | 2.52                     | 0.52              |
| 36:BG:127:ARG:C   | 36:BG:128:PHE:HD1  | 2.18                     | 0.52              |
| 37:BH:141:ARG:CG  | 37:BH:142:PRO:HD2  | 2.39                     | 0.52              |
| 41:BL:14:ARG:N    | 41:BL:14:ARG:HH11  | 2.08                     | 0.52              |
| 42:BM:82:ALA:HB1  | 42:BM:101:PHE:CE1  | 2.45                     | 0.52              |
| 43:BN:7:LYS:NZ    | 43:BN:71:LEU:HD11  | 2.24                     | 0.52              |
| 44:BO:43:SER:HB3  | 44:BO:64:ALA:HB1   | 1.91                     | 0.52              |
| 44:BO:110:ASP:HB2 | 51:BV:88:LYS:CD    | 2.38                     | 0.52              |
| 45:BP:16:GLU:OE1  | 45:BP:17:LYS:O     | 2.27                     | 0.52              |
| 45:BP:83:VAL:CG2  | 45:BP:84:LEU:H     | 2.09                     | 0.52              |
| 48:BS:54:ARG:HD3  | 48:BS:55:GLY:N     | 2.24                     | 0.52              |
| 53:BX:57:ARG:HH21 | 53:BX:100:ILE:HD12 | 1.73                     | 0.52              |
| 53:BX:83:ARG:HA   | 53:BX:86:ARG:HD3   | 1.90                     | 0.52              |
| 56:BD:4:C:H2'     | 56:BD:4:C:O2       | 2.08                     | 0.52              |
| 56:BD:63:G:O5'    | 56:BD:63:G:H8      | 1.92                     | 0.52              |
| 57:BZ:181:GLU:HG3 | 57:BZ:183:MET:HE3  | 1.90                     | 0.52              |
| 57:BZ:246:THR:C   | 57:BZ:247:ARG:HG3  | 2.34                     | 0.52              |
| 57:BZ:274:VAL:O   | 57:BZ:276:ILE:N    | 2.31                     | 0.52              |
| 57:BZ:282:LEU:O   | 57:BZ:283:ASN:ND2  | 2.43                     | 0.52              |
| 57:BZ:309:MET:CG  | 57:BZ:366:LEU:HD13 | 2.39                     | 0.52              |
| 57:BZ:404:THR:H   | 57:BZ:438:ARG:HG2  | 1.73                     | 0.52              |
| 57:BZ:447:GLY:CA  | 57:BZ:480:VAL:CG2  | 2.83                     | 0.52              |
| 1:AA:6:A:C2       | 1:AA:2897:U:C2'    | 2.78                     | 0.52              |
| 1:AA:116:C:H2'    | 1:AA:117:G:O5'     | 2.10                     | 0.52              |
| 1:AA:126:A:OP1    | 28:Ad:17:GLY:CA    | 2.57                     | 0.52              |
| 1:AA:247:G:H1     | 29:Ae:11:LYS:NZ    | 2.07                     | 0.52              |
| 1:AA:458:G:N7     | 28:Ad:38:GLY:HA2   | 2.24                     | 0.52              |
| 1:AA:464:U:N3     | 1:AA:465:G:C6      | 2.78                     | 0.52              |
| 1:AA:595:C:H2'    | 1:AA:596:G:C8      | 2.41                     | 0.52              |

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| Atom-1          | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-------------------|--------------------------|-------------------|
| 1:AA:730:C:H5'  | 1:AA:761:A:OP1    | 2.10                     | 0.52              |
| 1:AA:763:G:C6   | 1:AA:765:G:C5     | 2.98                     | 0.52              |
| 1:AA:836:G:C6   | 1:AA:837:C:C4     | 2.98                     | 0.52              |
| 1:AA:847:U:C4   | 1:AA:933:A:H2     | 2.27                     | 0.52              |
| 1:AA:871:U:H5'' | 12:AN:9:TYR:CE2   | 2.44                     | 0.52              |
| 1:AA:875:G:C2   | 1:AA:876:C:N3     | 2.78                     | 0.52              |
| 1:AA:894:C:H2'  | 1:AA:894:C:O2     | 2.08                     | 0.52              |
| 1:AA:897:C:HO2' | 1:AA:898:C:P      | 2.27                     | 0.52              |
| 1:AA:945:A:OP1  | 1:AA:945:A:H4'    | 2.09                     | 0.52              |
| 1:AA:957:A:OP2  | 12:AN:77:LYS:CD   | 2.46                     | 0.52              |
| 1:AA:1046:A:C5  | 31:AI:6:ASN:CA    | 2.92                     | 0.52              |
| 1:AA:1062:G:N7  | 1:AA:1063:G:C5    | 2.77                     | 0.52              |
| 1:AA:1075:C:O2  | 1:AA:1075:C:H2'   | 2.08                     | 0.52              |
| 1:AA:1392:A:C5  | 1:AA:1393:A:C6    | 2.97                     | 0.52              |
| 1:AA:1462:C:H4' | 1:AA:2703:C:OP1   | 2.10                     | 0.52              |
| 1:AA:1624:G:N1  | 1:AA:1625:C:N4    | 2.57                     | 0.52              |
| 1:AA:1632:A:O5' | 1:AA:1632:A:C8    | 2.63                     | 0.52              |
| 1:AA:1653:G:O6  | 13:AO:11:ASN:HA   | 2.08                     | 0.52              |
| 1:AA:1709:U:C1' | 1:AA:2860:A:H1'   | 2.39                     | 0.52              |
| 1:AA:1861:G:H2' | 1:AA:1862:G:C5'   | 2.39                     | 0.52              |
| 1:AA:1920:C:H5  | 58:AA:3001:NMY:H4 | 1.73                     | 0.52              |
| 1:AA:1920:C:C6  | 1:AA:1921:G:N7    | 2.78                     | 0.52              |
| 1:AA:1936:A:H1' | 1:AA:1940:U:N3    | 2.24                     | 0.52              |
| 1:AA:1996:C:C2  | 1:AA:1997:G:H4'   | 2.44                     | 0.52              |
| 1:AA:2052:G:C4  | 5:AE:150:VAL:HB   | 2.45                     | 0.52              |
| 1:AA:2093:G:H2' | 1:AA:2094:G:H5'   | 1.92                     | 0.52              |
| 1:AA:2287:A:N7  | 1:AA:2289:G:N7    | 2.57                     | 0.52              |
| 1:AA:2348:U:H2' | 1:AA:2349:G:O5'   | 2.09                     | 0.52              |
| 1:AA:2421:G:N3  | 1:AA:2422:A:N7    | 2.57                     | 0.52              |
| 1:AA:2525:G:O2' | 1:AA:2741:A:H2    | 1.93                     | 0.52              |
| 1:AA:2545:G:H2' | 1:AA:2546:U:H5'   | 1.91                     | 0.52              |
| 1:AA:2649:U:O5' | 1:AA:2649:U:H6    | 1.92                     | 0.52              |
| 1:AA:2684:U:O2' | 10:AL:67:LYS:CG   | 2.57                     | 0.52              |
| 1:AA:2740:A:H61 | 1:AA:2764:A:H1'   | 1.74                     | 0.52              |
| 1:AA:2821:A:H3' | 1:AA:2821:A:P     | 2.49                     | 0.52              |
| 1:AA:2848:G:N2  | 1:AA:2849:U:N3    | 2.55                     | 0.52              |
| 2:AB:29:A:O2'   | 2:AB:58:A:N1      | 2.38                     | 0.52              |
| 2:AB:37:C:N4    | 2:AB:44:G:H1      | 2.06                     | 0.52              |
| 3:AC:7:TYR:OH   | 3:AC:14:VAL:HG21  | 2.08                     | 0.52              |
| 3:AC:185:LEU:N  | 3:AC:185:LEU:HD23 | 2.23                     | 0.52              |
| 4:AD:90:ALA:C   | 4:AD:91:ARG:HH11  | 2.17                     | 0.52              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 5:AE:97:LYS:HD2    | 5:AE:98:PRO:HD2   | 1.90                     | 0.52              |
| 5:AE:147:PRO:HD2   | 5:AE:148:GLY:H    | 1.72                     | 0.52              |
| 6:AF:41:LEU:HD12   | 6:AF:41:LEU:C     | 2.35                     | 0.52              |
| 6:AF:77:ASP:OD1    | 6:AF:77:ASP:C     | 2.52                     | 0.52              |
| 6:AF:157:VAL:O     | 6:AF:157:VAL:HG23 | 2.08                     | 0.52              |
| 7:AG:174:GLU:HG2   | 7:AG:175:LEU:N    | 2.22                     | 0.52              |
| 8:AH:28:GLY:HA3    | 8:AH:79:VAL:CB    | 2.33                     | 0.52              |
| 8:AH:102:ALA:CA    | 8:AH:115:VAL:HG12 | 2.38                     | 0.52              |
| 9:AK:12:ARG:O      | 9:AK:12:ARG:CD    | 2.55                     | 0.52              |
| 9:AK:66:LYS:O      | 9:AK:67:LEU:O     | 2.27                     | 0.52              |
| 9:AK:112:LEU:C     | 9:AK:114:ARG:N    | 2.63                     | 0.52              |
| 10:AL:22:ILE:HD12  | 10:AL:40:VAL:HG21 | 1.91                     | 0.52              |
| 10:AL:106:LEU:HD21 | 15:AQ:38:ASN:ND2  | 2.25                     | 0.52              |
| 11:AM:72:PRO:CB    | 11:AM:111:ARG:CB  | 2.74                     | 0.52              |
| 11:AM:99:LEU:HD23  | 11:AM:100:LEU:N   | 2.23                     | 0.52              |
| 12:AN:27:VAL:CG2   | 12:AN:28:ALA:N    | 2.53                     | 0.52              |
| 13:AO:22:ARG:HG2   | 13:AO:70:LEU:CD2  | 2.40                     | 0.52              |
| 13:AO:26:LYS:HE2   | 13:AO:70:LEU:HB3  | 1.90                     | 0.52              |
| 14:AP:62:LYS:O     | 14:AP:64:GLU:N    | 2.41                     | 0.52              |
| 15:AQ:24:PRO:CG    | 15:AQ:25:GLY:H    | 2.09                     | 0.52              |
| 16:AR:80:ILE:O     | 16:AR:81:HIS:C    | 2.52                     | 0.52              |
| 16:AR:81:HIS:CB    | 16:AR:117:GLN:NE2 | 2.72                     | 0.52              |
| 17:AS:20:LEU:CB    | 17:AS:95:LEU:HB3  | 2.39                     | 0.52              |
| 18:AT:36:LEU:CD2   | 18:AT:47:VAL:HB   | 2.33                     | 0.52              |
| 18:AT:53:SER:O     | 18:AT:54:ALA:C    | 2.49                     | 0.52              |
| 19:AU:50:LYS:HG3   | 19:AU:85:PRO:HD2  | 1.90                     | 0.52              |
| 20:AV:2:ARG:CG     | 20:AV:3:VAL:H     | 2.22                     | 0.52              |
| 21:AW:100:VAL:CG1  | 21:AW:133:ILE:HB  | 2.38                     | 0.52              |
| 22:AX:11:ARG:HG2   | 22:AX:11:ARG:NH1  | 2.25                     | 0.52              |
| 22:AX:26:TYR:CE1   | 22:AX:29:GLN:NE2  | 2.78                     | 0.52              |
| 23:AY:14:VAL:HG13  | 23:AY:18:LYS:NZ   | 2.24                     | 0.52              |
| 24:AZ:9:VAL:HG21   | 24:AZ:52:HIS:O    | 2.09                     | 0.52              |
| 28:Ad:5:TRP:CE2    | 28:Ad:7:PRO:HD3   | 2.45                     | 0.52              |
| 32:AJ:20:ALA:CB    | 32:AJ:21:PRO:CD   | 2.86                     | 0.52              |
| 32:AJ:81:ALA:C     | 32:AJ:99:ILE:HG21 | 2.35                     | 0.52              |
| 34:BA:44:G:H2'     | 34:BA:45:U:O5'    | 2.10                     | 0.52              |
| 34:BA:50:A:H61     | 34:BA:361:G:H4'   | 1.70                     | 0.52              |
| 34:BA:133:U:O4     | 34:BA:229:U:O4    | 2.27                     | 0.52              |
| 34:BA:178:C:H2'    | 34:BA:179:A:H8    | 1.73                     | 0.52              |
| 34:BA:261:U:C4     | 34:BA:264:U:OP2   | 2.62                     | 0.52              |
| 34:BA:279:A:C1'    | 34:BA:281:G:C4    | 2.90                     | 0.52              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BA:335:C:H1'    | 34:BA:1434:A:H1'  | 1.91                     | 0.52              |
| 34:BA:413:G:N2     | 34:BA:428:G:O2'   | 2.41                     | 0.52              |
| 34:BA:491:G:N2     | 34:BA:492:G:H1'   | 2.23                     | 0.52              |
| 34:BA:626:U:O2'    | 34:BA:627:G:H5'   | 2.10                     | 0.52              |
| 34:BA:657:G:O2'    | 34:BA:658:G:H5'   | 2.09                     | 0.52              |
| 34:BA:739:C:O2     | 34:BA:739:C:H2'   | 2.10                     | 0.52              |
| 34:BA:969:A:H5'    | 34:BA:970:C:OP2   | 2.08                     | 0.52              |
| 34:BA:992:U:H4'    | 34:BA:993:G:C5'   | 2.39                     | 0.52              |
| 34:BA:1138:G:N1    | 34:BA:1140:C:C5   | 2.77                     | 0.52              |
| 34:BA:1158:C:H1'   | 35:BF:133:LYS:CE  | 2.40                     | 0.52              |
| 34:BA:1252:A:C5    | 34:BA:1253:G:C8   | 2.98                     | 0.52              |
| 34:BA:1302:U:O2'   | 34:BA:1303:C:C5'  | 2.58                     | 0.52              |
| 34:BA:1318:A:C2'   | 52:BW:37:ARG:C    | 2.81                     | 0.52              |
| 34:BA:1393:U:H2'   | 34:BA:1394:A:OP2  | 2.10                     | 0.52              |
| 34:BA:1511:G:O2'   | 34:BA:1512:U:H5'  | 2.10                     | 0.52              |
| 36:BG:36:ASP:OD2   | 36:BG:57:ILE:HD12 | 2.08                     | 0.52              |
| 36:BG:177:THR:O    | 36:BG:179:ARG:N   | 2.42                     | 0.52              |
| 37:BH:106:TYR:CE1  | 37:BH:112:VAL:C   | 2.87                     | 0.52              |
| 37:BH:126:ILE:O    | 37:BH:132:ARG:CB  | 2.58                     | 0.52              |
| 37:BH:170:VAL:HG23 | 37:BH:176:LEU:CD2 | 2.37                     | 0.52              |
| 38:BI:76:ILE:CD1   | 38:BI:142:LEU:HB2 | 2.27                     | 0.52              |
| 39:BJ:79:LEU:HB2   | 39:BJ:88:VAL:CG1  | 2.39                     | 0.52              |
| 40:BK:153:HIS:CE1  | 44:BO:58:PRO:CG   | 2.93                     | 0.52              |
| 41:BL:24:THR:H     | 41:BL:60:ARG:HD3  | 1.73                     | 0.52              |
| 41:BL:78:GLN:O     | 41:BL:79:VAL:C    | 2.52                     | 0.52              |
| 41:BL:97:VAL:HG13  | 41:BL:98:LYS:HZ1  | 1.74                     | 0.52              |
| 41:BL:103:VAL:HG11 | 41:BL:109:ILE:N   | 2.24                     | 0.52              |
| 42:BM:93:ARG:HH22  | 42:BM:97:LYS:HE2  | 1.73                     | 0.52              |
| 43:BN:24:VAL:O     | 43:BN:28:ARG:HG3  | 2.09                     | 0.52              |
| 44:BO:43:SER:CB    | 44:BO:64:ALA:HB1  | 2.40                     | 0.52              |
| 44:BO:84:VAL:HG23  | 44:BO:84:VAL:O    | 2.09                     | 0.52              |
| 44:BO:101:SER:OG   | 44:BO:103:LEU:HG  | 2.08                     | 0.52              |
| 44:BO:119:CYS:O    | 44:BO:120:ARG:C   | 2.52                     | 0.52              |
| 45:BP:41:ARG:NH1   | 45:BP:41:ARG:CB   | 2.70                     | 0.52              |
| 45:BP:43:VAL:CG1   | 45:BP:44:THR:N    | 2.72                     | 0.52              |
| 46:BQ:82:MET:O     | 46:BQ:82:MET:HG2  | 2.08                     | 0.52              |
| 49:BT:20:VAL:HG11  | 49:BT:32:TYR:CD2  | 2.44                     | 0.52              |
| 51:BV:26:LEU:CD2   | 51:BV:29:PHE:HB2  | 2.39                     | 0.52              |
| 51:BV:31:LEU:HD21  | 51:BV:62:GLU:OE2  | 2.10                     | 0.52              |
| 56:BE:7:A:H1'      | 56:BE:49:C:OP2    | 2.09                     | 0.52              |
| 57:BZ:17:GLY:C     | 57:BZ:20:THR:HG21 | 2.34                     | 0.52              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:BZ:62:ALA:HB3   | 57:BZ:63:ALA:CA    | 2.39                     | 0.52              |
| 57:BZ:163:VAL:HG22 | 57:BZ:174:LEU:N    | 2.17                     | 0.52              |
| 57:BZ:233:PRO:HG2  | 57:BZ:276:ILE:HG12 | 1.89                     | 0.52              |
| 57:BZ:258:LEU:CB   | 57:BZ:259:GLY:HA3  | 2.38                     | 0.52              |
| 57:BZ:357:ARG:HA   | 57:BZ:385:PRO:HG3  | 1.90                     | 0.52              |
| 57:BZ:502:PHE:CZ   | 57:BZ:555:VAL:O    | 2.62                     | 0.52              |
| 1:AA:14:A:N6       | 1:AA:15:G:C2       | 2.71                     | 0.52              |
| 1:AA:70:G:H4'      | 1:AA:71:A:H5'      | 1.89                     | 0.52              |
| 1:AA:75:G:O2'      | 23:AY:50:ARG:NH1   | 2.40                     | 0.52              |
| 1:AA:175:G:C2      | 1:AA:176:G:C4      | 2.97                     | 0.52              |
| 1:AA:195:A:OP2     | 1:AA:196:A:O3'     | 2.27                     | 0.52              |
| 1:AA:233:A:H2'     | 1:AA:234:C:H5'     | 1.92                     | 0.52              |
| 1:AA:270(X):G:O3'  | 1:AA:272:G:H4'     | 2.08                     | 0.52              |
| 1:AA:279:C:N4      | 1:AA:359:A:C4      | 2.66                     | 0.52              |
| 1:AA:331:A:N6      | 1:AA:1209:G:H2'    | 2.24                     | 0.52              |
| 1:AA:386:G:N3      | 1:AA:386:G:C2'     | 2.72                     | 0.52              |
| 1:AA:464:U:C2      | 1:AA:788:A:C5      | 2.98                     | 0.52              |
| 1:AA:604:G:C2'     | 1:AA:605:C:O5'     | 2.57                     | 0.52              |
| 1:AA:611:C:O2      | 1:AA:616:A:C2      | 2.63                     | 0.52              |
| 1:AA:612:G:N2      | 1:AA:617:G:H1      | 2.08                     | 0.52              |
| 1:AA:647:G:H5'     | 1:AA:2352:A:H5'    | 1.92                     | 0.52              |
| 1:AA:675:A:H5''    | 6:AF:67:GLN:OE1    | 2.10                     | 0.52              |
| 1:AA:702:G:C2'     | 1:AA:703:U:H5'     | 2.39                     | 0.52              |
| 1:AA:763:G:N3      | 1:AA:765:G:C1'     | 2.73                     | 0.52              |
| 1:AA:981:A:HO2'    | 1:AA:2036:C:HO2'   | 1.51                     | 0.52              |
| 1:AA:1005:C:H2'    | 1:AA:1006:C:C6     | 2.27                     | 0.52              |
| 1:AA:1080:C:C1'    | 32:AJ:129:GLY:HA3  | 2.35                     | 0.52              |
| 1:AA:1080:C:H6     | 1:AA:1080:C:H3'    | 1.74                     | 0.52              |
| 1:AA:1142(A):A:N6  | 1:AA:1143:A:N7     | 2.57                     | 0.52              |
| 1:AA:1151:G:C5'    | 16:AR:81:HIS:NE2   | 2.63                     | 0.52              |
| 1:AA:1210:A:H5''   | 1:AA:1211:U:H3'    | 1.91                     | 0.52              |
| 1:AA:1300:U:O2'    | 1:AA:1301:A:OP2    | 2.27                     | 0.52              |
| 1:AA:1301:A:O2'    | 1:AA:1302:A:H8     | 1.92                     | 0.52              |
| 1:AA:1312:U:O5'    | 19:AU:62:LYS:HD2   | 2.09                     | 0.52              |
| 1:AA:1315:C:O2     | 1:AA:1392:A:C2     | 2.62                     | 0.52              |
| 1:AA:1405:U:C2     | 1:AA:1406:U:C4     | 2.98                     | 0.52              |
| 1:AA:1632:A:C6     | 1:AA:1633:G:N1     | 2.76                     | 0.52              |
| 1:AA:1657:C:P      | 5:AE:136:ARG:NH2   | 2.82                     | 0.52              |
| 1:AA:1710:C:C1'    | 1:AA:2858:C:H42    | 2.21                     | 0.52              |
| 1:AA:1852:C:OP1    | 55:BC:72:C:C4'     | 2.58                     | 0.52              |
| 1:AA:1853:A:N3     | 1:AA:2233:U:O2'    | 2.42                     | 0.52              |

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| Atom-1            | Atom-2              | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|---------------------|--------------------------|-------------------|
| 1:AA:1899:G:C8    | 1:AA:1899:G:H3'     | 2.44                     | 0.52              |
| 1:AA:1925:C:H2'   | 1:AA:1925:C:O2      | 2.09                     | 0.52              |
| 1:AA:1938:A:H2    | 1:AA:2590:A:O4'     | 1.93                     | 0.52              |
| 1:AA:2197:U:C2'   | 1:AA:2198:A:H5''    | 2.39                     | 0.52              |
| 1:AA:2205:C:H2'   | 1:AA:2206:C:H6      | 1.74                     | 0.52              |
| 1:AA:2239:G:H1'   | 4:AD:249:PRO:HB3    | 1.92                     | 0.52              |
| 1:AA:2286:A:H62   | 27:Ac:30:THR:C      | 2.17                     | 0.52              |
| 1:AA:2297:C:C4    | 1:AA:2333:A:N6      | 2.76                     | 0.52              |
| 1:AA:2305:A:C3'   | 1:AA:2306:C:H5''    | 2.39                     | 0.52              |
| 1:AA:2308:G:N3    | 1:AA:2308:G:C2'     | 2.73                     | 0.52              |
| 1:AA:2312:U:OP2   | 7:AG:86:MET:HG2     | 2.09                     | 0.52              |
| 1:AA:2393:A:H4'   | 11:AM:56:SER:H      | 1.74                     | 0.52              |
| 1:AA:2436:G:O2'   | 1:AA:2437:U:C5'     | 2.58                     | 0.52              |
| 1:AA:2468:G:H4'   | 12:AN:120:ILE:CD1   | 2.40                     | 0.52              |
| 1:AA:2506:U:H6    | 59:AA:3002:8AN:HN3A | 1.43                     | 0.52              |
| 1:AA:2532:G:H1'   | 1:AA:2664:G:H1'     | 1.89                     | 0.52              |
| 1:AA:2596:U:O3'   | 4:AD:242:ARG:NE     | 2.43                     | 0.52              |
| 1:AA:2666:C:H6    | 1:AA:2666:C:H3'     | 1.74                     | 0.52              |
| 1:AA:2716:U:O5'   | 1:AA:2716:U:H6      | 1.92                     | 0.52              |
| 1:AA:2744:G:O2'   | 1:AA:2745:C:H5'     | 2.09                     | 0.52              |
| 1:AA:2815:C:O2'   | 26:Ab:42:PRO:CG     | 2.57                     | 0.52              |
| 1:AA:2870:C:H2'   | 1:AA:2871:C:O4'     | 2.09                     | 0.52              |
| 2:AB:13:A:N6      | 2:AB:70:C:H5'       | 2.25                     | 0.52              |
| 2:AB:85:G:C2      | 2:AB:92:G:N3        | 2.77                     | 0.52              |
| 2:AB:87:G:N2      | 2:AB:90:C:C2        | 2.78                     | 0.52              |
| 3:AC:39:GLU:HB3   | 3:AC:178:ALA:HB2    | 1.90                     | 0.52              |
| 4:AD:21:PHE:O     | 4:AD:205:VAL:CG2    | 2.56                     | 0.52              |
| 4:AD:90:ALA:HA    | 4:AD:91:ARG:HH11    | 1.74                     | 0.52              |
| 4:AD:208:LYS:O    | 4:AD:211:ARG:HB2    | 2.09                     | 0.52              |
| 5:AE:174:ASP:OD1  | 5:AE:175:VAL:N      | 2.43                     | 0.52              |
| 6:AF:114:VAL:HG23 | 6:AF:186:ILE:HD13   | 1.92                     | 0.52              |
| 6:AF:130:ALA:O    | 6:AF:139:PHE:CA     | 2.56                     | 0.52              |
| 7:AG:8:LYS:O      | 7:AG:9:ARG:C        | 2.52                     | 0.52              |
| 7:AG:32:PRO:HB2   | 7:AG:163:ALA:CA     | 2.33                     | 0.52              |
| 7:AG:38:VAL:O     | 7:AG:157:ILE:HG13   | 2.09                     | 0.52              |
| 8:AH:6:ARG:C      | 8:AH:7:LEU:HD23     | 2.34                     | 0.52              |
| 8:AH:11:VAL:HG11  | 8:AH:17:VAL:CB      | 2.40                     | 0.52              |
| 8:AH:56:SER:HB3   | 8:AH:61:HIS:ND1     | 2.25                     | 0.52              |
| 8:AH:74:ASN:HB2   | 8:AH:138:LYS:HZ3    | 1.72                     | 0.52              |
| 8:AH:118:PRO:CD   | 8:AH:121:ILE:HD13   | 2.29                     | 0.52              |
| 8:AH:121:ILE:HD11 | 8:AH:123:PHE:CZ     | 2.43                     | 0.52              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 9:AK:13:TRP:O      | 9:AK:14:VAL:CG2    | 2.56                     | 0.52              |
| 9:AK:104:LYS:O     | 9:AK:105:GLY:C     | 2.52                     | 0.52              |
| 10:AL:120:GLU:N    | 34:BA:347:G:OP2    | 2.42                     | 0.52              |
| 11:AM:90:ARG:N     | 11:AM:125:VAL:HG22 | 2.24                     | 0.52              |
| 11:AM:114:ILE:HG23 | 11:AM:122:PRO:O    | 2.09                     | 0.52              |
| 12:AN:16:ARG:C     | 12:AN:17:LEU:HD12  | 2.35                     | 0.52              |
| 12:AN:39:PRO:HA    | 12:AN:127:ILE:HG21 | 1.91                     | 0.52              |
| 13:AO:25:ALA:CA    | 13:AO:48:VAL:HG22  | 2.39                     | 0.52              |
| 13:AO:34:ILE:O     | 13:AO:113:LEU:HA   | 2.10                     | 0.52              |
| 13:AO:57:ARG:HE    | 13:AO:62:ALA:CB    | 2.17                     | 0.52              |
| 13:AO:65:LEU:O     | 13:AO:66:VAL:C     | 2.46                     | 0.52              |
| 13:AO:73:VAL:O     | 13:AO:76:VAL:N     | 2.43                     | 0.52              |
| 14:AP:65:VAL:HG23  | 14:AP:66:ALA:N     | 2.25                     | 0.52              |
| 15:AQ:109:GLU:CD   | 15:AQ:110:ILE:H    | 2.17                     | 0.52              |
| 16:AR:61:TRP:CE3   | 16:AR:93:LYS:NZ    | 2.77                     | 0.52              |
| 19:AU:47:PHE:HE2   | 19:AU:89:ILE:CA    | 2.08                     | 0.52              |
| 21:AW:18:LEU:HD11  | 21:AW:38:TYR:CG    | 2.45                     | 0.52              |
| 21:AW:98:MET:HE2   | 21:AW:133:ILE:CG1  | 2.39                     | 0.52              |
| 21:AW:99:TYR:CD1   | 21:AW:126:VAL:CG2  | 2.93                     | 0.52              |
| 21:AW:153:SER:O    | 21:AW:154:ASP:C    | 2.52                     | 0.52              |
| 22:AX:57:PHE:HD1   | 22:AX:57:PHE:N     | 2.08                     | 0.52              |
| 25:Aa:21:VAL:CG1   | 25:Aa:22:ILE:H     | 2.06                     | 0.52              |
| 31:AI:30:GLN:O     | 31:AI:32:LEU:N     | 2.34                     | 0.52              |
| 32:AJ:76:TYR:HE2   | 32:AJ:80:LYS:HZ3   | 1.56                     | 0.52              |
| 34:BA:250:A:N3     | 34:BA:252:U:C2     | 2.77                     | 0.52              |
| 34:BA:355:C:C4     | 34:BA:356:A:N7     | 2.78                     | 0.52              |
| 34:BA:467:G:N2     | 34:BA:468:A:C4     | 2.78                     | 0.52              |
| 34:BA:529:G:H1     | 45:BP:49:ASN:CB    | 2.15                     | 0.52              |
| 34:BA:608:A:C2     | 34:BA:609:A:O4'    | 2.62                     | 0.52              |
| 34:BA:817:C:O2     | 34:BA:817:C:H2'    | 2.09                     | 0.52              |
| 34:BA:857:C:C2     | 34:BA:858:G:H1'    | 2.45                     | 0.52              |
| 34:BA:939:G:H2'    | 34:BA:940:C:C5     | 2.44                     | 0.52              |
| 34:BA:977:A:N6     | 34:BA:1224:G:OP1   | 2.42                     | 0.52              |
| 34:BA:1114:C:H2'   | 34:BA:1114:C:O2    | 2.08                     | 0.52              |
| 34:BA:1170:A:C8    | 34:BA:1171:G:C8    | 2.98                     | 0.52              |
| 34:BA:1184:G:C2    | 34:BA:1185:G:C5    | 2.97                     | 0.52              |
| 34:BA:1202:G:N7    | 43:BN:53:PRO:CB    | 2.72                     | 0.52              |
| 34:BA:1216:G:OP1   | 47:BR:3:ARG:NH2    | 2.43                     | 0.52              |
| 34:BA:1339:A:O5'   | 34:BA:1339:A:H8    | 1.92                     | 0.52              |
| 34:BA:1342:C:C4'   | 42:BM:125:TYR:HB2  | 2.37                     | 0.52              |
| 34:BA:1413:A:C4    | 34:BA:1488:G:C2    | 2.97                     | 0.52              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1429:C:O2'   | 34:BA:1430:C:O5'   | 2.23                     | 0.52              |
| 34:BA:1486:G:N2    | 34:BA:1487:G:N3    | 2.56                     | 0.52              |
| 34:BA:1497:G:H2'   | 34:BA:1498:U:H5'   | 1.91                     | 0.52              |
| 35:BF:208:ILE:HG21 | 35:BF:239:VAL:CG1  | 2.37                     | 0.52              |
| 36:BG:119:ARG:HG2  | 36:BG:120:VAL:N    | 2.25                     | 0.52              |
| 37:BH:205:GLU:CD   | 38:BI:100:VAL:H    | 2.16                     | 0.52              |
| 38:BI:136:MET:HA   | 38:BI:139:LEU:CD1  | 2.40                     | 0.52              |
| 39:BJ:25:ILE:O     | 39:BJ:26:ILE:C     | 2.52                     | 0.52              |
| 39:BJ:41:GLU:HG2   | 39:BJ:42:GLU:N     | 2.24                     | 0.52              |
| 41:BL:10:LEU:HD11  | 41:BL:85:ARG:CD    | 2.26                     | 0.52              |
| 41:BL:18:ARG:HH12  | 41:BL:78:GLN:CD    | 2.16                     | 0.52              |
| 42:BM:4:TYR:CE1    | 42:BM:59:PHE:CE2   | 2.91                     | 0.52              |
| 42:BM:32:ASP:OD1   | 42:BM:35:GLU:HB2   | 2.10                     | 0.52              |
| 42:BM:97:LYS:CE    | 42:BM:102:LEU:HD22 | 2.40                     | 0.52              |
| 43:BN:87:THR:O     | 43:BN:87:THR:HG22  | 2.09                     | 0.52              |
| 46:BQ:52:GLU:HG2   | 46:BQ:55:ARG:CZ    | 2.40                     | 0.52              |
| 50:BU:4:LYS:O      | 50:BU:5:VAL:CG2    | 2.57                     | 0.52              |
| 51:BV:61:LYS:HB3   | 51:BV:62:GLU:OE1   | 2.09                     | 0.52              |
| 52:BW:27:GLU:OE2   | 52:BW:29:ARG:HA    | 2.10                     | 0.52              |
| 53:BX:31:SER:O     | 53:BX:32:ALA:C     | 2.53                     | 0.52              |
| 53:BX:37:SER:O     | 53:BX:41:ILE:HG13  | 2.09                     | 0.52              |
| 56:BE:52:G:H1      | 56:BE:62:C:H42     | 1.57                     | 0.52              |
| 57:BZ:403:VAL:HG21 | 57:BZ:466:TYR:CD1  | 2.45                     | 0.52              |
| 1:AA:52:A:H8       | 1:AA:52:A:O5'      | 1.92                     | 0.52              |
| 1:AA:70:G:H4'      | 1:AA:71:A:O5'      | 2.10                     | 0.52              |
| 1:AA:78:A:H2'      | 1:AA:79:G:C8       | 2.45                     | 0.52              |
| 1:AA:210:C:O2'     | 1:AA:211:A:H5'     | 2.10                     | 0.52              |
| 1:AA:243:U:OP2     | 29:Ae:4:MET:HB3    | 2.10                     | 0.52              |
| 1:AA:279:C:N4      | 1:AA:359:A:C1'     | 2.67                     | 0.52              |
| 1:AA:290:G:C8      | 1:AA:290:G:C3'     | 2.91                     | 0.52              |
| 1:AA:307:G:N2      | 1:AA:310:A:O4'     | 2.41                     | 0.52              |
| 1:AA:335:C:N3      | 1:AA:336:C:C5      | 2.78                     | 0.52              |
| 1:AA:428:A:H5'     | 1:AA:429:A:OP2     | 2.09                     | 0.52              |
| 1:AA:572:A:C8      | 1:AA:573:G:C4      | 2.98                     | 0.52              |
| 1:AA:742:G:C4'     | 1:AA:1675:C:O2'    | 2.57                     | 0.52              |
| 1:AA:852:G:C6      | 1:AA:853:G:N7      | 2.78                     | 0.52              |
| 1:AA:874:G:N1      | 1:AA:875:G:C6      | 2.77                     | 0.52              |
| 1:AA:902:C:C2'     | 1:AA:903:C:C2      | 2.86                     | 0.52              |
| 1:AA:912:C:O2'     | 1:AA:913:U:H5'     | 2.10                     | 0.52              |
| 1:AA:945:A:H3'     | 1:AA:946:G:H5''    | 1.91                     | 0.52              |
| 1:AA:962:G:C3'     | 1:AA:963:U:H6      | 2.23                     | 0.52              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1005:C:C5    | 1:AA:1142(A):A:O3' | 2.63                     | 0.52              |
| 1:AA:1019:U:O2    | 1:AA:1144:G:N2     | 2.42                     | 0.52              |
| 1:AA:1023:U:C2    | 1:AA:1024:G:H4'    | 2.44                     | 0.52              |
| 1:AA:1052:C:H2'   | 1:AA:1053:C:C6     | 2.44                     | 0.52              |
| 1:AA:1061:U:C2'   | 32:AJ:52:ILE:HD13  | 2.28                     | 0.52              |
| 1:AA:1256:G:C6    | 1:AA:1257:C:N4     | 2.77                     | 0.52              |
| 1:AA:1265:A:H1'   | 1:AA:1267:U:O4     | 2.08                     | 0.52              |
| 1:AA:1306:C:H2'   | 1:AA:1307:A:O4'    | 2.10                     | 0.52              |
| 1:AA:1338:G:O2'   | 19:AU:16:LYS:HD3   | 2.08                     | 0.52              |
| 1:AA:1363:C:O2'   | 1:AA:1809:A:N7     | 2.38                     | 0.52              |
| 1:AA:1449(A):G:C6 | 1:AA:1450:C:N4     | 2.78                     | 0.52              |
| 1:AA:1517:G:N2    | 1:AA:1518:C:H1'    | 2.23                     | 0.52              |
| 1:AA:1726:G:C5    | 1:AA:1727:U:O4     | 2.62                     | 0.52              |
| 1:AA:1807:G:N2    | 1:AA:1809:A:H5'    | 2.22                     | 0.52              |
| 1:AA:2033:A:O2'   | 1:AA:2034:U:P      | 2.68                     | 0.52              |
| 1:AA:2051:A:OP2   | 1:AA:2051:A:H8     | 1.92                     | 0.52              |
| 1:AA:2183:C:O2    | 1:AA:2183:C:H2'    | 2.08                     | 0.52              |
| 1:AA:2286:A:N1    | 27:Ac:28:ARG:C     | 2.68                     | 0.52              |
| 1:AA:2302:G:C6    | 1:AA:2315:G:C6     | 2.98                     | 0.52              |
| 1:AA:2343:C:O2    | 1:AA:2344:U:H6     | 1.93                     | 0.52              |
| 1:AA:2389:G:C5'   | 1:AA:2390:U:H6     | 2.21                     | 0.52              |
| 1:AA:2505:G:O6    | 1:AA:2576:G:C8     | 2.63                     | 0.52              |
| 1:AA:2554:U:H5    | 1:AA:2556:C:N3     | 2.06                     | 0.52              |
| 1:AA:2568:C:O2'   | 1:AA:2569:G:H5'    | 2.10                     | 0.52              |
| 1:AA:2617:C:C2    | 1:AA:2618:G:C8     | 2.98                     | 0.52              |
| 1:AA:2630:G:O2'   | 1:AA:2892:A:O2'    | 2.25                     | 0.52              |
| 1:AA:2630:G:N2    | 1:AA:2789:C:C2     | 2.77                     | 0.52              |
| 1:AA:2651:C:N4    | 1:AA:2670:A:N6     | 2.58                     | 0.52              |
| 1:AA:2659:G:H1'   | 1:AA:2663:G:H1     | 1.74                     | 0.52              |
| 1:AA:2720:U:H3'   | 1:AA:2721:A:H8     | 1.73                     | 0.52              |
| 1:AA:2753:A:H2'   | 1:AA:2753:A:N3     | 2.24                     | 0.52              |
| 1:AA:2820:A:H4'   | 13:AO:4:LEU:HD22   | 1.92                     | 0.52              |
| 2:AB:30:C:O4'     | 2:AB:58:A:C2       | 2.62                     | 0.52              |
| 2:AB:33:G:N2      | 2:AB:34:U:C2       | 2.77                     | 0.52              |
| 2:AB:81:G:C6      | 2:AB:82:G:C5       | 2.97                     | 0.52              |
| 3:AC:46:LYS:HD3   | 3:AC:46:LYS:O      | 2.10                     | 0.52              |
| 3:AC:131:LEU:O    | 3:AC:134:ARG:HB2   | 2.08                     | 0.52              |
| 4:AD:13:ARG:HD3   | 4:AD:22:SER:HB2    | 1.90                     | 0.52              |
| 4:AD:96:HIS:CG    | 4:AD:102:LYS:HG2   | 2.44                     | 0.52              |
| 4:AD:183:ARG:HG2  | 4:AD:268:ARG:HD2   | 1.92                     | 0.52              |
| 6:AF:107:LYS:O    | 6:AF:108:LYS:C     | 2.51                     | 0.52              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 6:AF:122:LYS:CD  | 6:AF:192:LEU:HD12 | 2.40                     | 0.52              |
| 7:AG:26:GLN:OE1  | 7:AG:29:TRP:CE3   | 2.63                     | 0.52              |
| 7:AG:125:PHE:CD1 | 7:AG:131:TYR:C    | 2.88                     | 0.52              |
| 8:AH:164:TYR:HD2 | 8:AH:166:GLY:H    | 1.56                     | 0.52              |
| 9:AK:72:TYR:CE1  | 9:AK:74:ARG:HB3   | 2.45                     | 0.52              |
| 9:AK:89:LYS:N    | 9:AK:89:LYS:HE3   | 2.22                     | 0.52              |
| 9:AK:111:PRO:C   | 9:AK:114:ARG:HB3  | 2.34                     | 0.52              |
| 10:AL:68:GLU:HG2 | 10:AL:76:ALA:CA   | 2.39                     | 0.52              |
| 11:AM:52:GLU:OE1 | 29:Ae:52:LYS:HE2  | 2.09                     | 0.52              |
| 11:AM:116:GLY:CA | 11:AM:121:LYS:HB3 | 2.40                     | 0.52              |
| 12:AN:44:ALA:CB  | 12:AN:93:TYR:O    | 2.58                     | 0.52              |
| 12:AN:134:ARG:NE | 12:AN:137:TYR:CA  | 2.64                     | 0.52              |
| 14:AP:9:ARG:HH11 | 14:AP:9:ARG:H     | 1.48                     | 0.52              |
| 14:AP:35:ILE:O   | 14:AP:36:TYR:CB   | 2.58                     | 0.52              |
| 15:AQ:56:GLY:C   | 15:AQ:57:PHE:CD2  | 2.87                     | 0.52              |
| 15:AQ:103:ARG:O  | 15:AQ:107:ASP:OD1 | 2.28                     | 0.52              |
| 15:AQ:113:LYS:O  | 15:AQ:114:LEU:O   | 2.27                     | 0.52              |
| 18:AT:58:ALA:HA  | 18:AT:62:HIS:HB3  | 1.90                     | 0.52              |
| 21:AW:30:ASN:CB  | 21:AW:90:VAL:HG23 | 2.27                     | 0.52              |
| 21:AW:77:ASP:OD1 | 21:AW:78:LYS:HG2  | 2.09                     | 0.52              |
| 22:AX:19:LYS:HG2 | 22:AX:20:ARG:N    | 2.21                     | 0.52              |
| 28:Ad:25:PRO:HD3 | 28:Ad:28:ARG:NH2  | 2.23                     | 0.52              |
| 33:Ag:290:UNK:CB | 33:Ag:343:UNK:CA  | 2.79                     | 0.52              |
| 34:BA:20:U:H6    | 34:BA:916:G:N2    | 2.08                     | 0.52              |
| 34:BA:85:U:H2'   | 34:BA:86:U:C5'    | 2.40                     | 0.52              |
| 34:BA:88:C:C2'   | 34:BA:89:U:OP2    | 2.58                     | 0.52              |
| 34:BA:127:G:N2   | 34:BA:128:G:H1'   | 2.24                     | 0.52              |
| 34:BA:275:G:H5'  | 50:BU:14:LYS:HZ2  | 1.70                     | 0.52              |
| 34:BA:281:G:O2'  | 34:BA:282:A:H8    | 1.92                     | 0.52              |
| 34:BA:320:C:O2'  | 34:BA:321:A:H5'   | 2.10                     | 0.52              |
| 34:BA:424:G:O2'  | 34:BA:425:G:H5'   | 2.09                     | 0.52              |
| 34:BA:533:A:OP2  | 34:BA:533:A:O4'   | 2.27                     | 0.52              |
| 34:BA:1002:G:N2  | 34:BA:1039:C:N4   | 2.58                     | 0.52              |
| 34:BA:1064:G:OP1 | 34:BA:1386:G:C5'  | 2.58                     | 0.52              |
| 34:BA:1164:G:C5  | 34:BA:1165:C:N4   | 2.77                     | 0.52              |
| 34:BA:1188:A:C8  | 34:BA:1188:A:OP2  | 2.62                     | 0.52              |
| 34:BA:1240:U:H2' | 40:BK:32:ARG:NH2  | 2.20                     | 0.52              |
| 34:BA:1292:U:OP2 | 34:BA:1292:U:H6   | 1.92                     | 0.52              |
| 34:BA:1310:G:O2' | 34:BA:1311:G:H5'  | 2.09                     | 0.52              |
| 34:BA:1319:A:O5' | 52:BW:37:ARG:HB3  | 2.09                     | 0.52              |
| 34:BA:1361:G:N7  | 34:BA:1362:C:C5   | 2.77                     | 0.52              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1376:U:O4    | 40:BK:10:ARG:HD2   | 2.10                     | 0.52              |
| 34:BA:1430:C:C2    | 34:BA:1431:C:C5    | 2.93                     | 0.52              |
| 35:BF:35:GLU:O     | 35:BF:36:ARG:NH2   | 2.43                     | 0.52              |
| 35:BF:82:ARG:CB    | 35:BF:94:ASN:HD21  | 2.22                     | 0.52              |
| 35:BF:91:PRO:CG    | 35:BF:155:LEU:H    | 2.23                     | 0.52              |
| 35:BF:124:SER:C    | 35:BF:126:GLU:N    | 2.67                     | 0.52              |
| 36:BG:125:GLU:O    | 36:BG:127:ARG:HG3  | 2.09                     | 0.52              |
| 37:BH:10:ARG:HH11  | 37:BH:11:LEU:HD23  | 1.74                     | 0.52              |
| 37:BH:30:LYS:CG    | 37:BH:35:ARG:HD2   | 2.39                     | 0.52              |
| 37:BH:171:GLY:HA3  | 37:BH:173:TRP:CZ3  | 2.44                     | 0.52              |
| 38:BI:53:LEU:O     | 38:BI:54:ALA:C     | 2.53                     | 0.52              |
| 38:BI:95:ALA:C     | 38:BI:96:PRO:O     | 2.53                     | 0.52              |
| 38:BI:122:GLU:CB   | 38:BI:126:ARG:HG3  | 2.39                     | 0.52              |
| 39:BJ:14:LEU:CD1   | 39:BJ:19:LEU:N     | 2.66                     | 0.52              |
| 41:BL:97:VAL:HG13  | 41:BL:98:LYS:N     | 2.25                     | 0.52              |
| 42:BM:78:LYS:NZ    | 42:BM:101:PHE:HE2  | 1.96                     | 0.52              |
| 43:BN:33:GLN:C     | 43:BN:34:VAL:HG23  | 2.35                     | 0.52              |
| 43:BN:78:ASN:O     | 43:BN:79:ARG:C     | 2.51                     | 0.52              |
| 44:BO:33:THR:HA    | 44:BO:38:ASN:O     | 2.10                     | 0.52              |
| 45:BP:118:SER:O    | 45:BP:121:GLY:HA2  | 2.09                     | 0.52              |
| 46:BQ:97:PRO:HG2   | 46:BQ:101:GLN:HB2  | 1.91                     | 0.52              |
| 48:BS:78:TYR:O     | 48:BS:81:LEU:HB3   | 2.10                     | 0.52              |
| 49:BT:43:LYS:HE3   | 49:BT:48:TRP:HZ3   | 1.74                     | 0.52              |
| 52:BW:79:THR:HG22  | 52:BW:79:THR:O     | 2.08                     | 0.52              |
| 53:BX:79:ARG:HG3   | 53:BX:79:ARG:HH11  | 1.73                     | 0.52              |
| 56:BD:6:G:N1       | 56:BD:67:C:N4      | 2.54                     | 0.52              |
| 57:BZ:64:ILE:N     | 57:BZ:65:LYS:CA    | 2.73                     | 0.52              |
| 57:BZ:71:ASN:C     | 57:BZ:72:ILE:HG13  | 2.34                     | 0.52              |
| 57:BZ:161:ALA:O    | 57:BZ:162:ILE:HB   | 2.09                     | 0.52              |
| 57:BZ:258:LEU:CD1  | 57:BZ:260:LEU:HD13 | 2.38                     | 0.52              |
| 57:BZ:284:ILE:HG22 | 57:BZ:284:ILE:O    | 2.09                     | 0.52              |
| 57:BZ:419:LEU:CD1  | 57:BZ:441:TYR:HB2  | 2.40                     | 0.52              |
| 57:BZ:422:ARG:O    | 57:BZ:423:LYS:HB2  | 2.09                     | 0.52              |
| 1:AA:112:U:OP2     | 1:AA:112:U:H6      | 1.93                     | 0.52              |
| 1:AA:120:U:C6      | 1:AA:150:C:H5      | 2.28                     | 0.52              |
| 1:AA:141(A):C:O5'  | 1:AA:141(A):C:H6   | 1.92                     | 0.52              |
| 1:AA:195:A:H4'     | 1:AA:251:A:C4'     | 2.40                     | 0.52              |
| 1:AA:221:A:O2'     | 1:AA:271(B):G:N1   | 2.43                     | 0.52              |
| 1:AA:273(B):C:H2'  | 1:AA:273(C):C:H6   | 1.67                     | 0.52              |
| 1:AA:306:U:O4      | 1:AA:310:A:N7      | 2.43                     | 0.52              |
| 1:AA:308:G:N7      | 1:AA:501:A:C4      | 2.78                     | 0.52              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:386:G:O5'   | 1:AA:388:G:N2     | 2.43                     | 0.52              |
| 1:AA:423:A:H2'   | 1:AA:424:G:OP1    | 2.10                     | 0.52              |
| 1:AA:487:C:C6    | 1:AA:487:C:C3'    | 2.93                     | 0.52              |
| 1:AA:532:A:N6    | 16:AR:45:TYR:OH   | 2.25                     | 0.52              |
| 1:AA:595:C:C2    | 1:AA:596:G:C8     | 2.98                     | 0.52              |
| 1:AA:637:A:H2    | 1:AA:651:G:C4'    | 2.23                     | 0.52              |
| 1:AA:650:C:C4    | 1:AA:651:G:C2     | 2.97                     | 0.52              |
| 1:AA:724:U:HO2'  | 1:AA:725:G:H5'    | 1.72                     | 0.52              |
| 1:AA:772:C:H2'   | 1:AA:773:U:C6     | 2.45                     | 0.52              |
| 1:AA:814:C:N3    | 1:AA:815:C:C5     | 2.78                     | 0.52              |
| 1:AA:872:A:O2'   | 12:AN:66:ILE:HD13 | 2.09                     | 0.52              |
| 1:AA:916:G:O2'   | 2:AB:99:A:H1'     | 2.10                     | 0.52              |
| 1:AA:937:U:H2'   | 1:AA:938:G:O4'    | 2.09                     | 0.52              |
| 1:AA:960:A:C5'   | 1:AA:961:C:OP1    | 2.54                     | 0.52              |
| 1:AA:1039:G:P    | 1:AA:1039:G:C3'   | 2.94                     | 0.52              |
| 1:AA:1074:G:H2'  | 1:AA:1075:C:C5    | 2.45                     | 0.52              |
| 1:AA:1148:A:N1   | 1:AA:1149:G:C5    | 2.77                     | 0.52              |
| 1:AA:1163:G:O2'  | 1:AA:1164:G:H5'   | 2.08                     | 0.52              |
| 1:AA:1241:A:HO2' | 1:AA:1242:A:P     | 2.33                     | 0.52              |
| 1:AA:1277:G:O2'  | 13:AO:24:GLN:HG2  | 2.10                     | 0.52              |
| 1:AA:1358:G:C8   | 1:AA:1371:G:N1    | 2.78                     | 0.52              |
| 1:AA:1360:A:C2'  | 1:AA:1361:G:H5'   | 2.40                     | 0.52              |
| 1:AA:1428:C:HO2' | 1:AA:1429:G:P     | 2.31                     | 0.52              |
| 1:AA:1442:G:C2   | 1:AA:1443:G:C5    | 2.98                     | 0.52              |
| 1:AA:1528:A:N7   | 1:AA:1529:A:C6    | 2.78                     | 0.52              |
| 1:AA:1612:C:H2'  | 28:Ad:3:ARG:NH2   | 2.24                     | 0.52              |
| 1:AA:1812:A:C4   | 1:AA:1813:G:C8    | 2.97                     | 0.52              |
| 1:AA:1879:C:H2'  | 1:AA:1880:C:O4'   | 2.09                     | 0.52              |
| 1:AA:2051:A:C3'  | 5:AE:141:ILE:HD11 | 2.38                     | 0.52              |
| 1:AA:2175:C:C6   | 3:AC:219:GLY:C    | 2.76                     | 0.52              |
| 1:AA:2176:A:O3'  | 3:AC:222:VAL:CA   | 2.58                     | 0.52              |
| 1:AA:2226:C:C2   | 4:AD:262:ARG:NH2  | 2.77                     | 0.52              |
| 1:AA:2230:G:O2'  | 1:AA:2231:C:H5'   | 2.09                     | 0.52              |
| 1:AA:2287:A:C2'  | 1:AA:2288:A:O5'   | 2.58                     | 0.52              |
| 1:AA:2328:A:H2'  | 1:AA:2329:G:C8    | 2.45                     | 0.52              |
| 1:AA:2366:A:H3'  | 1:AA:2367:G:C8    | 2.45                     | 0.52              |
| 1:AA:2412:A:H3'  | 1:AA:2413:G:H8    | 1.74                     | 0.52              |
| 1:AA:2573:C:H6   | 1:AA:2573:C:O5'   | 1.92                     | 0.52              |
| 1:AA:2588:G:N1   | 1:AA:2607:G:C6    | 2.77                     | 0.52              |
| 1:AA:2699:C:O2'  | 1:AA:2700:C:H5'   | 2.09                     | 0.52              |
| 1:AA:2718:G:C6   | 1:AA:2719:G:C5    | 2.97                     | 0.52              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2749:A:C2     | 1:AA:2750:A:N6    | 2.77                     | 0.52              |
| 1:AA:2751:G:H2'    | 1:AA:2751:G:N3    | 2.23                     | 0.52              |
| 1:AA:2799:A:H4'    | 1:AA:2802:G:C2    | 2.44                     | 0.52              |
| 1:AA:2811:G:H22    | 1:AA:2891:G:H1'   | 1.75                     | 0.52              |
| 1:AA:2845:G:OP1    | 15:AQ:57:PHE:O    | 2.27                     | 0.52              |
| 1:AA:2876:G:C2     | 1:AA:2877:G:N7    | 2.77                     | 0.52              |
| 3:AC:158:ALA:C     | 3:AC:159:GLY:HA3  | 2.34                     | 0.52              |
| 3:AC:189:ILE:HD11  | 3:AC:214:VAL:HG21 | 1.92                     | 0.52              |
| 4:AD:144:ALA:O     | 4:AD:145:VAL:O    | 2.27                     | 0.52              |
| 5:AE:5:LEU:O       | 5:AE:195:LEU:CD2  | 2.58                     | 0.52              |
| 5:AE:64:LYS:O      | 5:AE:65:GLY:C     | 2.50                     | 0.52              |
| 5:AE:154:LYS:NZ    | 5:AE:156:MET:CB   | 2.71                     | 0.52              |
| 5:AE:199:ARG:N     | 5:AE:199:ARG:CD   | 2.71                     | 0.52              |
| 6:AF:22:ALA:HB1    | 6:AF:115:ALA:HB2  | 1.92                     | 0.52              |
| 6:AF:56:GLU:O      | 6:AF:60:SER:N     | 2.43                     | 0.52              |
| 6:AF:103:LYS:HA    | 6:AF:106:ARG:NE   | 2.24                     | 0.52              |
| 7:AG:35:GLU:HA     | 7:AG:100:TRP:CH2  | 2.44                     | 0.52              |
| 8:AH:161:GLY:C     | 8:AH:163:TYR:HE1  | 2.18                     | 0.52              |
| 9:AK:23:LEU:HD11   | 9:AK:62:VAL:CA    | 2.39                     | 0.52              |
| 9:AK:23:LEU:HG     | 9:AK:61:ARG:O     | 2.10                     | 0.52              |
| 10:AL:13:ASN:O     | 10:AL:14:THR:O    | 2.26                     | 0.52              |
| 11:AM:40:SER:O     | 11:AM:40:SER:OG   | 2.28                     | 0.52              |
| 12:AN:35:VAL:HA    | 12:AN:101:ARG:O   | 2.09                     | 0.52              |
| 12:AN:45:GLN:C     | 12:AN:47:ILE:N    | 2.65                     | 0.52              |
| 12:AN:66:ILE:O     | 12:AN:67:ARG:CB   | 2.57                     | 0.52              |
| 13:AO:33:ARG:NH2   | 26:Ab:56:LYS:HB2  | 2.25                     | 0.52              |
| 13:AO:67:LEU:HD23  | 13:AO:76:VAL:CG2  | 2.40                     | 0.52              |
| 13:AO:67:LEU:HD21  | 13:AO:72:ASP:H    | 1.74                     | 0.52              |
| 13:AO:93:GLY:C     | 13:AO:95:THR:N    | 2.68                     | 0.52              |
| 13:AO:96:ARG:HD2   | 13:AO:115:GLU:OE1 | 2.09                     | 0.52              |
| 14:AP:77:ALA:HA    | 14:AP:80:LEU:HB2  | 1.90                     | 0.52              |
| 14:AP:97:ARG:HH21  | 14:AP:97:ARG:CG   | 2.23                     | 0.52              |
| 15:AQ:53:ARG:NH2   | 15:AQ:102:ILE:CG1 | 2.72                     | 0.52              |
| 15:AQ:65:LYS:CE    | 15:AQ:75:ILE:HD13 | 2.39                     | 0.52              |
| 16:AR:48:ALA:CA    | 16:AR:51:LYS:HD2  | 2.38                     | 0.52              |
| 16:AR:55:ARG:HH11  | 16:AR:55:ARG:CG   | 2.04                     | 0.52              |
| 18:AT:34:ASN:CG    | 18:AT:37:ARG:HH11 | 2.17                     | 0.52              |
| 21:AW:149:SER:OG   | 21:AW:173:ALA:HB2 | 2.10                     | 0.52              |
| 21:AW:171:ILE:HD12 | 21:AW:171:ILE:C   | 2.35                     | 0.52              |
| 22:AX:22:GLY:O     | 22:AX:38:VAL:HA   | 2.10                     | 0.52              |
| 22:AX:44:ARG:HG2   | 22:AX:77:ARG:HG3  | 1.91                     | 0.52              |

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| Atom-1              | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 23:AY:52:ILE:HG23   | 23:AY:55:LEU:HD22  | 1.90                     | 0.52              |
| 23:AY:58:VAL:O      | 23:AY:61:GLU:N     | 2.42                     | 0.52              |
| 24:AZ:4:LEU:HD23    | 24:AZ:4:LEU:C      | 2.35                     | 0.52              |
| 25:Aa:7:PRO:CD      | 25:Aa:56:VAL:CG1   | 2.80                     | 0.52              |
| 34:BA:135:C:C6      | 34:BA:135:C:C3'    | 2.93                     | 0.52              |
| 34:BA:186(B):C:C4'  | 53:BX:89:ARG:HH22  | 2.23                     | 0.52              |
| 34:BA:259:G:N2      | 34:BA:260:G:N3     | 2.58                     | 0.52              |
| 34:BA:583:A:H2'     | 34:BA:584:G:O4'    | 2.10                     | 0.52              |
| 34:BA:585:G:H2'     | 34:BA:586:C:H6     | 1.74                     | 0.52              |
| 34:BA:675:A:N3      | 44:BO:116:HIS:HB2  | 2.25                     | 0.52              |
| 34:BA:758:G:H2'     | 34:BA:759:A:OP2    | 2.10                     | 0.52              |
| 34:BA:932:C:OP1     | 40:BK:3:ARG:O      | 2.26                     | 0.52              |
| 34:BA:959:A:C2      | 34:BA:1221:G:N3    | 2.76                     | 0.52              |
| 34:BA:1064:G:O2'    | 34:BA:1065:U:H1'   | 2.10                     | 0.52              |
| 34:BA:1116:C:C2     | 34:BA:1117:G:N7    | 2.78                     | 0.52              |
| 34:BA:1210:C:O2'    | 34:BA:1214:C:N3    | 2.38                     | 0.52              |
| 34:BA:1232:U:OP1    | 42:BM:126:SER:HB2  | 2.10                     | 0.52              |
| 34:BA:1302:U:O2'    | 34:BA:1303:C:P     | 2.67                     | 0.52              |
| 34:BA:1308:U:H2'    | 34:BA:1309:G:C5'   | 2.40                     | 0.52              |
| 34:BA:1343:G:H2'    | 34:BA:1344:C:O4'   | 2.10                     | 0.52              |
| 34:BA:1347:G:HO2'   | 34:BA:1348:U:P     | 2.31                     | 0.52              |
| 34:BA:1362(A):C:H5' | 34:BA:1363:A:OP1   | 2.10                     | 0.52              |
| 34:BA:1484:C:C4     | 34:BA:1485:U:C5    | 2.98                     | 0.52              |
| 35:BF:80:ILE:HG12   | 35:BF:212:GLN:HG2  | 1.91                     | 0.52              |
| 35:BF:103:THR:O     | 35:BF:104:ASN:CB   | 2.57                     | 0.52              |
| 36:BG:30:ARG:H      | 36:BG:30:ARG:CD    | 2.23                     | 0.52              |
| 36:BG:48:TYR:HD2    | 36:BG:48:TYR:C     | 2.17                     | 0.52              |
| 36:BG:144:SER:OG    | 36:BG:144:SER:O    | 2.22                     | 0.52              |
| 37:BH:9:CYS:O       | 37:BH:12:CYS:HB2   | 2.10                     | 0.52              |
| 37:BH:60:GLU:HA     | 37:BH:63:LYS:HZ3   | 1.75                     | 0.52              |
| 37:BH:104:VAL:O     | 37:BH:105:VAL:C    | 2.52                     | 0.52              |
| 37:BH:128:VAL:HG23  | 37:BH:133:VAL:N    | 2.25                     | 0.52              |
| 38:BI:65:ASN:O      | 38:BI:65:ASN:CG    | 2.53                     | 0.52              |
| 38:BI:104:ALA:N     | 38:BI:107:ARG:HH12 | 2.06                     | 0.52              |
| 38:BI:117:ASP:O     | 38:BI:118:ILE:HG13 | 2.09                     | 0.52              |
| 38:BI:140:ARG:CB    | 38:BI:140:ARG:CZ   | 2.88                     | 0.52              |
| 40:BK:29:LYS:HZ3    | 40:BK:102:ARG:CB   | 2.11                     | 0.52              |
| 40:BK:56:GLN:H      | 40:BK:56:GLN:NE2   | 2.07                     | 0.52              |
| 41:BL:68:ARG:N      | 41:BL:76:PRO:HG3   | 2.25                     | 0.52              |
| 41:BL:127:LEU:HD13  | 41:BL:127:LEU:C    | 2.35                     | 0.52              |
| 42:BM:58:HIS:HD2    | 42:BM:59:PHE:CD1   | 2.25                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 42:BM:79:LEU:HD22 | 42:BM:101:PHE:HD2 | 1.74                     | 0.52              |
| 43:BN:19:SER:OG   | 43:BN:91:PRO:HG3  | 2.10                     | 0.52              |
| 43:BN:79:ARG:HD3  | 43:BN:80:LYS:N    | 2.24                     | 0.52              |
| 45:BP:32:PHE:HB3  | 45:BP:85:ILE:O    | 2.09                     | 0.52              |
| 45:BP:104:VAL:O   | 45:BP:106:ASP:N   | 2.43                     | 0.52              |
| 48:BS:64:ARG:O    | 48:BS:67:LEU:HB2  | 2.09                     | 0.52              |
| 49:BT:58:TYR:O    | 49:BT:61:SER:CB   | 2.58                     | 0.52              |
| 50:BU:35:VAL:HA   | 50:BU:36:ILE:HD13 | 1.90                     | 0.52              |
| 50:BU:59:ILE:O    | 50:BU:59:ILE:HG23 | 2.08                     | 0.52              |
| 50:BU:75:ARG:HH22 | 50:BU:77:VAL:CG2  | 2.13                     | 0.52              |
| 52:BW:4:SER:HB3   | 52:BW:42:PRO:HG3  | 1.91                     | 0.52              |
| 52:BW:42:PRO:O    | 52:BW:44:MET:N    | 2.42                     | 0.52              |
| 53:BX:29:LYS:O    | 53:BX:32:ALA:N    | 2.42                     | 0.52              |
| 53:BX:85:MET:O    | 53:BX:86:ARG:C    | 2.52                     | 0.52              |
| 54:BY:14:TRP:O    | 54:BY:15:ARG:C    | 2.52                     | 0.52              |
| 56:BD:50:U:O4     | 56:BD:64:A:C2     | 2.58                     | 0.52              |
| 56:BE:21:A:O2'    | 56:BE:22:G:C4'    | 2.55                     | 0.52              |
| 57:BZ:19:THR:N    | 57:BZ:20:THR:CB   | 2.73                     | 0.52              |
| 57:BZ:27:GLN:HG3  | 57:BZ:28:GLN:CD   | 2.34                     | 0.52              |
| 57:BZ:62:ALA:HA   | 57:BZ:187:TYR:HE2 | 1.64                     | 0.52              |
| 57:BZ:77:GLY:HA2  | 57:BZ:78:HIS:C    | 2.34                     | 0.52              |
| 57:BZ:88:VAL:HG12 | 57:BZ:92:VAL:CG2  | 2.40                     | 0.52              |
| 57:BZ:314:ASN:ND2 | 57:BZ:379:GLU:HB2 | 2.24                     | 0.52              |
| 57:BZ:601:ASN:CA  | 57:BZ:602:ARG:CB  | 2.87                     | 0.52              |
| 1:AA:19:C:N3      | 1:AA:20:C:C5      | 2.78                     | 0.52              |
| 1:AA:119:A:O2'    | 1:AA:120:U:P      | 2.67                     | 0.52              |
| 1:AA:144:C:O2'    | 1:AA:145:G:H5'    | 2.10                     | 0.52              |
| 1:AA:215:G:H1'    | 1:AA:216:A:C4'    | 2.40                     | 0.52              |
| 1:AA:388:G:OP2    | 25:Aa:23:GLU:CG   | 2.58                     | 0.52              |
| 1:AA:428:A:N3     | 1:AA:428:A:H2'    | 2.25                     | 0.52              |
| 1:AA:465:G:N2     | 1:AA:683:C:H2'    | 2.24                     | 0.52              |
| 1:AA:535:C:H4'    | 16:AR:53:ARG:CD   | 2.32                     | 0.52              |
| 1:AA:546:C:N3     | 1:AA:547:A:C6     | 2.78                     | 0.52              |
| 1:AA:563:G:N2     | 16:AR:34:LYS:HZ3  | 2.06                     | 0.52              |
| 1:AA:565:C:N3     | 1:AA:566:U:N3     | 2.58                     | 0.52              |
| 1:AA:707:G:H2'    | 1:AA:708:C:O4'    | 2.10                     | 0.52              |
| 1:AA:716:A:C8     | 1:AA:717:G:O4'    | 2.63                     | 0.52              |
| 1:AA:818:G:C2'    | 1:AA:819:A:H5''   | 2.39                     | 0.52              |
| 1:AA:860:U:H5     | 1:AA:2267:A:O3'   | 1.92                     | 0.52              |
| 1:AA:888:C:O2     | 1:AA:888:C:O2'    | 2.26                     | 0.52              |
| 1:AA:942:G:H1'    | 1:AA:1189:A:C2    | 2.44                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:944:G:O2'    | 1:AA:945:A:OP2    | 2.26                     | 0.52              |
| 1:AA:1079:C:N4    | 1:AA:1088:A:C5'   | 2.66                     | 0.52              |
| 1:AA:1082:U:C4    | 1:AA:1086:A:C2    | 2.97                     | 0.52              |
| 1:AA:1162:G:H4'   | 17:AS:23:GLU:O    | 2.09                     | 0.52              |
| 1:AA:1168:G:C6    | 1:AA:1169:G:C6    | 2.98                     | 0.52              |
| 1:AA:1227:A:C8    | 1:AA:1228:G:H5''  | 2.45                     | 0.52              |
| 1:AA:1236:G:O2'   | 1:AA:1237:A:O5'   | 2.28                     | 0.52              |
| 1:AA:1597:A:O3'   | 1:AA:1598:C:H6    | 1.93                     | 0.52              |
| 1:AA:1683:C:O5'   | 1:AA:1683:C:H6    | 1.93                     | 0.52              |
| 1:AA:1746:G:OP2   | 1:AA:1746:G:C8    | 2.63                     | 0.52              |
| 1:AA:1842:G:C6    | 1:AA:1901:A:N1    | 2.77                     | 0.52              |
| 1:AA:1890:A:C2    | 1:AA:1891:G:H1'   | 2.45                     | 0.52              |
| 1:AA:1993:U:C6    | 1:AA:1993:U:H3'   | 2.41                     | 0.52              |
| 1:AA:2054:A:H62   | 1:AA:2577:A:N6    | 2.07                     | 0.52              |
| 1:AA:2121:G:C4'   | 3:AC:167:LYS:HZ3  | 2.22                     | 0.52              |
| 1:AA:2225:A:C4'   | 1:AA:2226:C:C6    | 2.93                     | 0.52              |
| 1:AA:2341:G:C2'   | 1:AA:2342:C:C6    | 2.89                     | 0.52              |
| 1:AA:2376:A:C2    | 1:AA:2377:A:H1'   | 2.44                     | 0.52              |
| 1:AA:2617:C:O2'   | 1:AA:2618:G:H5'   | 2.09                     | 0.52              |
| 1:AA:2651:C:C3'   | 1:AA:2652:C:H5''  | 2.40                     | 0.52              |
| 1:AA:2656:U:H3    | 1:AA:2665:A:N6    | 2.08                     | 0.52              |
| 1:AA:2664:G:H8    | 1:AA:2664:G:O5'   | 1.93                     | 0.52              |
| 1:AA:2666:C:C6    | 1:AA:2667:C:H5'   | 2.45                     | 0.52              |
| 1:AA:2776:A:C8    | 1:AA:2781:A:N7    | 2.77                     | 0.52              |
| 1:AA:2808:U:C3'   | 1:AA:2809:A:C5'   | 2.85                     | 0.52              |
| 1:AA:2857:G:H2'   | 1:AA:2858:C:C5'   | 2.39                     | 0.52              |
| 2:AB:82:G:C2      | 2:AB:83:G:C8      | 2.98                     | 0.52              |
| 2:AB:117:G:C2     | 2:AB:118:G:N7     | 2.78                     | 0.52              |
| 3:AC:209:LEU:HG   | 3:AC:212:VAL:HG23 | 1.92                     | 0.52              |
| 4:AD:8:PRO:O      | 4:AD:25:THR:CG2   | 2.58                     | 0.52              |
| 5:AE:47:VAL:HG13  | 5:AE:78:LEU:C     | 2.34                     | 0.52              |
| 5:AE:67:PHE:O     | 5:AE:70:ALA:N     | 2.43                     | 0.52              |
| 5:AE:91:VAL:HG13  | 5:AE:95:ILE:HD13  | 1.92                     | 0.52              |
| 5:AE:103:ASP:O    | 5:AE:104:VAL:HG23 | 2.10                     | 0.52              |
| 5:AE:176:ILE:HG22 | 5:AE:181:LEU:C    | 2.34                     | 0.52              |
| 7:AG:107:LEU:HD22 | 7:AG:173:LEU:HD21 | 1.92                     | 0.52              |
| 7:AG:121:ASN:CG   | 7:AG:133:LEU:HD21 | 2.34                     | 0.52              |
| 8:AH:69:ARG:O     | 8:AH:73:ALA:HB2   | 2.10                     | 0.52              |
| 8:AH:122:THR:HB   | 8:AH:134:SER:OG   | 2.09                     | 0.52              |
| 8:AH:137:ASP:OD2  | 8:AH:139:GLN:HG3  | 2.09                     | 0.52              |
| 8:AH:157:TYR:HD1  | 8:AH:157:TYR:C    | 2.18                     | 0.52              |

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| Atom-1             | Atom-2              | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 9:AK:6:PRO:HB3     | 9:AK:41:ASP:HB3     | 1.92                     | 0.52              |
| 9:AK:46:VAL:O      | 9:AK:47:ALA:HB3     | 2.08                     | 0.52              |
| 9:AK:107:LEU:HD13  | 9:AK:117:PHE:CD2    | 2.45                     | 0.52              |
| 10:AL:13:ASN:N     | 10:AL:94:ARG:HB3    | 2.25                     | 0.52              |
| 11:AM:18:ARG:C     | 11:AM:20:GLY:H      | 2.17                     | 0.52              |
| 11:AM:57:THR:O     | 11:AM:58:THR:OG1    | 2.26                     | 0.52              |
| 11:AM:126:VAL:HG23 | 11:AM:127:ALA:N     | 2.25                     | 0.52              |
| 11:AM:130:PHE:C    | 11:AM:131:SER:O     | 2.53                     | 0.52              |
| 12:AN:25:ASP:C     | 12:AN:102:VAL:HB    | 2.34                     | 0.52              |
| 12:AN:57:HIS:O     | 12:AN:59:ARG:N      | 2.42                     | 0.52              |
| 13:AO:73:VAL:HB    | 13:AO:77:ARG:CZ     | 2.39                     | 0.52              |
| 13:AO:102:GLU:HG3  | 13:AO:103:ARG:H     | 1.75                     | 0.52              |
| 14:AP:13:ARG:NH2   | 14:AP:90:GLY:O      | 2.43                     | 0.52              |
| 14:AP:31:SER:CB    | 14:AP:34:HIS:HB3    | 2.40                     | 0.52              |
| 14:AP:40:ILE:CG2   | 14:AP:41:ASP:N      | 2.72                     | 0.52              |
| 16:AR:85:LYS:HB3   | 16:AR:116:ALA:O     | 2.10                     | 0.52              |
| 17:AS:67:GLY:HA2   | 17:AS:94:LEU:HA     | 1.91                     | 0.52              |
| 17:AS:81:TYR:O     | 17:AS:82:ARG:CB     | 2.56                     | 0.52              |
| 18:AT:25:ARG:O     | 18:AT:71:VAL:HG13   | 2.10                     | 0.52              |
| 21:AW:117:LEU:O    | 21:AW:174:VAL:HG12  | 2.09                     | 0.52              |
| 23:AY:59:LEU:HD11  | 23:AY:63:ARG:NE     | 2.24                     | 0.52              |
| 28:Ad:21:ARG:HB2   | 28:Ad:21:ARG:HH11   | 1.70                     | 0.52              |
| 29:Ae:58:ILE:HA    | 29:Ae:61:LEU:HD12   | 1.90                     | 0.52              |
| 32:AJ:122:ALA:CB   | 32:AJ:126:MET:SD    | 2.98                     | 0.52              |
| 33:Ag:291:UNK:N    | 33:Ag:342:UNK:CA    | 2.73                     | 0.52              |
| 34:BA:22:G:C4      | 34:BA:23:C:C6       | 2.98                     | 0.52              |
| 34:BA:186(B):C:C2' | 34:BA:186(C):G:H5'  | 2.39                     | 0.52              |
| 34:BA:210:U:H4'    | 34:BA:216:G:O5'     | 2.10                     | 0.52              |
| 34:BA:333:G:C2     | 34:BA:334:C:C5      | 2.98                     | 0.52              |
| 34:BA:393:A:H5'    | 34:BA:483:C:H4'     | 1.92                     | 0.52              |
| 34:BA:515:G:H3'    | 34:BA:516:U:H6      | 1.73                     | 0.52              |
| 34:BA:558:G:O5'    | 34:BA:559:A:C3'     | 2.58                     | 0.52              |
| 34:BA:579:G:C4     | 34:BA:580:U:C6      | 2.98                     | 0.52              |
| 34:BA:671:G:C2     | 34:BA:672:U:C2      | 2.98                     | 0.52              |
| 34:BA:673:G:C2'    | 34:BA:674:G:C8      | 2.91                     | 0.52              |
| 34:BA:848:C:C2     | 34:BA:849:C:C6      | 2.98                     | 0.52              |
| 34:BA:954:G:H2'    | 34:BA:955:U:C6      | 2.45                     | 0.52              |
| 34:BA:1028(B):C:O2 | 34:BA:1028(B):C:C2' | 2.58                     | 0.52              |
| 34:BA:1150:U:H2'   | 34:BA:1151:A:C8     | 2.44                     | 0.52              |
| 34:BA:1165:C:C2'   | 34:BA:1166:G:H5'    | 2.38                     | 0.52              |
| 34:BA:1207:G:O2'   | 34:BA:1208:C:H5'    | 2.10                     | 0.52              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1270:C:C3'   | 34:BA:1314:C:H5'   | 2.38                     | 0.52              |
| 34:BA:1502:A:N3    | 34:BA:1502:A:C2'   | 2.73                     | 0.52              |
| 35:BF:15:VAL:O     | 35:BF:16:HIS:HB2   | 2.08                     | 0.52              |
| 35:BF:20:GLU:N     | 35:BF:39:ILE:HD11  | 2.25                     | 0.52              |
| 35:BF:82:ARG:H     | 35:BF:94:ASN:ND2   | 2.04                     | 0.52              |
| 36:BG:14:ILE:CG2   | 36:BG:179:ARG:HA   | 2.30                     | 0.52              |
| 37:BH:61:LYS:HA    | 37:BH:203:VAL:CG2  | 2.39                     | 0.52              |
| 37:BH:82:ALA:C     | 37:BH:89:THR:HG23  | 2.35                     | 0.52              |
| 37:BH:173:TRP:CD1  | 37:BH:189:PRO:CB   | 2.91                     | 0.52              |
| 38:BI:78:HIS:ND1   | 41:BL:107:LEU:CD1  | 2.64                     | 0.52              |
| 39:BJ:62:TRP:CG    | 51:BV:35:ARG:HH12  | 2.27                     | 0.52              |
| 40:BK:20:ASP:OD1   | 40:BK:22:LEU:HB2   | 2.10                     | 0.52              |
| 40:BK:75:VAL:CA    | 40:BK:89:MET:HE1   | 2.30                     | 0.52              |
| 40:BK:87:VAL:HB    | 40:BK:156:TRP:CZ3  | 2.45                     | 0.52              |
| 41:BL:86:ILE:HG22  | 41:BL:87:SER:N     | 2.24                     | 0.52              |
| 41:BL:102:ARG:HH21 | 41:BL:105:ARG:HA   | 1.74                     | 0.52              |
| 43:BN:8:LEU:CD1    | 43:BN:16:LEU:HA    | 2.39                     | 0.52              |
| 46:BQ:16:ASP:OD1   | 46:BQ:34:LEU:HD13  | 2.07                     | 0.52              |
| 49:BT:38:TYR:O     | 49:BT:49:LEU:HD12  | 2.10                     | 0.52              |
| 53:BX:33:ILE:HD11  | 53:BX:62:LEU:O     | 2.10                     | 0.52              |
| 56:BD:6:G:C6       | 56:BD:67:C:C4      | 2.94                     | 0.52              |
| 56:BD:49:C:O2      | 56:BD:49:C:H2'     | 2.09                     | 0.52              |
| 56:BE:18:G:C5      | 56:BE:58:A:C2      | 2.98                     | 0.52              |
| 57:BZ:144:VAL:O    | 57:BZ:144:VAL:HG12 | 2.10                     | 0.52              |
| 57:BZ:233:PRO:HB3  | 57:BZ:234:ASN:CB   | 2.40                     | 0.52              |
| 57:BZ:495:LYS:HA   | 57:BZ:517:GLU:N    | 2.25                     | 0.52              |
| 57:BZ:538:LEU:CB   | 57:BZ:539:THR:CB   | 2.85                     | 0.52              |
| 1:AA:129:C:H5'     | 1:AA:1599:C:O2'    | 2.10                     | 0.52              |
| 1:AA:243:U:N3      | 1:AA:244:A:C8      | 2.77                     | 0.52              |
| 1:AA:263:C:O2      | 1:AA:264:C:O4'     | 2.27                     | 0.52              |
| 1:AA:299:A:H5''    | 1:AA:300:A:OP2     | 2.09                     | 0.52              |
| 1:AA:360:G:C2'     | 1:AA:361:G:H5'     | 2.40                     | 0.52              |
| 1:AA:410:G:C6      | 1:AA:411:G:O6      | 2.62                     | 0.52              |
| 1:AA:481:G:O2'     | 1:AA:482:A:H8      | 1.92                     | 0.52              |
| 1:AA:506:G:O2'     | 1:AA:507:A:H8      | 1.91                     | 0.52              |
| 1:AA:511:U:C4      | 1:AA:512:G:H1'     | 2.45                     | 0.52              |
| 1:AA:532:A:C8      | 1:AA:533:G:H1'     | 2.41                     | 0.52              |
| 1:AA:543:C:C2      | 1:AA:551:G:C2      | 2.98                     | 0.52              |
| 1:AA:616:A:H1'     | 6:AF:180:GLY:HA3   | 1.91                     | 0.52              |
| 1:AA:619:G:C8      | 1:AA:619:G:C3'     | 2.89                     | 0.52              |
| 1:AA:638:G:C8      | 1:AA:638:G:C3'     | 2.92                     | 0.52              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:AA:662:G:C5'   | 11:AM:17:LYS:H   | 2.22                     | 0.52              |
| 1:AA:774:A:H5''  | 1:AA:778:G:C4'   | 2.40                     | 0.52              |
| 1:AA:789:A:OP1   | 1:AA:789:A:C3'   | 2.51                     | 0.52              |
| 1:AA:815:C:C2'   | 1:AA:816:C:C5'   | 2.88                     | 0.52              |
| 1:AA:858:U:OP1   | 22:AX:44:ARG:NH2 | 2.43                     | 0.52              |
| 1:AA:988:A:OP1   | 24:AZ:10:LYS:HD3 | 2.10                     | 0.52              |
| 1:AA:1024:G:OP2  | 1:AA:1025:G:N2   | 2.43                     | 0.52              |
| 1:AA:1115:G:N2   | 1:AA:1116:C:C2   | 2.78                     | 0.52              |
| 1:AA:1116:C:OP2  | 1:AA:1116:C:C6   | 2.61                     | 0.52              |
| 1:AA:1137:G:C5   | 1:AA:1138:G:H1'  | 2.44                     | 0.52              |
| 1:AA:1139:G:C5'  | 9:AK:24:GLY:HA3  | 2.40                     | 0.52              |
| 1:AA:1157:G:C6   | 1:AA:1158:C:C4   | 2.98                     | 0.52              |
| 1:AA:1189:A:N7   | 1:AA:1190:G:C8   | 2.78                     | 0.52              |
| 1:AA:1212:G:N7   | 1:AA:1235:G:C6   | 2.78                     | 0.52              |
| 1:AA:1264:G:OP2  | 1:AA:1265:A:C2   | 2.63                     | 0.52              |
| 1:AA:1299:G:H5'  | 1:AA:1301:A:C1'  | 2.39                     | 0.52              |
| 1:AA:1335:U:OP2  | 19:AU:65:ARG:CZ  | 2.58                     | 0.52              |
| 1:AA:1784:A:C8   | 1:AA:1981:A:C4   | 2.97                     | 0.52              |
| 1:AA:1787:A:C2'  | 1:AA:1788:C:H5'  | 2.40                     | 0.52              |
| 1:AA:1861:G:N2   | 1:AA:1862:G:H1'  | 2.25                     | 0.52              |
| 1:AA:1993:U:C6   | 1:AA:1993:U:C3'  | 2.92                     | 0.52              |
| 1:AA:1995:U:C5'  | 1:AA:1996:C:C5'  | 2.65                     | 0.52              |
| 1:AA:1996:C:C6   | 1:AA:1996:C:C4'  | 2.92                     | 0.52              |
| 1:AA:2113:U:H3   | 1:AA:2169:A:H61  | 1.58                     | 0.52              |
| 1:AA:2128:C:N4   | 1:AA:2129:C:N4   | 2.58                     | 0.52              |
| 1:AA:2152:G:H5'' | 3:AC:2:LYS:HB3   | 1.80                     | 0.52              |
| 1:AA:2174:C:C2   | 3:AC:219:GLY:N   | 2.75                     | 0.52              |
| 1:AA:2274:A:C5   | 1:AA:2276:G:C8   | 2.98                     | 0.52              |
| 1:AA:2275:C:O2'  | 1:AA:2276:G:OP2  | 2.25                     | 0.52              |
| 1:AA:2331:G:C5   | 1:AA:2332:U:C2   | 2.97                     | 0.52              |
| 1:AA:2332:U:P    | 22:AX:43:THR:HB  | 2.50                     | 0.52              |
| 1:AA:2352:A:C2'  | 1:AA:2353:G:O4'  | 2.56                     | 0.52              |
| 1:AA:2497:A:O2'  | 1:AA:2498:C:C5   | 2.61                     | 0.52              |
| 1:AA:2602:A:O2'  | 22:AX:1:MET:HB2  | 2.10                     | 0.52              |
| 1:AA:2630:G:H1   | 1:AA:2789:C:H42  | 1.55                     | 0.52              |
| 1:AA:2671:A:C2   | 1:AA:2672:G:C6   | 2.98                     | 0.52              |
| 1:AA:2673:G:N2   | 1:AA:2674:G:C4   | 2.78                     | 0.52              |
| 1:AA:2735:G:H4'  | 5:AE:203:LYS:HE3 | 1.92                     | 0.52              |
| 1:AA:2768:C:C2   | 1:AA:2769:C:C6   | 2.98                     | 0.52              |
| 1:AA:2773:C:C2   | 1:AA:2774:C:C5   | 2.98                     | 0.52              |
| 1:AA:2791:C:OP2  | 1:AA:2893:G:C4   | 2.62                     | 0.52              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:2834:G:C5     | 1:AA:2879:C:C4     | 2.97                     | 0.52              |
| 1:AA:2848:G:H8     | 15:AQ:99:LEU:CD1   | 2.16                     | 0.52              |
| 1:AA:2882:A:H5''   | 13:AO:98:LEU:HD21  | 1.90                     | 0.52              |
| 2:AB:90:C:H2'      | 2:AB:91:C:C6       | 2.44                     | 0.52              |
| 3:AC:100:ILE:HG12  | 3:AC:127:LEU:HD12  | 1.91                     | 0.52              |
| 3:AC:175:VAL:HB    | 3:AC:185:LEU:O     | 2.10                     | 0.52              |
| 4:AD:182:LEU:N     | 4:AD:270:ILE:HG13  | 2.25                     | 0.52              |
| 7:AG:36:LYS:HG3    | 7:AG:160:VAL:CG2   | 2.40                     | 0.52              |
| 7:AG:38:VAL:CG1    | 7:AG:93:THR:HG23   | 2.40                     | 0.52              |
| 7:AG:56:ALA:HA     | 7:AG:59:GLU:CD     | 2.33                     | 0.52              |
| 7:AG:85:GLY:O      | 7:AG:86:MET:CB     | 2.57                     | 0.52              |
| 8:AH:65:HIS:O      | 8:AH:66:GLY:C      | 2.53                     | 0.52              |
| 8:AH:104:GLU:C     | 8:AH:105:LEU:HG    | 2.33                     | 0.52              |
| 9:AK:33:LEU:HD13   | 9:AK:34:LEU:CG     | 2.35                     | 0.52              |
| 10:AL:10:VAL:C     | 10:AL:17:ARG:CG    | 2.80                     | 0.52              |
| 10:AL:15:GLY:O     | 10:AL:47:ILE:HA    | 2.10                     | 0.52              |
| 10:AL:35:VAL:HA    | 10:AL:61:VAL:HG11  | 1.85                     | 0.52              |
| 10:AL:113:LYS:NZ   | 10:AL:117:LEU:HB2  | 2.25                     | 0.52              |
| 11:AM:24:GLY:O     | 11:AM:25:SER:C     | 2.52                     | 0.52              |
| 12:AN:46:GLN:HE22  | 12:AN:126:PRO:HG3  | 1.74                     | 0.52              |
| 12:AN:94:VAL:HG23  | 12:AN:95:ALA:H     | 1.67                     | 0.52              |
| 15:AQ:28:VAL:HG23  | 15:AQ:93:ARG:C     | 2.34                     | 0.52              |
| 15:AQ:29:ARG:C     | 15:AQ:30:VAL:CG1   | 2.81                     | 0.52              |
| 15:AQ:30:VAL:O     | 15:AQ:49:VAL:HA    | 2.09                     | 0.52              |
| 15:AQ:40:THR:O     | 15:AQ:41:ARG:C     | 2.53                     | 0.52              |
| 15:AQ:104:ASN:CA   | 15:AQ:108:ARG:HH12 | 2.23                     | 0.52              |
| 16:AR:33:ARG:C     | 16:AR:35:ALA:N     | 2.66                     | 0.52              |
| 16:AR:53:ARG:O     | 16:AR:57:PHE:HD1   | 1.92                     | 0.52              |
| 16:AR:55:ARG:HA    | 16:AR:58:ARG:CZ    | 2.40                     | 0.52              |
| 16:AR:106:PHE:HA   | 16:AR:109:LEU:HD12 | 1.92                     | 0.52              |
| 19:AU:58:HIS:CE1   | 19:AU:77:LYS:HE3   | 2.44                     | 0.52              |
| 19:AU:60:ARG:HD3   | 19:AU:62:LYS:HZ1   | 1.74                     | 0.52              |
| 19:AU:73:ARG:HG2   | 19:AU:74:PRO:CD    | 2.34                     | 0.52              |
| 21:AW:68:PRO:HB2   | 21:AW:131:ARG:HH12 | 1.75                     | 0.52              |
| 21:AW:127:LYS:HA   | 21:AW:164:ALA:N    | 2.21                     | 0.52              |
| 21:AW:141:VAL:HG12 | 21:AW:143:GLY:H    | 1.73                     | 0.52              |
| 22:AX:28:GLY:C     | 22:AX:67:VAL:HB    | 2.35                     | 0.52              |
| 26:Ab:31:VAL:HG23  | 26:Ab:32:PRO:N     | 2.25                     | 0.52              |
| 29:Ae:13:ARG:HG3   | 29:Ae:13:ARG:HH11  | 1.73                     | 0.52              |
| 29:Ae:26:LYS:O     | 29:Ae:28:GLY:N     | 2.43                     | 0.52              |
| 29:Ae:53:PRO:HA    | 29:Ae:56:GLU:HG2   | 1.89                     | 0.52              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 32:AJ:21:PRO:N     | 32:AJ:22:PRO:CD    | 2.73                     | 0.52              |
| 32:AJ:36:GLU:C     | 32:AJ:38:VAL:H     | 2.16                     | 0.52              |
| 34:BA:186(C):G:C6  | 34:BA:186(D):C:C4  | 2.98                     | 0.52              |
| 34:BA:226:G:C2     | 34:BA:227:G:C4     | 2.97                     | 0.52              |
| 34:BA:355:C:N4     | 34:BA:356:A:N6     | 2.56                     | 0.52              |
| 34:BA:513:C:C4     | 34:BA:514:C:C5     | 2.98                     | 0.52              |
| 34:BA:587:G:H1'    | 34:BA:755:G:C2     | 2.41                     | 0.52              |
| 34:BA:652:U:H1'    | 34:BA:653:A:C2     | 2.45                     | 0.52              |
| 34:BA:706:A:N3     | 34:BA:707:C:C6     | 2.78                     | 0.52              |
| 34:BA:779:C:H4'    | 44:BO:120:ARG:O    | 2.10                     | 0.52              |
| 34:BA:872:A:O2'    | 34:BA:873:A:P      | 2.68                     | 0.52              |
| 34:BA:886:G:H2'    | 34:BA:887:G:C5'    | 2.40                     | 0.52              |
| 34:BA:1083:U:H3'   | 34:BA:1084:G:H8    | 1.74                     | 0.52              |
| 34:BA:1246:C:H2'   | 34:BA:1247:U:H6    | 1.75                     | 0.52              |
| 34:BA:1293:G:C4    | 34:BA:1294:G:C8    | 2.98                     | 0.52              |
| 34:BA:1400:C:OP1   | 34:BA:1400:C:C5    | 2.63                     | 0.52              |
| 35:BF:9:GLU:OE1    | 35:BF:12:GLU:HG2   | 2.10                     | 0.52              |
| 35:BF:219:VAL:HA   | 35:BF:222:ILE:HD11 | 1.90                     | 0.52              |
| 35:BF:221:LEU:C    | 35:BF:221:LEU:CD1  | 2.75                     | 0.52              |
| 36:BG:12:LEU:HD21  | 47:BR:57:ARG:HG2   | 1.91                     | 0.52              |
| 37:BH:25:ARG:NH1   | 37:BH:30:LYS:HB3   | 2.25                     | 0.52              |
| 37:BH:35:ARG:O     | 37:BH:36:ARG:C     | 2.53                     | 0.52              |
| 37:BH:62:GLN:O     | 37:BH:66:ARG:HD2   | 2.10                     | 0.52              |
| 38:BI:32:VAL:C     | 38:BI:43:LEU:HG    | 2.35                     | 0.52              |
| 38:BI:80:ILE:HD12  | 38:BI:80:ILE:H     | 1.75                     | 0.52              |
| 38:BI:103:GLY:O    | 38:BI:104:ALA:C    | 2.52                     | 0.52              |
| 38:BI:109:ILE:CD1  | 38:BI:135:THR:HB   | 2.34                     | 0.52              |
| 39:BJ:52:ILE:CG2   | 39:BJ:53:ALA:N     | 2.71                     | 0.52              |
| 39:BJ:61:LEU:HD22  | 39:BJ:63:TYR:OH    | 2.09                     | 0.52              |
| 40:BK:75:VAL:HG13  | 40:BK:87:VAL:C     | 2.35                     | 0.52              |
| 40:BK:152:ALA:O    | 40:BK:154:TYR:N    | 2.43                     | 0.52              |
| 41:BL:100:ILE:HG23 | 41:BL:121:ASP:HA   | 1.92                     | 0.52              |
| 43:BN:72:VAL:HG12  | 43:BN:73:ASP:N     | 2.25                     | 0.52              |
| 46:BQ:37:THR:HA    | 46:BQ:56:LEU:CB    | 2.17                     | 0.52              |
| 46:BQ:65:LYS:HB2   | 46:BQ:66:LEU:O     | 2.09                     | 0.52              |
| 48:BS:7:GLU:C      | 48:BS:10:LYS:HG2   | 2.34                     | 0.52              |
| 49:BT:18:ARG:NH1   | 49:BT:32:TYR:CE2   | 2.78                     | 0.52              |
| 49:BT:19:ILE:CB    | 49:BT:37:GLY:O     | 2.51                     | 0.52              |
| 50:BU:27:PHE:O     | 50:BU:36:ILE:CD1   | 2.57                     | 0.52              |
| 52:BW:6:LYS:CD     | 52:BW:7:LYS:H      | 2.22                     | 0.52              |
| 53:BX:91:LEU:HD23  | 53:BX:91:LEU:H     | 1.74                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 55:BC:8:U:C4      | 55:BC:13:C:C4     | 2.98                     | 0.52              |
| 56:BD:66:U:H2'    | 56:BD:67:C:N3     | 2.24                     | 0.52              |
| 56:BE:72:C:C3'    | 56:BE:73:A:H5''   | 2.40                     | 0.52              |
| 57:BZ:64:ILE:CD1  | 57:BZ:188:GLN:N   | 2.73                     | 0.52              |
| 57:BZ:136:ARG:CG  | 57:BZ:139:TRP:HB3 | 2.19                     | 0.52              |
| 57:BZ:204:PRO:CA  | 57:BZ:290:ASP:CG  | 2.83                     | 0.52              |
| 57:BZ:519:TYR:OH  | 57:BZ:586:ARG:NH2 | 2.32                     | 0.52              |
| 57:BZ:520:GLU:OE1 | 57:BZ:593:THR:CA  | 2.58                     | 0.52              |
| 1:AA:2:G:N1       | 1:AA:2902:C:C6    | 2.78                     | 0.52              |
| 1:AA:45:G:H2'     | 1:AA:215:G:H2'    | 1.92                     | 0.52              |
| 1:AA:209:C:C6     | 1:AA:209:C:O5'    | 2.62                     | 0.52              |
| 1:AA:241:A:C8     | 1:AA:243:U:C2     | 2.97                     | 0.52              |
| 1:AA:247:G:N7     | 1:AA:249:C:O2     | 2.42                     | 0.52              |
| 1:AA:287:C:C3'    | 1:AA:288:C:H5     | 2.23                     | 0.52              |
| 1:AA:311:A:C2     | 1:AA:331:A:H5''   | 2.45                     | 0.52              |
| 1:AA:319:C:H2'    | 1:AA:320:A:H8     | 1.71                     | 0.52              |
| 1:AA:330:A:O2'    | 1:AA:1210:A:C6    | 2.63                     | 0.52              |
| 1:AA:552:G:C5     | 1:AA:553:U:C5     | 2.98                     | 0.52              |
| 1:AA:602:G:O2'    | 1:AA:603:A:OP2    | 2.24                     | 0.52              |
| 1:AA:630:G:H4'    | 29:Ae:46:ARG:HH22 | 1.75                     | 0.52              |
| 1:AA:648:G:N3     | 1:AA:649:G:N7     | 2.57                     | 0.52              |
| 1:AA:648:G:C2     | 1:AA:649:G:N7     | 2.78                     | 0.52              |
| 1:AA:724:U:C2'    | 1:AA:725:G:C5'    | 2.88                     | 0.52              |
| 1:AA:795:C:H2'    | 1:AA:796:C:C6     | 2.45                     | 0.52              |
| 1:AA:833:U:H2'    | 1:AA:834:C:C6     | 2.45                     | 0.52              |
| 1:AA:873:G:H2'    | 1:AA:874:G:O4'    | 2.09                     | 0.52              |
| 1:AA:1204:A:C4    | 6:AF:188:ARG:HB2  | 2.45                     | 0.52              |
| 1:AA:1222:C:H2'   | 1:AA:1223:C:C5'   | 2.39                     | 0.52              |
| 1:AA:1242:A:H3'   | 1:AA:1243:G:C8    | 2.45                     | 0.52              |
| 1:AA:1265:A:O5'   | 1:AA:1267:U:O2    | 2.28                     | 0.52              |
| 1:AA:1475:G:C2    | 1:AA:1476:C:C6    | 2.98                     | 0.52              |
| 1:AA:1520:U:C3'   | 1:AA:1520:U:C6    | 2.92                     | 0.52              |
| 1:AA:1568:G:OP2   | 4:AD:61:LEU:HD12  | 2.09                     | 0.52              |
| 1:AA:1568:G:OP2   | 4:AD:61:LEU:CD1   | 2.57                     | 0.52              |
| 1:AA:1607:C:O2    | 1:AA:1607:C:H2'   | 2.09                     | 0.52              |
| 1:AA:1681:G:O6    | 1:AA:1762:A:N6    | 2.43                     | 0.52              |
| 1:AA:1864:U:C4'   | 1:AA:2409:G:H22   | 2.20                     | 0.52              |
| 1:AA:1879:C:H2'   | 1:AA:1880:C:C6    | 2.44                     | 0.52              |
| 1:AA:1904:G:C2'   | 1:AA:1905:C:C5'   | 2.87                     | 0.52              |
| 1:AA:1954:G:N3    | 1:AA:2551:C:H4'   | 2.25                     | 0.52              |
| 1:AA:1955:U:H3'   | 1:AA:1956:U:H5    | 1.74                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2083:G:O2'   | 1:AA:2084:C:H5'   | 2.09                     | 0.52              |
| 1:AA:2213:U:OP2   | 1:AA:2215:G:C6    | 2.62                     | 0.52              |
| 1:AA:2285:C:H4'   | 1:AA:2288:A:N1    | 2.25                     | 0.52              |
| 1:AA:2297:C:H2'   | 1:AA:2298:A:H8    | 1.73                     | 0.52              |
| 1:AA:2309:A:H5''  | 1:AA:2310:A:C8    | 2.45                     | 0.52              |
| 1:AA:2311:A:H2    | 7:AG:45:GLU:CG    | 2.22                     | 0.52              |
| 1:AA:2320:A:H5'   | 1:AA:2321:G:N7    | 2.25                     | 0.52              |
| 1:AA:2353:G:C6    | 1:AA:2365:G:N2    | 2.78                     | 0.52              |
| 1:AA:2415:G:N1    | 1:AA:2416:C:C4    | 2.78                     | 0.52              |
| 1:AA:2423:U:C2'   | 1:AA:2424:C:OP2   | 2.58                     | 0.52              |
| 1:AA:2476:A:C8    | 1:AA:2477:C:C6    | 2.97                     | 0.52              |
| 1:AA:2533:A:H2'   | 1:AA:2534:A:O4'   | 2.10                     | 0.52              |
| 1:AA:2544:G:C6    | 1:AA:2545:G:C5    | 2.98                     | 0.52              |
| 1:AA:2631:G:N9    | 1:AA:2894:G:C8    | 2.76                     | 0.52              |
| 1:AA:2640:G:O3'   | 9:AK:75:TYR:CZ    | 2.63                     | 0.52              |
| 1:AA:2674:G:N3    | 1:AA:2675:A:C8    | 2.78                     | 0.52              |
| 1:AA:2691:C:O4'   | 1:AA:2872:G:N7    | 2.43                     | 0.52              |
| 1:AA:2717:G:O2'   | 1:AA:2718:G:O5'   | 2.17                     | 0.52              |
| 1:AA:2773:C:H2'   | 1:AA:2774:C:C6    | 2.44                     | 0.52              |
| 1:AA:2820:A:N3    | 13:AO:5:LYS:HG3   | 2.25                     | 0.52              |
| 2:AB:32:C:C2'     | 2:AB:33:G:H8      | 2.22                     | 0.52              |
| 2:AB:50:G:H5''    | 14:AP:61:ASN:CA   | 2.40                     | 0.52              |
| 3:AC:54:SER:CA    | 3:AC:57:ASN:HD22  | 2.22                     | 0.52              |
| 3:AC:68:LEU:CD2   | 3:AC:69:GLY:N     | 2.69                     | 0.52              |
| 3:AC:138:PRO:HB3  | 3:AC:145:VAL:CG2  | 2.40                     | 0.52              |
| 3:AC:200:LYS:HG3  | 3:AC:208:PHE:CE2  | 2.45                     | 0.52              |
| 4:AD:60:ARG:HG2   | 4:AD:62:TYR:OH    | 2.10                     | 0.52              |
| 4:AD:106:ILE:O    | 4:AD:107:ALA:CB   | 2.58                     | 0.52              |
| 4:AD:196:VAL:HG12 | 4:AD:198:ASN:N    | 2.24                     | 0.52              |
| 4:AD:250:TRP:HA   | 4:AD:250:TRP:HE3  | 1.70                     | 0.52              |
| 5:AE:51:PHE:CE1   | 5:AE:76:ARG:N     | 2.77                     | 0.52              |
| 5:AE:80:GLU:N     | 5:AE:80:GLU:CD    | 2.67                     | 0.52              |
| 5:AE:102:VAL:O    | 5:AE:170:LEU:HD23 | 2.09                     | 0.52              |
| 5:AE:103:ASP:O    | 5:AE:104:VAL:HG22 | 2.09                     | 0.52              |
| 5:AE:169:ASN:C    | 5:AE:170:LEU:HD23 | 2.35                     | 0.52              |
| 6:AF:104:LYS:C    | 6:AF:108:LYS:NZ   | 2.68                     | 0.52              |
| 7:AG:138:GLN:N    | 7:AG:155:MET:SD   | 2.83                     | 0.52              |
| 8:AH:97:ARG:CB    | 8:AH:104:GLU:HG3  | 2.37                     | 0.52              |
| 8:AH:118:PRO:HG3  | 8:AH:144:VAL:CG2  | 2.33                     | 0.52              |
| 8:AH:156:ALA:HA   | 8:AH:171:LEU:HD22 | 1.92                     | 0.52              |
| 9:AK:15:LEU:CD2   | 9:AK:137:LYS:HA   | 2.29                     | 0.52              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 9:AK:67:LEU:O      | 9:AK:68:GLU:HB2    | 2.10                     | 0.52              |
| 9:AK:134:ARG:O     | 9:AK:135:PRO:O     | 2.27                     | 0.52              |
| 11:AM:81:GLN:C     | 11:AM:86:LYS:CG    | 2.83                     | 0.52              |
| 11:AM:128:HIS:CG   | 11:AM:129:ALA:N    | 2.74                     | 0.52              |
| 13:AO:34:ILE:CG2   | 13:AO:35:THR:N     | 2.73                     | 0.52              |
| 13:AO:52:ILE:HD13  | 13:AO:52:ILE:C     | 2.35                     | 0.52              |
| 14:AP:26:LEU:N     | 14:AP:88:ASP:HB2   | 2.25                     | 0.52              |
| 14:AP:51:ALA:HB1   | 14:AP:73:LEU:CG    | 2.32                     | 0.52              |
| 14:AP:67:ARG:NE    | 14:AP:71:ARG:HD2   | 2.25                     | 0.52              |
| 15:AQ:30:VAL:HB    | 15:AQ:91:ARG:H     | 1.73                     | 0.52              |
| 15:AQ:108:ARG:O    | 15:AQ:109:GLU:C    | 2.53                     | 0.52              |
| 16:AR:17:ILE:HG23  | 16:AR:20:LEU:HD12  | 1.92                     | 0.52              |
| 16:AR:56:ASP:O     | 16:AR:60:LEU:HG    | 2.08                     | 0.52              |
| 16:AR:84:LYS:HA    | 16:AR:84:LYS:CE    | 2.40                     | 0.52              |
| 18:AT:50:VAL:HG11  | 18:AT:103:ILE:HG13 | 1.92                     | 0.52              |
| 20:AV:9:LYS:HD2    | 20:AV:110:GLU:CD   | 2.35                     | 0.52              |
| 20:AV:71:LYS:H     | 20:AV:71:LYS:CD    | 2.16                     | 0.52              |
| 20:AV:75:ILE:CG2   | 20:AV:100:ALA:HB2  | 2.29                     | 0.52              |
| 21:AW:6:LYS:CG     | 21:AW:7:ALA:H      | 2.20                     | 0.52              |
| 21:AW:26:GLY:O     | 21:AW:37:VAL:O     | 2.28                     | 0.52              |
| 21:AW:75:ASN:HB3   | 21:AW:84:GLU:HB2   | 1.92                     | 0.52              |
| 21:AW:157:LEU:HD23 | 21:AW:158:PRO:N    | 2.24                     | 0.52              |
| 21:AW:161:VAL:CG1  | 21:AW:162:GLU:N    | 2.72                     | 0.52              |
| 22:AX:20:ARG:O     | 22:AX:21:LEU:HB3   | 2.10                     | 0.52              |
| 22:AX:83:PRO:O     | 22:AX:84:LEU:C     | 2.53                     | 0.52              |
| 23:AY:20:VAL:HG23  | 23:AY:52:ILE:CG2   | 2.30                     | 0.52              |
| 25:Aa:31:ILE:O     | 25:Aa:32:TYR:CD2   | 2.63                     | 0.52              |
| 26:Ab:10:LYS:CE    | 26:Ab:15:ARG:CZ    | 2.86                     | 0.52              |
| 26:Ab:55:ARG:O     | 26:Ab:57:VAL:N     | 2.43                     | 0.52              |
| 27:Ac:51:GLU:CD    | 27:Ac:52:VAL:N     | 2.68                     | 0.52              |
| 32:AJ:4:VAL:HG22   | 32:AJ:4:VAL:O      | 2.09                     | 0.52              |
| 32:AJ:12:LEU:CD1   | 32:AJ:57:ILE:CG2   | 2.88                     | 0.52              |
| 34:BA:50:A:O2'     | 34:BA:360:A:C2     | 2.63                     | 0.52              |
| 34:BA:304:U:O2'    | 34:BA:305:G:H5'    | 2.10                     | 0.52              |
| 34:BA:321:A:C6     | 34:BA:322:C:N4     | 2.78                     | 0.52              |
| 34:BA:321:A:C2     | 34:BA:322:C:C4     | 2.98                     | 0.52              |
| 34:BA:382:A:H2'    | 34:BA:383:A:O5'    | 2.10                     | 0.52              |
| 34:BA:390:C:N4     | 34:BA:391:G:O6     | 2.43                     | 0.52              |
| 34:BA:570:G:C6     | 34:BA:866:C:N4     | 2.78                     | 0.52              |
| 34:BA:675:A:N1     | 34:BA:716:A:C2     | 2.77                     | 0.52              |
| 34:BA:740:U:H2'    | 34:BA:741:G:C8     | 2.42                     | 0.52              |

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| Atom-1              | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 34:BA:915:A:O2'     | 34:BA:916:G:H5'    | 2.08                     | 0.52              |
| 34:BA:1032(B):G:H2' | 34:BA:1033:G:O4'   | 2.10                     | 0.52              |
| 34:BA:1055:A:O2'    | 34:BA:1056:U:OP1   | 2.26                     | 0.52              |
| 34:BA:1077:G:H21    | 34:BA:1079:G:H3'   | 1.64                     | 0.52              |
| 34:BA:1163:C:H2'    | 34:BA:1163:C:O2    | 2.08                     | 0.52              |
| 34:BA:1219:U:C1'    | 52:BW:34:TRP:CZ2   | 2.70                     | 0.52              |
| 34:BA:1227:A:C8     | 34:BA:1228:C:O4'   | 2.58                     | 0.52              |
| 34:BA:1320:C:H1'    | 52:BW:74:PHE:N     | 2.14                     | 0.52              |
| 34:BA:1422:G:H2'    | 34:BA:1423:G:C8    | 2.41                     | 0.52              |
| 34:BA:1442:G:N3     | 34:BA:1442:G:C3'   | 2.73                     | 0.52              |
| 34:BA:1539:C:H2'    | 34:BA:1540:U:O4'   | 2.10                     | 0.52              |
| 35:BF:43:ASP:O      | 35:BF:47:THR:HB    | 2.10                     | 0.52              |
| 35:BF:84:GLU:CD     | 35:BF:234:PRO:HD2  | 2.34                     | 0.52              |
| 35:BF:102:LEU:O     | 35:BF:180:LEU:HD13 | 2.09                     | 0.52              |
| 35:BF:175:ARG:HA    | 35:BF:178:ARG:CB   | 2.38                     | 0.52              |
| 36:BG:43:LEU:CD2    | 36:BG:55:VAL:HG21  | 2.40                     | 0.52              |
| 36:BG:174:PRO:HB2   | 36:BG:177:THR:HG22 | 1.92                     | 0.52              |
| 37:BH:19:LEU:C      | 37:BH:21:LEU:H     | 2.18                     | 0.52              |
| 37:BH:79:PHE:HE1    | 37:BH:204:ILE:HG23 | 1.75                     | 0.52              |
| 37:BH:173:TRP:H     | 37:BH:173:TRP:HE3  | 1.58                     | 0.52              |
| 38:BI:39:GLY:C      | 38:BI:68:GLU:OE1   | 2.54                     | 0.52              |
| 39:BJ:51:PRO:HA     | 39:BJ:55:ASP:O     | 2.10                     | 0.52              |
| 40:BK:99:LEU:O      | 40:BK:99:LEU:HD23  | 2.10                     | 0.52              |
| 41:BL:49:GLU:OE1    | 41:BL:49:GLU:O     | 2.28                     | 0.52              |
| 42:BM:42:ARG:O      | 42:BM:43:ALA:C     | 2.53                     | 0.52              |
| 42:BM:106:ALA:O     | 42:BM:107:ARG:CG   | 2.53                     | 0.52              |
| 43:BN:44:VAL:HA     | 43:BN:66:ARG:HB3   | 1.92                     | 0.52              |
| 44:BO:46:GLY:HA3    | 44:BO:55:LYS:HD2   | 1.91                     | 0.52              |
| 45:BP:89:ARG:NE     | 45:BP:97:ARG:HG3   | 2.25                     | 0.52              |
| 49:BT:55:ARG:O      | 49:BT:56:ALA:C     | 2.51                     | 0.52              |
| 50:BU:5:VAL:HA      | 50:BU:59:ILE:O     | 2.09                     | 0.52              |
| 50:BU:101:ARG:HD2   | 50:BU:101:ARG:N    | 2.25                     | 0.52              |
| 52:BW:7:LYS:HG3     | 52:BW:7:LYS:O      | 2.09                     | 0.52              |
| 52:BW:35:SER:C      | 52:BW:37:ARG:H     | 2.18                     | 0.52              |
| 55:BC:16:U:C5       | 55:BC:18:G:H5''    | 2.45                     | 0.52              |
| 55:BC:16:U:N3       | 55:BC:19:G:P       | 2.83                     | 0.52              |
| 56:BD:7:A:HO2'      | 56:BD:49:C:H6      | 1.57                     | 0.52              |
| 57:BZ:205:PHE:H     | 57:BZ:290:ASP:CG   | 2.09                     | 0.52              |
| 57:BZ:366:LEU:O     | 57:BZ:370:ILE:HG13 | 2.09                     | 0.52              |
| 57:BZ:538:LEU:N     | 57:BZ:539:THR:CB   | 2.73                     | 0.52              |
| 57:BZ:546:MET:CB    | 57:BZ:547:ARG:CA   | 2.87                     | 0.52              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:BZ:578:VAL:O   | 57:BZ:580:VAL:HG13 | 2.09                     | 0.52              |
| 1:AA:29:U:O2      | 1:AA:30:G:O6       | 2.28                     | 0.51              |
| 1:AA:221:A:C2     | 1:AA:233:A:C4      | 2.98                     | 0.51              |
| 1:AA:248:G:N2     | 1:AA:2431:U:H5'    | 2.25                     | 0.51              |
| 1:AA:271(B):G:OP1 | 1:AA:271(C):U:O4'  | 2.28                     | 0.51              |
| 1:AA:446:G:OP2    | 1:AA:446:G:O4'     | 2.29                     | 0.51              |
| 1:AA:495:G:O4'    | 18:AT:57:ASN:CG    | 2.53                     | 0.51              |
| 1:AA:533:G:N7     | 1:AA:534:U:C4      | 2.78                     | 0.51              |
| 1:AA:584:C:C2'    | 1:AA:585:G:H5'     | 2.40                     | 0.51              |
| 1:AA:629:G:H5'    | 1:AA:649:G:H21     | 1.75                     | 0.51              |
| 1:AA:687:C:H4'    | 28:Ad:4:THR:CG2    | 2.40                     | 0.51              |
| 1:AA:832:G:C2'    | 1:AA:833:U:C5      | 2.89                     | 0.51              |
| 1:AA:875:G:C2     | 1:AA:876:C:C2      | 2.98                     | 0.51              |
| 1:AA:1142:U:C6    | 1:AA:1142(A):A:C8  | 2.84                     | 0.51              |
| 1:AA:1180:C:C2    | 1:AA:1181:C:C5     | 2.98                     | 0.51              |
| 1:AA:1256:G:C6    | 1:AA:1257:C:C4     | 2.98                     | 0.51              |
| 1:AA:1299:G:N2    | 1:AA:1640:C:OP2    | 2.39                     | 0.51              |
| 1:AA:1319:G:C6    | 1:AA:1334:G:C6     | 2.98                     | 0.51              |
| 1:AA:1515:C:C2'   | 1:AA:1516:U:OP1    | 2.58                     | 0.51              |
| 1:AA:1540:G:C6    | 1:AA:1541:U:H1'    | 2.45                     | 0.51              |
| 1:AA:1682:G:H3'   | 1:AA:1683:C:C5     | 2.45                     | 0.51              |
| 1:AA:1718:G:N2    | 1:AA:1742:C:C2     | 2.66                     | 0.51              |
| 1:AA:1809:A:H8    | 1:AA:1810:A:O4'    | 1.92                     | 0.51              |
| 1:AA:1820:U:H2'   | 4:AD:202:LYS:HZ3   | 1.75                     | 0.51              |
| 1:AA:1892:C:N4    | 1:AA:1893:C:N4     | 2.58                     | 0.51              |
| 1:AA:1899:G:H3'   | 1:AA:1899:G:H8     | 1.75                     | 0.51              |
| 1:AA:1906:G:O4'   | 1:AA:1929:G:C8     | 2.63                     | 0.51              |
| 1:AA:1911:U:H6    | 1:AA:1911:U:O5'    | 1.92                     | 0.51              |
| 1:AA:1924:C:C5    | 1:AA:1925:C:C5     | 2.98                     | 0.51              |
| 1:AA:2007:C:H5'   | 1:AA:2824:C:H1'    | 1.93                     | 0.51              |
| 1:AA:2009:G:C2    | 1:AA:2010:G:C8     | 2.98                     | 0.51              |
| 1:AA:2049:G:O2'   | 1:AA:2050:C:O5'    | 2.29                     | 0.51              |
| 1:AA:2136:C:C4    | 1:AA:2137:C:C5     | 2.98                     | 0.51              |
| 1:AA:2152:G:C5'   | 3:AC:2:LYS:C       | 2.83                     | 0.51              |
| 1:AA:2232:U:N3    | 1:AA:2233:U:C5     | 2.78                     | 0.51              |
| 1:AA:2238:G:O2'   | 1:AA:2239:G:C5'    | 2.55                     | 0.51              |
| 1:AA:2309:A:N3    | 1:AA:2309:A:H2'    | 2.24                     | 0.51              |
| 1:AA:2377:A:N3    | 1:AA:2378:A:N7     | 2.58                     | 0.51              |
| 1:AA:2426:A:H3'   | 1:AA:2427:C:C5'    | 2.40                     | 0.51              |
| 1:AA:2432:A:C8    | 1:AA:2433:A:C5     | 2.98                     | 0.51              |
| 1:AA:2476:A:C2    | 1:AA:2481:G:N2     | 2.78                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2484:G:H21   | 12:AN:124:LYS:HD2 | 1.75                     | 0.51              |
| 1:AA:2507:C:C4'   | 1:AA:2573:C:N4    | 2.72                     | 0.51              |
| 1:AA:2533:A:C1'   | 1:AA:2664:G:C4'   | 2.84                     | 0.51              |
| 1:AA:2562:U:O2    | 1:AA:2562:U:H2'   | 2.10                     | 0.51              |
| 1:AA:2655:G:N3    | 1:AA:2655:G:C3'   | 2.73                     | 0.51              |
| 1:AA:2794:C:N3    | 1:AA:2802:G:C6    | 2.78                     | 0.51              |
| 1:AA:2813:A:C2    | 1:AA:2888:C:C2    | 2.97                     | 0.51              |
| 1:AA:2815:C:C2'   | 1:AA:2816:C:H5'   | 2.40                     | 0.51              |
| 1:AA:2843:G:C4    | 1:AA:2844:G:C8    | 2.98                     | 0.51              |
| 1:AA:2876:G:C5'   | 15:AQ:1:MET:N     | 2.73                     | 0.51              |
| 2:AB:14:U:H3'     | 2:AB:14:U:C6      | 2.43                     | 0.51              |
| 2:AB:37:C:H3'     | 2:AB:38:C:C6      | 2.45                     | 0.51              |
| 2:AB:49:C:OP1     | 14:AP:96:GLY:HA3  | 2.10                     | 0.51              |
| 2:AB:50:G:O3'     | 14:AP:61:ASN:HA   | 2.10                     | 0.51              |
| 2:AB:97:G:C5      | 2:AB:98:G:C8      | 2.98                     | 0.51              |
| 2:AB:112:G:N2     | 2:AB:113:C:C2     | 2.78                     | 0.51              |
| 3:AC:36:LYS:O     | 3:AC:37:PHE:CG    | 2.63                     | 0.51              |
| 3:AC:82:LYS:CG    | 3:AC:116:THR:HG21 | 2.40                     | 0.51              |
| 4:AD:7:LYS:HZ3    | 4:AD:91:ARG:NE    | 2.08                     | 0.51              |
| 4:AD:56:GLY:HA3   | 4:AD:214:TRP:HZ3  | 1.74                     | 0.51              |
| 4:AD:78:LYS:CG    | 4:AD:114:GLY:O    | 2.57                     | 0.51              |
| 4:AD:168:ARG:HA   | 4:AD:174:ILE:CD1  | 2.39                     | 0.51              |
| 5:AE:38:THR:O     | 5:AE:42:ASP:OD2   | 2.28                     | 0.51              |
| 5:AE:92:THR:HG23  | 5:AE:96:PHE:H     | 1.75                     | 0.51              |
| 5:AE:100:GLU:O    | 5:AE:172:VAL:CG1  | 2.52                     | 0.51              |
| 5:AE:152:LYS:O    | 5:AE:152:LYS:CD   | 2.58                     | 0.51              |
| 6:AF:82:ILE:HD13  | 6:AF:82:ILE:H     | 1.68                     | 0.51              |
| 6:AF:201:VAL:CG1  | 6:AF:205:ARG:NH2  | 2.72                     | 0.51              |
| 7:AG:36:LYS:NZ    | 7:AG:38:VAL:HG22  | 2.25                     | 0.51              |
| 8:AH:146:ALA:O    | 8:AH:147:ASN:C    | 2.52                     | 0.51              |
| 9:AK:99:LEU:O     | 9:AK:100:GLU:C    | 2.53                     | 0.51              |
| 10:AL:106:LEU:CB  | 15:AQ:39:ARG:HH22 | 2.08                     | 0.51              |
| 11:AM:76:LYS:HE2  | 11:AM:81:GLN:NE2  | 2.25                     | 0.51              |
| 11:AM:124:LYS:HD2 | 11:AM:142:GLY:O   | 2.10                     | 0.51              |
| 12:AN:12:GLN:NE2  | 12:AN:12:GLN:O    | 2.43                     | 0.51              |
| 12:AN:36:ALA:C    | 12:AN:37:LEU:HG   | 2.34                     | 0.51              |
| 12:AN:109:VAL:CG2 | 12:AN:113:GLN:HB2 | 2.38                     | 0.51              |
| 12:AN:136:ALA:HB1 | 21:AW:76:LEU:CD1  | 2.40                     | 0.51              |
| 13:AO:103:ARG:HA  | 13:AO:109:ALA:O   | 2.10                     | 0.51              |
| 16:AR:25:TRP:HE3  | 16:AR:25:TRP:C    | 2.18                     | 0.51              |
| 18:AT:42:ARG:CG   | 18:AT:43:GLY:N    | 2.73                     | 0.51              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 19:AU:18:TYR:HD1  | 19:AU:21:PHE:CE1   | 2.27                     | 0.51              |
| 21:AW:53:ILE:CG1  | 21:AW:58:VAL:HG21  | 2.31                     | 0.51              |
| 21:AW:127:LYS:HD3 | 21:AW:165:VAL:H    | 1.74                     | 0.51              |
| 21:AW:152:ALA:C   | 21:AW:155:LEU:HD22 | 2.34                     | 0.51              |
| 22:AX:40:GLN:O    | 22:AX:57:PHE:HB3   | 2.09                     | 0.51              |
| 28:Ad:43:THR:O    | 28:Ad:46:VAL:CB    | 2.55                     | 0.51              |
| 34:BA:390:C:C2    | 34:BA:391:G:C8     | 2.97                     | 0.51              |
| 34:BA:497:U:O2    | 34:BA:498:A:C8     | 2.63                     | 0.51              |
| 34:BA:511:C:O2'   | 34:BA:512:U:C6     | 2.52                     | 0.51              |
| 34:BA:541:G:O4'   | 37:BH:42:GLN:NE2   | 2.36                     | 0.51              |
| 34:BA:684:A:C3'   | 44:BO:12:ARG:HH22  | 2.23                     | 0.51              |
| 34:BA:696:A:N6    | 34:BA:797:C:O2'    | 2.43                     | 0.51              |
| 34:BA:739:C:H2'   | 34:BA:740:U:C5'    | 2.39                     | 0.51              |
| 34:BA:817:C:C6    | 34:BA:819:A:H4'    | 2.44                     | 0.51              |
| 34:BA:958:A:H2'   | 34:BA:959:A:C8     | 2.45                     | 0.51              |
| 34:BA:967:C:H2'   | 34:BA:968:A:C8     | 2.45                     | 0.51              |
| 34:BA:996:A:C2    | 34:BA:997:U:C5     | 2.98                     | 0.51              |
| 34:BA:1107:C:P    | 36:BG:172:ARG:HH11 | 2.33                     | 0.51              |
| 34:BA:1155:G:H21  | 34:BA:1179:A:N6    | 2.08                     | 0.51              |
| 34:BA:1248:A:C2   | 34:BA:1249:C:N3    | 2.78                     | 0.51              |
| 34:BA:1251:A:N6   | 34:BA:1285:A:H2    | 2.06                     | 0.51              |
| 34:BA:1430:C:C2   | 34:BA:1471:G:N2    | 2.77                     | 0.51              |
| 35:BF:25:ASN:HD21 | 35:BF:27:LYS:CG    | 2.23                     | 0.51              |
| 35:BF:58:ILE:O    | 35:BF:61:LEU:CD2   | 2.58                     | 0.51              |
| 35:BF:163:PHE:CE1 | 35:BF:201:ILE:HD13 | 2.45                     | 0.51              |
| 36:BG:186:PHE:HB2 | 36:BG:199:LYS:HG2  | 1.92                     | 0.51              |
| 37:BH:30:LYS:CA   | 37:BH:34:GLU:HB3   | 2.39                     | 0.51              |
| 38:BI:98:THR:CG2  | 38:BI:119:LEU:HD21 | 2.39                     | 0.51              |
| 40:BK:16:LEU:O    | 40:BK:17:VAL:HG23  | 2.09                     | 0.51              |
| 41:BL:11:THR:HA   | 41:BL:14:ARG:NH2   | 2.25                     | 0.51              |
| 42:BM:28:VAL:C    | 42:BM:30:GLY:N     | 2.64                     | 0.51              |
| 42:BM:48:GLU:N    | 42:BM:49:PRO:CD    | 2.73                     | 0.51              |
| 42:BM:67:GLY:N    | 42:BM:73:GLN:NE2   | 2.58                     | 0.51              |
| 45:BP:84:LEU:CD2  | 45:BP:85:ILE:N     | 2.74                     | 0.51              |
| 45:BP:117:ARG:HG3 | 45:BP:117:ARG:NH1  | 2.14                     | 0.51              |
| 46:BQ:40:ASN:ND2  | 46:BQ:42:ALA:H     | 2.07                     | 0.51              |
| 48:BS:31:LEU:HA   | 48:BS:34:LEU:HD21  | 1.88                     | 0.51              |
| 48:BS:36:ILE:CG2  | 48:BS:37:ASN:N     | 2.73                     | 0.51              |
| 50:BU:22:LEU:HD11 | 50:BU:39:SER:OG    | 2.09                     | 0.51              |
| 50:BU:43:LEU:CD2  | 50:BU:44:ALA:N     | 2.61                     | 0.51              |
| 50:BU:66:SER:HB3  | 50:BU:69:LYS:HB3   | 1.91                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 51:BV:26:LEU:HB2  | 51:BV:42:ARG:NH1  | 2.26                     | 0.51              |
| 51:BV:38:GLU:CD   | 51:BV:38:GLU:N    | 2.64                     | 0.51              |
| 52:BW:6:LYS:HB2   | 52:BW:41:VAL:CG1  | 2.36                     | 0.51              |
| 53:BX:73:HIS:HD2  | 53:BX:74:LYS:NZ   | 2.08                     | 0.51              |
| 56:BD:28:G:H2'    | 56:BD:29:G:H8     | 1.75                     | 0.51              |
| 57:BZ:6:ARG:HG3   | 57:BZ:67:ASP:HB2  | 1.93                     | 0.51              |
| 57:BZ:54:ILE:HD11 | 57:BZ:211:GLN:CD  | 2.35                     | 0.51              |
| 57:BZ:311:PHE:N   | 57:BZ:356:PHE:O   | 2.43                     | 0.51              |
| 57:BZ:424:GLY:O   | 57:BZ:441:TYR:CE2 | 2.55                     | 0.51              |
| 1:AA:196:A:N1     | 1:AA:828:U:C5'    | 2.61                     | 0.51              |
| 1:AA:231:C:C4     | 1:AA:232:G:C2     | 2.98                     | 0.51              |
| 1:AA:274:G:N2     | 1:AA:274:G:OP2    | 2.42                     | 0.51              |
| 1:AA:308:G:C2     | 1:AA:329:G:C2     | 2.97                     | 0.51              |
| 1:AA:312:G:O4'    | 1:AA:312:G:P      | 2.68                     | 0.51              |
| 1:AA:448:U:O2     | 1:AA:448:U:C2'    | 2.53                     | 0.51              |
| 1:AA:479:A:N3     | 1:AA:480:A:N7     | 2.58                     | 0.51              |
| 1:AA:592:G:O2'    | 29:Ae:3:LYS:N     | 2.41                     | 0.51              |
| 1:AA:672:C:C2     | 1:AA:673:C:C5     | 2.98                     | 0.51              |
| 1:AA:761:A:H5''   | 1:AA:762:U:OP1    | 2.09                     | 0.51              |
| 1:AA:762:U:H1'    | 1:AA:763:G:C5     | 2.45                     | 0.51              |
| 1:AA:764:A:OP1    | 4:AD:211:ARG:CA   | 2.57                     | 0.51              |
| 1:AA:851:U:O4'    | 24:AZ:46:ASN:ND2  | 2.29                     | 0.51              |
| 1:AA:917:A:H2'    | 1:AA:918:A:C5'    | 2.37                     | 0.51              |
| 1:AA:1115:G:N3    | 1:AA:1115:G:C2'   | 2.73                     | 0.51              |
| 1:AA:1176:G:C2'   | 1:AA:1177:A:H5'   | 2.34                     | 0.51              |
| 1:AA:1363:C:C2    | 1:AA:1369:G:N1    | 2.78                     | 0.51              |
| 1:AA:1529:A:H8    | 1:AA:1530:G:N9    | 2.06                     | 0.51              |
| 1:AA:1667:G:C2    | 1:AA:1991:U:C5    | 2.99                     | 0.51              |
| 1:AA:1718:G:O6    | 1:AA:1735:C:N4    | 2.43                     | 0.51              |
| 1:AA:1730:U:O5'   | 1:AA:1730:U:H6    | 1.93                     | 0.51              |
| 1:AA:1754:C:C2    | 1:AA:1755:A:C1'   | 2.93                     | 0.51              |
| 1:AA:1804:C:C2    | 1:AA:1805:U:C5    | 2.99                     | 0.51              |
| 1:AA:1852:C:OP1   | 55:BC:72:C:H5'    | 2.10                     | 0.51              |
| 1:AA:2106:G:C6    | 1:AA:2184:G:C6    | 2.99                     | 0.51              |
| 1:AA:2136:C:H2'   | 1:AA:2137:C:O4'   | 2.09                     | 0.51              |
| 1:AA:2197:U:O2'   | 1:AA:2198:A:O4'   | 2.28                     | 0.51              |
| 1:AA:2291:U:O2'   | 1:AA:2374:C:H1'   | 2.10                     | 0.51              |
| 1:AA:2327:A:O2'   | 1:AA:2328:A:O4'   | 2.18                     | 0.51              |
| 1:AA:2336:A:O2'   | 1:AA:2337:G:OP1   | 2.18                     | 0.51              |
| 1:AA:2408:U:C2    | 1:AA:2409:G:C8    | 2.98                     | 0.51              |
| 1:AA:2447:G:H3'   | 1:AA:2499:C:O5'   | 2.10                     | 0.51              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2483:C:O2     | 1:AA:2483:C:H2'   | 2.10                     | 0.51              |
| 1:AA:2544:G:O2'    | 1:AA:2545:G:H5'   | 2.10                     | 0.51              |
| 1:AA:2564:A:C4     | 1:AA:2565:A:N7    | 2.78                     | 0.51              |
| 1:AA:2578:G:N7     | 5:AE:140:SER:HB2  | 2.25                     | 0.51              |
| 1:AA:2617:C:H2'    | 1:AA:2618:G:O5'   | 2.10                     | 0.51              |
| 1:AA:2660:A:C8     | 1:AA:2661:G:C8    | 2.98                     | 0.51              |
| 2:AB:6:C:H5'       | 2:AB:27:C:C2'     | 2.40                     | 0.51              |
| 2:AB:73:A:C8       | 2:AB:104:A:N1     | 2.78                     | 0.51              |
| 2:AB:100:G:C2'     | 2:AB:101:A:H8     | 2.20                     | 0.51              |
| 3:AC:52:ARG:HB3    | 3:AC:52:ARG:CZ    | 2.40                     | 0.51              |
| 3:AC:59:ARG:HH11   | 3:AC:59:ARG:CB    | 2.23                     | 0.51              |
| 4:AD:5:LYS:CE      | 4:AD:31:LYS:NZ    | 2.72                     | 0.51              |
| 4:AD:65:ILE:CG2    | 4:AD:66:ASP:N     | 2.73                     | 0.51              |
| 4:AD:77:ALA:HB1    | 4:AD:95:LEU:CD1   | 2.40                     | 0.51              |
| 4:AD:80:ALA:CB     | 4:AD:96:HIS:ND1   | 2.73                     | 0.51              |
| 4:AD:146:GLU:HG3   | 4:AD:152:GLY:O    | 2.10                     | 0.51              |
| 5:AE:33:VAL:HG22   | 5:AE:47:VAL:C     | 2.35                     | 0.51              |
| 5:AE:49:LEU:CD1    | 5:AE:50:GLY:N     | 2.73                     | 0.51              |
| 5:AE:61:ARG:O      | 5:AE:62:PRO:C     | 2.51                     | 0.51              |
| 5:AE:98:PRO:HG3    | 5:AE:175:VAL:HG22 | 1.91                     | 0.51              |
| 5:AE:113:PHE:C     | 5:AE:158:GLY:HA2  | 2.35                     | 0.51              |
| 5:AE:136:ARG:C     | 5:AE:136:ARG:HD3  | 2.34                     | 0.51              |
| 6:AF:34:TRP:CD1    | 6:AF:38:ARG:HH11  | 2.18                     | 0.51              |
| 6:AF:39:TRP:C      | 6:AF:39:TRP:CD2   | 2.88                     | 0.51              |
| 6:AF:46:ARG:NE     | 6:AF:46:ARG:HA    | 2.25                     | 0.51              |
| 6:AF:74:ARG:HH12   | 6:AF:76:GLY:N     | 2.06                     | 0.51              |
| 7:AG:74:LYS:CE     | 7:AG:75:LYS:HE3   | 2.39                     | 0.51              |
| 7:AG:114:ILE:O     | 7:AG:117:PHE:HB2  | 2.10                     | 0.51              |
| 9:AK:39:ARG:CB     | 9:AK:48:MET:SD    | 2.98                     | 0.51              |
| 9:AK:55:VAL:O      | 9:AK:57:ALA:N     | 2.43                     | 0.51              |
| 9:AK:112:LEU:O     | 9:AK:114:ARG:N    | 2.44                     | 0.51              |
| 10:AL:48:PRO:O     | 10:AL:49:ARG:C    | 2.52                     | 0.51              |
| 11:AM:37:GLY:O     | 11:AM:40:SER:HB3  | 2.10                     | 0.51              |
| 11:AM:73:GLY:C     | 11:AM:107:LYS:HE3 | 2.35                     | 0.51              |
| 12:AN:45:GLN:CA    | 12:AN:48:GLU:HG2  | 2.39                     | 0.51              |
| 12:AN:64:ILE:HG22  | 12:AN:105:GLU:HB3 | 1.92                     | 0.51              |
| 12:AN:65:PHE:O     | 12:AN:66:ILE:CG1  | 2.55                     | 0.51              |
| 12:AN:109:VAL:HG22 | 12:AN:113:GLN:CB  | 2.39                     | 0.51              |
| 12:AN:133:ARG:HD2  | 12:AN:133:ARG:C   | 2.36                     | 0.51              |
| 13:AO:99:LYS:HG2   | 26:Ab:43:HIS:CD2  | 2.45                     | 0.51              |
| 14:AP:70:GLY:O     | 14:AP:72:ALA:N    | 2.43                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 14:AP:76:LYS:CE   | 14:AP:77:ALA:HB2  | 2.38                     | 0.51              |
| 16:AR:2:PRO:O     | 16:AR:3:ARG:O     | 2.28                     | 0.51              |
| 16:AR:59:ARG:O    | 16:AR:62:ILE:CB   | 2.48                     | 0.51              |
| 16:AR:67:ALA:O    | 16:AR:71:GLN:CD   | 2.54                     | 0.51              |
| 17:AS:10:LYS:C    | 17:AS:12:TYR:H    | 2.18                     | 0.51              |
| 17:AS:25:LEU:HA   | 17:AS:28:GLU:CG   | 2.40                     | 0.51              |
| 17:AS:70:ILE:HG23 | 17:AS:90:PRO:CA   | 2.37                     | 0.51              |
| 17:AS:74:LYS:C    | 17:AS:75:PHE:CG   | 2.88                     | 0.51              |
| 19:AU:12:VAL:HG22 | 19:AU:29:TRP:NE1  | 2.25                     | 0.51              |
| 19:AU:63:LYS:HA   | 19:AU:63:LYS:HZ3  | 1.73                     | 0.51              |
| 20:AV:13:VAL:CG2  | 20:AV:14:LEU:N    | 2.72                     | 0.51              |
| 21:AW:56:VAL:HG22 | 21:AW:133:ILE:CD1 | 2.41                     | 0.51              |
| 22:AX:31:VAL:HG13 | 22:AX:67:VAL:CG2  | 2.40                     | 0.51              |
| 25:Aa:46:GLN:O    | 25:Aa:52:THR:HB   | 2.10                     | 0.51              |
| 25:Aa:57:GLU:O    | 25:Aa:61:ARG:HG3  | 2.06                     | 0.51              |
| 31:AI:59:ILE:O    | 31:AI:61:LEU:N    | 2.40                     | 0.51              |
| 32:AJ:27:LEU:CD2  | 32:AJ:57:ILE:HB   | 2.40                     | 0.51              |
| 34:BA:40:C:O2'    | 34:BA:41:G:H5'    | 2.09                     | 0.51              |
| 34:BA:80:G:C2     | 34:BA:81:G:H1'    | 2.44                     | 0.51              |
| 34:BA:112:G:C2'   | 34:BA:113:G:H5'   | 2.39                     | 0.51              |
| 34:BA:233:C:C2'   | 34:BA:234:C:H5'   | 2.39                     | 0.51              |
| 34:BA:250:A:N3    | 34:BA:252:U:N3    | 2.57                     | 0.51              |
| 34:BA:270:A:O2'   | 34:BA:271:C:C5'   | 2.56                     | 0.51              |
| 34:BA:404:U:OP2   | 37:BH:118:ARG:NH1 | 2.43                     | 0.51              |
| 34:BA:475:G:C2    | 34:BA:476:G:C5    | 2.98                     | 0.51              |
| 34:BA:587:G:C2    | 34:BA:755:G:C5    | 2.98                     | 0.51              |
| 34:BA:598:U:N3    | 34:BA:599:C:C5    | 2.78                     | 0.51              |
| 34:BA:599:C:N4    | 34:BA:640:A:N6    | 2.59                     | 0.51              |
| 34:BA:735:C:O2'   | 51:BV:75:ILE:CD1  | 2.57                     | 0.51              |
| 34:BA:812:C:H4'   | 34:BA:813:U:H6    | 1.75                     | 0.51              |
| 34:BA:857:C:N3    | 34:BA:858:G:H1'   | 2.25                     | 0.51              |
| 34:BA:867:G:N2    | 34:BA:868:C:C2    | 2.77                     | 0.51              |
| 34:BA:893:C:N3    | 34:BA:894:G:N7    | 2.58                     | 0.51              |
| 34:BA:946:A:O2'   | 34:BA:1333:A:H1'  | 2.10                     | 0.51              |
| 34:BA:948:C:H2'   | 34:BA:949:A:C8    | 2.42                     | 0.51              |
| 34:BA:952:U:H5'   | 34:BA:972:C:N4    | 2.07                     | 0.51              |
| 34:BA:1060:C:H2'  | 34:BA:1061:G:C8   | 2.45                     | 0.51              |
| 34:BA:1164:G:C5   | 34:BA:1173:G:N1   | 2.78                     | 0.51              |
| 34:BA:1202:G:N3   | 34:BA:1203:C:C6   | 2.78                     | 0.51              |
| 34:BA:1321:C:C5   | 34:BA:1322:C:C2'  | 2.92                     | 0.51              |
| 34:BA:1329:A:C2'  | 34:BA:1330:U:H5'  | 2.40                     | 0.51              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1401:G:H2'   | 34:BA:1402:C:C5'   | 2.40                     | 0.51              |
| 34:BA:1430:C:N3    | 34:BA:1471:G:C2    | 2.78                     | 0.51              |
| 34:BA:1443:G:N3    | 34:BA:1443:G:C2'   | 2.73                     | 0.51              |
| 34:BA:1450:U:H1'   | 34:BA:1453:G:H1    | 1.75                     | 0.51              |
| 34:BA:1507:A:C2    | 34:BA:1530:G:H1'   | 2.46                     | 0.51              |
| 35:BF:80:ILE:HD11  | 35:BF:212:GLN:HG2  | 1.92                     | 0.51              |
| 36:BG:172:ARG:NH1  | 36:BG:174:PRO:HD3  | 2.25                     | 0.51              |
| 37:BH:159:ARG:O    | 37:BH:163:GLU:HB3  | 2.11                     | 0.51              |
| 39:BJ:30:LEU:C     | 39:BJ:35:ALA:HB3   | 2.35                     | 0.51              |
| 39:BJ:40:VAL:HG22  | 39:BJ:40:VAL:O     | 2.09                     | 0.51              |
| 39:BJ:46:ARG:NH2   | 51:BV:37:VAL:HG11  | 2.25                     | 0.51              |
| 39:BJ:76:ALA:HA    | 39:BJ:79:LEU:HD11  | 1.92                     | 0.51              |
| 40:BK:76:ARG:NH1   | 40:BK:89:MET:CG    | 2.72                     | 0.51              |
| 42:BM:67:GLY:C     | 42:BM:73:GLN:NE2   | 2.69                     | 0.51              |
| 43:BN:5:ARG:NH2    | 43:BN:73:ASP:OD2   | 2.43                     | 0.51              |
| 43:BN:28:ARG:HG2   | 43:BN:28:ARG:NH1   | 2.24                     | 0.51              |
| 43:BN:51:ARG:NH2   | 43:BN:61:GLU:OE1   | 2.44                     | 0.51              |
| 44:BO:42:TRP:CZ3   | 44:BO:47:VAL:CG2   | 2.94                     | 0.51              |
| 44:BO:128:ALA:O    | 44:BO:129:SER:OXT  | 2.27                     | 0.51              |
| 46:BQ:14:ARG:CD    | 46:BQ:41:PRO:CB    | 2.81                     | 0.51              |
| 46:BQ:25:ILE:HA    | 46:BQ:29:ARG:HD2   | 1.92                     | 0.51              |
| 46:BQ:81:LEU:CD1   | 46:BQ:81:LEU:N     | 2.73                     | 0.51              |
| 48:BS:79:ARG:HG2   | 48:BS:82:ILE:HD12  | 1.91                     | 0.51              |
| 50:BU:84:LEU:O     | 50:BU:87:LYS:N     | 2.43                     | 0.51              |
| 51:BV:56:THR:O     | 51:BV:57:GLY:C     | 2.53                     | 0.51              |
| 53:BX:38:LYS:O     | 53:BX:39:LYS:C     | 2.53                     | 0.51              |
| 55:BC:16:U:C5      | 55:BC:18:G:C5'     | 2.92                     | 0.51              |
| 56:BD:50:U:O4      | 56:BD:65:G:N1      | 2.43                     | 0.51              |
| 56:BE:41:C:H3'     | 56:BE:42:C:C5'     | 2.38                     | 0.51              |
| 57:BZ:40:GLU:N     | 57:BZ:41:ARG:CB    | 2.73                     | 0.51              |
| 57:BZ:122:LYS:HG3  | 57:BZ:158:LEU:C    | 2.31                     | 0.51              |
| 57:BZ:185:PRO:CD   | 57:BZ:186:LEU:H    | 2.23                     | 0.51              |
| 57:BZ:240:ILE:HD11 | 57:BZ:287:THR:CG2  | 1.92                     | 0.51              |
| 57:BZ:313:VAL:N    | 57:BZ:354:ASP:HB3  | 2.25                     | 0.51              |
| 57:BZ:314:ASN:C    | 57:BZ:316:SER:H    | 2.19                     | 0.51              |
| 57:BZ:427:LYS:HG3  | 57:BZ:442:VAL:HG21 | 1.86                     | 0.51              |
| 1:AA:2:G:C4        | 1:AA:2902:C:N1     | 2.76                     | 0.51              |
| 1:AA:24:G:H1'      | 18:AT:77:ASP:OD1   | 2.10                     | 0.51              |
| 1:AA:136:G:H2'     | 1:AA:137:C:C6      | 2.44                     | 0.51              |
| 1:AA:234:C:H2'     | 1:AA:235:U:O5'     | 2.10                     | 0.51              |
| 1:AA:292:C:C2'     | 1:AA:293:U:C2      | 2.91                     | 0.51              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:415:A:O4'   | 1:AA:1869:G:H5''  | 2.10                     | 0.51              |
| 1:AA:515:A:H5'   | 16:AR:32:PHE:HZ   | 1.74                     | 0.51              |
| 1:AA:534:U:OP1   | 16:AR:24:TYR:HE2  | 1.93                     | 0.51              |
| 1:AA:541:C:OP2   | 1:AA:541:C:H6     | 1.93                     | 0.51              |
| 1:AA:563:G:C2    | 1:AA:564:C:C4     | 2.99                     | 0.51              |
| 1:AA:750:A:H2'   | 18:AT:90:ARG:NH1  | 2.26                     | 0.51              |
| 1:AA:879:G:C6    | 1:AA:897:C:O2'    | 2.63                     | 0.51              |
| 1:AA:945:A:C3'   | 1:AA:946:G:H5''   | 2.41                     | 0.51              |
| 1:AA:957:A:C6    | 1:AA:959:A:C4     | 2.98                     | 0.51              |
| 1:AA:1006:C:O2'  | 9:AK:106:MET:CB   | 2.54                     | 0.51              |
| 1:AA:1010:A:O2'  | 1:AA:1152:C:O2    | 2.26                     | 0.51              |
| 1:AA:1069:A:H5'' | 1:AA:1070:A:C8    | 2.46                     | 0.51              |
| 1:AA:1243:G:N1   | 1:AA:1244:G:C5    | 2.79                     | 0.51              |
| 1:AA:1287:A:H2'  | 1:AA:1287:A:N3    | 2.24                     | 0.51              |
| 1:AA:1308:A:N3   | 1:AA:1309:G:C1'   | 2.73                     | 0.51              |
| 1:AA:1313:U:P    | 19:AU:63:LYS:CD   | 2.98                     | 0.51              |
| 1:AA:1354:A:C2'  | 1:AA:1355:G:H5'   | 2.40                     | 0.51              |
| 1:AA:1466:G:O4'  | 1:AA:1545(A):A:C2 | 2.63                     | 0.51              |
| 1:AA:1540:G:H2'  | 1:AA:1541:U:H5'   | 1.92                     | 0.51              |
| 1:AA:1639:U:O2'  | 1:AA:2699:C:H4'   | 2.11                     | 0.51              |
| 1:AA:1655:A:C3'  | 1:AA:1656:C:H6    | 2.22                     | 0.51              |
| 1:AA:1799:G:H22  | 4:AD:157:ARG:NH2  | 2.04                     | 0.51              |
| 1:AA:1944:U:H1'  | 1:AA:1955:U:H1'   | 1.90                     | 0.51              |
| 1:AA:2094:G:N1   | 1:AA:2196:C:C4    | 2.78                     | 0.51              |
| 1:AA:2298:A:C3'  | 1:AA:2299:G:H8    | 2.24                     | 0.51              |
| 1:AA:2443:C:H2'  | 1:AA:2444:G:C8    | 2.28                     | 0.51              |
| 1:AA:2526:G:H1'  | 30:Af:35:ARG:HH12 | 1.74                     | 0.51              |
| 1:AA:2569:G:C4   | 1:AA:2570:G:C8    | 2.99                     | 0.51              |
| 1:AA:2638:G:N2   | 1:AA:2781:A:N6    | 2.57                     | 0.51              |
| 1:AA:2742:C:H4'  | 30:Af:35:ARG:NH1  | 2.25                     | 0.51              |
| 1:AA:2761:G:C2'  | 1:AA:2762:G:H5'   | 2.41                     | 0.51              |
| 1:AA:2773:C:P    | 5:AE:164:ARG:NH2  | 2.83                     | 0.51              |
| 1:AA:2784:C:H1'  | 5:AE:41:LYS:HZ3   | 1.73                     | 0.51              |
| 1:AA:2785:C:C4   | 1:AA:2786:U:C4    | 2.99                     | 0.51              |
| 1:AA:2812:G:C6   | 1:AA:2813:A:N6    | 2.78                     | 0.51              |
| 1:AA:2815:C:O2'  | 26:Ab:42:PRO:HG3  | 2.10                     | 0.51              |
| 1:AA:2884:U:O4   | 26:Ab:40:LYS:HE2  | 2.10                     | 0.51              |
| 2:AB:43:C:H2'    | 2:AB:44:G:H5''    | 1.91                     | 0.51              |
| 3:AC:54:SER:HA   | 3:AC:57:ASN:ND2   | 2.24                     | 0.51              |
| 3:AC:59:ARG:HH12 | 3:AC:164:ARG:HH11 | 1.57                     | 0.51              |
| 3:AC:63:SER:O    | 3:AC:65:PRO:CD    | 2.57                     | 0.51              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 3:AC:134:ARG:HD3  | 3:AC:136:LEU:CD1   | 2.38                     | 0.51              |
| 4:AD:55:GLY:N     | 4:AD:218:ARG:CD    | 2.73                     | 0.51              |
| 4:AD:142:VAL:HG22 | 4:AD:165:ILE:HD11  | 1.91                     | 0.51              |
| 4:AD:181:GLU:HA   | 4:AD:270:ILE:CB    | 2.39                     | 0.51              |
| 4:AD:226:MET:O    | 4:AD:227:ASN:C     | 2.53                     | 0.51              |
| 5:AE:14:ILE:CG2   | 5:AE:19:ARG:HA     | 2.40                     | 0.51              |
| 5:AE:54:GLN:HB3   | 5:AE:57:LYS:CE     | 2.41                     | 0.51              |
| 6:AF:104:LYS:O    | 6:AF:108:LYS:CE    | 2.57                     | 0.51              |
| 6:AF:136:THR:O    | 6:AF:137:LYS:C     | 2.52                     | 0.51              |
| 6:AF:173:VAL:CG2  | 6:AF:174:VAL:N     | 2.73                     | 0.51              |
| 7:AG:20:ILE:HD12  | 7:AG:28:VAL:CG1    | 2.40                     | 0.51              |
| 7:AG:39:ILE:HG23  | 7:AG:157:ILE:HG13  | 1.91                     | 0.51              |
| 7:AG:105:LYS:C    | 7:AG:109:VAL:HG22  | 2.33                     | 0.51              |
| 7:AG:121:ASN:OD1  | 7:AG:180:PHE:HB2   | 2.10                     | 0.51              |
| 8:AH:103:LEU:O    | 8:AH:104:GLU:C     | 2.53                     | 0.51              |
| 8:AH:105:LEU:HD12 | 8:AH:113:VAL:CG1   | 2.40                     | 0.51              |
| 10:AL:68:GLU:OE2  | 10:AL:76:ALA:CB    | 2.42                     | 0.51              |
| 11:AM:72:PRO:HA   | 11:AM:110:TYR:CE1  | 2.45                     | 0.51              |
| 11:AM:97:PRO:HD3  | 11:AM:102:ARG:CZ   | 2.41                     | 0.51              |
| 12:AN:90:VAL:C    | 12:AN:91:GLU:OE2   | 2.54                     | 0.51              |
| 13:AO:41:ALA:HB1  | 13:AO:97:VAL:CG1   | 2.34                     | 0.51              |
| 13:AO:43:GLU:OE2  | 13:AO:43:GLU:HA    | 2.10                     | 0.51              |
| 13:AO:61:HIS:O    | 13:AO:64:ARG:N     | 2.44                     | 0.51              |
| 13:AO:66:VAL:O    | 13:AO:67:LEU:C     | 2.53                     | 0.51              |
| 13:AO:96:ARG:C    | 13:AO:114:VAL:HG13 | 2.35                     | 0.51              |
| 13:AO:100:LEU:O   | 26:Ab:44:THR:CG2   | 2.57                     | 0.51              |
| 14:AP:31:SER:C    | 14:AP:97:ARG:NH2   | 2.68                     | 0.51              |
| 14:AP:73:LEU:H    | 14:AP:73:LEU:CD1   | 2.17                     | 0.51              |
| 15:AQ:17:THR:HG21 | 15:AQ:20:PRO:CA    | 2.40                     | 0.51              |
| 16:AR:12:ARG:O    | 16:AR:13:LYS:C     | 2.53                     | 0.51              |
| 16:AR:14:HIS:O    | 16:AR:17:ILE:N     | 2.43                     | 0.51              |
| 16:AR:16:LYS:HD2  | 16:AR:17:ILE:CD1   | 2.41                     | 0.51              |
| 16:AR:93:LYS:O    | 16:AR:94:ASN:ND2   | 2.44                     | 0.51              |
| 17:AS:3:ALA:HB1   | 17:AS:44:LYS:NZ    | 2.21                     | 0.51              |
| 17:AS:43:GLU:C    | 17:AS:44:LYS:CD    | 2.83                     | 0.51              |
| 18:AT:38:TYR:N    | 18:AT:38:TYR:HD1   | 2.08                     | 0.51              |
| 20:AV:67:LEU:CD1  | 20:AV:71:LYS:HZ3   | 2.23                     | 0.51              |
| 21:AW:3:TYR:HB3   | 21:AW:61:LEU:HB2   | 1.91                     | 0.51              |
| 21:AW:29:TYR:O    | 21:AW:89:PHE:HD2   | 1.93                     | 0.51              |
| 21:AW:122:ARG:HG2 | 21:AW:171:ILE:CA   | 2.34                     | 0.51              |
| 22:AX:40:GLN:NE2  | 22:AX:42:GLY:O     | 2.43                     | 0.51              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:AX:50:ASN:C     | 22:AX:62:LEU:HB3   | 2.36                     | 0.51              |
| 24:AZ:30:ARG:N     | 24:AZ:30:ARG:CD    | 2.73                     | 0.51              |
| 25:Aa:13:ARG:O     | 25:Aa:14:ILE:CG1   | 2.50                     | 0.51              |
| 27:Ac:17:LYS:HZ3   | 27:Ac:50:ARG:HA    | 1.75                     | 0.51              |
| 32:AJ:98:ARG:HG2   | 32:AJ:100:THR:H    | 1.76                     | 0.51              |
| 34:BA:16:A:H2'     | 34:BA:16:A:N3      | 2.26                     | 0.51              |
| 34:BA:80:G:H2'     | 34:BA:81:G:C8      | 2.45                     | 0.51              |
| 34:BA:296:U:O2'    | 34:BA:556:C:O2'    | 2.22                     | 0.51              |
| 34:BA:332:G:O2'    | 34:BA:333:G:H5'    | 2.11                     | 0.51              |
| 34:BA:341:C:O2'    | 34:BA:342:C:O5'    | 2.29                     | 0.51              |
| 34:BA:363:A:N7     | 45:BP:31:PRO:HD2   | 2.25                     | 0.51              |
| 34:BA:957:U:H3     | 34:BA:960:U:C5'    | 2.23                     | 0.51              |
| 34:BA:961:U:C2'    | 34:BA:962:C:H5'    | 2.41                     | 0.51              |
| 34:BA:973:G:N1     | 34:BA:974:A:C5     | 2.78                     | 0.51              |
| 34:BA:1128:C:H4'   | 34:BA:1148:U:C5    | 2.45                     | 0.51              |
| 34:BA:1129:C:H4'   | 34:BA:1130:A:H8    | 1.74                     | 0.51              |
| 34:BA:1169:A:H8    | 34:BA:1169:A:OP2   | 1.93                     | 0.51              |
| 34:BA:1305:G:H5'   | 54:BY:4:GLY:HA3    | 1.92                     | 0.51              |
| 34:BA:1316:G:O4'   | 34:BA:1360:A:C6    | 2.60                     | 0.51              |
| 34:BA:1318:A:C2'   | 52:BW:35:SER:OG    | 2.54                     | 0.51              |
| 34:BA:1326:C:OP1   | 54:BY:17:THR:OG1   | 2.23                     | 0.51              |
| 34:BA:1342:C:O2'   | 42:BM:124:GLN:HA   | 2.11                     | 0.51              |
| 34:BA:1396:A:O2'   | 34:BA:1397:C:H5''  | 2.10                     | 0.51              |
| 35:BF:69:LEU:CD1   | 35:BF:70:PHE:N     | 2.74                     | 0.51              |
| 35:BF:69:LEU:CD1   | 35:BF:92:TYR:HA    | 2.32                     | 0.51              |
| 35:BF:95:GLN:CD    | 35:BF:148:TYR:HB3  | 2.35                     | 0.51              |
| 35:BF:130:ARG:CB   | 35:BF:131:PRO:CD   | 2.88                     | 0.51              |
| 36:BG:37:GLN:HA    | 36:BG:37:GLN:OE1   | 2.09                     | 0.51              |
| 36:BG:78:GLY:O     | 36:BG:80:GLY:N     | 2.43                     | 0.51              |
| 36:BG:84:ILE:HD11  | 36:BG:88:ARG:HH21  | 1.76                     | 0.51              |
| 36:BG:132:ARG:C    | 36:BG:136:GLN:NE2  | 2.69                     | 0.51              |
| 37:BH:60:GLU:O     | 37:BH:63:LYS:HD2   | 2.10                     | 0.51              |
| 37:BH:147:ALA:O    | 37:BH:149:ALA:N    | 2.43                     | 0.51              |
| 37:BH:148:VAL:HG11 | 37:BH:153:ARG:HA   | 1.92                     | 0.51              |
| 38:BI:47:LYS:H     | 38:BI:57:LYS:CE    | 2.22                     | 0.51              |
| 38:BI:59:GLY:O     | 38:BI:62:ALA:CB    | 2.56                     | 0.51              |
| 39:BJ:13:ASN:N     | 39:BJ:13:ASN:ND2   | 2.56                     | 0.51              |
| 40:BK:16:LEU:HD12  | 42:BM:44:VAL:HG23  | 1.93                     | 0.51              |
| 40:BK:16:LEU:HD12  | 42:BM:44:VAL:CG2   | 2.40                     | 0.51              |
| 40:BK:69:VAL:CB    | 40:BK:135:VAL:HG22 | 2.39                     | 0.51              |
| 40:BK:125:MET:O    | 40:BK:126:ASP:C    | 2.52                     | 0.51              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 42:BM:45:ALA:O    | 42:BM:78:LYS:CB    | 2.58                     | 0.51              |
| 44:BO:73:MET:C    | 44:BO:75:TYR:H     | 2.18                     | 0.51              |
| 45:BP:8:ASN:O     | 45:BP:9:GLN:C      | 2.50                     | 0.51              |
| 46:BQ:27:LYS:C    | 46:BQ:29:ARG:H     | 2.19                     | 0.51              |
| 46:BQ:80:ARG:HH12 | 46:BQ:81:LEU:HD12  | 1.68                     | 0.51              |
| 47:BR:27:CYS:O    | 47:BR:40:CYS:SG    | 2.69                     | 0.51              |
| 50:BU:31:LEU:O    | 50:BU:32:TYR:CD2   | 2.52                     | 0.51              |
| 50:BU:51:TYR:CE1  | 50:BU:73:VAL:HG11  | 2.46                     | 0.51              |
| 50:BU:75:ARG:HH12 | 50:BU:77:VAL:CA    | 2.23                     | 0.51              |
| 50:BU:75:ARG:HG2  | 50:BU:75:ARG:HH11  | 1.76                     | 0.51              |
| 50:BU:84:LEU:O    | 50:BU:85:VAL:C     | 2.54                     | 0.51              |
| 52:BW:5:LEU:CG    | 52:BW:6:LYS:N      | 2.73                     | 0.51              |
| 55:BC:37:A:H2'    | 55:BC:38:A:H5'     | 1.90                     | 0.51              |
| 56:BD:18:G:N1     | 56:BD:57:G:N7      | 2.56                     | 0.51              |
| 56:BE:18:G:C4     | 56:BE:58:A:C2      | 2.98                     | 0.51              |
| 57:BZ:81:PHE:HD1  | 57:BZ:365:HIS:CD2  | 2.01                     | 0.51              |
| 57:BZ:101:ALA:HB3 | 57:BZ:130:VAL:HG12 | 1.88                     | 0.51              |
| 57:BZ:188:GLN:C   | 57:BZ:190:ILE:H    | 2.17                     | 0.51              |
| 57:BZ:242:SER:HB2 | 57:BZ:243:GLU:OE1  | 2.10                     | 0.51              |
| 57:BZ:393:ASP:N   | 57:BZ:394:GLY:CA   | 2.74                     | 0.51              |
| 57:BZ:436:ARG:HG2 | 57:BZ:436:ARG:HH11 | 1.75                     | 0.51              |
| 1:AA:37:C:H2'     | 1:AA:38:A:H8       | 1.76                     | 0.51              |
| 1:AA:195:A:C4     | 1:AA:198:C:N4      | 2.79                     | 0.51              |
| 1:AA:295:G:O4'    | 1:AA:345:A:H2      | 1.93                     | 0.51              |
| 1:AA:445:C:OP1    | 16:AR:2:PRO:HB2    | 2.09                     | 0.51              |
| 1:AA:563:G:N2     | 1:AA:564:C:N3      | 2.57                     | 0.51              |
| 1:AA:672:C:C6     | 11:AM:38:GLN:CD    | 2.88                     | 0.51              |
| 1:AA:675:A:C5     | 1:AA:804:A:C2      | 2.98                     | 0.51              |
| 1:AA:675:A:O3'    | 6:AF:67:GLN:OE1    | 2.27                     | 0.51              |
| 1:AA:678:C:C2     | 1:AA:679:C:C5      | 2.99                     | 0.51              |
| 1:AA:742:G:O2'    | 1:AA:1676:A:H4'    | 2.10                     | 0.51              |
| 1:AA:781:A:H8     | 4:AD:220:HIS:NE2   | 2.07                     | 0.51              |
| 1:AA:815:C:C4     | 1:AA:1193:G:N1     | 2.78                     | 0.51              |
| 1:AA:980:A:C4     | 1:AA:981:A:C2      | 2.98                     | 0.51              |
| 1:AA:1019:U:OP2   | 1:AA:1036:G:C4'    | 2.58                     | 0.51              |
| 1:AA:1029:A:H61   | 1:AA:1125:G:H2'    | 1.76                     | 0.51              |
| 1:AA:1051:G:H3'   | 1:AA:1052:C:H5''   | 1.92                     | 0.51              |
| 1:AA:1079:C:O2    | 32:AJ:133:SER:N    | 2.44                     | 0.51              |
| 1:AA:1095:A:C2'   | 1:AA:1096:A:O4'    | 2.58                     | 0.51              |
| 1:AA:1100:C:C2'   | 1:AA:1101:U:OP1    | 2.58                     | 0.51              |
| 1:AA:1243:G:C2    | 1:AA:1244:G:C4     | 2.98                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1265:A:O4'   | 1:AA:1267:U:N3    | 2.43                     | 0.51              |
| 1:AA:1327:C:H5''  | 1:AA:1328:G:OP2   | 2.10                     | 0.51              |
| 1:AA:1381:G:C5    | 1:AA:1382:G:C5    | 2.98                     | 0.51              |
| 1:AA:1540:G:H2'   | 1:AA:1541:U:C4'   | 2.40                     | 0.51              |
| 1:AA:1650:G:C2'   | 1:AA:1651:G:O5'   | 2.58                     | 0.51              |
| 1:AA:1669:A:C6    | 1:AA:1994:C:O2    | 2.64                     | 0.51              |
| 1:AA:1773:A:N7    | 1:AA:1774:C:N3    | 2.58                     | 0.51              |
| 1:AA:1782:C:C6    | 1:AA:1782:C:C3'   | 2.93                     | 0.51              |
| 1:AA:1791:A:C3'   | 1:AA:1792:G:H8    | 2.15                     | 0.51              |
| 1:AA:1838:C:H5'   | 1:AA:1839:G:OP1   | 2.11                     | 0.51              |
| 1:AA:1949:G:C5    | 1:AA:1950:G:N7    | 2.79                     | 0.51              |
| 1:AA:2118:U:C6    | 1:AA:2147:G:O6    | 2.64                     | 0.51              |
| 1:AA:2121:G:O2'   | 3:AC:167:LYS:CD   | 2.58                     | 0.51              |
| 1:AA:2168:G:H1'   | 1:AA:2170:A:N7    | 2.25                     | 0.51              |
| 1:AA:2318:G:C8    | 1:AA:2318:G:OP2   | 2.63                     | 0.51              |
| 1:AA:2321:G:N3    | 1:AA:2321:G:C2'   | 2.73                     | 0.51              |
| 1:AA:2345:G:H21   | 1:AA:2381:C:C3'   | 2.23                     | 0.51              |
| 1:AA:2602:A:C2    | 56:BD:74:C:H2'    | 2.43                     | 0.51              |
| 1:AA:2607:G:N2    | 1:AA:2608:G:H1'   | 2.25                     | 0.51              |
| 1:AA:2639:A:C5    | 1:AA:2778:A:C6    | 2.98                     | 0.51              |
| 1:AA:2674:G:C5    | 1:AA:2675:A:N7    | 2.78                     | 0.51              |
| 1:AA:2675:A:H5'   | 10:AL:29:ASN:HB3  | 1.91                     | 0.51              |
| 1:AA:2682:U:H2'   | 1:AA:2683:C:C5'   | 2.40                     | 0.51              |
| 1:AA:2713:A:P     | 1:AA:2713:A:H8    | 2.33                     | 0.51              |
| 1:AA:2767:C:O2    | 1:AA:2768:C:C5    | 2.63                     | 0.51              |
| 1:AA:2780:G:N2    | 9:AK:97:ARG:NH2   | 2.57                     | 0.51              |
| 1:AA:2815:C:N3    | 1:AA:2816:C:C5    | 2.78                     | 0.51              |
| 1:AA:2820:A:H62   | 5:AE:191:PRO:HB3  | 1.75                     | 0.51              |
| 3:AC:6:ARG:C      | 3:AC:8:ARG:H      | 2.18                     | 0.51              |
| 3:AC:93:TYR:CE1   | 3:AC:109:ASP:HB2  | 2.45                     | 0.51              |
| 3:AC:163:PHE:HB3  | 3:AC:171:ILE:HD12 | 1.92                     | 0.51              |
| 4:AD:13:ARG:NH2   | 4:AD:19:ALA:HB1   | 2.24                     | 0.51              |
| 4:AD:29:PRO:C     | 4:AD:31:LYS:H     | 2.17                     | 0.51              |
| 4:AD:147:LEU:HD23 | 4:AD:147:LEU:N    | 2.23                     | 0.51              |
| 4:AD:246:PRO:O    | 4:AD:247:ALA:O    | 2.28                     | 0.51              |
| 5:AE:77:ILE:CG1   | 5:AE:78:LEU:N     | 2.71                     | 0.51              |
| 5:AE:103:ASP:O    | 5:AE:199:ARG:O    | 2.28                     | 0.51              |
| 5:AE:108:SER:O    | 5:AE:109:LYS:C    | 2.53                     | 0.51              |
| 5:AE:138:PRO:O    | 5:AE:139:GLY:O    | 2.28                     | 0.51              |
| 5:AE:203:LYS:O    | 5:AE:203:LYS:CD   | 2.58                     | 0.51              |
| 6:AF:49:ALA:HB3   | 6:AF:94:PRO:CA    | 2.40                     | 0.51              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 7:AG:8:LYS:CE      | 7:AG:100:TRP:HD1   | 2.23                     | 0.51              |
| 7:AG:44:GLY:O      | 7:AG:72:ARG:O      | 2.28                     | 0.51              |
| 7:AG:80:PHE:CD1    | 7:AG:81:LYS:N      | 2.68                     | 0.51              |
| 7:AG:87:PRO:C      | 7:AG:88:ILE:HG13   | 2.35                     | 0.51              |
| 7:AG:173:LEU:HA    | 7:AG:176:LEU:HB3   | 1.92                     | 0.51              |
| 8:AH:105:LEU:N     | 8:AH:105:LEU:CD2   | 2.63                     | 0.51              |
| 9:AK:44:PRO:HG2    | 9:AK:45:ASN:OD1    | 2.10                     | 0.51              |
| 9:AK:48:MET:C      | 9:AK:50:ASP:N      | 2.67                     | 0.51              |
| 10:AL:2:ILE:HB     | 10:AL:32:TYR:HA    | 1.91                     | 0.51              |
| 10:AL:7:TYR:CA     | 10:AL:18:LYS:CE    | 2.85                     | 0.51              |
| 10:AL:15:GLY:HA2   | 10:AL:47:ILE:CG1   | 2.41                     | 0.51              |
| 10:AL:94:ARG:HG3   | 10:AL:96:THR:N     | 2.22                     | 0.51              |
| 11:AM:97:PRO:O     | 11:AM:98:GLU:C     | 2.53                     | 0.51              |
| 11:AM:138:LEU:HD22 | 11:AM:138:LEU:C    | 2.35                     | 0.51              |
| 12:AN:37:LEU:CD1   | 12:AN:130:LYS:HB2  | 2.37                     | 0.51              |
| 12:AN:44:ALA:N     | 12:AN:94:VAL:HB    | 2.24                     | 0.51              |
| 13:AO:83:ILE:CD1   | 13:AO:86:ARG:HE    | 2.16                     | 0.51              |
| 14:AP:20:ARG:O     | 14:AP:21:THR:HG23  | 2.10                     | 0.51              |
| 15:AQ:18:ASP:O     | 15:AQ:19:LEU:CB    | 2.58                     | 0.51              |
| 15:AQ:30:VAL:CG2   | 15:AQ:31:SER:N     | 2.73                     | 0.51              |
| 16:AR:47:TYR:CE1   | 17:AS:77:ALA:HA    | 2.45                     | 0.51              |
| 16:AR:55:ARG:C     | 16:AR:58:ARG:HB3   | 2.34                     | 0.51              |
| 16:AR:98:LEU:O     | 16:AR:99:ALA:C     | 2.52                     | 0.51              |
| 18:AT:7:ALA:H      | 18:AT:103:ILE:HD13 | 1.76                     | 0.51              |
| 18:AT:74:ALA:HB1   | 18:AT:105:VAL:CA   | 2.40                     | 0.51              |
| 20:AV:1:MET:HG2    | 20:AV:33:LYS:CG    | 2.41                     | 0.51              |
| 20:AV:54:LYS:C     | 20:AV:56:PRO:HD3   | 2.35                     | 0.51              |
| 21:AW:14:LYS:O     | 21:AW:15:PRO:C     | 2.53                     | 0.51              |
| 21:AW:77:ASP:O     | 21:AW:78:LYS:C     | 2.53                     | 0.51              |
| 21:AW:95:PRO:CB    | 21:AW:130:PRO:HA   | 2.39                     | 0.51              |
| 21:AW:116:VAL:CG2  | 21:AW:145:GLU:CG   | 2.88                     | 0.51              |
| 23:AY:27:LEU:HD21  | 23:AY:49:LYS:N     | 2.25                     | 0.51              |
| 24:AZ:5:LYS:NZ     | 24:AZ:59:VAL:CG2   | 2.74                     | 0.51              |
| 24:AZ:40:THR:O     | 24:AZ:44:ARG:HG3   | 2.10                     | 0.51              |
| 25:Aa:58:ARG:HG2   | 25:Aa:62:ARG:NH2   | 2.24                     | 0.51              |
| 26:Ab:11:THR:O     | 26:Ab:14:ALA:HB3   | 2.11                     | 0.51              |
| 27:Ac:22:ALA:CB    | 27:Ac:39:TYR:HE2   | 2.22                     | 0.51              |
| 28:Ad:19:ARG:O     | 28:Ad:20:ALA:C     | 2.53                     | 0.51              |
| 29:Ae:34:TRP:HE3   | 29:Ae:36:LYS:HD3   | 1.74                     | 0.51              |
| 34:BA:46:G:C2      | 34:BA:366:C:C2     | 2.97                     | 0.51              |
| 34:BA:55:A:H2'     | 34:BA:56:U:C4'     | 2.41                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 34:BA:159:G:C2    | 34:BA:161:A:OP2   | 2.63                     | 0.51              |
| 34:BA:381:C:H2'   | 34:BA:381:C:O2    | 2.10                     | 0.51              |
| 34:BA:390:C:N3    | 34:BA:391:G:N7    | 2.59                     | 0.51              |
| 34:BA:411:A:C5    | 34:BA:429:U:C5    | 2.98                     | 0.51              |
| 34:BA:432:A:H3'   | 34:BA:432:A:C8    | 2.44                     | 0.51              |
| 34:BA:458:C:N4    | 34:BA:464:G:C6    | 2.78                     | 0.51              |
| 34:BA:629:G:C2    | 34:BA:630:G:C8    | 2.99                     | 0.51              |
| 34:BA:686:U:H2'   | 34:BA:687:A:C8    | 2.45                     | 0.51              |
| 34:BA:730:G:H2'   | 34:BA:731:G:C4'   | 2.41                     | 0.51              |
| 34:BA:836:G:C6    | 34:BA:851:G:C6    | 2.99                     | 0.51              |
| 34:BA:971:G:N2    | 34:BA:1363:A:OP2  | 2.43                     | 0.51              |
| 34:BA:1034:G:C2   | 34:BA:1035:A:C5   | 2.98                     | 0.51              |
| 34:BA:1154:G:C2   | 34:BA:1155:G:C5   | 2.98                     | 0.51              |
| 34:BA:1196:U:C6   | 34:BA:1196:U:C3'  | 2.94                     | 0.51              |
| 34:BA:1215:G:N2   | 34:BA:1216:G:C8   | 2.78                     | 0.51              |
| 34:BA:1255:G:H1'  | 34:BA:1259:C:H1'  | 1.93                     | 0.51              |
| 34:BA:1268:A:H2   | 34:BA:1311:G:C4   | 2.28                     | 0.51              |
| 34:BA:1276:G:O2'  | 34:BA:1277:C:H5'  | 2.10                     | 0.51              |
| 34:BA:1321:C:C6   | 34:BA:1321:C:H3'  | 2.44                     | 0.51              |
| 34:BA:1373:G:H5'  | 40:BK:36:LYS:HB2  | 1.92                     | 0.51              |
| 34:BA:1450:U:C1'  | 34:BA:1454:G:N2   | 2.73                     | 0.51              |
| 35:BF:35:GLU:CD   | 35:BF:36:ARG:N    | 2.69                     | 0.51              |
| 35:BF:56:ARG:HH11 | 35:BF:57:PHE:N    | 2.07                     | 0.51              |
| 36:BG:52:LEU:O    | 36:BG:53:ALA:CB   | 2.59                     | 0.51              |
| 37:BH:200:GLU:CG  | 37:BH:201:GLN:H   | 2.22                     | 0.51              |
| 39:BJ:26:ILE:CG2  | 39:BJ:30:LEU:HD11 | 2.39                     | 0.51              |
| 39:BJ:40:VAL:HA   | 39:BJ:63:TYR:HD1  | 1.75                     | 0.51              |
| 39:BJ:52:ILE:HD13 | 39:BJ:87:ARG:HH21 | 1.70                     | 0.51              |
| 41:BL:6:ILE:CG1   | 41:BL:85:ARG:CZ   | 2.89                     | 0.51              |
| 41:BL:69:ARG:O    | 41:BL:74:PRO:HA   | 2.10                     | 0.51              |
| 44:BO:22:HIS:CD2  | 44:BO:22:HIS:C    | 2.87                     | 0.51              |
| 44:BO:57:THR:OG1  | 44:BO:59:TYR:HB2  | 2.10                     | 0.51              |
| 46:BQ:56:LEU:CD1  | 46:BQ:60:VAL:HG22 | 2.41                     | 0.51              |
| 47:BR:45:ARG:NH1  | 47:BR:45:ARG:CG   | 2.72                     | 0.51              |
| 48:BS:77:ARG:NH1  | 48:BS:81:LEU:H    | 2.08                     | 0.51              |
| 52:BW:18:LYS:HE2  | 52:BW:22:LEU:HD13 | 1.90                     | 0.51              |
| 53:BX:42:GLN:O    | 53:BX:43:LEU:C    | 2.49                     | 0.51              |
| 57:BZ:86:GLU:C    | 57:BZ:88:VAL:H    | 2.18                     | 0.51              |
| 57:BZ:125:VAL:HB  | 57:BZ:162:ILE:N   | 2.25                     | 0.51              |
| 57:BZ:220:VAL:O   | 57:BZ:279:LEU:CD2 | 2.59                     | 0.51              |
| 57:BZ:405:LEU:CG  | 57:BZ:464:LEU:CA  | 2.65                     | 0.51              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 57:BZ:495:LYS:CA | 57:BZ:515:GLY:O  | 2.58                     | 0.51              |
| 1:AA:154:G:C2    | 1:AA:155:C:N3    | 2.79                     | 0.51              |
| 1:AA:220:G:O2'   | 1:AA:233:A:N3    | 2.44                     | 0.51              |
| 1:AA:246:C:O2    | 1:AA:246:C:H2'   | 2.11                     | 0.51              |
| 1:AA:253:C:H2'   | 1:AA:253:C:O2    | 2.11                     | 0.51              |
| 1:AA:281:G:N2    | 1:AA:283:A:C4'   | 2.74                     | 0.51              |
| 1:AA:339:U:C6    | 1:AA:340:A:N7    | 2.79                     | 0.51              |
| 1:AA:403:U:H4'   | 1:AA:404:C:OP1   | 2.11                     | 0.51              |
| 1:AA:450:G:O6    | 1:AA:453:C:P     | 2.69                     | 0.51              |
| 1:AA:481:G:H2'   | 1:AA:507:A:H61   | 1.75                     | 0.51              |
| 1:AA:562:U:O2'   | 1:AA:563:G:H5'   | 2.11                     | 0.51              |
| 1:AA:566:U:C6    | 1:AA:567:A:C8    | 2.99                     | 0.51              |
| 1:AA:653:A:H62   | 1:AA:655:A:C1'   | 2.13                     | 0.51              |
| 1:AA:685:A:O2'   | 1:AA:686:G:P     | 2.68                     | 0.51              |
| 1:AA:775:G:N2    | 1:AA:787:U:O2'   | 2.43                     | 0.51              |
| 1:AA:975:G:N3    | 1:AA:975:G:C2'   | 2.73                     | 0.51              |
| 1:AA:1007:C:O3'  | 9:AK:108:PRO:HG3 | 2.10                     | 0.51              |
| 1:AA:1020:A:O2'  | 1:AA:1021:A:N7   | 2.43                     | 0.51              |
| 1:AA:1021:A:C6   | 1:AA:1023:U:C6   | 2.98                     | 0.51              |
| 1:AA:1050:A:N6   | 1:AA:2751:G:C4   | 2.79                     | 0.51              |
| 1:AA:1064:C:N4   | 1:AA:1065:U:C2   | 2.78                     | 0.51              |
| 1:AA:1212:G:H3'  | 1:AA:1212:G:C8   | 2.45                     | 0.51              |
| 1:AA:1221:C:C4   | 1:AA:1229:G:N1   | 2.79                     | 0.51              |
| 1:AA:1338:G:O2'  | 19:AU:16:LYS:NZ  | 2.39                     | 0.51              |
| 1:AA:1364:G:C2   | 1:AA:1368:G:C5   | 2.99                     | 0.51              |
| 1:AA:1513:C:H2'  | 1:AA:1514:U:C5   | 2.46                     | 0.51              |
| 1:AA:1530:G:C5   | 1:AA:1531:C:N4   | 2.79                     | 0.51              |
| 1:AA:1559:G:H1   | 1:AA:1560:G:C4'  | 2.09                     | 0.51              |
| 1:AA:1613:G:C1'  | 28:Ad:3:ARG:CZ   | 2.89                     | 0.51              |
| 1:AA:1675:C:OP2  | 1:AA:1676:A:OP2  | 2.28                     | 0.51              |
| 1:AA:1750:G:O2'  | 1:AA:1751:C:C5'  | 2.59                     | 0.51              |
| 1:AA:1803:A:C8   | 1:AA:1804:C:C5   | 2.98                     | 0.51              |
| 1:AA:1819:A:N7   | 4:AD:179:SER:HB3 | 2.25                     | 0.51              |
| 1:AA:1833:U:O2   | 1:AA:1834:U:O2   | 2.28                     | 0.51              |
| 1:AA:1871:A:H2'  | 1:AA:1872:A:H8   | 1.75                     | 0.51              |
| 1:AA:1902:C:H4'  | 4:AD:242:ARG:O   | 2.10                     | 0.51              |
| 1:AA:1946:U:O2'  | 1:AA:1947:C:O5'  | 2.27                     | 0.51              |
| 1:AA:1954:G:C2'  | 1:AA:1956:U:C4   | 2.93                     | 0.51              |
| 1:AA:1995:U:H3'  | 1:AA:1995:U:C6   | 2.46                     | 0.51              |
| 1:AA:2014:A:C2   | 1:AA:2613:U:N3   | 2.79                     | 0.51              |
| 1:AA:2808:U:H2'  | 1:AA:2809:A:C5'  | 2.25                     | 0.51              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2886:G:N2     | 1:AA:2887:U:C1'   | 2.74                     | 0.51              |
| 2:AB:47:C:H6       | 2:AB:47:C:O5'     | 1.93                     | 0.51              |
| 2:AB:79:C:H2'      | 2:AB:80:U:C5'     | 2.41                     | 0.51              |
| 3:AC:7:TYR:CZ      | 3:AC:11:LEU:HD13  | 2.44                     | 0.51              |
| 3:AC:59:ARG:CG     | 3:AC:60:GLY:N     | 2.69                     | 0.51              |
| 3:AC:188:ASN:O     | 3:AC:189:ILE:C    | 2.53                     | 0.51              |
| 4:AD:107:ALA:N     | 4:AD:108:PRO:CD   | 2.71                     | 0.51              |
| 5:AE:57:LYS:O      | 5:AE:58:ARG:NH2   | 2.43                     | 0.51              |
| 5:AE:201:THR:O     | 5:AE:202:LYS:HB3  | 2.11                     | 0.51              |
| 6:AF:3:GLU:O       | 6:AF:3:GLU:CD     | 2.54                     | 0.51              |
| 6:AF:46:ARG:HE     | 6:AF:47:GLY:N     | 2.07                     | 0.51              |
| 6:AF:146:ALA:O     | 6:AF:148:LEU:HD22 | 2.10                     | 0.51              |
| 6:AF:161:GLU:OE2   | 6:AF:161:GLU:HA   | 2.11                     | 0.51              |
| 7:AG:110:ALA:HB2   | 7:AG:139:LEU:HD11 | 1.92                     | 0.51              |
| 8:AH:105:LEU:HB2   | 8:AH:113:VAL:CG1  | 2.33                     | 0.51              |
| 8:AH:107:VAL:HG11  | 8:AH:152:ARG:HD2  | 1.92                     | 0.51              |
| 9:AK:16:ILE:CD1    | 9:AK:53:VAL:O     | 2.57                     | 0.51              |
| 9:AK:106:MET:O     | 9:AK:108:PRO:HD3  | 2.10                     | 0.51              |
| 10:AL:64:ARG:HE    | 10:AL:67:LYS:C    | 2.19                     | 0.51              |
| 10:AL:117:LEU:HD23 | 10:AL:118:ALA:CA  | 2.40                     | 0.51              |
| 11:AM:130:PHE:HB3  | 11:AM:134:ALA:HB1 | 1.92                     | 0.51              |
| 12:AN:6:ARG:NH2    | 12:AN:8:LYS:C     | 2.64                     | 0.51              |
| 13:AO:61:HIS:HA    | 13:AO:64:ARG:CD   | 2.35                     | 0.51              |
| 14:AP:106:ARG:HH22 | 14:AP:110:LEU:CD1 | 2.16                     | 0.51              |
| 14:AP:106:ARG:HD3  | 14:AP:107:GLU:CD  | 2.35                     | 0.51              |
| 15:AQ:19:LEU:O     | 15:AQ:21:GLU:HG2  | 2.10                     | 0.51              |
| 15:AQ:31:SER:OG    | 15:AQ:91:ARG:NH1  | 2.43                     | 0.51              |
| 15:AQ:54:ARG:HE    | 15:AQ:100:TYR:HD1 | 1.59                     | 0.51              |
| 16:AR:88:ILE:HG12  | 17:AS:52:VAL:CG2  | 2.41                     | 0.51              |
| 17:AS:68:LYS:HZ3   | 17:AS:95:LEU:HD13 | 1.75                     | 0.51              |
| 17:AS:79:VAL:HB    | 17:AS:81:TYR:CD1  | 2.45                     | 0.51              |
| 18:AT:11:ARG:HB2   | 18:AT:98:LYS:CD   | 2.41                     | 0.51              |
| 19:AU:15:GLU:CA    | 19:AU:16:LYS:HE2  | 2.40                     | 0.51              |
| 19:AU:24:GLY:O     | 19:AU:83:VAL:CG2  | 2.58                     | 0.51              |
| 20:AV:32:PRO:HB2   | 20:AV:34:LYS:CE   | 2.41                     | 0.51              |
| 21:AW:71:VAL:HG11  | 21:AW:74:VAL:HG23 | 1.91                     | 0.51              |
| 21:AW:100:VAL:O    | 21:AW:124:ILE:CG2 | 2.56                     | 0.51              |
| 25:Aa:33:VAL:O     | 25:Aa:33:VAL:HG12 | 2.10                     | 0.51              |
| 25:Aa:58:ARG:C     | 25:Aa:62:ARG:NE   | 2.69                     | 0.51              |
| 27:Ac:16:CYS:HB2   | 27:Ac:49:HIS:C    | 2.35                     | 0.51              |
| 27:Ac:17:LYS:HZ3   | 27:Ac:50:ARG:CB   | 2.24                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 27:Ac:25:LYS:O    | 27:Ac:26:ASN:CG   | 2.54                     | 0.51              |
| 29:Ac:23:VAL:CG1  | 29:Ac:24:ALA:N    | 2.72                     | 0.51              |
| 32:Aj:4:VAL:HG22  | 33:Ag:333:UNK:CB  | 2.41                     | 0.51              |
| 32:Aj:40:ALA:CA   | 32:Aj:66:THR:OG1  | 2.52                     | 0.51              |
| 34:BA:25:C:H4'    | 34:BA:524:G:N3    | 2.25                     | 0.51              |
| 34:BA:219:C:O5'   | 34:BA:219:C:H6    | 1.94                     | 0.51              |
| 34:BA:247:G:C6    | 34:BA:248:C:C5    | 2.99                     | 0.51              |
| 34:BA:386:C:C4    | 34:BA:387:U:C5    | 2.98                     | 0.51              |
| 34:BA:532:A:H5''  | 36:BG:161:GLU:OE1 | 2.11                     | 0.51              |
| 34:BA:573:A:OP2   | 34:BA:574:A:OP2   | 2.28                     | 0.51              |
| 34:BA:687:A:N3    | 34:BA:704:A:C6    | 2.79                     | 0.51              |
| 34:BA:765:G:N2    | 34:BA:816:A:H2    | 2.06                     | 0.51              |
| 34:BA:785:G:C6    | 34:BA:798:G:C6    | 2.98                     | 0.51              |
| 34:BA:811:C:H5    | 34:BA:812:C:C2    | 2.28                     | 0.51              |
| 34:BA:828:A:H4'   | 34:BA:828:A:OP1   | 2.10                     | 0.51              |
| 34:BA:838:G:N1    | 34:BA:849:C:N3    | 2.58                     | 0.51              |
| 34:BA:1004:A:H3'  | 34:BA:1025:U:C2   | 2.42                     | 0.51              |
| 34:BA:1049:U:O4   | 47:BR:3:ARG:HB2   | 2.11                     | 0.51              |
| 34:BA:1107:C:H2'  | 34:BA:1108:G:H5'  | 1.93                     | 0.51              |
| 34:BA:1226:C:H5   | 46:BQ:104:ARG:HB2 | 1.66                     | 0.51              |
| 34:BA:1262:C:C2   | 34:BA:1263:C:C5   | 2.98                     | 0.51              |
| 34:BA:1278:U:H5'  | 34:BA:1279:A:C5'  | 2.40                     | 0.51              |
| 34:BA:1406:U:O4'  | 34:BA:1518:A:H4'  | 2.11                     | 0.51              |
| 34:BA:1494:G:H1'  | 34:BA:1495:U:C5   | 2.45                     | 0.51              |
| 35:BF:42:ILE:HG23 | 35:BF:43:ASP:N    | 2.24                     | 0.51              |
| 35:BF:45:GLN:O    | 35:BF:48:MET:HB2  | 2.11                     | 0.51              |
| 35:BF:166:ASP:O   | 35:BF:169:LYS:HD3 | 2.09                     | 0.51              |
| 35:BF:189:ASP:CB  | 35:BF:205:ASP:HB3 | 2.40                     | 0.51              |
| 36:BG:136:GLN:HA  | 36:BG:139:GLN:HB2 | 1.91                     | 0.51              |
| 36:BG:157:ILE:CG1 | 36:BG:164:ARG:HG2 | 2.40                     | 0.51              |
| 36:BG:179:ARG:O   | 36:BG:206:GLU:HG3 | 2.11                     | 0.51              |
| 38:BI:20:GLN:NE2  | 38:BI:21:ALA:N    | 2.59                     | 0.51              |
| 38:BI:73:ASN:HD22 | 38:BI:73:ASN:C    | 2.16                     | 0.51              |
| 38:BI:129:ILE:O   | 38:BI:130:ASN:C   | 2.54                     | 0.51              |
| 38:BI:140:ARG:O   | 38:BI:141:GLN:C   | 2.52                     | 0.51              |
| 40:BK:71:PRO:HD2  | 40:BK:100:ALA:HB2 | 1.92                     | 0.51              |
| 40:BK:140:ASP:O   | 40:BK:144:MET:HB2 | 2.10                     | 0.51              |
| 41:BL:6:ILE:HG21  | 41:BL:85:ARG:NH2  | 2.26                     | 0.51              |
| 41:BL:14:ARG:HB3  | 41:BL:83:ILE:HG21 | 1.92                     | 0.51              |
| 44:BO:58:PRO:HB2  | 44:BO:93:GLN:HG3  | 1.91                     | 0.51              |
| 44:BO:67:ASP:N    | 44:BO:70:LYS:HZ2  | 2.06                     | 0.51              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 46:BQ:73:GLU:O    | 46:BQ:77:ASN:CB  | 2.58                     | 0.51              |
| 47:BR:40:CYS:O    | 47:BR:41:ARG:C   | 2.54                     | 0.51              |
| 48:BS:71:GLN:CG   | 48:BS:75:PRO:HB3 | 2.23                     | 0.51              |
| 49:BT:63:GLY:O    | 49:BT:64:ALA:C   | 2.52                     | 0.51              |
| 51:BV:49:LYS:HE3  | 51:BV:49:LYS:N   | 2.22                     | 0.51              |
| 52:BW:64:GLU:CG   | 52:BW:65:ASN:N   | 2.73                     | 0.51              |
| 57:BZ:24:LYS:CG   | 57:BZ:25:LEU:N   | 2.73                     | 0.51              |
| 57:BZ:141:VAL:CG2 | 57:BZ:164:TYR:CZ | 2.85                     | 0.51              |
| 1:AA:52:A:N7      | 1:AA:117:G:N2    | 2.58                     | 0.51              |
| 1:AA:59:U:C3'     | 1:AA:60:G:H5''   | 2.40                     | 0.51              |
| 1:AA:72:U:H5      | 1:AA:112:U:C2'   | 2.23                     | 0.51              |
| 1:AA:90:U:OP1     | 1:AA:90:U:C6     | 2.63                     | 0.51              |
| 1:AA:270(N):G:H3' | 1:AA:270(O):U:C6 | 2.45                     | 0.51              |
| 1:AA:471:A:N7     | 1:AA:472:A:N7    | 2.59                     | 0.51              |
| 1:AA:507:A:O4'    | 1:AA:509:C:C2    | 2.63                     | 0.51              |
| 1:AA:630:G:OP1    | 29:Ae:46:ARG:NH1 | 2.44                     | 0.51              |
| 1:AA:896:A:N1     | 1:AA:897:C:C4    | 2.78                     | 0.51              |
| 1:AA:993:G:C5     | 1:AA:994:C:N4    | 2.79                     | 0.51              |
| 1:AA:1022:G:O6    | 9:AK:65:LYS:NZ   | 2.43                     | 0.51              |
| 1:AA:1131:G:C2    | 9:AK:74:ARG:HD2  | 2.46                     | 0.51              |
| 1:AA:1223:C:O2'   | 1:AA:1225:C:H5   | 1.93                     | 0.51              |
| 1:AA:1227:A:H2'   | 1:AA:1228:G:C5'  | 2.41                     | 0.51              |
| 1:AA:1307:A:H4'   | 1:AA:1379:A:H62  | 1.75                     | 0.51              |
| 1:AA:1467:C:C4    | 1:AA:1468:C:N4   | 2.79                     | 0.51              |
| 1:AA:1503:U:H2'   | 1:AA:1504:C:H6   | 1.70                     | 0.51              |
| 1:AA:1706:U:N3    | 1:AA:1757:U:H5'' | 2.21                     | 0.51              |
| 1:AA:1749:A:H2'   | 1:AA:1750:G:O4'  | 2.11                     | 0.51              |
| 1:AA:1854:A:H1'   | 1:AA:2087:G:N2   | 2.25                     | 0.51              |
| 1:AA:1890:A:N3    | 1:AA:1891:G:H1'  | 2.26                     | 0.51              |
| 1:AA:1924:C:C4    | 1:AA:1925:C:C5   | 2.98                     | 0.51              |
| 1:AA:1996:C:C5    | 1:AA:1996:C:OP1  | 2.64                     | 0.51              |
| 1:AA:2205:C:C2'   | 1:AA:2206:C:H5'  | 2.40                     | 0.51              |
| 1:AA:2255:G:N2    | 1:AA:2256:G:H1'  | 2.25                     | 0.51              |
| 1:AA:2298:A:H62   | 1:AA:2318:G:H21  | 1.58                     | 0.51              |
| 1:AA:2323:G:N2    | 1:AA:2324:C:C2   | 2.79                     | 0.51              |
| 1:AA:2346:A:H4'   | 1:AA:2383:G:C5'  | 2.35                     | 0.51              |
| 1:AA:2413:G:H2'   | 1:AA:2414:G:O4'  | 2.09                     | 0.51              |
| 1:AA:2415:G:C6    | 1:AA:2416:C:C4   | 2.99                     | 0.51              |
| 1:AA:2468:G:O2'   | 1:AA:2469:A:H8   | 1.93                     | 0.51              |
| 1:AA:2494:G:O2'   | 12:AN:81:VAL:O   | 2.24                     | 0.51              |
| 1:AA:2588:G:O6    | 1:AA:2589:A:N6   | 2.42                     | 0.51              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2748:A:N1    | 1:AA:2757:A:N6     | 2.59                     | 0.51              |
| 1:AA:2779:U:C6    | 1:AA:2779:U:H3'    | 2.46                     | 0.51              |
| 1:AA:2797:U:H6    | 1:AA:2797:U:H3'    | 1.75                     | 0.51              |
| 2:AB:32:C:H2'     | 2:AB:33:G:H8       | 1.71                     | 0.51              |
| 2:AB:57:A:C8      | 2:AB:57:A:C3'      | 2.94                     | 0.51              |
| 2:AB:58:A:N6      | 2:AB:59:A:C6       | 2.79                     | 0.51              |
| 2:AB:82:G:HO2'    | 2:AB:83:G:P        | 2.34                     | 0.51              |
| 4:AD:72:LYS:O     | 4:AD:73:VAL:C      | 2.53                     | 0.51              |
| 4:AD:228:PRO:O    | 4:AD:229:VAL:C     | 2.53                     | 0.51              |
| 4:AD:250:TRP:CE3  | 4:AD:250:TRP:CA    | 2.92                     | 0.51              |
| 5:AE:4:ILE:HG12   | 5:AE:30:PRO:HB3    | 1.91                     | 0.51              |
| 5:AE:52:LEU:CA    | 5:AE:74:PRO:HA     | 2.29                     | 0.51              |
| 5:AE:91:VAL:HG11  | 5:AE:93:VAL:CG2    | 2.37                     | 0.51              |
| 5:AE:120:TRP:CG   | 5:AE:121:ASN:N     | 2.77                     | 0.51              |
| 6:AF:177:ALA:N    | 6:AF:178:PRO:CD    | 2.74                     | 0.51              |
| 7:AG:44:GLY:CA    | 7:AG:72:ARG:HG2    | 2.39                     | 0.51              |
| 7:AG:47:LYS:CD    | 7:AG:49:ASP:OD2    | 2.53                     | 0.51              |
| 7:AG:135:LEU:HD11 | 7:AG:137:GLU:O     | 2.11                     | 0.51              |
| 9:AK:8:GLN:HA     | 9:AK:8:GLN:OE1     | 2.10                     | 0.51              |
| 9:AK:88:GLU:H     | 9:AK:88:GLU:CD     | 2.17                     | 0.51              |
| 9:AK:99:LEU:O     | 9:AK:102:ALA:N     | 2.43                     | 0.51              |
| 10:AL:70:LYS:HD3  | 10:AL:107:ARG:HH12 | 1.76                     | 0.51              |
| 11:AM:6:LEU:C     | 11:AM:7:ARG:CG     | 2.83                     | 0.51              |
| 11:AM:92:GLU:OE2  | 11:AM:92:GLU:HA    | 2.09                     | 0.51              |
| 12:AN:9:TYR:N     | 12:AN:9:TYR:CD2    | 2.71                     | 0.51              |
| 12:AN:42:ILE:CG2  | 12:AN:42:ILE:O     | 2.58                     | 0.51              |
| 13:AO:83:ILE:O    | 13:AO:84:ALA:C     | 2.53                     | 0.51              |
| 14:AP:26:LEU:CD1  | 14:AP:37:ALA:HB1   | 2.40                     | 0.51              |
| 15:AQ:5:ALA:O     | 15:AQ:8:LYS:HB2    | 2.11                     | 0.51              |
| 15:AQ:7:ILE:CG1   | 15:AQ:8:LYS:N      | 2.68                     | 0.51              |
| 15:AQ:34:VAL:O    | 15:AQ:44:ASP:O     | 2.29                     | 0.51              |
| 17:AS:34:GLU:O    | 17:AS:35:LEU:CD1   | 2.58                     | 0.51              |
| 21:AW:1:MET:HE1   | 21:AW:61:LEU:HG    | 1.92                     | 0.51              |
| 21:AW:39:VAL:O    | 21:AW:39:VAL:HG12  | 2.11                     | 0.51              |
| 21:AW:99:TYR:CZ   | 21:AW:124:ILE:HB   | 2.46                     | 0.51              |
| 21:AW:176:PRO:HB2 | 21:AW:179:ASP:H    | 1.75                     | 0.51              |
| 23:AY:1:MET:SD    | 23:AY:3:LYS:HB2    | 2.51                     | 0.51              |
| 23:AY:27:LEU:HG   | 23:AY:48:LEU:HB3   | 1.92                     | 0.51              |
| 23:AY:52:ILE:HA   | 23:AY:55:LEU:HD13  | 1.93                     | 0.51              |
| 26:Ab:6:VAL:O     | 26:Ab:7:PRO:O      | 2.28                     | 0.51              |
| 29:Ae:29:LYS:HB3  | 29:Ae:34:TRP:HH2   | 1.70                     | 0.51              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 32:AJ:105:LEU:HD22 | 32:AJ:123:ALA:HB3  | 1.92                     | 0.51              |
| 34:BA:29:G:H4'     | 34:BA:295:C:O3'    | 2.10                     | 0.51              |
| 34:BA:267:C:H2'    | 34:BA:268:C:C6     | 2.46                     | 0.51              |
| 34:BA:308:C:O2     | 34:BA:309:G:C8     | 2.64                     | 0.51              |
| 34:BA:491:G:O2'    | 34:BA:492:G:H5'    | 2.09                     | 0.51              |
| 34:BA:494:U:C2'    | 34:BA:495:A:H5'    | 2.41                     | 0.51              |
| 34:BA:754:C:H1'    | 48:BS:69:TYR:CB    | 2.41                     | 0.51              |
| 34:BA:817:C:N1     | 34:BA:819:A:H5'    | 2.25                     | 0.51              |
| 34:BA:834:C:O2'    | 34:BA:835:U:O4'    | 2.28                     | 0.51              |
| 34:BA:834:C:C4     | 34:BA:853:G:N1     | 2.79                     | 0.51              |
| 34:BA:924:C:O2'    | 34:BA:925:G:H5'    | 2.10                     | 0.51              |
| 34:BA:931:C:H2'    | 34:BA:932:C:H5     | 1.72                     | 0.51              |
| 34:BA:990:C:H2'    | 34:BA:991:U:N1     | 2.26                     | 0.51              |
| 34:BA:1039:C:O2'   | 34:BA:1040:U:H5'   | 2.11                     | 0.51              |
| 34:BA:1064:G:N3    | 34:BA:1066:C:C4    | 2.78                     | 0.51              |
| 34:BA:1104:G:H4'   | 35:BF:111:ARG:CZ   | 2.40                     | 0.51              |
| 34:BA:1123:A:O4'   | 34:BA:1123:A:OP2   | 2.27                     | 0.51              |
| 34:BA:1205:U:H1'   | 36:BG:195:VAL:HG22 | 1.93                     | 0.51              |
| 34:BA:1419:G:O6    | 34:BA:1482:G:N1    | 2.44                     | 0.51              |
| 36:BG:12:LEU:CD2   | 47:BR:58:LYS:H     | 2.20                     | 0.51              |
| 36:BG:36:ASP:OD2   | 36:BG:36:ASP:C     | 2.54                     | 0.51              |
| 36:BG:39:ILE:HG21  | 36:BG:57:ILE:CD1   | 2.40                     | 0.51              |
| 36:BG:179:ARG:HD2  | 36:BG:206:GLU:OE1  | 2.10                     | 0.51              |
| 37:BH:30:LYS:HG2   | 37:BH:35:ARG:CD    | 2.40                     | 0.51              |
| 37:BH:30:LYS:H     | 37:BH:34:GLU:HB3   | 1.71                     | 0.51              |
| 37:BH:123:HIS:CB   | 37:BH:125:HIS:HE1  | 2.24                     | 0.51              |
| 38:BI:80:ILE:HD12  | 38:BI:80:ILE:N     | 2.24                     | 0.51              |
| 38:BI:95:ALA:O     | 38:BI:96:PRO:O     | 2.27                     | 0.51              |
| 38:BI:133:TYR:O    | 38:BI:136:MET:HB2  | 2.11                     | 0.51              |
| 39:BJ:14:LEU:HD22  | 39:BJ:18:GLN:CD    | 2.35                     | 0.51              |
| 39:BJ:98:LEU:CG    | 51:BV:28:GLU:HG3   | 2.41                     | 0.51              |
| 41:BL:97:VAL:HG12  | 41:BL:99:GLU:OE2   | 2.10                     | 0.51              |
| 42:BM:11:LYS:CB    | 42:BM:108:VAL:HG12 | 2.41                     | 0.51              |
| 42:BM:127:LYS:HD2  | 56:BE:30:G:O2'     | 2.11                     | 0.51              |
| 43:BN:97:GLU:C     | 43:BN:98:ILE:HD12  | 2.36                     | 0.51              |
| 44:BO:12:ARG:HH11  | 44:BO:40:ILE:HG23  | 1.75                     | 0.51              |
| 44:BO:41:THR:HB    | 44:BO:71:LYS:HD3   | 1.92                     | 0.51              |
| 44:BO:102:GLY:HA2  | 44:BO:105:VAL:HG23 | 1.90                     | 0.51              |
| 45:BP:12:ARG:HB3   | 45:BP:12:ARG:HH11  | 1.74                     | 0.51              |
| 45:BP:84:LEU:O     | 45:BP:100:ILE:HG22 | 2.10                     | 0.51              |
| 48:BS:21:ASP:OD2   | 48:BS:24:SER:CB    | 2.59                     | 0.51              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 50:BU:10:VAL:HB    | 50:BU:55:ASP:N     | 2.26                     | 0.51              |
| 50:BU:29:HIS:CG    | 50:BU:30:PRO:HD2   | 2.45                     | 0.51              |
| 55:BC:25:C:O2'     | 55:BC:26:A:H5'     | 2.10                     | 0.51              |
| 55:BC:35:A:C2'     | 55:BC:36:A:C8      | 2.86                     | 0.51              |
| 56:BE:41:C:C2'     | 56:BE:42:C:H5''    | 2.40                     | 0.51              |
| 57:BZ:6:ARG:CZ     | 57:BZ:196:ALA:N    | 2.74                     | 0.51              |
| 57:BZ:11:ILE:CG1   | 57:BZ:112:VAL:HG12 | 2.41                     | 0.51              |
| 57:BZ:74:ASP:C     | 57:BZ:75:THR:OG1   | 2.52                     | 0.51              |
| 57:BZ:131:ASP:CG   | 57:BZ:166:SER:OG   | 2.53                     | 0.51              |
| 57:BZ:253:LYS:CG   | 57:BZ:271:GLY:HA2  | 2.41                     | 0.51              |
| 57:BZ:400:TYR:H    | 57:BZ:470:SER:H    | 1.58                     | 0.51              |
| 57:BZ:422:ARG:HH11 | 57:BZ:480:VAL:HG22 | 0.71                     | 0.51              |
| 57:BZ:574:ASP:CG   | 57:BZ:575:ASP:H    | 2.19                     | 0.51              |
| 1:AA:14:A:H2       | 1:AA:2625:G:HO2'   | 1.57                     | 0.51              |
| 1:AA:24:G:O2'      | 18:AT:77:ASP:OD1   | 2.27                     | 0.51              |
| 1:AA:84:A:N6       | 1:AA:99:U:O2'      | 2.44                     | 0.51              |
| 1:AA:116:C:H4'     | 1:AA:127:A:C4'     | 2.41                     | 0.51              |
| 1:AA:183:C:H1'     | 1:AA:433:C:C1'     | 2.27                     | 0.51              |
| 1:AA:230:U:H2'     | 1:AA:231:C:O4'     | 2.11                     | 0.51              |
| 1:AA:271:G:C2      | 1:AA:272:G:C8      | 2.99                     | 0.51              |
| 1:AA:279:C:N3      | 1:AA:360:G:O6      | 2.44                     | 0.51              |
| 1:AA:302:C:H2'     | 1:AA:303:U:C6      | 2.45                     | 0.51              |
| 1:AA:324:A:C2      | 1:AA:325:G:C1'     | 2.93                     | 0.51              |
| 1:AA:450:G:H3'     | 1:AA:451:C:H5'     | 1.93                     | 0.51              |
| 1:AA:483:A:C2      | 1:AA:484:C:O4'     | 2.64                     | 0.51              |
| 1:AA:504:U:H6      | 1:AA:504:U:OP2     | 1.94                     | 0.51              |
| 1:AA:510:C:C2      | 1:AA:511:U:C6      | 2.98                     | 0.51              |
| 1:AA:533:G:C5      | 1:AA:534:U:N3      | 2.79                     | 0.51              |
| 1:AA:569:U:H1'     | 1:AA:947:G:O4'     | 2.10                     | 0.51              |
| 1:AA:655:A:O3'     | 1:AA:656:G:O4'     | 2.28                     | 0.51              |
| 1:AA:715:G:H2'     | 1:AA:716:A:O5'     | 2.11                     | 0.51              |
| 1:AA:730:C:C3'     | 1:AA:731:C:H5'     | 2.40                     | 0.51              |
| 1:AA:781:A:N1      | 1:AA:1776:G:O2'    | 2.39                     | 0.51              |
| 1:AA:848:G:N2      | 1:AA:931:G:N7      | 2.57                     | 0.51              |
| 1:AA:1024:G:C6     | 1:AA:1134:G:H1'    | 2.46                     | 0.51              |
| 1:AA:1099:G:C2     | 1:AA:1100:C:C6     | 2.99                     | 0.51              |
| 1:AA:1128:A:C2     | 1:AA:2490:G:OP1    | 2.64                     | 0.51              |
| 1:AA:1176:G:C5'    | 1:AA:1177:A:C8     | 2.94                     | 0.51              |
| 1:AA:1226:G:C8     | 1:AA:1226:G:C3'    | 2.93                     | 0.51              |
| 1:AA:1263:U:H4'    | 26:Ab:10:LYS:HD3   | 1.92                     | 0.51              |
| 1:AA:1476:C:C5     | 1:AA:1477:A:C6     | 2.98                     | 0.51              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:1528:A:H3'  | 1:AA:1529:A:O4'   | 2.11                     | 0.51              |
| 1:AA:1607:C:O2'  | 1:AA:1608:A:OP2   | 2.25                     | 0.51              |
| 1:AA:1838:C:C2'  | 1:AA:1898:U:O4    | 2.58                     | 0.51              |
| 1:AA:1844:C:C2   | 1:AA:1845:G:C8    | 2.98                     | 0.51              |
| 1:AA:1920:C:H6   | 58:AA:3001:NMY:O4 | 1.94                     | 0.51              |
| 1:AA:2046:G:C4   | 1:AA:2047:U:C5    | 2.98                     | 0.51              |
| 1:AA:2052:G:O2'  | 1:AA:2053:G:H5'   | 2.11                     | 0.51              |
| 1:AA:2081:C:C2   | 1:AA:2082:A:H8    | 2.29                     | 0.51              |
| 1:AA:2208:U:H1'  | 1:AA:2217:G:N2    | 2.25                     | 0.51              |
| 1:AA:2210:G:O6   | 4:AD:70:TRP:CZ3   | 2.64                     | 0.51              |
| 1:AA:2260:C:H2'  | 1:AA:2261:C:C6    | 2.46                     | 0.51              |
| 1:AA:2305:A:C1'  | 7:AG:154:GLY:C    | 2.84                     | 0.51              |
| 1:AA:2365:G:H4'  | 22:AX:60:PHE:CE2  | 2.45                     | 0.51              |
| 1:AA:2376:A:OP1  | 1:AA:2376:A:C8    | 2.61                     | 0.51              |
| 1:AA:2400:G:C6   | 1:AA:2401:U:N3    | 2.79                     | 0.51              |
| 1:AA:2409:G:C2   | 1:AA:2410:G:H1'   | 2.46                     | 0.51              |
| 1:AA:2431:U:O2'  | 1:AA:2432:A:H8    | 1.92                     | 0.51              |
| 1:AA:2497:A:H1'  | 1:AA:2498:C:C4    | 2.44                     | 0.51              |
| 1:AA:2512:C:H2'  | 1:AA:2513:G:C5'   | 2.40                     | 0.51              |
| 1:AA:2626:C:C2   | 1:AA:2627:G:C8    | 2.98                     | 0.51              |
| 1:AA:2637:U:OP1  | 5:AE:81:ILE:HD11  | 2.10                     | 0.51              |
| 1:AA:2711:A:N6   | 1:AA:2714:G:C6    | 2.79                     | 0.51              |
| 1:AA:2756:U:C2   | 1:AA:2758:A:C6    | 2.98                     | 0.51              |
| 1:AA:2805:G:C3'  | 1:AA:2807:G:C5'   | 2.86                     | 0.51              |
| 1:AA:2837:G:N2   | 1:AA:2882:A:C4    | 2.79                     | 0.51              |
| 1:AA:2867:G:H5'  | 1:AA:2868:A:OP1   | 2.11                     | 0.51              |
| 1:AA:2876:G:OP1  | 15:AQ:2:ASN:HB2   | 2.11                     | 0.51              |
| 1:AA:2887:U:C2   | 1:AA:2888:C:C5    | 2.99                     | 0.51              |
| 2:AB:14:U:C6     | 2:AB:14:U:C3'     | 2.93                     | 0.51              |
| 2:AB:24:G:C8     | 2:AB:24:G:O5'     | 2.62                     | 0.51              |
| 2:AB:75:G:H21    | 21:AW:27:VAL:HG21 | 1.76                     | 0.51              |
| 3:AC:62:VAL:HG11 | 3:AC:192:PHE:CA   | 2.29                     | 0.51              |
| 3:AC:127:LEU:HA  | 3:AC:130:ILE:HD13 | 1.93                     | 0.51              |
| 3:AC:131:LEU:HB2 | 3:AC:137:LEU:HB2  | 1.92                     | 0.51              |
| 4:AD:56:GLY:N    | 4:AD:217:ARG:O    | 2.44                     | 0.51              |
| 4:AD:63:ARG:HG2  | 4:AD:65:ILE:CG1   | 2.40                     | 0.51              |
| 4:AD:75:ILE:HD13 | 4:AD:99:ASP:CB    | 2.39                     | 0.51              |
| 4:AD:136:ILE:CG2 | 4:AD:165:ILE:HG21 | 2.41                     | 0.51              |
| 4:AD:142:VAL:CG1 | 4:AD:193:VAL:HA   | 2.21                     | 0.51              |
| 4:AD:168:ARG:CD  | 4:AD:173:VAL:HG22 | 2.29                     | 0.51              |
| 4:AD:176:ARG:CG  | 4:AD:176:ARG:NH1  | 2.67                     | 0.51              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 4:AD:205:VAL:O     | 4:AD:205:VAL:HG13  | 2.11                     | 0.51              |
| 5:AE:47:VAL:HA     | 5:AE:48:GLN:HE22   | 1.75                     | 0.51              |
| 5:AE:109:LYS:H     | 5:AE:191:PRO:HD3   | 1.74                     | 0.51              |
| 5:AE:136:ARG:C     | 5:AE:137:HIS:CG    | 2.86                     | 0.51              |
| 5:AE:148:GLY:O     | 5:AE:149:ARG:HG3   | 2.11                     | 0.51              |
| 5:AE:161:GLY:O     | 5:AE:163:GLU:OE1   | 2.29                     | 0.51              |
| 6:AF:8:GLN:HB3     | 6:AF:18:ARG:HB2    | 1.93                     | 0.51              |
| 6:AF:34:TRP:CE3    | 11:AM:8:PRO:HB2    | 2.46                     | 0.51              |
| 6:AF:185:ASP:HA    | 6:AF:188:ARG:CG    | 2.41                     | 0.51              |
| 7:AG:19:LEU:O      | 7:AG:20:ILE:C      | 2.54                     | 0.51              |
| 7:AG:62:LEU:HD23   | 7:AG:143:GLU:CG    | 2.40                     | 0.51              |
| 8:AH:29:PRO:N      | 8:AH:79:VAL:O      | 2.43                     | 0.51              |
| 9:AK:66:LYS:N      | 9:AK:69:GLN:OE1    | 2.44                     | 0.51              |
| 10:AL:11:ALA:HB1   | 10:AL:97:ARG:NH1   | 2.22                     | 0.51              |
| 10:AL:12:ASP:N     | 10:AL:14:THR:HG22  | 2.24                     | 0.51              |
| 10:AL:112:MET:O    | 10:AL:113:LYS:C    | 2.50                     | 0.51              |
| 11:AM:17:LYS:HB2   | 11:AM:17:LYS:HZ2   | 1.76                     | 0.51              |
| 11:AM:96:THR:OG1   | 11:AM:112:LEU:HD11 | 2.11                     | 0.51              |
| 12:AN:37:LEU:HD23  | 12:AN:100:GLY:CA   | 2.40                     | 0.51              |
| 13:AO:8:ARG:NH2    | 13:AO:17:ARG:CD    | 2.74                     | 0.51              |
| 13:AO:53:HIS:C     | 13:AO:53:HIS:ND1   | 2.68                     | 0.51              |
| 14:AP:78:LEU:HD22  | 14:AP:78:LEU:O     | 2.10                     | 0.51              |
| 14:AP:106:ARG:NH1  | 14:AP:106:ARG:O    | 2.44                     | 0.51              |
| 16:AR:108:GLU:O    | 16:AR:110:VAL:N    | 2.43                     | 0.51              |
| 17:AS:66:ARG:HE    | 17:AS:95:LEU:CB    | 2.12                     | 0.51              |
| 17:AS:79:VAL:HG12  | 17:AS:81:TYR:CD1   | 2.46                     | 0.51              |
| 19:AU:57:LEU:HD23  | 19:AU:57:LEU:C     | 2.35                     | 0.51              |
| 20:AV:46:LYS:NZ    | 20:AV:49:VAL:CG2   | 2.74                     | 0.51              |
| 21:AW:19:ARG:HE    | 21:AW:24:LEU:CD2   | 2.22                     | 0.51              |
| 22:AX:44:ARG:HG3   | 22:AX:77:ARG:HG3   | 1.92                     | 0.51              |
| 24:AZ:38:GLU:HG2   | 24:AZ:38:GLU:O     | 2.11                     | 0.51              |
| 25:Aa:21:VAL:O     | 25:Aa:22:ILE:HB    | 2.09                     | 0.51              |
| 26:Ab:11:THR:O     | 26:Ab:11:THR:OG1   | 2.27                     | 0.51              |
| 26:Ab:51:TYR:CE1   | 26:Ab:55:ARG:HD3   | 2.45                     | 0.51              |
| 30:Af:11:CYS:N     | 30:Af:14:CYS:SG    | 2.83                     | 0.51              |
| 32:AJ:27:LEU:O     | 32:AJ:29:GLN:N     | 2.38                     | 0.51              |
| 32:AJ:29:GLN:CG    | 57:BZ:431:PRO:HB2  | 2.38                     | 0.51              |
| 33:Ag:313:UNK:HA   | 33:Ag:316:UNK:CB   | 2.40                     | 0.51              |
| 34:BA:45:U:H2'     | 34:BA:46:G:C8      | 2.45                     | 0.51              |
| 34:BA:49:U:C4      | 34:BA:364:A:N7     | 2.79                     | 0.51              |
| 34:BA:191(D):U:O2' | 34:BA:191(E):G:H5' | 2.11                     | 0.51              |

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| Atom-1              | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 34:BA:280:C:C5'     | 34:BA:281:G:OP2    | 2.57                     | 0.51              |
| 34:BA:295:C:C2'     | 34:BA:296:U:O5'    | 2.59                     | 0.51              |
| 34:BA:317:G:C2'     | 34:BA:318:G:H5'    | 2.39                     | 0.51              |
| 34:BA:540:G:N2      | 37:BH:42:GLN:NE2   | 2.56                     | 0.51              |
| 34:BA:553:A:C2'     | 34:BA:554:C:O4'    | 2.59                     | 0.51              |
| 34:BA:595:G:H8      | 34:BA:641:U:O4     | 1.93                     | 0.51              |
| 34:BA:657:G:H4'     | 48:BS:28:GLN:NE2   | 2.25                     | 0.51              |
| 34:BA:775:G:C4      | 34:BA:776:G:N7     | 2.78                     | 0.51              |
| 34:BA:782:A:N1      | 34:BA:801:U:C2     | 2.79                     | 0.51              |
| 34:BA:808:C:C4      | 34:BA:809:G:N7     | 2.79                     | 0.51              |
| 34:BA:831:U:C2      | 34:BA:832:C:C5     | 2.99                     | 0.51              |
| 34:BA:978:A:C6      | 34:BA:1318:A:N6    | 2.79                     | 0.51              |
| 34:BA:1026:G:C8     | 34:BA:1027:C:H6    | 2.28                     | 0.51              |
| 34:BA:1031:G:O2'    | 34:BA:1032:A:H5'   | 2.10                     | 0.51              |
| 34:BA:1048:G:H1'    | 34:BA:1215:G:H5'   | 1.92                     | 0.51              |
| 34:BA:1148:U:O2     | 34:BA:1148:U:C2'   | 2.58                     | 0.51              |
| 34:BA:1153:C:H2'    | 34:BA:1154:G:H8    | 1.65                     | 0.51              |
| 34:BA:1163:C:H2'    | 34:BA:1164:G:H5'   | 1.92                     | 0.51              |
| 34:BA:1202:G:C2'    | 34:BA:1203:C:O5'   | 2.58                     | 0.51              |
| 34:BA:1251:A:H2'    | 34:BA:1252:A:C5    | 2.45                     | 0.51              |
| 34:BA:1370:G:H5''   | 42:BM:12:GLU:HG3   | 1.92                     | 0.51              |
| 34:BA:1435:G:N2     | 34:BA:1436:U:C4    | 2.79                     | 0.51              |
| 34:BA:1442:G:N3     | 34:BA:1442:G:C2'   | 2.73                     | 0.51              |
| 34:BA:1461:G:HO2'   | 34:BA:1462:G:H5'   | 1.76                     | 0.51              |
| 58:BA:1601:NMY:H232 | 58:BA:1601:NMY:O18 | 2.10                     | 0.51              |
| 35:BF:217:ARG:O     | 35:BF:220:ASP:CB   | 2.52                     | 0.51              |
| 36:BG:12:LEU:CD1    | 47:BR:57:ARG:HG3   | 2.41                     | 0.51              |
| 36:BG:22:TRP:CZ2    | 36:BG:33:LEU:HG    | 2.45                     | 0.51              |
| 37:BH:76:ARG:HG3    | 37:BH:207:TYR:CE2  | 2.46                     | 0.51              |
| 37:BH:191:ARG:HD3   | 37:BH:191:ARG:C    | 2.35                     | 0.51              |
| 39:BJ:78:GLU:O      | 39:BJ:81:ILE:CB    | 2.57                     | 0.51              |
| 41:BL:63:LEU:HD23   | 41:BL:63:LEU:C     | 2.36                     | 0.51              |
| 42:BM:97:LYS:NZ     | 42:BM:102:LEU:HB3  | 2.25                     | 0.51              |
| 43:BN:48:THR:CA     | 43:BN:62:HIS:HB3   | 2.40                     | 0.51              |
| 47:BR:16:PHE:C      | 47:BR:18:VAL:N     | 2.67                     | 0.51              |
| 47:BR:51:GLY:C      | 47:BR:53:LEU:N     | 2.62                     | 0.51              |
| 49:BT:14:ASN:HA     | 49:BT:42:ARG:NH2   | 2.25                     | 0.51              |
| 49:BT:26:ARG:HD2    | 49:BT:31:LYS:H     | 1.73                     | 0.51              |
| 51:BV:22:VAL:HG22   | 51:BV:55:ARG:NH1   | 2.25                     | 0.51              |
| 54:BY:17:THR:O      | 54:BY:22:ARG:NH2   | 2.43                     | 0.51              |
| 56:BE:18:G:H22      | 56:BE:57:G:H3'     | 1.75                     | 0.51              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 56:BE:68:C:H2'    | 56:BE:69:G:H5''    | 1.92                     | 0.51              |
| 57:BZ:50:LYS:HZ3  | 57:BZ:368:VAL:HG22 | 1.75                     | 0.51              |
| 57:BZ:110:ARG:NH2 | 57:BZ:117:PHE:HE2  | 2.08                     | 0.51              |
| 57:BZ:310:PHE:C   | 57:BZ:356:PHE:O    | 2.54                     | 0.51              |
| 57:BZ:338:GLU:C   | 57:BZ:340:VAL:H    | 2.17                     | 0.51              |
| 1:AA:30:G:C5      | 1:AA:31:C:C5       | 2.98                     | 0.51              |
| 1:AA:47:C:O5'     | 1:AA:47:C:C6       | 2.55                     | 0.51              |
| 1:AA:71:A:C2      | 1:AA:73:A:C6       | 2.99                     | 0.51              |
| 1:AA:134:C:O5'    | 1:AA:134:C:H6      | 1.94                     | 0.51              |
| 1:AA:188:G:H2'    | 1:AA:189:G:O4'     | 2.11                     | 0.51              |
| 1:AA:215:G:O4'    | 1:AA:216:A:H4'     | 2.11                     | 0.51              |
| 1:AA:270:A:OP2    | 1:AA:270(X):G:N2   | 2.37                     | 0.51              |
| 1:AA:364:C:H2'    | 1:AA:365:C:H6      | 1.62                     | 0.51              |
| 1:AA:383:U:O2     | 1:AA:385:C:N4      | 2.43                     | 0.51              |
| 1:AA:393:C:H2'    | 1:AA:394:A:O4'     | 2.11                     | 0.51              |
| 1:AA:415:A:N1     | 1:AA:416:C:O2      | 2.43                     | 0.51              |
| 1:AA:429:A:C2'    | 1:AA:430:G:C8      | 2.89                     | 0.51              |
| 1:AA:447:A:O2'    | 1:AA:449:A:N6      | 2.43                     | 0.51              |
| 1:AA:449:A:O2'    | 6:AF:52:LYS:NZ     | 2.37                     | 0.51              |
| 1:AA:452:G:H5''   | 1:AA:453:C:OP2     | 2.10                     | 0.51              |
| 1:AA:547:A:C5     | 1:AA:548:A:C5      | 2.99                     | 0.51              |
| 1:AA:637:A:H4'    | 1:AA:638:G:C4'     | 2.41                     | 0.51              |
| 1:AA:714:U:O2'    | 1:AA:715:G:N7      | 2.40                     | 0.51              |
| 1:AA:729:G:H2'    | 1:AA:730:C:C1'     | 2.40                     | 0.51              |
| 1:AA:771:G:C4     | 1:AA:772:C:C5      | 2.98                     | 0.51              |
| 1:AA:809:G:C5     | 1:AA:810:U:C5      | 2.98                     | 0.51              |
| 1:AA:915:C:H1'    | 2:AB:100:G:H4'     | 1.92                     | 0.51              |
| 1:AA:971:C:OP2    | 1:AA:974(A):C:C5   | 2.64                     | 0.51              |
| 1:AA:977:G:N7     | 1:AA:987:G:N1      | 2.58                     | 0.51              |
| 1:AA:989:G:C2'    | 1:AA:990:A:OP2     | 2.58                     | 0.51              |
| 1:AA:1075:C:C1'   | 32:AJ:90:LYS:CE    | 2.65                     | 0.51              |
| 1:AA:1077:A:H5'   | 1:AA:1078:U:OP2    | 2.11                     | 0.51              |
| 1:AA:1303:G:O2'   | 1:AA:1641:A:N1     | 2.44                     | 0.51              |
| 1:AA:1321:A:N3    | 1:AA:1321:A:C2'    | 2.74                     | 0.51              |
| 1:AA:1332:G:H5''  | 1:AA:1333:C:OP2    | 2.11                     | 0.51              |
| 1:AA:1410:G:H2'   | 1:AA:1411:C:C6     | 2.46                     | 0.51              |
| 1:AA:1448:G:H21   | 1:AA:1529:A:H2     | 1.59                     | 0.51              |
| 1:AA:1511:A:H3'   | 1:AA:1511:A:C8     | 2.45                     | 0.51              |
| 1:AA:1634:A:O3'   | 1:AA:1635:G:N7     | 2.43                     | 0.51              |
| 1:AA:1638:C:H5''  | 1:AA:2710:C:C2'    | 2.40                     | 0.51              |
| 1:AA:1670:C:O2'   | 1:AA:1671:U:H5'    | 2.09                     | 0.51              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1687:G:H1'   | 1:AA:1702:G:N2     | 2.26                     | 0.51              |
| 1:AA:1804:C:O3'   | 4:AD:250:TRP:CH2   | 2.64                     | 0.51              |
| 1:AA:1834:U:H1'   | 1:AA:1969:A:N3     | 2.25                     | 0.51              |
| 1:AA:2000:G:OP2   | 13:AO:2:ARG:CG     | 2.59                     | 0.51              |
| 1:AA:2134:A:O4'   | 1:AA:2134:A:OP2    | 2.28                     | 0.51              |
| 1:AA:2191:G:H21   | 1:AA:2192:G:H1'    | 1.75                     | 0.51              |
| 1:AA:2197:U:O2'   | 1:AA:2198:A:N3     | 2.37                     | 0.51              |
| 1:AA:2216:G:O5'   | 1:AA:2216:G:C8     | 2.62                     | 0.51              |
| 1:AA:2262:U:O4    | 22:AX:15:ASP:O     | 2.28                     | 0.51              |
| 1:AA:2301:C:N3    | 1:AA:2302:G:N7     | 2.58                     | 0.51              |
| 1:AA:2385:C:C2'   | 1:AA:2386:C:O5'    | 2.58                     | 0.51              |
| 1:AA:2424:C:H5''  | 1:AA:2425:A:H5'    | 1.92                     | 0.51              |
| 1:AA:2462:U:C4    | 1:AA:2463:C:C4     | 2.98                     | 0.51              |
| 1:AA:2594:C:C2'   | 1:AA:2595:G:H5'    | 2.40                     | 0.51              |
| 1:AA:2638:G:HO2'  | 1:AA:2639:A:H8     | 1.53                     | 0.51              |
| 1:AA:2666:C:C2'   | 1:AA:2667:C:C5'    | 2.86                     | 0.51              |
| 1:AA:2690:C:HO2'  | 1:AA:2691:C:P      | 2.32                     | 0.51              |
| 1:AA:2754:U:O5'   | 1:AA:2754:U:H6     | 1.94                     | 0.51              |
| 1:AA:2792:G:C2'   | 1:AA:2805:G:N2     | 2.73                     | 0.51              |
| 1:AA:2884:U:C2'   | 1:AA:2885:C:H5'    | 2.40                     | 0.51              |
| 2:AB:100:G:C5     | 2:AB:101:A:N7      | 2.78                     | 0.51              |
| 3:AC:10:LEU:CD1   | 3:AC:32:LEU:HD23   | 2.40                     | 0.51              |
| 3:AC:49:ILE:HD11  | 3:AC:165:ASN:ND2   | 2.24                     | 0.51              |
| 3:AC:63:SER:CB    | 3:AC:155:GLU:HG2   | 2.41                     | 0.51              |
| 4:AD:71:ASP:O     | 4:AD:72:LYS:CB     | 2.59                     | 0.51              |
| 4:AD:90:ALA:HA    | 4:AD:91:ARG:HH12   | 1.74                     | 0.51              |
| 4:AD:146:GLU:HA   | 4:AD:154:LYS:CG    | 2.41                     | 0.51              |
| 4:AD:225:ALA:HB3  | 4:AD:231:HIS:NE2   | 2.25                     | 0.51              |
| 4:AD:244:ARG:O    | 4:AD:252:TRP:CG    | 2.63                     | 0.51              |
| 6:AF:12:LEU:HD22  | 6:AF:129:PHE:N     | 2.26                     | 0.51              |
| 6:AF:24:LEU:H     | 6:AF:25:PRO:CD     | 2.21                     | 0.51              |
| 6:AF:36:VAL:HG11  | 6:AF:183:VAL:CG2   | 2.41                     | 0.51              |
| 7:AG:8:LYS:NZ     | 7:AG:176:LEU:HD11  | 2.23                     | 0.51              |
| 7:AG:39:ILE:HG13  | 7:AG:157:ILE:HD11  | 1.92                     | 0.51              |
| 7:AG:56:ALA:HB3   | 7:AG:68:PRO:CB     | 2.41                     | 0.51              |
| 8:AH:8:PRO:O      | 8:AH:9:ILE:HG13    | 2.11                     | 0.51              |
| 10:AL:61:VAL:HA   | 10:AL:83:ALA:HB2   | 1.93                     | 0.51              |
| 10:AL:70:LYS:HZ1  | 10:AL:102:VAL:HG13 | 1.73                     | 0.51              |
| 10:AL:111:PHE:O   | 10:AL:114:ILE:N    | 2.44                     | 0.51              |
| 11:AM:58:THR:HG23 | 29:Ae:13:ARG:H     | 1.76                     | 0.51              |
| 11:AM:98:GLU:O    | 11:AM:100:LEU:HD23 | 2.11                     | 0.51              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 11:AM:122:PRO:HB2  | 11:AM:138:LEU:CA   | 2.40                     | 0.51              |
| 11:AM:131:SER:O    | 11:AM:135:LEU:HD13 | 2.11                     | 0.51              |
| 12:AN:59:ARG:C     | 12:AN:60:ARG:CD    | 2.84                     | 0.51              |
| 12:AN:109:VAL:HG11 | 12:AN:114:ALA:CA   | 2.40                     | 0.51              |
| 13:AO:75:LEU:HD23  | 13:AO:78:LYS:CB    | 2.40                     | 0.51              |
| 13:AO:99:LYS:HA    | 13:AO:112:ALA:CB   | 2.39                     | 0.51              |
| 14:AP:49:VAL:CG2   | 14:AP:80:LEU:HG    | 2.40                     | 0.51              |
| 14:AP:59:LYS:HD3   | 14:AP:59:LYS:N     | 2.26                     | 0.51              |
| 14:AP:69:VAL:CG1   | 14:AP:73:LEU:HD21  | 2.41                     | 0.51              |
| 16:AR:67:ALA:HB1   | 16:AR:71:GLN:NE2   | 2.15                     | 0.51              |
| 17:AS:15:GLU:CA    | 17:AS:100:ARG:NH1  | 2.73                     | 0.51              |
| 17:AS:66:ARG:HE    | 17:AS:95:LEU:HD12  | 1.73                     | 0.51              |
| 18:AT:19:LEU:HA    | 26:Ab:25:LEU:HD22  | 1.91                     | 0.51              |
| 19:AU:50:LYS:HZ3   | 19:AU:85:PRO:CG    | 2.24                     | 0.51              |
| 19:AU:87:GLN:CD    | 19:AU:87:GLN:N     | 2.68                     | 0.51              |
| 20:AV:40:GLU:N     | 20:AV:62:GLU:OE2   | 2.44                     | 0.51              |
| 21:AW:40:ASP:O     | 21:AW:44:PHE:HB2   | 2.10                     | 0.51              |
| 21:AW:53:ILE:O     | 21:AW:53:ILE:HG22  | 2.11                     | 0.51              |
| 22:AX:76:GLY:CA    | 22:AX:78:TYR:HE1   | 2.24                     | 0.51              |
| 23:AY:22:GLU:OE1   | 23:AY:22:GLU:HA    | 2.11                     | 0.51              |
| 24:AZ:5:LYS:NZ     | 24:AZ:57:GLU:HB2   | 2.25                     | 0.51              |
| 24:AZ:23:LEU:HD11  | 24:AZ:53:LEU:CD1   | 2.40                     | 0.51              |
| 28:Ad:5:TRP:CE3    | 28:Ad:5:TRP:CA     | 2.94                     | 0.51              |
| 29:Ae:8:LYS:HA     | 29:Ae:11:LYS:CD    | 2.40                     | 0.51              |
| 31:AI:30:GLN:C     | 31:AI:32:LEU:H     | 2.18                     | 0.51              |
| 32:AJ:22:PRO:CD    | 32:AJ:23:VAL:H     | 2.22                     | 0.51              |
| 32:AJ:51:ALA:O     | 32:AJ:72:PRO:CA    | 2.59                     | 0.51              |
| 32:AJ:75:SER:OG    | 32:AJ:130:SER:CB   | 2.31                     | 0.51              |
| 32:AJ:76:TYR:CD2   | 32:AJ:80:LYS:HE2   | 2.45                     | 0.51              |
| 33:Ag:149:UNK:HA   | 33:Ag:153:UNK:O    | 2.10                     | 0.51              |
| 34:BA:62:U:H4'     | 34:BA:385:C:O2     | 2.10                     | 0.51              |
| 34:BA:67:C:C4'     | 34:BA:172:A:C1'    | 2.89                     | 0.51              |
| 34:BA:73:G:C6      | 34:BA:74:C:C4      | 2.98                     | 0.51              |
| 34:BA:300:A:O5'    | 34:BA:300:A:H8     | 1.94                     | 0.51              |
| 34:BA:322:C:H2'    | 34:BA:323:U:O4'    | 2.11                     | 0.51              |
| 34:BA:474:G:H2'    | 34:BA:475:G:H8     | 1.76                     | 0.51              |
| 34:BA:652:U:C2     | 34:BA:752:G:N2     | 2.79                     | 0.51              |
| 34:BA:866:C:C5     | 34:BA:867:G:C1'    | 2.86                     | 0.51              |
| 34:BA:955:U:H2'    | 34:BA:956:U:H6     | 1.76                     | 0.51              |
| 34:BA:1105:A:C2'   | 34:BA:1106:G:H5'   | 2.38                     | 0.51              |
| 34:BA:1162:C:O2'   | 34:BA:1163:C:H5'   | 2.11                     | 0.51              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1189:C:O2'   | 34:BA:1190:G:H5'   | 2.11                     | 0.51              |
| 34:BA:1213:A:C2    | 34:BA:1215:G:C4    | 2.99                     | 0.51              |
| 34:BA:1303:C:N4    | 34:BA:1304:G:C2    | 2.79                     | 0.51              |
| 34:BA:1314:C:N4    | 34:BA:1324:A:H61   | 2.09                     | 0.51              |
| 34:BA:1382:C:C6    | 34:BA:1383:C:H5    | 2.29                     | 0.51              |
| 34:BA:1430:C:O2'   | 34:BA:1431:C:C5'   | 2.59                     | 0.51              |
| 34:BA:1446:A:HO2'  | 34:BA:1447:G:P     | 2.34                     | 0.51              |
| 34:BA:1453:G:H2'   | 34:BA:1454:G:C5'   | 2.39                     | 0.51              |
| 35:BF:131:PRO:C    | 35:BF:133:LYS:N    | 2.64                     | 0.51              |
| 35:BF:171:ALA:HA   | 35:BF:174:VAL:CB   | 2.40                     | 0.51              |
| 35:BF:193:ASP:CG   | 35:BF:196:LEU:HD11 | 2.34                     | 0.51              |
| 36:BG:11:ARG:HH11  | 36:BG:15:THR:CG2   | 2.23                     | 0.51              |
| 36:BG:28:GLN:NE2   | 36:BG:29:TYR:H     | 2.08                     | 0.51              |
| 36:BG:64:VAL:O     | 36:BG:65:ALA:C     | 2.54                     | 0.51              |
| 36:BG:96:GLY:O     | 36:BG:97:LYS:C     | 2.53                     | 0.51              |
| 36:BG:150:LYS:HZ3  | 36:BG:152:ILE:CG2  | 2.23                     | 0.51              |
| 37:BH:88:VAL:HG13  | 38:BI:97:GLY:HA3   | 1.93                     | 0.51              |
| 37:BH:101:LEU:O    | 37:BH:104:VAL:N    | 2.43                     | 0.51              |
| 38:BI:114:GLY:C    | 38:BI:115:VAL:HG13 | 2.36                     | 0.51              |
| 38:BI:127:ASN:O    | 38:BI:127:ASN:OD1  | 2.29                     | 0.51              |
| 38:BI:147:ASP:O    | 38:BI:150:ARG:N    | 2.44                     | 0.51              |
| 39:BJ:6:VAL:O      | 39:BJ:6:VAL:HG13   | 2.11                     | 0.51              |
| 40:BK:42:ILE:HD13  | 40:BK:116:ALA:CB   | 2.41                     | 0.51              |
| 40:BK:121:ALA:O    | 40:BK:122:HIS:C    | 2.52                     | 0.51              |
| 41:BL:111:ILE:HG13 | 41:BL:120:THR:HG22 | 1.92                     | 0.51              |
| 43:BN:23:ILE:HG13  | 43:BN:85:LEU:CB    | 2.30                     | 0.51              |
| 44:BO:68:ALA:O     | 44:BO:72:ALA:HB2   | 2.11                     | 0.51              |
| 44:BO:110:ASP:HB3  | 51:BV:85:LEU:HB3   | 1.92                     | 0.51              |
| 45:BP:32:PHE:HB2   | 45:BP:84:LEU:CD1   | 2.36                     | 0.51              |
| 45:BP:35:GLY:HA3   | 45:BP:60:LEU:CB    | 2.40                     | 0.51              |
| 45:BP:85:ILE:HD11  | 45:BP:99:HIS:H     | 1.73                     | 0.51              |
| 46:BQ:50:GLU:O     | 46:BQ:54:VAL:HG23  | 2.11                     | 0.51              |
| 46:BQ:65:LYS:HA    | 46:BQ:66:LEU:C     | 2.35                     | 0.51              |
| 47:BR:24:CYS:SG    | 47:BR:27:CYS:C     | 2.94                     | 0.51              |
| 49:BT:57:ARG:HA    | 49:BT:60:LEU:HD12  | 1.92                     | 0.51              |
| 50:BU:56:VAL:C     | 50:BU:57:VAL:HG12  | 2.36                     | 0.51              |
| 51:BV:49:LYS:H     | 51:BV:49:LYS:CE    | 2.20                     | 0.51              |
| 52:BW:71:LEU:O     | 52:BW:74:PHE:CD1   | 2.64                     | 0.51              |
| 56:BD:74:C:C1'     | 56:BD:75:C:OP2     | 2.59                     | 0.51              |
| 56:BE:16:U:O4      | 56:BE:59:U:O2      | 2.28                     | 0.51              |
| 56:BE:21:A:C8      | 56:BE:46:G:O6      | 2.64                     | 0.51              |

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| Atom-1             | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|------------------|--------------------------|-------------------|
| 57:BZ:19:THR:HB    | 57:BZ:22:VAL:H   | 1.75                     | 0.51              |
| 57:BZ:321:LYS:HD3  | 57:BZ:321:LYS:C  | 2.35                     | 0.51              |
| 57:BZ:569:LEU:HD23 | 57:BZ:569:LEU:C  | 2.35                     | 0.51              |
| 1:AA:8:A:H2'       | 1:AA:9:U:H6      | 1.76                     | 0.51              |
| 1:AA:27:G:C2       | 1:AA:512:G:C2'   | 2.93                     | 0.51              |
| 1:AA:47:C:N3       | 1:AA:179:G:C6    | 2.78                     | 0.51              |
| 1:AA:66:C:C4       | 1:AA:67:U:C5     | 2.99                     | 0.51              |
| 1:AA:149:A:C2'     | 1:AA:150:C:H5'   | 2.37                     | 0.51              |
| 1:AA:200:U:O4      | 1:AA:201:C:H1'   | 2.10                     | 0.51              |
| 1:AA:270(X):G:O6   | 1:AA:270(Y):G:N3 | 2.43                     | 0.51              |
| 1:AA:370:G:O2'     | 1:AA:371:A:O4'   | 2.25                     | 0.51              |
| 1:AA:398:G:C2      | 1:AA:399:G:H1'   | 2.46                     | 0.51              |
| 1:AA:414:C:O2      | 1:AA:1864:U:H4'  | 2.11                     | 0.51              |
| 1:AA:598:G:N2      | 1:AA:599:G:H1'   | 2.25                     | 0.51              |
| 1:AA:616:A:H2'     | 1:AA:617:G:N3    | 2.25                     | 0.51              |
| 1:AA:641:C:H41     | 1:AA:646:A:H61   | 1.59                     | 0.51              |
| 1:AA:675:A:O2'     | 1:AA:676:A:H5'   | 2.10                     | 0.51              |
| 1:AA:716:A:C2      | 48:BS:44:LYS:HE2 | 2.45                     | 0.51              |
| 1:AA:753:C:H2'     | 1:AA:754:C:C6    | 2.46                     | 0.51              |
| 1:AA:760:G:H2'     | 1:AA:761:A:C5'   | 2.41                     | 0.51              |
| 1:AA:1009:A:O4'    | 16:AR:59:ARG:CZ  | 2.59                     | 0.51              |
| 1:AA:1096:A:C5     | 1:AA:1097:U:H1'  | 2.46                     | 0.51              |
| 1:AA:1426:G:C8     | 1:AA:1427:A:N7   | 2.79                     | 0.51              |
| 1:AA:1477:A:H8     | 1:AA:1477:A:OP2  | 1.93                     | 0.51              |
| 1:AA:1519:G:H3'    | 1:AA:1520:U:N1   | 2.26                     | 0.51              |
| 1:AA:1743:G:C5     | 1:AA:1746:G:N7   | 2.79                     | 0.51              |
| 1:AA:1788:C:C6     | 1:AA:1788:C:C3'  | 2.93                     | 0.51              |
| 1:AA:1956:U:H6     | 1:AA:1956:U:C5'  | 2.24                     | 0.51              |
| 1:AA:1970:A:C2'    | 1:AA:1971:A:OP2  | 2.58                     | 0.51              |
| 1:AA:1999:C:C2     | 1:AA:2000:G:C8   | 2.99                     | 0.51              |
| 1:AA:2063:C:C3'    | 1:AA:2064:C:C5'  | 2.87                     | 0.51              |
| 1:AA:2123:G:C5'    | 3:AC:172:HIS:ND1 | 2.74                     | 0.51              |
| 1:AA:2150:U:O2     | 1:AA:2151:G:C8   | 2.64                     | 0.51              |
| 1:AA:2243:U:C2     | 1:AA:2244:U:C6   | 2.98                     | 0.51              |
| 1:AA:2246:G:N3     | 1:AA:2247:A:C5   | 2.79                     | 0.51              |
| 1:AA:2256:G:N2     | 1:AA:2275:C:N4   | 2.58                     | 0.51              |
| 1:AA:2261:C:OP1    | 22:AX:17:GLN:CB  | 2.59                     | 0.51              |
| 1:AA:2327:A:C5     | 1:AA:2388:A:N1   | 2.79                     | 0.51              |
| 1:AA:2407:G:H3'    | 1:AA:2408:U:H5   | 1.75                     | 0.51              |
| 1:AA:2415:G:OP1    | 11:AM:61:ARG:CD  | 2.53                     | 0.51              |
| 1:AA:2506:U:C2'    | 1:AA:2507:C:H5'  | 2.39                     | 0.51              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2553:G:C8     | 1:AA:2583:G:H4'   | 2.46                     | 0.51              |
| 1:AA:2584:U:C5     | 1:AA:2585:U:C2    | 2.98                     | 0.51              |
| 1:AA:2660:A:N7     | 57:BZ:457:THR:CG2 | 2.72                     | 0.51              |
| 1:AA:2696:U:C2     | 1:AA:2697:G:C8    | 2.99                     | 0.51              |
| 1:AA:2793:G:C4     | 1:AA:2794:C:C6    | 2.99                     | 0.51              |
| 1:AA:2799:A:C4'    | 1:AA:2802:G:N1    | 2.73                     | 0.51              |
| 1:AA:2836:U:H2'    | 1:AA:2837:G:C8    | 2.46                     | 0.51              |
| 1:AA:2844:G:N2     | 1:AA:2845:G:C1'   | 2.74                     | 0.51              |
| 1:AA:2886:G:N2     | 1:AA:2887:U:H1'   | 2.25                     | 0.51              |
| 59:AA:3003:8AN:O1P | 22:AX:2:ALA:CB    | 2.47                     | 0.51              |
| 2:AB:117:G:N2      | 2:AB:118:G:N9     | 2.59                     | 0.51              |
| 3:AC:129:ARG:C     | 3:AC:130:ILE:HD12 | 2.35                     | 0.51              |
| 4:AD:27:THR:CG2    | 4:AD:82:ILE:HG21  | 2.41                     | 0.51              |
| 4:AD:231:HIS:O     | 4:AD:233:HIS:N    | 2.44                     | 0.51              |
| 5:AE:185:LYS:O     | 5:AE:185:LYS:CG   | 2.58                     | 0.51              |
| 6:AF:63:LYS:CA     | 6:AF:76:GLY:O     | 2.53                     | 0.51              |
| 6:AF:119:ARG:CZ    | 6:AF:120:GLU:OE1  | 2.59                     | 0.51              |
| 6:AF:149:ASP:HA    | 6:AF:172:TRP:HE1  | 1.76                     | 0.51              |
| 7:AG:100:TRP:C     | 7:AG:102:PHE:N    | 2.63                     | 0.51              |
| 7:AG:125:PHE:HD1   | 7:AG:132:ASN:N    | 2.09                     | 0.51              |
| 8:AH:33:LEU:HD22   | 8:AH:75:ALA:CB    | 2.41                     | 0.51              |
| 8:AH:149:ARG:HD3   | 8:AH:153:LYS:HE3  | 1.91                     | 0.51              |
| 9:AK:18:ALA:O      | 9:AK:19:GLU:C     | 2.53                     | 0.51              |
| 9:AK:115:ARG:HA    | 9:AK:118:LYS:CE   | 2.41                     | 0.51              |
| 10:AL:11:ALA:CB    | 10:AL:97:ARG:HH22 | 2.24                     | 0.51              |
| 10:AL:63:VAL:HG12  | 10:AL:99:PHE:HZ   | 1.75                     | 0.51              |
| 11:AM:79:ARG:HA    | 11:AM:79:ARG:NH2  | 2.26                     | 0.51              |
| 11:AM:88:LEU:HD21  | 11:AM:124:LYS:NZ  | 2.26                     | 0.51              |
| 11:AM:115:LEU:O    | 11:AM:117:GLU:OE1 | 2.28                     | 0.51              |
| 12:AN:112:GLU:HA   | 12:AN:115:MET:CB  | 2.40                     | 0.51              |
| 12:AN:118:LEU:O    | 12:AN:119:ARG:C   | 2.53                     | 0.51              |
| 13:AO:14:SER:HA    | 13:AO:17:ARG:CG   | 2.41                     | 0.51              |
| 13:AO:23:ASN:O     | 13:AO:26:LYS:HB2  | 2.11                     | 0.51              |
| 13:AO:107:ASP:OD2  | 13:AO:108:GLY:N   | 2.44                     | 0.51              |
| 15:AQ:93:ARG:HG2   | 15:AQ:95:ARG:HH11 | 1.74                     | 0.51              |
| 17:AS:4:ILE:HA     | 17:AS:12:TYR:CE2  | 2.45                     | 0.51              |
| 17:AS:34:GLU:CA    | 17:AS:62:LEU:O    | 2.50                     | 0.51              |
| 17:AS:68:LYS:CG    | 17:AS:95:LEU:HD11 | 2.41                     | 0.51              |
| 18:AT:74:ALA:HB1   | 18:AT:105:VAL:CB  | 2.40                     | 0.51              |
| 19:AU:50:LYS:O     | 19:AU:52:VAL:HG23 | 2.11                     | 0.51              |
| 20:AV:84:ARG:C     | 20:AV:84:ARG:CD   | 2.76                     | 0.51              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 21:AW:5:LEU:HB2   | 21:AW:23:LYS:NZ    | 2.24                     | 0.51              |
| 21:AW:6:LYS:HB2   | 21:AW:37:VAL:HG13  | 1.92                     | 0.51              |
| 21:AW:122:ARG:C   | 21:AW:124:ILE:H    | 2.18                     | 0.51              |
| 21:AW:150:LEU:C   | 21:AW:151:HIS:CG   | 2.89                     | 0.51              |
| 23:AY:25:ARG:HH21 | 23:AY:25:ARG:CG    | 2.17                     | 0.51              |
| 24:AZ:35:ARG:HH22 | 24:AZ:47:VAL:HG13  | 1.76                     | 0.51              |
| 24:AZ:41:PRO:HA   | 24:AZ:44:ARG:HE    | 1.76                     | 0.51              |
| 29:Ae:22:VAL:HB   | 29:Ae:48:PHE:CE2   | 2.45                     | 0.51              |
| 29:Ae:51:ALA:C    | 29:Ae:53:PRO:HD2   | 2.35                     | 0.51              |
| 32:AJ:55:VAL:H    | 32:AJ:56:GLU:CA    | 2.24                     | 0.51              |
| 32:AJ:123:ALA:C   | 32:AJ:127:ILE:HG13 | 2.35                     | 0.51              |
| 33:Ag:316:UNK:C   | 33:Ag:318:UNK:H    | 2.23                     | 0.51              |
| 34:BA:186:C:H2'   | 34:BA:186(A):C:C6  | 2.44                     | 0.51              |
| 34:BA:270:A:H8    | 34:BA:270:A:OP2    | 1.94                     | 0.51              |
| 34:BA:356:A:H2'   | 34:BA:357:G:O4'    | 2.11                     | 0.51              |
| 34:BA:412:A:HO2'  | 34:BA:413:G:H5''   | 1.75                     | 0.51              |
| 34:BA:640:A:H2'   | 34:BA:641:U:C4'    | 2.40                     | 0.51              |
| 34:BA:890:G:H2'   | 34:BA:891:U:OP2    | 2.11                     | 0.51              |
| 34:BA:1053:G:N2   | 34:BA:1058:G:O6    | 2.43                     | 0.51              |
| 34:BA:1271:G:OP2  | 34:BA:1314:C:H5''  | 2.11                     | 0.51              |
| 34:BA:1521:G:O2'  | 34:BA:1522:U:C5'   | 2.58                     | 0.51              |
| 35:BF:35:GLU:HG2  | 35:BF:39:ILE:O     | 2.11                     | 0.51              |
| 35:BF:42:ILE:HG12 | 35:BF:43:ASP:N     | 2.16                     | 0.51              |
| 35:BF:59:GLU:O    | 35:BF:62:ALA:HB3   | 2.11                     | 0.51              |
| 35:BF:61:LEU:HD21 | 35:BF:68:ILE:HD11  | 1.93                     | 0.51              |
| 35:BF:163:PHE:CE1 | 35:BF:186:ALA:CA   | 2.94                     | 0.51              |
| 35:BF:173:ALA:HA  | 35:BF:176:GLU:CG   | 2.39                     | 0.51              |
| 35:BF:179:LYS:C   | 35:BF:181:PHE:H    | 2.18                     | 0.51              |
| 36:BG:15:THR:HG21 | 36:BG:181:ASN:N    | 2.26                     | 0.51              |
| 36:BG:39:ILE:O    | 36:BG:40:ARG:C     | 2.54                     | 0.51              |
| 37:BH:61:LYS:HA   | 37:BH:203:VAL:HG22 | 1.93                     | 0.51              |
| 37:BH:79:PHE:CG   | 37:BH:80:GLU:N     | 2.77                     | 0.51              |
| 37:BH:139:ARG:CG  | 37:BH:140:VAL:N    | 2.74                     | 0.51              |
| 37:BH:154:ASN:ND2 | 37:BH:155:LEU:CD2  | 2.72                     | 0.51              |
| 38:BI:14:ARG:HG2  | 38:BI:29:GLY:O     | 2.10                     | 0.51              |
| 38:BI:37:ARG:HG2  | 38:BI:112:LEU:O    | 2.11                     | 0.51              |
| 40:BK:3:ARG:C     | 40:BK:4:ARG:HG2    | 2.36                     | 0.51              |
| 40:BK:47:CYS:HA   | 40:BK:50:ILE:HG13  | 1.93                     | 0.51              |
| 41:BL:29:SER:HB2  | 41:BL:32:LYS:HZ3   | 1.68                     | 0.51              |
| 41:BL:40:ALA:HB2  | 41:BL:45:ILE:CD1   | 2.41                     | 0.51              |
| 42:BM:5:TYR:CZ    | 42:BM:18:PHE:CZ    | 2.99                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 43:BN:9:ARG:HH11  | 43:BN:9:ARG:HB2   | 1.76                     | 0.51              |
| 44:BO:13:GLN:O    | 44:BO:14:VAL:HG23 | 2.11                     | 0.51              |
| 44:BO:45:GLY:CA   | 44:BO:55:LYS:HB3  | 2.41                     | 0.51              |
| 46:BQ:14:ARG:CB   | 46:BQ:41:PRO:CA   | 2.88                     | 0.51              |
| 46:BQ:20:THR:OG1  | 46:BQ:26:GLY:C    | 2.54                     | 0.51              |
| 46:BQ:22:ILE:CA   | 46:BQ:25:ILE:HD12 | 2.37                     | 0.51              |
| 46:BQ:37:THR:CB   | 46:BQ:56:LEU:HB2  | 2.41                     | 0.51              |
| 47:BR:41:ARG:O    | 47:BR:44:LEU:HB3  | 2.11                     | 0.51              |
| 49:BT:20:VAL:HG13 | 49:BT:21:VAL:N    | 2.19                     | 0.51              |
| 52:BW:18:LYS:HA   | 52:BW:18:LYS:CE   | 2.16                     | 0.51              |
| 54:BY:6:ARG:HG3   | 54:BY:7:ARG:N     | 2.24                     | 0.51              |
| 57:BZ:24:LYS:N    | 57:BZ:26:LEU:CD2  | 2.74                     | 0.51              |
| 57:BZ:317:PRO:CD  | 57:BZ:318:PHE:H   | 2.24                     | 0.51              |
| 57:BZ:382:VAL:HA  | 57:BZ:383:SER:C   | 2.35                     | 0.51              |
| 57:BZ:447:GLY:HA2 | 57:BZ:480:VAL:CG2 | 2.39                     | 0.51              |
| 57:BZ:461:GLY:O   | 57:BZ:463:GLY:N   | 2.44                     | 0.51              |
| 57:BZ:481:GLY:HA2 | 57:BZ:482:GLN:O   | 2.09                     | 0.51              |
| 57:BZ:572:ILE:CG2 | 57:BZ:576:GLU:HB2 | 2.40                     | 0.51              |
| 1:AA:91:A:H3'     | 1:AA:92:G:H8      | 1.75                     | 0.51              |
| 1:AA:208:C:H2'    | 1:AA:209:C:C6     | 2.46                     | 0.51              |
| 1:AA:209:C:O5'    | 1:AA:209:C:H6     | 1.94                     | 0.51              |
| 1:AA:228:A:N6     | 1:AA:230:U:N3     | 2.59                     | 0.51              |
| 1:AA:263:C:N3     | 1:AA:264:C:C6     | 2.79                     | 0.51              |
| 1:AA:309:G:O6     | 1:AA:1210:A:O2'   | 2.22                     | 0.51              |
| 1:AA:311:A:C2     | 1:AA:328:U:O4     | 2.64                     | 0.51              |
| 1:AA:336:C:H4'    | 20:AV:67:LEU:HD21 | 1.93                     | 0.51              |
| 1:AA:389:G:H8     | 1:AA:389:G:OP1    | 1.94                     | 0.51              |
| 1:AA:411:G:O5'    | 1:AA:412:A:OP2    | 2.29                     | 0.51              |
| 1:AA:530:G:N2     | 1:AA:2021:C:H2'   | 2.27                     | 0.51              |
| 1:AA:778:G:N2     | 1:AA:787:U:H1'    | 2.26                     | 0.51              |
| 1:AA:833:U:H4'    | 11:AM:49:ARG:HE   | 1.76                     | 0.51              |
| 1:AA:975:G:N1     | 1:AA:976:C:C5     | 2.79                     | 0.51              |
| 1:AA:1055:G:C4'   | 31:AI:33:PRO:HA   | 2.40                     | 0.51              |
| 1:AA:1087:G:C2'   | 1:AA:1089:G:H4'   | 2.32                     | 0.51              |
| 1:AA:1163:G:N1    | 1:AA:1164:G:N7    | 2.59                     | 0.51              |
| 1:AA:1227:A:H3'   | 1:AA:1228:G:H5''  | 1.92                     | 0.51              |
| 1:AA:1263:U:C5'   | 26:Ab:10:LYS:NZ   | 2.69                     | 0.51              |
| 1:AA:1264:G:O2'   | 26:Ab:7:PRO:HG3   | 2.10                     | 0.51              |
| 1:AA:1289:C:H4'   | 1:AA:1330:C:C4'   | 2.41                     | 0.51              |
| 1:AA:1308:A:H61   | 1:AA:1606:G:H1'   | 1.76                     | 0.51              |
| 1:AA:1311:G:N7    | 28:Ad:48:LYS:HD3  | 2.26                     | 0.51              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:1395:A:OP1  | 1:AA:1602:U:O2'   | 2.29                     | 0.51              |
| 1:AA:1451:C:H5'' | 1:AA:1453:A:H4'   | 1.93                     | 0.51              |
| 1:AA:1753:G:O6   | 1:AA:1756:G:C6    | 2.64                     | 0.51              |
| 1:AA:1797:C:O2'  | 4:AD:257:LEU:HD12 | 2.11                     | 0.51              |
| 1:AA:1827:C:O2   | 1:AA:1828:G:H1'   | 2.11                     | 0.51              |
| 1:AA:1997:G:H5'  | 5:AE:123:ALA:CB   | 2.41                     | 0.51              |
| 1:AA:2000:G:O6   | 1:AA:2001:A:N6    | 2.41                     | 0.51              |
| 1:AA:2006:C:O3'  | 1:AA:2823:A:H2    | 1.94                     | 0.51              |
| 1:AA:2018:G:OP1  | 1:AA:2019:A:OP2   | 2.28                     | 0.51              |
| 1:AA:2119:A:N1   | 1:AA:2171:A:C6    | 2.79                     | 0.51              |
| 1:AA:2127:G:C4   | 1:AA:2162:G:C2    | 2.98                     | 0.51              |
| 1:AA:2132:U:C3'  | 1:AA:2133:G:C5'   | 2.68                     | 0.51              |
| 1:AA:2152:G:N1   | 1:AA:2153:G:C6    | 2.79                     | 0.51              |
| 1:AA:2211:G:OP1  | 1:AA:2212:A:C5'   | 2.59                     | 0.51              |
| 1:AA:2356:C:C4   | 1:AA:2357:U:C4    | 2.99                     | 0.51              |
| 1:AA:2392:A:HO2' | 1:AA:2393:A:P     | 2.35                     | 0.51              |
| 1:AA:2417:C:C2   | 1:AA:2418:A:N7    | 2.79                     | 0.51              |
| 1:AA:2544:G:C2'  | 1:AA:2545:G:H5'   | 2.40                     | 0.51              |
| 1:AA:2572:A:H3'  | 5:AE:144:ARG:NH2  | 2.25                     | 0.51              |
| 1:AA:2589:A:P    | 4:AD:226:MET:SD   | 3.09                     | 0.51              |
| 1:AA:2668:G:O2'  | 1:AA:2669:G:H5'   | 2.09                     | 0.51              |
| 1:AA:2692:C:O2'  | 1:AA:2693:A:H5'   | 2.11                     | 0.51              |
| 1:AA:2714:G:O6   | 1:AA:2715:C:N4    | 2.44                     | 0.51              |
| 1:AA:2777:G:H4'  | 1:AA:2778:A:OP2   | 2.10                     | 0.51              |
| 1:AA:2849:U:H2'  | 1:AA:2850:A:OP2   | 2.11                     | 0.51              |
| 2:AB:52:A:C4'    | 2:AB:52:A:OP1     | 2.58                     | 0.51              |
| 2:AB:104:A:H62   | 2:AB:105:G:N2     | 2.09                     | 0.51              |
| 3:AC:104:LEU:CD2 | 3:AC:127:LEU:HD23 | 2.41                     | 0.51              |
| 4:AD:53:PHE:CE2  | 4:AD:221:VAL:HG13 | 2.46                     | 0.51              |
| 4:AD:63:ARG:HH12 | 4:AD:86:PRO:HD2   | 1.76                     | 0.51              |
| 4:AD:122:ASP:N   | 4:AD:135:PHE:HE2  | 2.08                     | 0.51              |
| 4:AD:134:ARG:C   | 4:AD:136:ILE:N    | 2.69                     | 0.51              |
| 4:AD:134:ARG:C   | 4:AD:168:ARG:NH2  | 2.57                     | 0.51              |
| 5:AE:12:THR:CA   | 5:AE:22:PRO:HD2   | 2.39                     | 0.51              |
| 5:AE:100:GLU:O   | 5:AE:172:VAL:HG22 | 2.11                     | 0.51              |
| 6:AF:121:GLY:CA  | 6:AF:191:ARG:NE   | 2.73                     | 0.51              |
| 6:AF:156:LEU:HG  | 6:AF:173:VAL:CG2  | 2.34                     | 0.51              |
| 6:AF:160:ASN:HB2 | 6:AF:195:ASP:OD2  | 2.11                     | 0.51              |
| 6:AF:182:ASN:O   | 6:AF:186:ILE:HG13 | 2.11                     | 0.51              |
| 6:AF:182:ASN:ND2 | 6:AF:185:ASP:CG   | 2.67                     | 0.51              |
| 7:AG:55:LYS:HB3  | 7:AG:152:LEU:HD21 | 1.92                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:AG:114:ILE:HG12 | 7:AG:140:ILE:HD11 | 1.93                     | 0.51              |
| 8:AH:103:LEU:HB2  | 8:AH:115:VAL:CG1  | 2.41                     | 0.51              |
| 8:AH:149:ARG:NH2  | 8:AH:164:TYR:HD1  | 2.09                     | 0.51              |
| 9:AK:69:GLN:N     | 9:AK:69:GLN:HE21  | 2.09                     | 0.51              |
| 10:AL:41:ALA:O    | 10:AL:56:ASP:CA   | 2.58                     | 0.51              |
| 11:AM:16:ARG:HG3  | 11:AM:19:VAL:HG22 | 1.92                     | 0.51              |
| 11:AM:126:VAL:CA  | 11:AM:146:VAL:H   | 2.22                     | 0.51              |
| 12:AN:46:GLN:OE1  | 12:AN:125:LEU:O   | 2.28                     | 0.51              |
| 12:AN:131:ILE:O   | 12:AN:132:VAL:CG1 | 2.57                     | 0.51              |
| 14:AP:31:SER:HB3  | 14:AP:34:HIS:CG   | 2.45                     | 0.51              |
| 14:AP:37:ALA:H    | 14:AP:51:ALA:HB3  | 1.76                     | 0.51              |
| 14:AP:39:ILE:O    | 14:AP:47:THR:CG2  | 2.58                     | 0.51              |
| 15:AQ:28:VAL:HG11 | 15:AQ:90:GLN:HB2  | 1.92                     | 0.51              |
| 15:AQ:57:PHE:O    | 15:AQ:58:ASN:CB   | 2.59                     | 0.51              |
| 15:AQ:104:ASN:HA  | 15:AQ:107:ASP:OD2 | 2.10                     | 0.51              |
| 15:AQ:110:ILE:CD1 | 15:AQ:113:LYS:HE3 | 2.41                     | 0.51              |
| 16:AR:25:TRP:O    | 16:AR:28:ARG:HG2  | 2.10                     | 0.51              |
| 16:AR:89:GLU:C    | 16:AR:90:VAL:HG23 | 2.35                     | 0.51              |
| 17:AS:5:VAL:N     | 17:AS:12:TYR:CD2  | 2.65                     | 0.51              |
| 17:AS:78:LYS:HB2  | 17:AS:78:LYS:HZ3  | 1.76                     | 0.51              |
| 18:AT:10:VAL:HB   | 18:AT:12:ILE:CD1  | 2.41                     | 0.51              |
| 21:AW:78:LYS:CG   | 21:AW:79:ARG:H    | 2.13                     | 0.51              |
| 21:AW:96:VAL:HG13 | 21:AW:128:VAL:CG1 | 2.40                     | 0.51              |
| 24:AZ:9:VAL:CG2   | 24:AZ:53:LEU:C    | 2.71                     | 0.51              |
| 24:AZ:26:LEU:CG   | 24:AZ:35:ARG:NH1  | 2.70                     | 0.51              |
| 27:Ac:19:ARG:HH11 | 27:Ac:43:CYS:CB   | 2.20                     | 0.51              |
| 29:Ae:8:LYS:O     | 29:Ae:9:GLY:C     | 2.53                     | 0.51              |
| 29:Ae:9:GLY:O     | 29:Ae:14:VAL:CB   | 2.59                     | 0.51              |
| 34:BA:210:U:H4'   | 34:BA:216:G:O4'   | 2.10                     | 0.51              |
| 34:BA:246:A:C4    | 34:BA:282:A:N6    | 2.79                     | 0.51              |
| 34:BA:254:G:O6    | 34:BA:273:A:N6    | 2.44                     | 0.51              |
| 34:BA:404:U:P     | 37:BH:118:ARG:NH1 | 2.84                     | 0.51              |
| 34:BA:606:G:N2    | 34:BA:631:G:N3    | 2.59                     | 0.51              |
| 34:BA:615:C:H2'   | 34:BA:616:G:O4'   | 2.11                     | 0.51              |
| 34:BA:649:G:H2'   | 34:BA:650:G:C8    | 2.44                     | 0.51              |
| 34:BA:759:A:N6    | 34:BA:760:G:C2    | 2.79                     | 0.51              |
| 34:BA:826:C:H5'   | 41:BL:12:ARG:CZ   | 2.41                     | 0.51              |
| 34:BA:895:G:H2'   | 34:BA:896:C:H6    | 1.73                     | 0.51              |
| 34:BA:899:C:N4    | 34:BA:900:A:C6    | 2.79                     | 0.51              |
| 34:BA:927:G:N1    | 34:BA:1391:U:C2   | 2.79                     | 0.51              |
| 34:BA:927:G:H4'   | 34:BA:1503:A:N7   | 2.26                     | 0.51              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:961:U:C5     | 34:BA:983:A:C6     | 2.99                     | 0.51              |
| 34:BA:975:A:O2'    | 34:BA:1358:U:C1'   | 2.54                     | 0.51              |
| 34:BA:1065:U:C2'   | 34:BA:1066:C:OP2   | 2.59                     | 0.51              |
| 34:BA:1182:G:C4'   | 34:BA:1183:A:O5'   | 2.58                     | 0.51              |
| 34:BA:1204:A:C2'   | 34:BA:1205:U:H5'   | 2.41                     | 0.51              |
| 34:BA:1284:C:C2    | 34:BA:1285:A:N7    | 2.79                     | 0.51              |
| 34:BA:1451:A:H8    | 34:BA:1451:A:OP1   | 1.94                     | 0.51              |
| 35:BF:58:ILE:O     | 35:BF:61:LEU:CB    | 2.59                     | 0.51              |
| 35:BF:117:GLU:CD   | 35:BF:118:LEU:N    | 2.68                     | 0.51              |
| 35:BF:187:LEU:HD23 | 35:BF:201:ILE:HG22 | 1.93                     | 0.51              |
| 36:BG:14:ILE:HG22  | 36:BG:15:THR:HG22  | 1.92                     | 0.51              |
| 37:BH:8:VAL:O      | 37:BH:11:LEU:HB2   | 2.11                     | 0.51              |
| 37:BH:90:GLY:O     | 37:BH:94:LEU:HG    | 2.11                     | 0.51              |
| 37:BH:113:SER:HB3  | 37:BH:116:GLN:CG   | 2.41                     | 0.51              |
| 38:BI:84:PHE:HB3   | 38:BI:87:SER:O     | 2.10                     | 0.51              |
| 38:BI:133:TYR:HA   | 38:BI:136:MET:CG   | 2.40                     | 0.51              |
| 39:BJ:97:PHE:CE2   | 51:BV:31:LEU:HD22  | 2.46                     | 0.51              |
| 40:BK:79:ARG:HA    | 40:BK:83:ALA:O     | 2.11                     | 0.51              |
| 41:BL:14:ARG:HD2   | 41:BL:14:ARG:C     | 2.35                     | 0.51              |
| 41:BL:26:VAL:O     | 41:BL:58:TYR:HD1   | 1.94                     | 0.51              |
| 41:BL:89:PRO:CB    | 41:BL:92:ARG:HH21  | 2.23                     | 0.51              |
| 41:BL:112:LEU:HD12 | 41:BL:131:GLY:O    | 2.11                     | 0.51              |
| 42:BM:16:ARG:CG    | 42:BM:18:PHE:CE1   | 2.89                     | 0.51              |
| 43:BN:6:ILE:HG21   | 43:BN:98:ILE:HG13  | 1.90                     | 0.51              |
| 43:BN:9:ARG:HG3    | 43:BN:95:GLU:OE2   | 2.11                     | 0.51              |
| 43:BN:49:VAL:HG11  | 47:BR:45:ARG:HD2   | 1.93                     | 0.51              |
| 44:BO:121:PRO:HB2  | 44:BO:125:PHE:HD1  | 1.75                     | 0.51              |
| 45:BP:69:TYR:O     | 45:BP:71:PRO:CD    | 2.59                     | 0.51              |
| 45:BP:106:ASP:CA   | 57:BZ:329:ARG:CD   | 2.89                     | 0.51              |
| 46:BQ:19:LEU:CD1   | 46:BQ:30:ALA:CB    | 2.70                     | 0.51              |
| 49:BT:75:ARG:O     | 49:BT:78:GLY:N     | 2.44                     | 0.51              |
| 50:BU:59:ILE:HD11  | 50:BU:71:PHE:C     | 2.36                     | 0.51              |
| 50:BU:60:ILE:HD13  | 50:BU:62:SER:HG    | 1.76                     | 0.51              |
| 51:BV:36:ASN:OD1   | 51:BV:39:VAL:HB    | 2.11                     | 0.51              |
| 57:BZ:10:ILE:HD13  | 57:BZ:21:LEU:CD1   | 2.39                     | 0.51              |
| 57:BZ:174:LEU:CD1  | 57:BZ:175:ASP:H    | 2.24                     | 0.51              |
| 57:BZ:244:GLY:HA2  | 57:BZ:245:LYS:HB2  | 1.90                     | 0.51              |
| 1:AA:135:G:H2'     | 1:AA:136:G:O4'     | 2.10                     | 0.50              |
| 1:AA:152:G:N1      | 1:AA:175:G:C4      | 2.79                     | 0.50              |
| 1:AA:203:C:C6      | 1:AA:204:A:N7      | 2.79                     | 0.50              |
| 1:AA:319:C:O2'     | 1:AA:320:A:O4'     | 2.27                     | 0.50              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:371:A:C2    | 1:AA:372:G:N1     | 2.78                     | 0.50              |
| 1:AA:412:A:N6    | 1:AA:2411:A:O2'   | 2.44                     | 0.50              |
| 1:AA:530:G:N2    | 1:AA:2021:C:H3'   | 2.19                     | 0.50              |
| 1:AA:605:C:OP1   | 6:AF:104:LYS:HD2  | 2.11                     | 0.50              |
| 1:AA:625:G:H1    | 11:AM:100:LEU:HB3 | 1.76                     | 0.50              |
| 1:AA:673:C:H5''  | 6:AF:81:PRO:HG3   | 1.93                     | 0.50              |
| 1:AA:685:A:C4    | 1:AA:774:A:C6     | 3.00                     | 0.50              |
| 1:AA:716:A:C8    | 1:AA:717:G:C8     | 2.99                     | 0.50              |
| 1:AA:731:C:C2'   | 1:AA:732:C:H5'    | 2.41                     | 0.50              |
| 1:AA:792:G:C6    | 1:AA:2440:C:N1    | 2.78                     | 0.50              |
| 1:AA:817:C:H3'   | 1:AA:818:G:H8     | 1.76                     | 0.50              |
| 1:AA:848:G:C8    | 1:AA:848:G:H3'    | 2.46                     | 0.50              |
| 1:AA:918:A:C8    | 2:AB:80:U:C4'     | 2.93                     | 0.50              |
| 1:AA:996:A:C6    | 1:AA:1160:G:C2    | 2.99                     | 0.50              |
| 1:AA:1061:U:H3   | 32:AJ:11:GLN:NE2  | 2.00                     | 0.50              |
| 1:AA:1081:U:H5   | 1:AA:1082:U:O4    | 1.95                     | 0.50              |
| 1:AA:1087:G:N2   | 1:AA:1103:A:H2'   | 2.23                     | 0.50              |
| 1:AA:1224:G:N7   | 1:AA:1225:C:C5    | 2.79                     | 0.50              |
| 1:AA:1540:G:C3'  | 1:AA:1541:U:H5'   | 2.41                     | 0.50              |
| 1:AA:1683:C:C2   | 1:AA:1684:C:H5    | 2.25                     | 0.50              |
| 1:AA:1789:A:N7   | 1:AA:1790:C:C5    | 2.79                     | 0.50              |
| 1:AA:1809:A:N1   | 25:Aa:3:GLU:CD    | 2.69                     | 0.50              |
| 1:AA:1819:A:OP2  | 4:AD:157:ARG:HA   | 2.11                     | 0.50              |
| 1:AA:1960:A:H4'  | 34:BA:1483:A:N1   | 2.26                     | 0.50              |
| 1:AA:2052:G:C4   | 1:AA:2053:G:C8    | 2.99                     | 0.50              |
| 1:AA:2069:G:O2'  | 1:AA:2070:G:H5'   | 2.10                     | 0.50              |
| 1:AA:2107:C:C6   | 1:AA:2109:U:C5    | 2.99                     | 0.50              |
| 1:AA:2209:C:H3'  | 1:AA:2209:C:H6    | 1.75                     | 0.50              |
| 1:AA:2353:G:O2'  | 22:AX:35:ASN:ND2  | 2.43                     | 0.50              |
| 1:AA:2461:C:O2'  | 1:AA:2462:U:H5'   | 2.11                     | 0.50              |
| 1:AA:2558:C:C4'  | 57:BZ:543:LEU:CD2 | 2.81                     | 0.50              |
| 1:AA:2635:C:O2'  | 5:AE:79:ARG:HD2   | 2.12                     | 0.50              |
| 1:AA:2690:C:O2'  | 1:AA:2691:C:O5'   | 2.30                     | 0.50              |
| 1:AA:2695:C:H2'  | 1:AA:2696:U:C6    | 2.45                     | 0.50              |
| 1:AA:2730:C:H2'  | 1:AA:2731:G:H8    | 1.75                     | 0.50              |
| 1:AA:2830:G:N3   | 1:AA:2830:G:H2'   | 2.26                     | 0.50              |
| 1:AA:2848:G:P    | 15:AQ:99:LEU:HD12 | 2.51                     | 0.50              |
| 2:AB:103:U:H6    | 2:AB:103:U:C5'    | 2.24                     | 0.50              |
| 4:AD:108:PRO:O   | 4:AD:109:ASP:C    | 2.54                     | 0.50              |
| 4:AD:200:ASP:O   | 4:AD:201:HIS:C    | 2.54                     | 0.50              |
| 5:AE:91:VAL:HG13 | 5:AE:93:VAL:HG22  | 1.90                     | 0.50              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 7:AG:19:LEU:H      | 7:AG:19:LEU:CD1   | 2.22                     | 0.50              |
| 10:AL:38:VAL:C     | 10:AL:39:ILE:HG23 | 2.36                     | 0.50              |
| 11:AM:29:LYS:N     | 11:AM:29:LYS:CD   | 2.71                     | 0.50              |
| 11:AM:49:ARG:NH2   | 11:AM:49:ARG:HG2  | 2.20                     | 0.50              |
| 11:AM:51:PHE:O     | 11:AM:52:GLU:C    | 2.54                     | 0.50              |
| 11:AM:113:LYS:HD3  | 11:AM:113:LYS:C   | 2.35                     | 0.50              |
| 11:AM:114:ILE:HG12 | 11:AM:130:PHE:CG  | 2.46                     | 0.50              |
| 12:AN:6:ARG:C      | 12:AN:6:ARG:CD    | 2.82                     | 0.50              |
| 12:AN:12:GLN:NE2   | 12:AN:13:GLN:NE2  | 2.41                     | 0.50              |
| 13:AO:99:LYS:O     | 26:Ab:44:THR:HG22 | 2.11                     | 0.50              |
| 13:AO:100:LEU:HD12 | 13:AO:101:ALA:H   | 1.76                     | 0.50              |
| 14:AP:95:HIS:HA    | 14:AP:99:LYS:CD   | 2.36                     | 0.50              |
| 15:AQ:26:ASP:OD2   | 15:AQ:26:ASP:C    | 2.54                     | 0.50              |
| 15:AQ:51:ARG:O     | 15:AQ:66:VAL:CA   | 2.55                     | 0.50              |
| 15:AQ:93:ARG:N     | 15:AQ:93:ARG:CD   | 2.74                     | 0.50              |
| 16:AR:88:ILE:CG1   | 17:AS:52:VAL:HG22 | 2.41                     | 0.50              |
| 16:AR:93:LYS:CG    | 17:AS:10:LYS:NZ   | 2.68                     | 0.50              |
| 16:AR:94:ASN:O     | 16:AR:97:ASP:N    | 2.44                     | 0.50              |
| 17:AS:14:VAL:CG2   | 17:AS:21:ARG:HH22 | 2.23                     | 0.50              |
| 18:AT:74:ALA:O     | 18:AT:75:TYR:CD2  | 2.64                     | 0.50              |
| 18:AT:89:ALA:O     | 18:AT:91:GLY:N    | 2.44                     | 0.50              |
| 19:AU:35:THR:HB    | 19:AU:38:GLU:HB2  | 1.93                     | 0.50              |
| 20:AV:37:VAL:CG1   | 20:AV:39:VAL:HB   | 2.40                     | 0.50              |
| 20:AV:50:ARG:HA    | 20:AV:54:LYS:CA   | 2.32                     | 0.50              |
| 20:AV:53:PRO:O     | 20:AV:54:LYS:C    | 2.51                     | 0.50              |
| 20:AV:75:ILE:N     | 20:AV:100:ALA:CB  | 2.74                     | 0.50              |
| 21:AW:102:LEU:HD13 | 21:AW:137:ILE:C   | 2.35                     | 0.50              |
| 21:AW:118:GLN:C    | 21:AW:118:GLN:CD  | 2.79                     | 0.50              |
| 21:AW:139:VAL:HG12 | 21:AW:140:ASP:H   | 1.75                     | 0.50              |
| 25:Aa:29:PRO:CG    | 25:Aa:31:ILE:CG2  | 2.88                     | 0.50              |
| 29:Ae:16:ILE:CG2   | 29:Ae:57:ARG:HH22 | 2.24                     | 0.50              |
| 32:AJ:122:ALA:HB1  | 32:AJ:126:MET:SD  | 2.51                     | 0.50              |
| 34:BA:32:A:N6      | 34:BA:553:A:N6    | 2.59                     | 0.50              |
| 34:BA:68:G:C5      | 34:BA:69:G:C8     | 2.99                     | 0.50              |
| 34:BA:85:U:O2'     | 34:BA:86:U:H5'    | 2.11                     | 0.50              |
| 34:BA:87:A:N7      | 34:BA:88:C:N3     | 2.60                     | 0.50              |
| 34:BA:404:U:O4'    | 37:BH:122:ARG:NH1 | 2.45                     | 0.50              |
| 34:BA:447:G:H1'    | 34:BA:487:A:H61   | 1.76                     | 0.50              |
| 34:BA:627:G:O2'    | 34:BA:628:G:C5'   | 2.57                     | 0.50              |
| 34:BA:686:U:H2'    | 34:BA:687:A:H8    | 1.76                     | 0.50              |
| 34:BA:797:C:C2'    | 34:BA:798:G:H5'   | 2.41                     | 0.50              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BA:872:A:C5     | 34:BA:874:G:C8    | 2.99                     | 0.50              |
| 34:BA:885:G:C2     | 34:BA:913:A:N1    | 2.79                     | 0.50              |
| 34:BA:971:G:C5     | 34:BA:1365:G:H5'  | 2.46                     | 0.50              |
| 34:BA:1048:G:O3'   | 34:BA:1049:U:H3'  | 2.10                     | 0.50              |
| 34:BA:1051:C:H2'   | 34:BA:1052:U:C6   | 2.46                     | 0.50              |
| 34:BA:1198:G:O2'   | 34:BA:1199:U:H5'  | 2.11                     | 0.50              |
| 34:BA:1205:U:H2'   | 34:BA:1206:G:C8   | 2.46                     | 0.50              |
| 34:BA:1229:A:H5'   | 56:BE:29:G:C5'    | 2.27                     | 0.50              |
| 34:BA:1298:C:C6    | 40:BK:114:ARG:NH1 | 2.79                     | 0.50              |
| 34:BA:1313:U:C4    | 34:BA:1325:C:O2   | 2.64                     | 0.50              |
| 34:BA:1418:A:N1    | 34:BA:1483:A:C6   | 2.79                     | 0.50              |
| 34:BA:1517:G:N2    | 34:BA:1518:A:C1'  | 2.73                     | 0.50              |
| 35:BF:19:HIS:C     | 35:BF:20:GLU:HG2  | 2.36                     | 0.50              |
| 35:BF:56:ARG:O     | 35:BF:57:PHE:C    | 2.53                     | 0.50              |
| 35:BF:73:THR:HG22  | 35:BF:94:ASN:C    | 2.35                     | 0.50              |
| 35:BF:152:PHE:CG   | 35:BF:153:ARG:N   | 2.77                     | 0.50              |
| 35:BF:189:ASP:OD2  | 35:BF:205:ASP:CG  | 2.54                     | 0.50              |
| 36:BG:108:ASN:O    | 36:BG:110:ASN:N   | 2.44                     | 0.50              |
| 36:BG:182:ILE:HD11 | 36:BG:203:PHE:CD1 | 2.46                     | 0.50              |
| 36:BG:204:LEU:O    | 36:BG:205:GLY:C   | 2.53                     | 0.50              |
| 37:BH:94:LEU:HA    | 37:BH:97:LEU:HD11 | 1.89                     | 0.50              |
| 40:BK:119:ARG:O    | 40:BK:120:ILE:C   | 2.52                     | 0.50              |
| 41:BL:14:ARG:HH11  | 41:BL:14:ARG:CA   | 2.24                     | 0.50              |
| 42:BM:47:LEU:HD11  | 42:BM:50:LEU:HD22 | 1.93                     | 0.50              |
| 45:BP:60:LEU:HD21  | 45:BP:64:TYR:HD2  | 1.76                     | 0.50              |
| 48:BS:70:LEU:CG    | 48:BS:78:TYR:CD1  | 2.87                     | 0.50              |
| 49:BT:19:ILE:HG13  | 49:BT:38:TYR:CA   | 2.40                     | 0.50              |
| 49:BT:21:VAL:N     | 49:BT:36:ILE:HD11 | 2.26                     | 0.50              |
| 49:BT:53:VAL:HG12  | 49:BT:79:VAL:HG22 | 1.92                     | 0.50              |
| 49:BT:55:ARG:NH2   | 49:BT:58:TYR:CG   | 2.79                     | 0.50              |
| 49:BT:58:TYR:O     | 49:BT:61:SER:HB3  | 2.11                     | 0.50              |
| 49:BT:75:ARG:O     | 49:BT:76:GLN:C    | 2.54                     | 0.50              |
| 49:BT:75:ARG:HG3   | 49:BT:80:PHE:CD1  | 2.46                     | 0.50              |
| 50:BU:10:VAL:CB    | 50:BU:54:GLY:H    | 2.24                     | 0.50              |
| 52:BW:9:VAL:O      | 52:BW:11:VAL:HG23 | 2.11                     | 0.50              |
| 52:BW:51:VAL:HG23  | 52:BW:60:VAL:HG23 | 1.93                     | 0.50              |
| 53:BX:81:LYS:O     | 53:BX:82:SER:C    | 2.53                     | 0.50              |
| 56:BD:1:G:N3       | 56:BD:2:C:N3      | 2.59                     | 0.50              |
| 56:BD:3:C:C2       | 56:BD:70:G:C6     | 2.99                     | 0.50              |
| 56:BD:51:U:C4      | 56:BD:63:G:N1     | 2.79                     | 0.50              |
| 57:BZ:69:ARG:HA    | 57:BZ:70:ILE:C    | 2.35                     | 0.50              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:BZ:101:ALA:HB2 | 57:BZ:127:ILE:HG22 | 1.93                     | 0.50              |
| 57:BZ:301:SER:O   | 57:BZ:302:VAL:HG13 | 2.11                     | 0.50              |
| 1:AA:46:C:C5      | 1:AA:215:G:H8      | 2.28                     | 0.50              |
| 1:AA:49:A:C5      | 1:AA:177:G:N1      | 2.79                     | 0.50              |
| 1:AA:60:G:O2'     | 1:AA:61:G:P        | 2.70                     | 0.50              |
| 1:AA:137(A):G:C2  | 1:AA:138:G:O6      | 2.64                     | 0.50              |
| 1:AA:141(A):C:C2' | 1:AA:142:G:H5'     | 2.41                     | 0.50              |
| 1:AA:270(A):A:OP2 | 1:AA:270(B):A:C2   | 2.64                     | 0.50              |
| 1:AA:273(F):C:O2  | 1:AA:363(A):A:C6   | 2.65                     | 0.50              |
| 1:AA:360:G:C2'    | 1:AA:361:G:O5'     | 2.59                     | 0.50              |
| 1:AA:416:C:H3'    | 1:AA:416:C:C6      | 2.46                     | 0.50              |
| 1:AA:443:A:C4'    | 1:AA:1201:C:H5'    | 2.36                     | 0.50              |
| 1:AA:493:G:C2     | 1:AA:494:G:C8      | 2.99                     | 0.50              |
| 1:AA:507:A:H1'    | 1:AA:509:C:C4      | 2.47                     | 0.50              |
| 1:AA:548:A:C5     | 1:AA:549:G:H1'     | 2.46                     | 0.50              |
| 1:AA:609:A:C5     | 1:AA:609(A):G:O6   | 2.64                     | 0.50              |
| 1:AA:621:A:H8     | 1:AA:622:G:H5'     | 1.76                     | 0.50              |
| 1:AA:653:A:H3'    | 1:AA:654:A:C4'     | 2.41                     | 0.50              |
| 1:AA:691:C:C2'    | 4:AD:45:ASN:HD21   | 2.25                     | 0.50              |
| 1:AA:696:G:O2'    | 1:AA:697:C:C5'     | 2.59                     | 0.50              |
| 1:AA:714:U:O2     | 1:AA:715:G:C8      | 2.64                     | 0.50              |
| 1:AA:716:A:C2     | 48:BS:44:LYS:CA    | 2.95                     | 0.50              |
| 1:AA:733:G:C5     | 1:AA:761:A:C6      | 2.99                     | 0.50              |
| 1:AA:740:U:C6     | 1:AA:741:G:N7      | 2.79                     | 0.50              |
| 1:AA:774:A:C5'    | 1:AA:778:G:H4'     | 2.41                     | 0.50              |
| 1:AA:799:G:C6     | 1:AA:800:A:N1      | 2.80                     | 0.50              |
| 1:AA:814:C:H4'    | 1:AA:1224:G:H22    | 1.76                     | 0.50              |
| 1:AA:832:G:OP1    | 11:AM:36:LYS:HE2   | 2.10                     | 0.50              |
| 1:AA:922:U:H2'    | 1:AA:923:C:C5      | 2.46                     | 0.50              |
| 1:AA:1077:A:C2    | 32:AJ:133:SER:O    | 2.64                     | 0.50              |
| 1:AA:1080:C:C6    | 32:AJ:129:GLY:HA2  | 2.45                     | 0.50              |
| 1:AA:1142:U:O2'   | 1:AA:1142(A):A:H5' | 2.11                     | 0.50              |
| 1:AA:1155:A:O2'   | 1:AA:1156:A:C5'    | 2.59                     | 0.50              |
| 1:AA:1197:G:N7    | 1:AA:1198:U:C5     | 2.80                     | 0.50              |
| 1:AA:1237:A:O2'   | 1:AA:1238:G:O5'    | 2.30                     | 0.50              |
| 1:AA:1309:G:OP1   | 28:Ad:8:ASN:ND2    | 2.44                     | 0.50              |
| 1:AA:1310:G:N7    | 1:AA:1311:G:N3     | 2.59                     | 0.50              |
| 1:AA:1314:C:H2'   | 1:AA:1315:C:H5'    | 1.93                     | 0.50              |
| 1:AA:1442:G:H2'   | 1:AA:1442:G:N3     | 2.26                     | 0.50              |
| 1:AA:1495:A:O5'   | 1:AA:1495:A:H8     | 1.94                     | 0.50              |
| 1:AA:1511:A:H2'   | 1:AA:1512:G:C4'    | 2.41                     | 0.50              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:1831:G:H2'  | 1:AA:1832:C:C6    | 2.47                     | 0.50              |
| 1:AA:1833:U:C2   | 1:AA:1834:U:O2    | 2.65                     | 0.50              |
| 1:AA:1859:A:H61  | 1:AA:1883:G:C2'   | 2.23                     | 0.50              |
| 1:AA:1897:G:N1   | 1:AA:1898:U:C2    | 2.79                     | 0.50              |
| 1:AA:1910:G:N1   | 1:AA:1920:C:C4    | 2.79                     | 0.50              |
| 1:AA:1916:A:N3   | 1:AA:1916:A:C2'   | 2.73                     | 0.50              |
| 1:AA:1936:A:N3   | 1:AA:1940:U:O2    | 2.44                     | 0.50              |
| 1:AA:1948:G:C4   | 1:AA:1959:G:C2    | 2.99                     | 0.50              |
| 1:AA:1957:C:O2   | 1:AA:1958:C:C5    | 2.64                     | 0.50              |
| 1:AA:2046:G:N3   | 1:AA:2047:U:C5    | 2.79                     | 0.50              |
| 1:AA:2129:C:C3'  | 3:AC:6:ARG:HD3    | 2.41                     | 0.50              |
| 1:AA:2195:C:C2'  | 1:AA:2196:C:O4'   | 2.57                     | 0.50              |
| 1:AA:2301:C:C2   | 1:AA:2302:G:C8    | 3.00                     | 0.50              |
| 1:AA:2325:G:O2'  | 1:AA:2326:C:H5'   | 2.11                     | 0.50              |
| 1:AA:2344:U:O2   | 1:AA:2344:U:C3'   | 2.58                     | 0.50              |
| 1:AA:2361:A:H2'  | 1:AA:2361:A:N3    | 2.26                     | 0.50              |
| 1:AA:2516:G:C4   | 1:AA:2569:G:C2    | 2.99                     | 0.50              |
| 1:AA:2519:U:C6   | 1:AA:2542:A:N6    | 2.79                     | 0.50              |
| 1:AA:2655:G:N3   | 1:AA:2655:G:C2'   | 2.73                     | 0.50              |
| 1:AA:2682:U:C2   | 5:AE:21:VAL:HG21  | 2.46                     | 0.50              |
| 1:AA:2788:C:O2   | 1:AA:2789:C:C2    | 2.64                     | 0.50              |
| 1:AA:2793:G:C4   | 1:AA:2794:C:C5    | 3.00                     | 0.50              |
| 1:AA:2848:G:H2'  | 15:AQ:99:LEU:HD21 | 1.92                     | 0.50              |
| 2:AB:11:C:OP1    | 22:AX:75:LEU:HD11 | 2.11                     | 0.50              |
| 2:AB:96:G:C2     | 2:AB:97:G:C8      | 2.99                     | 0.50              |
| 3:AC:19:ILE:O    | 3:AC:19:ILE:HG22  | 2.11                     | 0.50              |
| 3:AC:48:GLY:N    | 3:AC:210:ARG:CD   | 2.74                     | 0.50              |
| 3:AC:90:GLY:C    | 3:AC:153:ILE:HG22 | 2.36                     | 0.50              |
| 3:AC:93:TYR:CE1  | 3:AC:109:ASP:CB   | 2.94                     | 0.50              |
| 4:AD:36:PRO:O    | 4:AD:37:LEU:HD22  | 2.11                     | 0.50              |
| 4:AD:105:ILE:O   | 4:AD:106:ILE:C    | 2.53                     | 0.50              |
| 4:AD:176:ARG:HA  | 4:AD:182:LEU:HD23 | 1.91                     | 0.50              |
| 5:AE:9:VAL:CG1   | 15:AQ:3:ARG:HG2   | 2.42                     | 0.50              |
| 5:AE:31:CYS:O    | 5:AE:33:VAL:N     | 2.44                     | 0.50              |
| 6:AF:39:TRP:NE1  | 6:AF:106:ARG:NH2  | 2.59                     | 0.50              |
| 6:AF:117:ARG:HG3 | 6:AF:187:VAL:HA   | 1.93                     | 0.50              |
| 6:AF:118:ALA:CB  | 6:AF:122:LYS:HB2  | 2.42                     | 0.50              |
| 7:AG:16:ARG:C    | 7:AG:20:ILE:HG13  | 2.36                     | 0.50              |
| 8:AH:107:VAL:O   | 8:AH:107:VAL:CG2  | 2.54                     | 0.50              |
| 8:AH:137:ASP:HB3 | 8:AH:140:LYS:CG   | 2.41                     | 0.50              |
| 10:AL:22:ILE:HB  | 10:AL:40:VAL:CG1  | 2.40                     | 0.50              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 11:AM:7:ARG:H      | 11:AM:8:PRO:CD    | 2.24                     | 0.50              |
| 11:AM:49:ARG:HH22  | 29:Ae:55:ALA:HB2  | 1.74                     | 0.50              |
| 11:AM:77:ARG:CZ    | 11:AM:79:ARG:HG2  | 2.40                     | 0.50              |
| 12:AN:85:LYS:NZ    | 22:AX:10:THR:CG2  | 2.74                     | 0.50              |
| 12:AN:104:PHE:C    | 12:AN:105:GLU:OE1 | 2.55                     | 0.50              |
| 14:AP:38:GLN:O     | 14:AP:38:GLN:HG3  | 2.11                     | 0.50              |
| 14:AP:57:LYS:NZ    | 14:AP:62:LYS:CB   | 2.74                     | 0.50              |
| 14:AP:76:LYS:HD3   | 14:AP:77:ALA:H    | 1.76                     | 0.50              |
| 15:AQ:32:TYR:C     | 15:AQ:33:LYS:HG2  | 2.35                     | 0.50              |
| 15:AQ:53:ARG:O     | 15:AQ:100:TYR:CD2 | 2.64                     | 0.50              |
| 15:AQ:65:LYS:HA    | 15:AQ:76:PHE:C    | 2.35                     | 0.50              |
| 17:AS:43:GLU:H     | 17:AS:44:LYS:HZ3  | 1.50                     | 0.50              |
| 18:AT:22:ASP:HA    | 18:AT:75:TYR:OH   | 2.11                     | 0.50              |
| 20:AV:97:ARG:CB    | 20:AV:101:LYS:HG2 | 2.40                     | 0.50              |
| 21:AW:12:GLY:O     | 21:AW:15:PRO:HG2  | 2.10                     | 0.50              |
| 21:AW:16:SER:O     | 21:AW:19:ARG:HB2  | 2.11                     | 0.50              |
| 21:AW:95:PRO:N     | 21:AW:130:PRO:HA  | 2.26                     | 0.50              |
| 21:AW:116:VAL:HG21 | 21:AW:144:LEU:O   | 2.10                     | 0.50              |
| 22:AX:26:TYR:O     | 22:AX:29:GLN:OE1  | 2.27                     | 0.50              |
| 23:AY:1:MET:O      | 23:AY:4:GLN:N     | 2.43                     | 0.50              |
| 23:AY:7:GLU:HA     | 23:AY:10:LYS:CG   | 2.39                     | 0.50              |
| 23:AY:25:ARG:HG3   | 23:AY:25:ARG:NH2  | 2.22                     | 0.50              |
| 23:AY:25:ARG:CG    | 23:AY:25:ARG:NH2  | 2.73                     | 0.50              |
| 23:AY:30:LEU:HD11  | 23:AY:48:LEU:HD23 | 1.94                     | 0.50              |
| 25:Aa:39:CYS:C     | 25:Aa:40:HIS:ND1  | 2.69                     | 0.50              |
| 25:Aa:54:GLY:O     | 25:Aa:55:ARG:CB   | 2.59                     | 0.50              |
| 26:Ab:15:ARG:O     | 26:Ab:16:ARG:C    | 2.54                     | 0.50              |
| 27:Ac:48:VAL:HG22  | 27:Ac:49:HIS:N    | 2.25                     | 0.50              |
| 32:AJ:12:LEU:HD13  | 32:AJ:23:VAL:CG2  | 2.40                     | 0.50              |
| 32:AJ:24:GLY:C     | 32:AJ:26:ALA:N    | 2.68                     | 0.50              |
| 33:Ag:7:UNK:N      | 33:Ag:144:UNK:HA  | 2.26                     | 0.50              |
| 33:Ag:335:UNK:C    | 33:Ag:337:UNK:N   | 2.73                     | 0.50              |
| 34:BA:9:G:C8       | 38:BI:126:ARG:NH2 | 2.79                     | 0.50              |
| 34:BA:41:G:C2'     | 34:BA:42:G:H8     | 2.01                     | 0.50              |
| 34:BA:160:A:O2'    | 34:BA:161:A:H5'   | 2.11                     | 0.50              |
| 34:BA:226:G:O2'    | 34:BA:227:G:C5'   | 2.59                     | 0.50              |
| 34:BA:287:U:C2'    | 34:BA:288:A:H5'   | 2.42                     | 0.50              |
| 34:BA:438:G:H5''   | 37:BH:123:HIS:HB3 | 1.92                     | 0.50              |
| 34:BA:652:U:H2'    | 34:BA:752:G:H22   | 1.75                     | 0.50              |
| 34:BA:735:C:H5'    | 51:BV:71:LYS:CD   | 2.38                     | 0.50              |
| 34:BA:828:A:O2'    | 34:BA:829:G:O5'   | 2.27                     | 0.50              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:829:G:O2'    | 34:BA:830:G:H5'    | 2.12                     | 0.50              |
| 34:BA:860:A:N7     | 34:BA:861:G:C4     | 2.79                     | 0.50              |
| 34:BA:862:C:C4     | 34:BA:863:U:C5     | 2.99                     | 0.50              |
| 34:BA:872:A:C2     | 34:BA:874:G:O6     | 2.64                     | 0.50              |
| 34:BA:947:G:H21    | 34:BA:948:C:H1'    | 1.75                     | 0.50              |
| 34:BA:1048:G:C5'   | 47:BR:3:ARG:NH1    | 2.68                     | 0.50              |
| 34:BA:1071:C:N4    | 34:BA:1084:G:N2    | 2.58                     | 0.50              |
| 34:BA:1401:G:H2'   | 34:BA:1402:C:C4'   | 2.41                     | 0.50              |
| 34:BA:1419:G:O2'   | 34:BA:1420:C:C5'   | 2.60                     | 0.50              |
| 34:BA:1442:G:N2    | 34:BA:1446:A:C4    | 2.79                     | 0.50              |
| 34:BA:1506:U:H6    | 34:BA:1506:U:P     | 2.35                     | 0.50              |
| 35:BF:16:HIS:NE2   | 35:BF:210:SER:HA   | 2.25                     | 0.50              |
| 35:BF:50:GLU:O     | 35:BF:51:LEU:C     | 2.53                     | 0.50              |
| 35:BF:58:ILE:HG23  | 35:BF:61:LEU:HD13  | 1.93                     | 0.50              |
| 35:BF:92:TYR:CE2   | 35:BF:151:GLY:O    | 2.63                     | 0.50              |
| 35:BF:115:LEU:HD23 | 35:BF:149:LEU:CD2  | 2.35                     | 0.50              |
| 35:BF:136:VAL:CA   | 35:BF:139:LYS:NZ   | 2.73                     | 0.50              |
| 36:BG:12:LEU:HD12  | 36:BG:18:TRP:CH2   | 2.46                     | 0.50              |
| 36:BG:142:MET:HA   | 36:BG:146:ALA:HB3  | 1.92                     | 0.50              |
| 37:BH:110:PHE:HZ   | 37:BH:147:ALA:CB   | 2.24                     | 0.50              |
| 37:BH:165:MET:HG3  | 37:BH:166:LYS:N    | 2.26                     | 0.50              |
| 37:BH:169:LYS:HA   | 37:BH:176:LEU:CD1  | 2.41                     | 0.50              |
| 38:BI:151:LEU:HD11 | 41:BL:77:GLU:HB2   | 1.91                     | 0.50              |
| 38:BI:152:ARG:NH2  | 41:BL:44:PHE:N     | 2.59                     | 0.50              |
| 39:BJ:1:MET:CB     | 39:BJ:67:MET:O     | 2.59                     | 0.50              |
| 39:BJ:96:PRO:HD2   | 51:BV:32:ARG:HE    | 1.76                     | 0.50              |
| 40:BK:72:ARG:HG3   | 40:BK:73:MET:N     | 2.24                     | 0.50              |
| 40:BK:72:ARG:O     | 40:BK:91:VAL:N     | 2.43                     | 0.50              |
| 40:BK:107:ALA:HB3  | 40:BK:134:ALA:HB2  | 1.94                     | 0.50              |
| 41:BL:14:ARG:HD2   | 41:BL:15:ASN:HD22  | 1.76                     | 0.50              |
| 41:BL:92:ARG:HH11  | 41:BL:92:ARG:CG    | 2.20                     | 0.50              |
| 42:BM:3:GLN:HG3    | 42:BM:20:ARG:CG    | 2.41                     | 0.50              |
| 42:BM:51:ARG:CA    | 42:BM:51:ARG:NH1   | 2.73                     | 0.50              |
| 43:BN:16:LEU:HD22  | 43:BN:16:LEU:N     | 2.27                     | 0.50              |
| 44:BO:58:PRO:CA    | 44:BO:90:GLY:HA3   | 2.41                     | 0.50              |
| 44:BO:82:VAL:CG1   | 44:BO:108:ILE:HG23 | 2.40                     | 0.50              |
| 45:BP:90:VAL:HG12  | 45:BP:90:VAL:O     | 2.10                     | 0.50              |
| 50:BU:3:LYS:O      | 50:BU:4:LYS:C      | 2.54                     | 0.50              |
| 52:BW:39:THR:C     | 52:BW:40:ILE:O     | 2.53                     | 0.50              |
| 52:BW:41:VAL:CB    | 52:BW:42:PRO:CD    | 2.81                     | 0.50              |
| 56:BD:2:C:N4       | 56:BD:71:G:N1      | 2.55                     | 0.50              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 56:BD:3:C:H2'      | 56:BD:4:C:H6       | 1.75                     | 0.50              |
| 56:BE:73:A:N3      | 56:BE:73:A:C3'     | 2.73                     | 0.50              |
| 57:BZ:2:ILE:HG22   | 57:BZ:2:ILE:O      | 2.10                     | 0.50              |
| 57:BZ:6:ARG:HD3    | 57:BZ:195:PRO:O    | 2.11                     | 0.50              |
| 57:BZ:22:VAL:CG2   | 57:BZ:23:ASP:N     | 2.73                     | 0.50              |
| 57:BZ:169:ASN:C    | 57:BZ:171:ILE:HD13 | 2.36                     | 0.50              |
| 57:BZ:405:LEU:HD11 | 57:BZ:464:LEU:CG   | 2.40                     | 0.50              |
| 1:AA:6:A:C6        | 1:AA:2897:U:O4     | 2.50                     | 0.50              |
| 1:AA:236:C:H2'     | 1:AA:237:C:O5'     | 2.10                     | 0.50              |
| 1:AA:247:G:C2      | 29:Ae:8:LYS:HD2    | 2.45                     | 0.50              |
| 1:AA:319:C:N4      | 1:AA:320:A:N6      | 2.60                     | 0.50              |
| 1:AA:327:G:N2      | 1:AA:328:U:C2      | 2.79                     | 0.50              |
| 1:AA:447:A:C6      | 1:AA:473:G:N9      | 2.79                     | 0.50              |
| 1:AA:531:C:C4'     | 1:AA:2035:G:H21    | 2.24                     | 0.50              |
| 1:AA:563:G:C5      | 1:AA:2018:G:N1     | 2.79                     | 0.50              |
| 1:AA:568:U:H3'     | 1:AA:570:G:OP2     | 2.10                     | 0.50              |
| 1:AA:570:G:H2'     | 1:AA:2030:A:N6     | 2.26                     | 0.50              |
| 1:AA:646:A:H2'     | 1:AA:647:G:C8      | 2.47                     | 0.50              |
| 1:AA:733:G:H5''    | 1:AA:761:A:H61     | 1.76                     | 0.50              |
| 1:AA:751:A:N7      | 1:AA:789:A:N6      | 2.59                     | 0.50              |
| 1:AA:821:A:OP1     | 1:AA:822:U:C6      | 2.65                     | 0.50              |
| 1:AA:918:A:N3      | 1:AA:918:A:H3'     | 2.26                     | 0.50              |
| 1:AA:974:G:O2'     | 1:AA:1186:G:N3     | 2.38                     | 0.50              |
| 1:AA:1020:A:H2     | 1:AA:1140:C:H2'    | 1.71                     | 0.50              |
| 1:AA:1068:G:C1'    | 1:AA:1096:A:C4'    | 2.87                     | 0.50              |
| 1:AA:1107:G:O2'    | 1:AA:1108:U:H5'    | 2.11                     | 0.50              |
| 1:AA:1129:A:HO2'   | 1:AA:2515:C:H1'    | 1.76                     | 0.50              |
| 1:AA:1131:G:H4'    | 1:AA:1132:A:OP1    | 2.10                     | 0.50              |
| 1:AA:1203:G:H5'    | 1:AA:1205:U:OP2    | 2.11                     | 0.50              |
| 1:AA:1208:C:N4     | 1:AA:1209:G:C6     | 2.79                     | 0.50              |
| 1:AA:1228:G:H5'    | 1:AA:1228:G:H8     | 1.76                     | 0.50              |
| 1:AA:1372:U:O2'    | 1:AA:1373:A:H5'    | 2.11                     | 0.50              |
| 1:AA:1381:G:C6     | 1:AA:1382:G:C5     | 3.00                     | 0.50              |
| 1:AA:1394:U:C4'    | 1:AA:1603:A:H4'    | 2.37                     | 0.50              |
| 1:AA:1397:U:OP1    | 1:AA:1398:C:H5     | 1.94                     | 0.50              |
| 1:AA:1440:G:H2'    | 1:AA:1441:G:H8     | 1.75                     | 0.50              |
| 1:AA:1477:A:OP2    | 1:AA:1477:A:C8     | 2.64                     | 0.50              |
| 1:AA:1485:G:O2'    | 1:AA:1486:A:H5'    | 2.11                     | 0.50              |
| 1:AA:1527:G:H3'    | 1:AA:1527:G:H8     | 1.71                     | 0.50              |
| 1:AA:1559:G:N3     | 1:AA:1559:G:C2'    | 2.73                     | 0.50              |
| 1:AA:1807:G:C2     | 1:AA:1809:A:OP2    | 2.64                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1879:C:C4    | 1:AA:1880:C:C4    | 2.99                     | 0.50              |
| 1:AA:1964:G:C4    | 1:AA:1967:C:H5    | 2.29                     | 0.50              |
| 1:AA:2046:G:H4'   | 26:Ab:22:HIS:HB3  | 1.93                     | 0.50              |
| 1:AA:2072:G:H2'   | 1:AA:2073:C:C5    | 2.46                     | 0.50              |
| 1:AA:2122:U:O2'   | 3:AC:166:ASP:HB3  | 2.11                     | 0.50              |
| 1:AA:2257:U:H5'   | 22:AX:11:ARG:HD3  | 1.92                     | 0.50              |
| 1:AA:2310:A:H2    | 7:AG:83:ARG:NH2   | 2.10                     | 0.50              |
| 1:AA:2356:C:C4    | 1:AA:2357:U:O4    | 2.64                     | 0.50              |
| 1:AA:2373:G:C4    | 1:AA:2374:C:C5    | 2.99                     | 0.50              |
| 1:AA:2431:U:O2'   | 1:AA:2432:A:C8    | 2.65                     | 0.50              |
| 1:AA:2458:G:C6    | 1:AA:2490:G:C2    | 2.99                     | 0.50              |
| 1:AA:2603:G:C6    | 1:AA:2604:U:C4    | 3.00                     | 0.50              |
| 1:AA:2681:C:C4    | 1:AA:2725:A:N6    | 2.75                     | 0.50              |
| 1:AA:2709:G:H8    | 1:AA:2709:G:O5'   | 1.93                     | 0.50              |
| 1:AA:2789:C:C2'   | 1:AA:2791:C:H5'   | 2.38                     | 0.50              |
| 1:AA:2807:G:H3'   | 1:AA:2808:U:C6    | 2.46                     | 0.50              |
| 1:AA:2825:C:N3    | 1:AA:2826:A:N7    | 2.59                     | 0.50              |
| 1:AA:2833:G:O4'   | 1:AA:2833:G:OP1   | 2.28                     | 0.50              |
| 1:AA:2882:A:H4'   | 13:AO:98:LEU:HD21 | 1.92                     | 0.50              |
| 2:AB:43:C:O2      | 7:AG:95:ARG:CB    | 2.49                     | 0.50              |
| 2:AB:75:G:N2      | 21:AW:27:VAL:HG21 | 2.26                     | 0.50              |
| 3:AC:34:THR:O     | 3:AC:35:ALA:O     | 2.30                     | 0.50              |
| 3:AC:77:ILE:HD12  | 3:AC:123:VAL:HG11 | 1.92                     | 0.50              |
| 3:AC:148:ASN:HB2  | 3:AC:151:GLU:HB2  | 1.92                     | 0.50              |
| 3:AC:176:GLY:HA2  | 3:AC:185:LEU:H    | 1.74                     | 0.50              |
| 5:AE:92:THR:HG23  | 5:AE:95:ILE:HG22  | 1.93                     | 0.50              |
| 5:AE:102:VAL:HG23 | 5:AE:200:GLU:OE2  | 2.11                     | 0.50              |
| 5:AE:127:ASP:O    | 5:AE:128:SER:CB   | 2.58                     | 0.50              |
| 5:AE:133:LYS:CD   | 5:AE:137:HIS:CG   | 2.90                     | 0.50              |
| 5:AE:154:LYS:HD2  | 5:AE:154:LYS:O    | 2.12                     | 0.50              |
| 6:AF:52:LYS:O     | 6:AF:53:THR:CG2   | 2.53                     | 0.50              |
| 6:AF:53:THR:O     | 6:AF:56:GLU:OE1   | 2.28                     | 0.50              |
| 7:AG:17:PRO:HA    | 7:AG:20:ILE:CB    | 2.39                     | 0.50              |
| 7:AG:33:ARG:HH21  | 7:AG:33:ARG:C     | 2.20                     | 0.50              |
| 7:AG:174:GLU:CG   | 7:AG:175:LEU:N    | 2.74                     | 0.50              |
| 8:AH:159:GLU:HG2  | 8:AH:163:TYR:OH   | 2.11                     | 0.50              |
| 9:AK:23:LEU:HD21  | 9:AK:62:VAL:HA    | 1.93                     | 0.50              |
| 9:AK:135:PRO:O    | 9:AK:136:GLU:O    | 2.29                     | 0.50              |
| 12:AN:130:LYS:HE3 | 12:AN:131:ILE:C   | 2.35                     | 0.50              |
| 15:AQ:67:SER:HA   | 15:AQ:75:ILE:CG2  | 2.41                     | 0.50              |
| 15:AQ:97:ALA:C    | 15:AQ:99:LEU:H    | 2.19                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 16:AR:26:GLY:O    | 16:AR:27:LEU:HD12 | 2.10                     | 0.50              |
| 16:AR:66:ASN:OD1  | 16:AR:76:TYR:CD1  | 2.65                     | 0.50              |
| 16:AR:75:ASN:O    | 16:AR:79:PHE:HB3  | 2.11                     | 0.50              |
| 17:AS:40:LEU:CG   | 17:AS:55:ALA:CA   | 2.89                     | 0.50              |
| 17:AS:83:ARG:HH21 | 17:AS:85:LYS:HE2  | 1.76                     | 0.50              |
| 18:AT:18:ARG:CD   | 18:AT:76:VAL:HG12 | 2.36                     | 0.50              |
| 19:AU:7:VAL:HB    | 23:AY:28:MET:SD   | 2.50                     | 0.50              |
| 19:AU:26:TYR:HB3  | 19:AU:28:PHE:CE1  | 2.46                     | 0.50              |
| 21:AW:10:ARG:HD3  | 21:AW:36:LYS:CG   | 2.42                     | 0.50              |
| 21:AW:43:GLU:N    | 21:AW:43:GLU:OE2  | 2.43                     | 0.50              |
| 21:AW:57:ILE:HG23 | 21:AW:69:THR:C    | 2.36                     | 0.50              |
| 21:AW:70:LEU:C    | 21:AW:70:LEU:CD1  | 2.84                     | 0.50              |
| 21:AW:127:LYS:HA  | 21:AW:164:ALA:CB  | 2.40                     | 0.50              |
| 23:AY:2:ARG:O     | 23:AY:6:GLU:OE2   | 2.29                     | 0.50              |
| 24:AZ:26:LEU:HD13 | 24:AZ:26:LEU:N    | 2.26                     | 0.50              |
| 25:Aa:14:ILE:CG1  | 25:Aa:39:CYS:HB2  | 2.39                     | 0.50              |
| 27:Ac:9:LEU:C     | 27:Ac:10:LEU:HD23 | 2.35                     | 0.50              |
| 27:Ac:31:PRO:HB3  | 27:Ac:34:LEU:CD1  | 2.30                     | 0.50              |
| 30:Af:10:ILE:N    | 30:Af:10:ILE:CD1  | 2.65                     | 0.50              |
| 30:Af:17:ILE:CD1  | 30:Af:26:ILE:HD12 | 2.16                     | 0.50              |
| 32:AJ:23:VAL:HG13 | 32:AJ:27:LEU:CD1  | 2.42                     | 0.50              |
| 32:AJ:104:VAL:CG1 | 32:AJ:127:ILE:CG2 | 2.64                     | 0.50              |
| 34:BA:149:A:H2'   | 34:BA:150:C:C6    | 2.46                     | 0.50              |
| 34:BA:291:C:C3'   | 34:BA:305:G:N2    | 2.64                     | 0.50              |
| 34:BA:294:U:C2    | 34:BA:295:C:C5    | 2.99                     | 0.50              |
| 34:BA:295:C:H2'   | 34:BA:296:U:O4'   | 2.11                     | 0.50              |
| 34:BA:380:G:N2    | 34:BA:383:A:OP2   | 2.44                     | 0.50              |
| 34:BA:409:G:H2'   | 34:BA:410:G:O5'   | 2.11                     | 0.50              |
| 34:BA:439:A:H1'   | 34:BA:496:A:C2    | 2.46                     | 0.50              |
| 34:BA:498:A:C4'   | 34:BA:500:G:H5'   | 2.39                     | 0.50              |
| 34:BA:579:G:C6    | 34:BA:580:U:C5    | 3.00                     | 0.50              |
| 34:BA:597:G:N2    | 41:BL:94:TYR:CZ   | 2.79                     | 0.50              |
| 34:BA:688:G:C6    | 34:BA:700:G:C6    | 2.99                     | 0.50              |
| 34:BA:781:A:O4'   | 34:BA:1523:G:H1'  | 2.11                     | 0.50              |
| 34:BA:957:U:H2'   | 34:BA:959:A:OP2   | 2.11                     | 0.50              |
| 34:BA:1060:C:H2'  | 34:BA:1061:G:H8   | 1.75                     | 0.50              |
| 34:BA:1155:G:H21  | 34:BA:1179:A:H61  | 1.58                     | 0.50              |
| 34:BA:1352:C:H2'  | 34:BA:1353:G:O4'  | 2.11                     | 0.50              |
| 34:BA:1365:G:N1   | 34:BA:1366:C:C4   | 2.80                     | 0.50              |
| 34:BA:1415:G:C2   | 34:BA:1416:G:C8   | 2.99                     | 0.50              |
| 35:BF:28:PHE:CA   | 35:BF:194:PRO:HG2 | 2.41                     | 0.50              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BF:72:GLY:CA   | 35:BF:81:VAL:HG21  | 2.41                     | 0.50              |
| 35:BF:92:TYR:O    | 35:BF:152:PHE:CB   | 2.59                     | 0.50              |
| 35:BF:178:ARG:CA  | 35:BF:184:VAL:HG21 | 2.40                     | 0.50              |
| 37:BH:55:ALA:C    | 37:BH:59:ARG:HG2   | 2.31                     | 0.50              |
| 37:BH:187:ARG:CD  | 37:BH:188:LEU:H    | 2.24                     | 0.50              |
| 39:BJ:1:MET:HA    | 39:BJ:67:MET:O     | 2.11                     | 0.50              |
| 39:BJ:42:GLU:HB2  | 39:BJ:61:LEU:CD2   | 2.41                     | 0.50              |
| 39:BJ:53:ALA:O    | 39:BJ:55:ASP:CG    | 2.55                     | 0.50              |
| 40:BK:5:ARG:NH1   | 40:BK:5:ARG:O      | 2.41                     | 0.50              |
| 40:BK:29:LYS:HE3  | 40:BK:101:LEU:CD1  | 2.39                     | 0.50              |
| 40:BK:74:GLU:O    | 40:BK:88:PRO:CA    | 2.53                     | 0.50              |
| 41:BL:6:ILE:HG21  | 41:BL:85:ARG:HH22  | 1.76                     | 0.50              |
| 41:BL:19:VAL:HB   | 41:BL:21:LYS:CD    | 2.41                     | 0.50              |
| 41:BL:97:VAL:CG1  | 41:BL:98:LYS:HZ1   | 2.24                     | 0.50              |
| 41:BL:98:LYS:HZ2  | 41:BL:98:LYS:CA    | 2.22                     | 0.50              |
| 42:BM:67:GLY:O    | 42:BM:68:GLY:C     | 2.54                     | 0.50              |
| 42:BM:91:ASP:O    | 42:BM:91:ASP:CG    | 2.54                     | 0.50              |
| 44:BO:24:SER:O    | 44:BO:88:GLY:HA2   | 2.11                     | 0.50              |
| 44:BO:29:ILE:HG13 | 44:BO:29:ILE:O     | 2.10                     | 0.50              |
| 44:BO:51:LYS:HD3  | 44:BO:52:GLY:N     | 2.24                     | 0.50              |
| 44:BO:80:VAL:HG22 | 44:BO:81:ASP:N     | 2.25                     | 0.50              |
| 44:BO:126:ARG:HB3 | 44:BO:126:ARG:CZ   | 2.41                     | 0.50              |
| 45:BP:24:VAL:CG1  | 45:BP:26:ALA:HB2   | 2.40                     | 0.50              |
| 45:BP:28:LYS:CE   | 45:BP:33:ARG:HH22  | 2.22                     | 0.50              |
| 45:BP:90:VAL:HB   | 45:BP:96:VAL:CG1   | 2.42                     | 0.50              |
| 46:BQ:11:ARG:C    | 46:BQ:44:ARG:O     | 2.52                     | 0.50              |
| 48:BS:57:LEU:O    | 48:BS:58:MET:C     | 2.52                     | 0.50              |
| 50:BU:59:ILE:HG12 | 50:BU:71:PHE:HB3   | 1.93                     | 0.50              |
| 51:BV:81:PHE:O    | 51:BV:82:THR:CB    | 2.59                     | 0.50              |
| 56:BE:3:C:C2'     | 56:BE:4:C:C6       | 2.86                     | 0.50              |
| 57:BZ:29:SER:CB   | 57:BZ:60:ASN:OD1   | 2.60                     | 0.50              |
| 57:BZ:156:GLU:N   | 57:BZ:157:GLN:CB   | 2.73                     | 0.50              |
| 57:BZ:160:PHE:HA  | 57:BZ:161:ALA:O    | 2.12                     | 0.50              |
| 57:BZ:160:PHE:CA  | 57:BZ:161:ALA:HB3  | 2.41                     | 0.50              |
| 57:BZ:267:LEU:CG  | 57:BZ:268:ALA:N    | 2.73                     | 0.50              |
| 57:BZ:293:ASN:N   | 57:BZ:294:VAL:CA   | 2.73                     | 0.50              |
| 57:BZ:383:SER:N   | 57:BZ:384:ARG:CB   | 2.75                     | 0.50              |
| 57:BZ:426:LEU:CG  | 57:BZ:441:TYR:CZ   | 2.94                     | 0.50              |
| 1:AA:66:C:C4      | 1:AA:89:G:N1       | 2.80                     | 0.50              |
| 1:AA:70:G:H2'     | 1:AA:114:U:C5      | 2.46                     | 0.50              |
| 1:AA:120:U:C2     | 1:AA:149:A:C2      | 2.99                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:147:U:N3     | 1:AA:148:C:N4     | 2.60                     | 0.50              |
| 1:AA:247:G:O3'    | 1:AA:386:G:N2     | 2.44                     | 0.50              |
| 1:AA:322:A:H5'    | 1:AA:341:G:H5'    | 1.92                     | 0.50              |
| 1:AA:463:G:O3'    | 1:AA:464:U:H5     | 1.95                     | 0.50              |
| 1:AA:588:U:C1'    | 6:AF:90:PHE:CD1   | 2.94                     | 0.50              |
| 1:AA:611:C:N4     | 1:AA:618:G:H1     | 2.10                     | 0.50              |
| 1:AA:617:G:OP2    | 6:AF:40:GLN:NE2   | 2.44                     | 0.50              |
| 1:AA:702:G:H2'    | 1:AA:703:U:C5'    | 2.41                     | 0.50              |
| 1:AA:753:C:H2'    | 1:AA:753:C:O2     | 2.11                     | 0.50              |
| 1:AA:795:C:C2     | 1:AA:796:C:C5     | 2.99                     | 0.50              |
| 1:AA:943:U:H5''   | 1:AA:944:G:O6     | 2.12                     | 0.50              |
| 1:AA:1046:A:N7    | 31:AI:9:LEU:O     | 2.43                     | 0.50              |
| 1:AA:1050:A:C2'   | 1:AA:2752:C:OP1   | 2.57                     | 0.50              |
| 1:AA:1128:A:C6    | 1:AA:1129:A:N1    | 2.79                     | 0.50              |
| 1:AA:1151:G:H2'   | 1:AA:1152:C:C5    | 2.45                     | 0.50              |
| 1:AA:1189:A:OP2   | 1:AA:1190:G:N7    | 2.44                     | 0.50              |
| 1:AA:1222:C:N3    | 1:AA:1223:C:C5    | 2.78                     | 0.50              |
| 1:AA:1313:U:H2'   | 1:AA:1314:C:C5    | 2.45                     | 0.50              |
| 1:AA:1539:G:C8    | 1:AA:1540:G:C8    | 2.99                     | 0.50              |
| 1:AA:1543:A:H8    | 1:AA:1544:C:HO2'  | 1.59                     | 0.50              |
| 1:AA:1575:C:N4    | 1:AA:1576:U:N3    | 2.58                     | 0.50              |
| 1:AA:1577:C:OP2   | 1:AA:1577:C:H6    | 1.94                     | 0.50              |
| 1:AA:1591:G:C2    | 1:AA:1592:C:C4    | 2.99                     | 0.50              |
| 1:AA:1613:G:N2    | 1:AA:1619:G:N9    | 2.60                     | 0.50              |
| 1:AA:1731:G:N3    | 1:AA:1731:G:C2'   | 2.74                     | 0.50              |
| 1:AA:1769:G:C6    | 1:AA:1770:G:O6    | 2.64                     | 0.50              |
| 1:AA:1774:C:H5    | 1:AA:1775:U:C5    | 2.26                     | 0.50              |
| 1:AA:1942:C:H3'   | 1:AA:1942:C:OP2   | 2.11                     | 0.50              |
| 1:AA:1997:G:H5'   | 5:AE:123:ALA:HB3  | 1.93                     | 0.50              |
| 1:AA:2000:G:H2'   | 1:AA:2001:A:H8    | 1.76                     | 0.50              |
| 1:AA:2041:U:C2    | 1:AA:2042:A:N7    | 2.80                     | 0.50              |
| 1:AA:2260:C:O2'   | 1:AA:2261:C:H5'   | 2.11                     | 0.50              |
| 1:AA:2503:A:HO2'  | 1:AA:2504:U:P     | 2.33                     | 0.50              |
| 2:AB:7:G:C4'      | 14:AP:29:PHE:HE2  | 2.17                     | 0.50              |
| 2:AB:28:C:O5'     | 2:AB:28:C:C6      | 2.57                     | 0.50              |
| 2:AB:66:A:H2      | 2:AB:108:C:N1     | 2.09                     | 0.50              |
| 2:AB:73:A:C2      | 21:AW:29:TYR:HE1  | 2.30                     | 0.50              |
| 4:AD:89:SER:O     | 4:AD:202:LYS:HE3  | 2.11                     | 0.50              |
| 4:AD:106:ILE:HD12 | 4:AD:192:THR:HG23 | 1.93                     | 0.50              |
| 4:AD:111:LEU:HD12 | 4:AD:115:GLN:OE1  | 2.11                     | 0.50              |
| 5:AE:14:ILE:HD12  | 5:AE:14:ILE:O     | 2.12                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 5:AE:50:GLY:O     | 5:AE:76:ARG:NE    | 2.39                     | 0.50              |
| 6:AF:39:TRP:O     | 6:AF:42:ALA:HB3   | 2.12                     | 0.50              |
| 6:AF:162:LEU:O    | 6:AF:165:ARG:HB3  | 2.11                     | 0.50              |
| 8:AH:85:LYS:HZ3   | 8:AH:141:VAL:C    | 2.18                     | 0.50              |
| 8:AH:120:GLY:C    | 8:AH:135:GLY:HA2  | 2.35                     | 0.50              |
| 9:AK:136:GLU:C    | 9:AK:137:LYS:HG3  | 2.36                     | 0.50              |
| 10:AL:12:ASP:OD1  | 10:AL:12:ASP:N    | 2.42                     | 0.50              |
| 11:AM:46:LYS:HZ1  | 11:AM:50:ARG:NH1  | 2.09                     | 0.50              |
| 11:AM:87:ASP:O    | 11:AM:89:ALA:N    | 2.45                     | 0.50              |
| 12:AN:16:ARG:O    | 12:AN:17:LEU:CG   | 2.59                     | 0.50              |
| 12:AN:85:LYS:CG   | 12:AN:86:GLY:N    | 2.73                     | 0.50              |
| 13:AO:20:LEU:HD21 | 13:AO:24:GLN:CD   | 2.35                     | 0.50              |
| 15:AQ:49:VAL:O    | 15:AQ:50:ILE:HG12 | 2.12                     | 0.50              |
| 16:AR:65:ILE:O    | 16:AR:68:ALA:N    | 2.44                     | 0.50              |
| 16:AR:102:GLU:O   | 16:AR:105:VAL:CB  | 2.59                     | 0.50              |
| 18:AT:78:GLU:CG   | 18:AT:99:ARG:HB3  | 2.42                     | 0.50              |
| 19:AU:61:GLY:N    | 19:AU:73:ARG:HH12 | 2.09                     | 0.50              |
| 20:AV:35:TYR:CE2  | 20:AV:67:LEU:HD13 | 2.46                     | 0.50              |
| 20:AV:69:ALA:O    | 20:AV:71:LYS:HD2  | 2.11                     | 0.50              |
| 21:AW:17:ALA:CA   | 21:AW:20:ARG:NH2  | 2.72                     | 0.50              |
| 21:AW:41:LEU:O    | 21:AW:45:ASP:OD1  | 2.29                     | 0.50              |
| 24:AZ:5:LYS:HE2   | 24:AZ:57:GLU:HB2  | 1.94                     | 0.50              |
| 25:Aa:38:LYS:HG2  | 25:Aa:40:HIS:ND1  | 2.26                     | 0.50              |
| 27:Ac:19:ARG:HH11 | 27:Ac:19:ARG:CG   | 1.97                     | 0.50              |
| 29:Ae:17:THR:C    | 29:Ae:19:SER:H    | 2.19                     | 0.50              |
| 30:Af:9:ARG:O     | 30:Af:10:ILE:HG13 | 2.12                     | 0.50              |
| 31:AI:141:VAL:O   | 33:Ag:134:UNK:CA  | 2.56                     | 0.50              |
| 32:AJ:98:ARG:CG   | 32:AJ:99:ILE:N    | 2.74                     | 0.50              |
| 32:AJ:99:ILE:O    | 32:AJ:103:GLN:CB  | 2.60                     | 0.50              |
| 34:BA:22:G:C2     | 34:BA:23:C:C2     | 3.00                     | 0.50              |
| 34:BA:145:G:C6    | 34:BA:178:C:C4    | 2.99                     | 0.50              |
| 34:BA:196:A:H1'   | 34:BA:222:U:H1'   | 1.92                     | 0.50              |
| 34:BA:262:A:C4'   | 53:BX:74:LYS:HG3  | 2.41                     | 0.50              |
| 34:BA:309:G:H2'   | 34:BA:310:G:H8    | 1.76                     | 0.50              |
| 34:BA:336:C:C2    | 34:BA:337:C:C5    | 2.99                     | 0.50              |
| 34:BA:367:U:O2'   | 34:BA:368:U:H4'   | 2.12                     | 0.50              |
| 34:BA:485:G:O2'   | 34:BA:486:U:H6    | 1.93                     | 0.50              |
| 34:BA:621:A:H2'   | 34:BA:622:A:C8    | 2.46                     | 0.50              |
| 34:BA:750:G:H1'   | 48:BS:23:GLY:CA   | 2.42                     | 0.50              |
| 34:BA:833:U:O2'   | 34:BA:834:C:H6    | 1.92                     | 0.50              |
| 34:BA:997:U:H6    | 34:BA:997:U:OP2   | 1.94                     | 0.50              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1027:C:C4    | 34:BA:1028:C:C5    | 2.99                     | 0.50              |
| 34:BA:1061:G:H5'   | 43:BN:59:SER:OG    | 2.11                     | 0.50              |
| 34:BA:1084:G:HO2'  | 34:BA:1085:U:P     | 2.35                     | 0.50              |
| 34:BA:1116:C:H2'   | 34:BA:1117:G:H8    | 1.76                     | 0.50              |
| 34:BA:1167:A:H3'   | 34:BA:1169:A:C8    | 2.46                     | 0.50              |
| 34:BA:1319:A:C8    | 52:BW:70:LYS:NZ    | 2.75                     | 0.50              |
| 34:BA:1324:A:C6    | 34:BA:1325:C:C5    | 3.00                     | 0.50              |
| 34:BA:1329:A:O2'   | 46:BQ:70:LEU:HD21  | 1.99                     | 0.50              |
| 34:BA:1399:C:H42   | 34:BA:1504:G:H1    | 1.60                     | 0.50              |
| 34:BA:1419:G:C6    | 34:BA:1482:G:C2    | 2.99                     | 0.50              |
| 35:BF:105:PHE:O    | 35:BF:109:SER:OG   | 2.21                     | 0.50              |
| 36:BG:60:ALA:HA    | 43:BN:92:THR:O     | 2.11                     | 0.50              |
| 37:BH:98:GLU:CA    | 37:BH:103:ASN:ND2  | 2.68                     | 0.50              |
| 38:BI:109:ILE:HD13 | 38:BI:135:THR:HG21 | 1.91                     | 0.50              |
| 38:BI:122:GLU:HG2  | 38:BI:126:ARG:CG   | 2.41                     | 0.50              |
| 39:BJ:2:ARG:NE     | 39:BJ:69:GLU:HG2   | 2.26                     | 0.50              |
| 39:BJ:60:PHE:HE2   | 51:BV:78:LEU:HD11  | 1.77                     | 0.50              |
| 40:BK:23:VAL:HG13  | 40:BK:43:PHE:CE2   | 2.46                     | 0.50              |
| 40:BK:64:GLN:C     | 40:BK:128:ALA:HA   | 2.36                     | 0.50              |
| 40:BK:69:VAL:CA    | 40:BK:135:VAL:HG22 | 2.42                     | 0.50              |
| 40:BK:70:LYS:C     | 40:BK:138:LYS:HE3  | 2.36                     | 0.50              |
| 40:BK:113:GLU:OE2  | 40:BK:119:ARG:CG   | 2.58                     | 0.50              |
| 42:BM:11:LYS:O     | 42:BM:11:LYS:CG    | 2.59                     | 0.50              |
| 43:BN:22:LYS:NZ    | 43:BN:90:LEU:CD1   | 2.73                     | 0.50              |
| 43:BN:57:LYS:O     | 43:BN:57:LYS:HG2   | 2.11                     | 0.50              |
| 43:BN:61:GLU:CG    | 43:BN:62:HIS:H     | 2.19                     | 0.50              |
| 44:BO:70:LYS:HD2   | 44:BO:70:LYS:H     | 1.77                     | 0.50              |
| 45:BP:102:ARG:NH2  | 45:BP:109:GLY:C    | 2.69                     | 0.50              |
| 46:BQ:97:PRO:HG2   | 46:BQ:101:GLN:CB   | 2.42                     | 0.50              |
| 47:BR:23:ARG:HA    | 47:BR:30:ALA:HA    | 1.93                     | 0.50              |
| 50:BU:75:ARG:HH12  | 50:BU:77:VAL:HA    | 1.77                     | 0.50              |
| 52:BW:30:LEU:HD12  | 52:BW:59:PRO:HA    | 1.93                     | 0.50              |
| 56:BD:3:C:C2       | 56:BD:71:G:C2      | 2.99                     | 0.50              |
| 57:BZ:244:GLY:CA   | 57:BZ:245:LYS:CB   | 2.86                     | 0.50              |
| 57:BZ:481:GLY:C    | 57:BZ:573:ASP:OD1  | 2.53                     | 0.50              |
| 57:BZ:556:VAL:O    | 57:BZ:557:LEU:HD23 | 2.12                     | 0.50              |
| 57:BZ:601:ASN:CA   | 57:BZ:602:ARG:HB2  | 2.42                     | 0.50              |
| 1:AA:185:U:C4      | 1:AA:212:G:N2      | 2.79                     | 0.50              |
| 1:AA:270(L):U:O2'  | 1:AA:270(M):U:P    | 2.69                     | 0.50              |
| 1:AA:270(X):G:N3   | 1:AA:270(Y):G:H4'  | 2.26                     | 0.50              |
| 1:AA:371:A:H5''    | 1:AA:423:A:C5      | 2.46                     | 0.50              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:375:C:H2'    | 1:AA:375:C:O2      | 2.10                     | 0.50              |
| 1:AA:448:U:O4     | 1:AA:583:G:C4      | 2.65                     | 0.50              |
| 1:AA:487:C:N4     | 1:AA:488:G:C6      | 2.79                     | 0.50              |
| 1:AA:532:A:P      | 1:AA:2021:C:N4     | 2.84                     | 0.50              |
| 1:AA:571:A:N3     | 1:AA:573:G:N7      | 2.60                     | 0.50              |
| 1:AA:685:A:H5''   | 1:AA:686:G:H22     | 1.70                     | 0.50              |
| 1:AA:697:C:O2'    | 1:AA:698:C:O4'     | 2.25                     | 0.50              |
| 1:AA:746:A:N7     | 1:AA:2612:C:OP1    | 2.44                     | 0.50              |
| 1:AA:751:A:H4'    | 18:AT:90:ARG:NE    | 2.26                     | 0.50              |
| 1:AA:819:A:C8     | 1:AA:819:A:H5'     | 2.46                     | 0.50              |
| 1:AA:823:G:H5'    | 1:AA:824:A:OP2     | 2.11                     | 0.50              |
| 1:AA:898:C:H3'    | 1:AA:899:A:H5''    | 1.92                     | 0.50              |
| 1:AA:904:C:O2'    | 21:AW:122:ARG:NH1  | 2.44                     | 0.50              |
| 1:AA:934:G:C6     | 1:AA:935:C:C5      | 3.00                     | 0.50              |
| 1:AA:969:U:N3     | 1:AA:970:C:C5      | 2.80                     | 0.50              |
| 1:AA:1063:G:C8    | 1:AA:1064:C:C6     | 2.99                     | 0.50              |
| 1:AA:1083:U:N3    | 1:AA:1085:A:H8     | 2.01                     | 0.50              |
| 1:AA:1103:A:OP2   | 1:AA:1104:C:C6     | 2.65                     | 0.50              |
| 1:AA:1142(A):A:C8 | 1:AA:1142(A):A:O5' | 2.65                     | 0.50              |
| 1:AA:1272:A:H5'   | 1:AA:1646:C:C2     | 2.47                     | 0.50              |
| 1:AA:1373:A:C8    | 1:AA:1374:G:N7     | 2.80                     | 0.50              |
| 1:AA:1403:C:H4'   | 1:AA:1471:A:C5'    | 2.37                     | 0.50              |
| 1:AA:1476:C:O2    | 1:AA:1476:C:H2'    | 2.11                     | 0.50              |
| 1:AA:1552:G:H5'   | 1:AA:1553:A:OP1    | 2.11                     | 0.50              |
| 1:AA:1567:A:N1    | 4:AD:85:ASP:C      | 2.70                     | 0.50              |
| 1:AA:1619:G:N2    | 1:AA:1620:G:C4     | 2.80                     | 0.50              |
| 1:AA:1655:A:C2'   | 1:AA:1656:C:H6     | 2.22                     | 0.50              |
| 1:AA:1803:A:O3'   | 4:AD:257:LEU:HD13  | 2.10                     | 0.50              |
| 1:AA:1889:A:C2    | 1:AA:2234:G:H1'    | 2.47                     | 0.50              |
| 1:AA:2009:G:C1'   | 13:AO:107:ASP:O    | 2.59                     | 0.50              |
| 1:AA:2027:G:C1'   | 1:AA:2037:G:H22    | 2.22                     | 0.50              |
| 1:AA:2048:G:H2'   | 1:AA:2049:G:O5'    | 2.12                     | 0.50              |
| 1:AA:2057:A:C8    | 1:AA:2058:A:N7     | 2.80                     | 0.50              |
| 1:AA:2072:G:N3    | 1:AA:2073:C:C5     | 2.80                     | 0.50              |
| 1:AA:2199:A:C4    | 1:AA:2225:A:N1     | 2.80                     | 0.50              |
| 1:AA:2247:A:H2'   | 1:AA:2248:C:H6     | 1.76                     | 0.50              |
| 1:AA:2265:U:H2'   | 1:AA:2265:U:O2     | 2.10                     | 0.50              |
| 1:AA:2277:G:C6    | 1:AA:2278:A:N7     | 2.79                     | 0.50              |
| 1:AA:2469:A:C6    | 1:AA:2482:G:C8     | 3.00                     | 0.50              |
| 1:AA:2521:C:C5    | 1:AA:2522:U:C5     | 2.99                     | 0.50              |
| 1:AA:2544:G:H2'   | 1:AA:2545:G:C5'    | 2.42                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2620:C:C2'   | 1:AA:2621:A:O5'   | 2.60                     | 0.50              |
| 1:AA:2701:C:C3'   | 1:AA:2702:U:C5'   | 2.80                     | 0.50              |
| 1:AA:2707:G:C2'   | 1:AA:2708:G:O5'   | 2.58                     | 0.50              |
| 1:AA:2781:A:C2'   | 1:AA:2782:G:O2'   | 2.57                     | 0.50              |
| 1:AA:2830:G:H5'   | 5:AE:57:LYS:CE    | 2.42                     | 0.50              |
| 2:AB:32:C:O2      | 2:AB:32:C:C2'     | 2.60                     | 0.50              |
| 2:AB:60:C:H2'     | 2:AB:61:G:C8      | 2.47                     | 0.50              |
| 2:AB:79:C:C2'     | 2:AB:80:U:H5'     | 2.41                     | 0.50              |
| 3:AC:43:VAL:CG1   | 3:AC:224:ILE:HD13 | 2.27                     | 0.50              |
| 3:AC:71:GLN:CD    | 3:AC:174:PRO:HD3  | 2.34                     | 0.50              |
| 3:AC:213:TYR:HD1  | 3:AC:213:TYR:N    | 2.04                     | 0.50              |
| 4:AD:61:LEU:O     | 4:AD:62:TYR:CB    | 2.60                     | 0.50              |
| 4:AD:117:VAL:CG1  | 4:AD:118:VAL:N    | 2.74                     | 0.50              |
| 4:AD:133:LEU:CB   | 4:AD:136:ILE:HD11 | 2.26                     | 0.50              |
| 4:AD:177:LEU:O    | 4:AD:178:PRO:O    | 2.30                     | 0.50              |
| 4:AD:181:GLU:OE1  | 4:AD:271:ILE:O    | 2.30                     | 0.50              |
| 5:AE:4:ILE:O      | 5:AE:27:LEU:CD2   | 2.57                     | 0.50              |
| 5:AE:4:ILE:HD12   | 5:AE:76:ARG:NH2   | 2.26                     | 0.50              |
| 5:AE:51:PHE:CD1   | 5:AE:51:PHE:C     | 2.87                     | 0.50              |
| 5:AE:85:ASN:HD22  | 5:AE:85:ASN:N     | 2.03                     | 0.50              |
| 5:AE:111:ARG:HB2  | 5:AE:160:TYR:C    | 2.37                     | 0.50              |
| 6:AF:45:ARG:HD3   | 6:AF:97:TYR:CE1   | 2.46                     | 0.50              |
| 7:AG:110:ALA:HB1  | 7:AG:139:LEU:HD21 | 1.92                     | 0.50              |
| 8:AH:54:ARG:HB3   | 8:AH:54:ARG:NH2   | 2.26                     | 0.50              |
| 9:AK:35:ARG:HB3   | 9:AK:37:LYS:H     | 1.76                     | 0.50              |
| 9:AK:67:LEU:N     | 9:AK:69:GLN:OE1   | 2.45                     | 0.50              |
| 10:AL:15:GLY:N    | 10:AL:52:VAL:HG21 | 2.25                     | 0.50              |
| 10:AL:63:VAL:CA   | 10:AL:78:ARG:HD3  | 2.36                     | 0.50              |
| 11:AM:55:ARG:CB   | 11:AM:55:ARG:NH2  | 2.68                     | 0.50              |
| 12:AN:11:LYS:HD3  | 12:AN:16:ARG:HH21 | 1.76                     | 0.50              |
| 13:AO:4:LEU:O     | 13:AO:6:SER:N     | 2.45                     | 0.50              |
| 13:AO:13:HIS:HB3  | 13:AO:16:HIS:HD2  | 1.66                     | 0.50              |
| 13:AO:63:ARG:HH12 | 13:AO:80:PHE:CB   | 2.24                     | 0.50              |
| 13:AO:99:LYS:HE2  | 26:Ab:43:HIS:ND1  | 2.26                     | 0.50              |
| 14:AP:69:VAL:HG13 | 14:AP:73:LEU:HD11 | 1.93                     | 0.50              |
| 17:AS:89:GLN:HG2  | 17:AS:91:TYR:CE1  | 2.47                     | 0.50              |
| 21:AW:56:VAL:HG11 | 21:AW:135:GLU:OE2 | 2.11                     | 0.50              |
| 21:AW:102:LEU:HG  | 21:AW:125:LEU:CD1 | 2.42                     | 0.50              |
| 23:AY:56:LEU:N    | 23:AY:56:LEU:CD1  | 2.70                     | 0.50              |
| 26:Ab:56:LYS:HG3  | 26:Ab:57:VAL:HG13 | 1.93                     | 0.50              |
| 28:Ad:32:LYS:CA   | 28:Ad:35:ARG:HD3  | 2.41                     | 0.50              |

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| Atom-1              | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 29:Ae:30:ARG:HG2    | 29:Ae:31:HIS:N     | 2.24                     | 0.50              |
| 32:AJ:34:ILE:CD1    | 32:AJ:63:ARG:HH22  | 2.18                     | 0.50              |
| 32:AJ:78:ILE:HG21   | 32:AJ:127:ILE:N    | 2.27                     | 0.50              |
| 32:AJ:134:MET:C     | 32:AJ:134:MET:SD   | 2.95                     | 0.50              |
| 34:BA:27:G:C6       | 34:BA:557:G:C2     | 3.00                     | 0.50              |
| 34:BA:49:U:C4       | 34:BA:361:G:C2     | 3.00                     | 0.50              |
| 34:BA:245:C:N3      | 34:BA:284:G:N1     | 2.59                     | 0.50              |
| 34:BA:258:G:C6      | 34:BA:259:G:O6     | 2.65                     | 0.50              |
| 34:BA:266:G:H22     | 34:BA:270:A:N6     | 2.09                     | 0.50              |
| 34:BA:380:G:N2      | 34:BA:382:A:C3'    | 2.75                     | 0.50              |
| 34:BA:393:A:H2'     | 34:BA:394:G:H8     | 1.76                     | 0.50              |
| 34:BA:440:A:H62     | 34:BA:493:G:H21    | 1.58                     | 0.50              |
| 34:BA:595:G:N7      | 34:BA:641:U:N3     | 2.58                     | 0.50              |
| 34:BA:598:U:O2'     | 34:BA:599:C:H5'    | 2.12                     | 0.50              |
| 34:BA:712:A:H2'     | 34:BA:713:G:C8     | 2.47                     | 0.50              |
| 34:BA:729:A:H2'     | 34:BA:730:G:O5'    | 2.10                     | 0.50              |
| 34:BA:850:U:H2'     | 34:BA:851:G:H8     | 1.76                     | 0.50              |
| 34:BA:851:G:C2      | 34:BA:852:G:C1'    | 2.94                     | 0.50              |
| 34:BA:896:C:H2'     | 34:BA:897:C:H6     | 1.76                     | 0.50              |
| 34:BA:920:U:O2'     | 34:BA:921:U:H5'    | 2.10                     | 0.50              |
| 34:BA:1003:G:N2     | 34:BA:1005:A:H5'   | 2.26                     | 0.50              |
| 34:BA:1058:G:C8     | 34:BA:1058:G:O5'   | 2.64                     | 0.50              |
| 34:BA:1066:C:C3'    | 34:BA:1067:A:C8    | 2.90                     | 0.50              |
| 34:BA:1115:C:O2     | 34:BA:1186:G:C5    | 2.65                     | 0.50              |
| 34:BA:1124:G:O6     | 34:BA:1147:C:N4    | 2.36                     | 0.50              |
| 34:BA:1324:A:C6     | 34:BA:1325:C:C4    | 3.00                     | 0.50              |
| 34:BA:1362(A):C:H5' | 34:BA:1363:A:O5'   | 2.11                     | 0.50              |
| 34:BA:1446:A:H2'    | 34:BA:1447:G:H5'   | 1.93                     | 0.50              |
| 35:BF:28:PHE:CD1    | 35:BF:32:ILE:HD12  | 2.46                     | 0.50              |
| 35:BF:76:GLN:O      | 35:BF:211:ILE:HD11 | 2.12                     | 0.50              |
| 35:BF:157:ARG:C     | 35:BF:158:LEU:CD2  | 2.81                     | 0.50              |
| 36:BG:28:GLN:NE2    | 36:BG:29:TYR:N     | 2.60                     | 0.50              |
| 36:BG:76:VAL:CG1    | 36:BG:77:ILE:N     | 2.74                     | 0.50              |
| 36:BG:78:GLY:HA3    | 36:BG:82:GLU:OE1   | 2.11                     | 0.50              |
| 36:BG:186:PHE:CA    | 36:BG:198:VAL:O    | 2.59                     | 0.50              |
| 37:BH:62:GLN:C      | 37:BH:66:ARG:HD2   | 2.36                     | 0.50              |
| 37:BH:66:ARG:O      | 37:BH:68:TYR:N     | 2.44                     | 0.50              |
| 38:BI:13:ILE:N      | 38:BI:13:ILE:CD1   | 2.66                     | 0.50              |
| 39:BJ:46:ARG:NH2    | 51:BV:37:VAL:HG13  | 2.27                     | 0.50              |
| 40:BK:155:ARG:C     | 40:BK:156:TRP:HE3  | 2.19                     | 0.50              |
| 41:BL:36:LEU:CD1    | 41:BL:48:TYR:HB2   | 2.37                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 42:BM:49:PRO:HG3  | 42:BM:81:ILE:HB   | 1.92                     | 0.50              |
| 42:BM:69:GLY:O    | 42:BM:70:LYS:C    | 2.55                     | 0.50              |
| 43:BN:76:ASN:C    | 43:BN:78:ASN:N    | 2.69                     | 0.50              |
| 45:BP:88:GLY:O    | 45:BP:89:ARG:C    | 2.55                     | 0.50              |
| 46:BQ:14:ARG:NH2  | 46:BQ:42:ALA:CA   | 2.63                     | 0.50              |
| 48:BS:70:LEU:CD2  | 48:BS:81:LEU:HD13 | 2.41                     | 0.50              |
| 49:BT:54:GLU:O    | 49:BT:57:ARG:N    | 2.44                     | 0.50              |
| 50:BU:21:VAL:O    | 50:BU:42:TYR:O    | 2.29                     | 0.50              |
| 50:BU:75:ARG:CG   | 50:BU:76:LEU:N    | 2.74                     | 0.50              |
| 51:BV:59:SER:O    | 51:BV:60:ALA:C    | 2.54                     | 0.50              |
| 51:BV:60:ALA:O    | 51:BV:64:ARG:HG3  | 2.11                     | 0.50              |
| 53:BX:100:ILE:C   | 53:BX:102:GLY:H   | 2.14                     | 0.50              |
| 54:BY:4:GLY:C     | 54:BY:6:ARG:H     | 2.18                     | 0.50              |
| 54:BY:9:ARG:NH1   | 54:BY:21:TYR:CD2  | 2.76                     | 0.50              |
| 55:BC:38:A:H8     | 55:BC:38:A:O5'    | 1.94                     | 0.50              |
| 56:BE:21:A:H61    | 56:BE:46:G:C2'    | 2.24                     | 0.50              |
| 57:BZ:10:ILE:HD13 | 57:BZ:21:LEU:HD13 | 1.92                     | 0.50              |
| 57:BZ:27:GLN:HG3  | 57:BZ:28:GLN:CB   | 2.41                     | 0.50              |
| 57:BZ:545:ASN:HB3 | 57:BZ:546:MET:HE3 | 1.88                     | 0.50              |
| 1:AA:6:A:C2       | 1:AA:2897:U:N3    | 2.63                     | 0.50              |
| 1:AA:195:A:H4'    | 1:AA:251:A:O4'    | 2.11                     | 0.50              |
| 1:AA:239:U:C2     | 1:AA:259:G:N1     | 2.80                     | 0.50              |
| 1:AA:251:A:H3'    | 1:AA:251:A:OP2    | 2.12                     | 0.50              |
| 1:AA:252:G:O6     | 29:Ae:8:LYS:NZ    | 2.27                     | 0.50              |
| 1:AA:299:A:O2'    | 1:AA:319:C:C4'    | 2.59                     | 0.50              |
| 1:AA:313:C:C2     | 1:AA:314:A:C8     | 2.99                     | 0.50              |
| 1:AA:408:G:C4     | 1:AA:409:C:C6     | 3.00                     | 0.50              |
| 1:AA:422:A:N1     | 1:AA:423:A:C2     | 2.79                     | 0.50              |
| 1:AA:439:G:H2'    | 1:AA:440:G:O4'    | 2.12                     | 0.50              |
| 1:AA:461:C:N4     | 1:AA:469:G:H21    | 2.10                     | 0.50              |
| 1:AA:473:G:N2     | 1:AA:474:G:N3     | 2.59                     | 0.50              |
| 1:AA:487:C:O5'    | 1:AA:487:C:H6     | 1.95                     | 0.50              |
| 1:AA:556:G:H2'    | 1:AA:557:U:O5'    | 2.12                     | 0.50              |
| 1:AA:609:A:C8     | 1:AA:609(A):G:N7  | 2.79                     | 0.50              |
| 1:AA:731:C:H2'    | 1:AA:732:C:C5'    | 2.41                     | 0.50              |
| 1:AA:748:G:OP1    | 18:AT:88:ARG:CD   | 2.60                     | 0.50              |
| 1:AA:863:A:H2'    | 1:AA:864:G:C8     | 2.47                     | 0.50              |
| 1:AA:963:U:H2'    | 1:AA:963:U:O2     | 2.11                     | 0.50              |
| 1:AA:991:C:C5     | 1:AA:1185:C:C4    | 3.00                     | 0.50              |
| 1:AA:1022:G:C6    | 1:AA:1139:G:C2    | 2.99                     | 0.50              |
| 1:AA:1031:G:C6    | 1:AA:1032:A:N6    | 2.80                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1179:C:O2'   | 1:AA:1180:C:P     | 2.69                     | 0.50              |
| 1:AA:1210:A:C1'   | 1:AA:1212:G:N2    | 2.75                     | 0.50              |
| 1:AA:1238:G:N2    | 1:AA:1239:G:H1'   | 2.25                     | 0.50              |
| 1:AA:1265:A:P     | 1:AA:2615:U:OP1   | 2.69                     | 0.50              |
| 1:AA:1361:G:H2'   | 1:AA:1362:C:H6    | 1.77                     | 0.50              |
| 1:AA:1532:C:N4    | 1:AA:1540:G:C2    | 2.80                     | 0.50              |
| 1:AA:1620:G:H2'   | 1:AA:1621:U:C6    | 2.46                     | 0.50              |
| 1:AA:1672:C:H2'   | 1:AA:1673:U:H5''  | 1.94                     | 0.50              |
| 1:AA:1710:C:H6    | 1:AA:1710:C:O5'   | 1.95                     | 0.50              |
| 1:AA:1746:G:O2'   | 1:AA:1747:G:O4'   | 2.22                     | 0.50              |
| 1:AA:1754:C:C2    | 1:AA:1755:A:N9    | 2.79                     | 0.50              |
| 1:AA:1772:G:C2    | 1:AA:1773:A:O2'   | 2.65                     | 0.50              |
| 1:AA:1819:A:OP1   | 4:AD:158:ALA:N    | 2.44                     | 0.50              |
| 1:AA:1858:G:C6    | 1:AA:1883:G:C6    | 3.00                     | 0.50              |
| 1:AA:1924:C:C5'   | 56:BE:12:U:O2'    | 2.58                     | 0.50              |
| 1:AA:1980:G:H2'   | 1:AA:1982:C:OP2   | 2.11                     | 0.50              |
| 1:AA:2047:U:C2    | 1:AA:2048:G:N7    | 2.79                     | 0.50              |
| 1:AA:2072:G:C4    | 1:AA:2073:C:H5    | 2.27                     | 0.50              |
| 1:AA:2209:C:C6    | 1:AA:2209:C:C3'   | 2.94                     | 0.50              |
| 1:AA:2345:G:P     | 27:Ac:39:TYR:HA   | 2.52                     | 0.50              |
| 1:AA:2424:C:C5'   | 1:AA:2425:A:H5'   | 2.42                     | 0.50              |
| 1:AA:2472:G:OP1   | 57:BZ:529:ARG:NE  | 2.44                     | 0.50              |
| 1:AA:2496:C:OP1   | 12:AN:83:MET:CE   | 2.52                     | 0.50              |
| 1:AA:2496:C:P     | 12:AN:83:MET:HE1  | 2.51                     | 0.50              |
| 1:AA:2507:C:N1    | 59:AA:3002:8AN:C4 | 2.74                     | 0.50              |
| 1:AA:2630:G:C2    | 1:AA:2894:G:N7    | 2.78                     | 0.50              |
| 1:AA:2792:G:H1    | 1:AA:2803:C:N4    | 1.89                     | 0.50              |
| 1:AA:2862:G:C4    | 1:AA:2863:C:C5    | 2.99                     | 0.50              |
| 2:AB:47:C:C2'     | 2:AB:48:A:H5'     | 2.42                     | 0.50              |
| 2:AB:47:C:O2'     | 14:AP:92:TYR:CE1  | 2.64                     | 0.50              |
| 2:AB:58:A:C5      | 2:AB:59:A:N7      | 2.79                     | 0.50              |
| 3:AC:52:ARG:HG3   | 3:AC:53:ARG:CG    | 2.42                     | 0.50              |
| 3:AC:62:VAL:CG1   | 3:AC:192:PHE:HB2  | 2.41                     | 0.50              |
| 3:AC:97:GLU:OE1   | 3:AC:122:ALA:CB   | 2.60                     | 0.50              |
| 4:AD:133:LEU:HG   | 4:AD:187:GLY:O    | 2.12                     | 0.50              |
| 4:AD:182:LEU:O    | 4:AD:268:ARG:HA   | 2.11                     | 0.50              |
| 6:AF:64:ILE:HG21  | 6:AF:78:ILE:HB    | 1.92                     | 0.50              |
| 6:AF:125:LEU:HD13 | 6:AF:128:ALA:CB   | 2.41                     | 0.50              |
| 6:AF:155:LEU:HA   | 6:AF:174:VAL:CG2  | 2.38                     | 0.50              |
| 7:AG:2:PRO:C      | 7:AG:5:VAL:HB     | 2.34                     | 0.50              |
| 7:AG:9:ARG:CZ     | 7:AG:9:ARG:HB2    | 2.41                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:AG:63:ILE:CG2   | 7:AG:64:THR:N     | 2.74                     | 0.50              |
| 8:AH:42:ARG:HA    | 8:AH:42:ARG:CZ    | 2.41                     | 0.50              |
| 8:AH:85:LYS:HZ2   | 8:AH:85:LYS:CB    | 2.25                     | 0.50              |
| 8:AH:94:TYR:O     | 8:AH:95:ARG:HD2   | 2.10                     | 0.50              |
| 8:AH:136:ILE:HG23 | 8:AH:140:LYS:HE2  | 1.94                     | 0.50              |
| 8:AH:159:GLU:O    | 8:AH:160:LYS:HB2  | 2.11                     | 0.50              |
| 11:AM:114:ILE:CG2 | 11:AM:134:ALA:HB2 | 2.41                     | 0.50              |
| 12:AN:30:GLY:O    | 12:AN:31:ASP:HB2  | 2.12                     | 0.50              |
| 12:AN:51:ARG:HD3  | 12:AN:52:VAL:CA   | 2.42                     | 0.50              |
| 13:AO:26:LYS:CE   | 13:AO:70:LEU:HA   | 2.41                     | 0.50              |
| 13:AO:57:ARG:HH11 | 13:AO:57:ARG:HG2  | 1.76                     | 0.50              |
| 14:AP:49:VAL:HG11 | 14:AP:80:LEU:CG   | 2.32                     | 0.50              |
| 16:AR:48:ALA:O    | 16:AR:52:ARG:NE   | 2.44                     | 0.50              |
| 16:AR:54:LYS:HE2  | 16:AR:54:LYS:HA   | 1.92                     | 0.50              |
| 16:AR:61:TRP:C    | 16:AR:65:ILE:HD11 | 2.37                     | 0.50              |
| 16:AR:67:ALA:HA   | 16:AR:70:ARG:NH2  | 2.11                     | 0.50              |
| 16:AR:111:GLU:HG3 | 16:AR:112:ARG:H   | 1.77                     | 0.50              |
| 17:AS:22:VAL:HG12 | 17:AS:23:GLU:N    | 2.26                     | 0.50              |
| 18:AT:59:VAL:C    | 18:AT:63:ASP:HA   | 2.36                     | 0.50              |
| 19:AU:32:PRO:O    | 19:AU:33:LYS:HB2  | 2.11                     | 0.50              |
| 20:AV:12:THR:HG22 | 20:AV:13:VAL:CG1  | 2.41                     | 0.50              |
| 20:AV:26:LYS:HB2  | 20:AV:38:ILE:CD1  | 2.32                     | 0.50              |
| 20:AV:45:VAL:HA   | 20:AV:57:GLN:CG   | 2.41                     | 0.50              |
| 21:AW:6:LYS:HE3   | 21:AW:35:ARG:HG3  | 1.93                     | 0.50              |
| 21:AW:28:MET:SD   | 21:AW:28:MET:C    | 2.92                     | 0.50              |
| 21:AW:62:PRO:O    | 21:AW:64:GLY:N    | 2.41                     | 0.50              |
| 25:Aa:55:ARG:O    | 25:Aa:61:ARG:NH2  | 2.44                     | 0.50              |
| 25:Aa:68:ARG:HB2  | 25:Aa:68:ARG:CZ   | 2.42                     | 0.50              |
| 27:Ac:54:ILE:C    | 27:Ac:54:ILE:CD1  | 2.85                     | 0.50              |
| 29:Ae:44:LYS:NZ   | 29:Ae:44:LYS:HA   | 2.26                     | 0.50              |
| 34:BA:5:U:O2'     | 34:BA:6:G:P       | 2.69                     | 0.50              |
| 34:BA:96:G:C5     | 34:BA:97:U:C4     | 2.99                     | 0.50              |
| 34:BA:126:G:C6    | 34:BA:236:G:O6    | 2.65                     | 0.50              |
| 34:BA:323:U:C5    | 34:BA:324:G:C1'   | 2.94                     | 0.50              |
| 34:BA:364:A:C2    | 34:BA:365:U:O4    | 2.65                     | 0.50              |
| 34:BA:451:A:OP1   | 34:BA:481:G:N1    | 2.43                     | 0.50              |
| 34:BA:465:A:N6    | 34:BA:467:G:N3    | 2.59                     | 0.50              |
| 34:BA:486:U:H2'   | 34:BA:486:U:O2    | 2.10                     | 0.50              |
| 34:BA:518:C:H3'   | 34:BA:530:G:H21   | 1.76                     | 0.50              |
| 34:BA:557:G:H3'   | 34:BA:558:G:H8    | 1.74                     | 0.50              |
| 34:BA:643:C:N3    | 34:BA:644:G:N7    | 2.60                     | 0.50              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:717:C:O2'    | 34:BA:718:G:P      | 2.68                     | 0.50              |
| 34:BA:783:C:C2'    | 34:BA:784:C:H5'    | 2.42                     | 0.50              |
| 34:BA:972:C:O2     | 34:BA:972:C:H2'    | 2.12                     | 0.50              |
| 34:BA:1002:G:N7    | 34:BA:1004:A:N1    | 2.60                     | 0.50              |
| 34:BA:1062:U:C2    | 34:BA:1063:C:N4    | 2.80                     | 0.50              |
| 34:BA:1260:C:O5'   | 34:BA:1284:C:H4'   | 2.12                     | 0.50              |
| 34:BA:1465:C:O2'   | 34:BA:1466:C:H5'   | 2.09                     | 0.50              |
| 34:BA:1488:G:C2    | 34:BA:1489:G:N7    | 2.80                     | 0.50              |
| 34:BA:1494:G:H22   | 34:BA:1496:C:N4    | 2.10                     | 0.50              |
| 34:BA:1505:G:H5''  | 34:BA:1506:U:O5'   | 2.12                     | 0.50              |
| 35:BF:67:THR:CG2   | 35:BF:155:LEU:HD21 | 2.42                     | 0.50              |
| 35:BF:71:VAL:O     | 35:BF:165:VAL:HG22 | 2.12                     | 0.50              |
| 35:BF:100:GLY:C    | 35:BF:104:ASN:ND2  | 2.69                     | 0.50              |
| 35:BF:136:VAL:O    | 35:BF:139:LYS:CG   | 2.56                     | 0.50              |
| 35:BF:165:VAL:HG23 | 35:BF:166:ASP:N    | 2.21                     | 0.50              |
| 35:BF:222:ILE:HD13 | 35:BF:226:ARG:NH2  | 2.25                     | 0.50              |
| 36:BG:6:HIS:NE2    | 36:BG:8:ILE:HB     | 2.26                     | 0.50              |
| 36:BG:11:ARG:HH11  | 36:BG:15:THR:HG21  | 1.77                     | 0.50              |
| 36:BG:31:HIS:CE1   | 36:BG:34:LEU:HD13  | 2.47                     | 0.50              |
| 36:BG:47:LEU:HD22  | 36:BG:47:LEU:N     | 2.27                     | 0.50              |
| 37:BH:17:VAL:O     | 37:BH:18:LYS:O     | 2.29                     | 0.50              |
| 37:BH:100:ARG:NH2  | 37:BH:136:PRO:O    | 2.44                     | 0.50              |
| 37:BH:191:ARG:HD3  | 37:BH:192:GLU:CA   | 2.42                     | 0.50              |
| 38:BI:115:VAL:HG11 | 38:BI:118:ILE:CD1  | 2.41                     | 0.50              |
| 40:BK:16:LEU:HB3   | 42:BM:41:VAL:HG12  | 1.93                     | 0.50              |
| 40:BK:71:PRO:HD3   | 40:BK:100:ALA:HB2  | 1.92                     | 0.50              |
| 42:BM:20:ARG:O     | 42:BM:21:PRO:C     | 2.53                     | 0.50              |
| 43:BN:4:ILE:HD13   | 43:BN:98:ILE:HG23  | 1.94                     | 0.50              |
| 46:BQ:20:THR:CA    | 46:BQ:25:ILE:HG22  | 2.42                     | 0.50              |
| 49:BT:9:PHE:CE1    | 49:BT:18:ARG:HG3   | 2.47                     | 0.50              |
| 50:BU:26:GLN:O     | 50:BU:27:PHE:HB3   | 2.12                     | 0.50              |
| 50:BU:29:HIS:CE1   | 50:BU:31:LEU:HB3   | 2.46                     | 0.50              |
| 50:BU:80:GLY:O     | 50:BU:81:ARG:C     | 2.54                     | 0.50              |
| 51:BV:38:GLU:HG2   | 51:BV:39:VAL:H     | 1.77                     | 0.50              |
| 52:BW:39:THR:O     | 52:BW:39:THR:HG22  | 2.11                     | 0.50              |
| 53:BX:91:LEU:C     | 53:BX:93:GLU:H     | 2.20                     | 0.50              |
| 53:BX:98:PRO:O     | 53:BX:99:LEU:C     | 2.54                     | 0.50              |
| 54:BY:7:ARG:O      | 54:BY:12:LYS:HD3   | 2.11                     | 0.50              |
| 55:BC:37:A:C2'     | 55:BC:38:A:C5'     | 2.89                     | 0.50              |
| 55:BC:70:G:H2'     | 55:BC:71:G:O4'     | 2.12                     | 0.50              |
| 56:BD:4:C:C5       | 56:BD:70:G:N1      | 2.80                     | 0.50              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 56:BD:26:A:H2'    | 56:BD:27:G:H5'     | 1.92                     | 0.50              |
| 57:BZ:221:ILE:N   | 57:BZ:221:ILE:CD1  | 2.74                     | 0.50              |
| 57:BZ:253:LYS:HZ1 | 57:BZ:269:GLU:HB3  | 1.76                     | 0.50              |
| 57:BZ:382:VAL:CG2 | 57:BZ:578:VAL:HG21 | 2.29                     | 0.50              |
| 57:BZ:446:ARG:O   | 57:BZ:480:VAL:HG11 | 2.12                     | 0.50              |
| 1:AA:17:G:H4'     | 16:AR:25:TRP:CZ3   | 2.46                     | 0.50              |
| 1:AA:50:U:H3'     | 1:AA:50:U:C6       | 2.46                     | 0.50              |
| 1:AA:70:G:H4'     | 1:AA:71:A:H5''     | 1.89                     | 0.50              |
| 1:AA:117:G:C4     | 1:AA:119:A:N6      | 2.80                     | 0.50              |
| 1:AA:126:A:O2'    | 1:AA:127:A:H5'     | 2.11                     | 0.50              |
| 1:AA:251:A:C2'    | 1:AA:252:G:O5'     | 2.58                     | 0.50              |
| 1:AA:262:A:H2'    | 1:AA:263:C:H6      | 1.76                     | 0.50              |
| 1:AA:299:A:HO2'   | 1:AA:319:C:C2'     | 2.22                     | 0.50              |
| 1:AA:408:G:N3     | 1:AA:409:C:C6      | 2.79                     | 0.50              |
| 1:AA:455:C:C5'    | 1:AA:456:C:OP1     | 2.60                     | 0.50              |
| 1:AA:458:G:H3'    | 28:Ad:39:ARG:HD2   | 1.93                     | 0.50              |
| 1:AA:484:C:H2'    | 1:AA:485:C:C5      | 2.44                     | 0.50              |
| 1:AA:514:A:H2'    | 1:AA:514:A:N3      | 2.27                     | 0.50              |
| 1:AA:531:C:O4'    | 1:AA:2035:G:N2     | 2.43                     | 0.50              |
| 1:AA:552:G:C6     | 1:AA:553:U:C4      | 3.00                     | 0.50              |
| 1:AA:558:G:N3     | 1:AA:559:G:N7      | 2.59                     | 0.50              |
| 1:AA:587:C:C4     | 1:AA:671:C:C6      | 3.00                     | 0.50              |
| 1:AA:764:A:C6     | 1:AA:1789:A:C2     | 3.00                     | 0.50              |
| 1:AA:820:A:C2     | 1:AA:943:U:C2'     | 2.95                     | 0.50              |
| 1:AA:847:U:C4     | 1:AA:933:A:C2      | 3.00                     | 0.50              |
| 1:AA:858:U:C5     | 1:AA:859:G:N2      | 2.80                     | 0.50              |
| 1:AA:928:G:N7     | 1:AA:929:G:C4      | 2.80                     | 0.50              |
| 1:AA:974:G:H8     | 1:AA:974(A):C:O4'  | 1.95                     | 0.50              |
| 1:AA:1008:C:H6    | 1:AA:1008:C:OP1    | 1.95                     | 0.50              |
| 1:AA:1058:G:H1'   | 32:AJ:116:ASN:HB3  | 1.94                     | 0.50              |
| 1:AA:1062:G:C1'   | 1:AA:1063:G:P      | 3.00                     | 0.50              |
| 1:AA:1077:A:H62   | 1:AA:1088:A:C2'    | 2.23                     | 0.50              |
| 1:AA:1135:C:C2    | 1:AA:1136:G:C8     | 2.99                     | 0.50              |
| 1:AA:1203:G:O6    | 1:AA:1240:U:N1     | 2.35                     | 0.50              |
| 1:AA:1272:A:O2'   | 1:AA:1273:U:P      | 2.68                     | 0.50              |
| 1:AA:1334:G:P     | 19:AU:65:ARG:HH12  | 2.34                     | 0.50              |
| 1:AA:1444:G:H5'   | 1:AA:1444(A):A:OP2 | 2.12                     | 0.50              |
| 1:AA:1464:C:C4'   | 1:AA:1528:A:O2'    | 2.59                     | 0.50              |
| 1:AA:1471:A:N7    | 1:AA:1521:G:N2     | 2.59                     | 0.50              |
| 1:AA:1575:C:N4    | 1:AA:1576:U:C4     | 2.80                     | 0.50              |
| 1:AA:1582:C:C2    | 1:AA:1583:A:N7     | 2.80                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1672:C:N4    | 1:AA:1673:U:C5    | 2.79                     | 0.50              |
| 1:AA:1690:A:N3    | 1:AA:1691:C:O4'   | 2.45                     | 0.50              |
| 1:AA:1756:G:OP1   | 1:AA:1756:G:H3'   | 2.11                     | 0.50              |
| 1:AA:1826:G:O5'   | 1:AA:1826:G:C8    | 2.64                     | 0.50              |
| 1:AA:1916:A:N6    | 34:BA:1409:C:O2'  | 2.45                     | 0.50              |
| 1:AA:1920:C:C1'   | 1:AA:1921:G:P     | 3.00                     | 0.50              |
| 1:AA:1945:G:H5'   | 1:AA:1945:G:C8    | 2.46                     | 0.50              |
| 1:AA:1964:G:HO2'  | 1:AA:1965:C:P     | 2.34                     | 0.50              |
| 1:AA:2046:G:H5'   | 26:Ab:22:HIS:HB2  | 1.93                     | 0.50              |
| 1:AA:2110:G:C5    | 1:AA:2120:G:C8    | 3.00                     | 0.50              |
| 1:AA:2111:C:C4    | 1:AA:2145:C:C4    | 3.00                     | 0.50              |
| 1:AA:2256:G:H5''  | 1:AA:2256:G:C8    | 2.46                     | 0.50              |
| 1:AA:2264:C:C5    | 1:AA:2265:U:C5    | 3.00                     | 0.50              |
| 1:AA:2305:A:H62   | 1:AA:2306:C:H5    | 1.60                     | 0.50              |
| 1:AA:2537:U:H2'   | 1:AA:2538:C:H6    | 1.71                     | 0.50              |
| 1:AA:2610:C:O2'   | 1:AA:2611:U:OP2   | 2.24                     | 0.50              |
| 1:AA:2640:G:H2'   | 1:AA:2641:G:H8    | 1.77                     | 0.50              |
| 1:AA:2658:C:H41   | 1:AA:2664:G:H22   | 1.59                     | 0.50              |
| 1:AA:2667:C:O2'   | 1:AA:2668:G:H5'   | 2.12                     | 0.50              |
| 1:AA:2671:A:C2'   | 1:AA:2672:G:C8    | 2.86                     | 0.50              |
| 1:AA:2694:G:C6    | 1:AA:2695:C:N4    | 2.80                     | 0.50              |
| 1:AA:2723:C:HO2'  | 13:AO:2:ARG:CA    | 2.25                     | 0.50              |
| 1:AA:2875:C:OP1   | 15:AQ:3:ARG:NH1   | 2.44                     | 0.50              |
| 2:AB:66:A:N1      | 2:AB:107:U:H2'    | 2.26                     | 0.50              |
| 3:AC:91:ALA:CB    | 3:AC:153:ILE:HG21 | 2.35                     | 0.50              |
| 4:AD:96:HIS:NE2   | 4:AD:102:LYS:CE   | 2.74                     | 0.50              |
| 4:AD:172:TYR:CE2  | 4:AD:186:HIS:CD2  | 3.00                     | 0.50              |
| 5:AE:144:ARG:O    | 5:AE:146:THR:N    | 2.45                     | 0.50              |
| 6:AF:34:TRP:O     | 6:AF:37:VAL:CB    | 2.59                     | 0.50              |
| 6:AF:43:LYS:HE3   | 6:AF:98:SER:HB3   | 1.94                     | 0.50              |
| 6:AF:132:VAL:HG22 | 6:AF:135:LYS:CB   | 2.42                     | 0.50              |
| 7:AG:39:ILE:CA    | 7:AG:157:ILE:HG13 | 2.42                     | 0.50              |
| 7:AG:152:LEU:C    | 7:AG:155:MET:HE1  | 2.36                     | 0.50              |
| 8:AH:58:GLU:HG2   | 8:AH:59:ARG:N     | 2.27                     | 0.50              |
| 8:AH:114:VAL:O    | 8:AH:114:VAL:HG13 | 2.12                     | 0.50              |
| 8:AH:131:VAL:O    | 8:AH:131:VAL:HG12 | 2.12                     | 0.50              |
| 10:AL:76:ALA:CB   | 10:AL:78:ARG:HH22 | 2.24                     | 0.50              |
| 11:AM:10:PRO:O    | 11:AM:11:GLY:O    | 2.29                     | 0.50              |
| 11:AM:64:LYS:O    | 11:AM:64:LYS:CD   | 2.59                     | 0.50              |
| 11:AM:70:GLN:CB   | 11:AM:110:TYR:OH  | 2.60                     | 0.50              |
| 11:AM:73:GLY:N    | 11:AM:107:LYS:HE3 | 2.27                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 11:AM:130:PHE:HE1 | 11:AM:145:PRO:HB3 | 1.77                     | 0.50              |
| 12:AN:37:LEU:N    | 12:AN:100:GLY:HA2 | 2.25                     | 0.50              |
| 12:AN:56:ARG:O    | 12:AN:57:HIS:C    | 2.54                     | 0.50              |
| 12:AN:61:GLY:O    | 21:AW:177:PRO:O   | 2.30                     | 0.50              |
| 13:AO:25:ALA:HB2  | 13:AO:48:VAL:HG22 | 1.93                     | 0.50              |
| 13:AO:51:LEU:HD23 | 13:AO:70:LEU:HD11 | 1.92                     | 0.50              |
| 13:AO:97:VAL:O    | 13:AO:98:LEU:CD2  | 2.60                     | 0.50              |
| 14:AP:43:GLU:C    | 14:AP:45:GLY:N    | 2.67                     | 0.50              |
| 15:AQ:63:VAL:C    | 15:AQ:64:ARG:NH1  | 2.70                     | 0.50              |
| 16:AR:52:ARG:C    | 16:AR:54:LYS:H    | 2.19                     | 0.50              |
| 16:AR:52:ARG:O    | 16:AR:53:ARG:C    | 2.53                     | 0.50              |
| 17:AS:6:LYS:CD    | 17:AS:10:LYS:HG2  | 2.27                     | 0.50              |
| 17:AS:21:ARG:O    | 17:AS:93:GLU:OE1  | 2.29                     | 0.50              |
| 18:AT:25:ARG:HD3  | 18:AT:74:ALA:CA   | 2.40                     | 0.50              |
| 19:AU:42:ALA:O    | 19:AU:46:ALA:HB3  | 2.12                     | 0.50              |
| 19:AU:85:PRO:C    | 19:AU:87:GLN:NE2  | 2.70                     | 0.50              |
| 20:AV:105:ALA:C   | 20:AV:107:ASP:H   | 2.20                     | 0.50              |
| 21:AW:1:MET:HE3   | 21:AW:3:TYR:HD2   | 1.75                     | 0.50              |
| 23:AY:19:LEU:CD1  | 23:AY:55:LEU:HG   | 2.42                     | 0.50              |
| 25:Aa:7:PRO:HG2   | 25:Aa:60:GLN:CD   | 2.36                     | 0.50              |
| 25:Aa:68:ARG:O    | 25:Aa:71:ARG:HA   | 2.11                     | 0.50              |
| 28:Ad:10:ARG:HD3  | 28:Ad:14:LYS:NZ   | 2.27                     | 0.50              |
| 28:Ad:43:THR:C    | 28:Ad:46:VAL:HB   | 2.37                     | 0.50              |
| 29:Ae:4:MET:HB3   | 29:Ae:7:HIS:NE2   | 2.27                     | 0.50              |
| 32:AJ:44:ALA:HB3  | 32:AJ:66:THR:HG22 | 1.91                     | 0.50              |
| 32:AJ:79:ARG:HH22 | 32:AJ:84:LEU:HG   | 1.75                     | 0.50              |
| 32:AJ:98:ARG:CZ   | 32:AJ:101:TRP:CD1 | 2.94                     | 0.50              |
| 34:BA:236:G:C2'   | 34:BA:237:C:C6    | 2.95                     | 0.50              |
| 34:BA:254:G:C6    | 34:BA:273:A:C6    | 3.00                     | 0.50              |
| 34:BA:306:G:O5'   | 34:BA:306:G:C8    | 2.64                     | 0.50              |
| 34:BA:315:A:H2'   | 34:BA:315:A:N3    | 2.27                     | 0.50              |
| 34:BA:566:G:C4'   | 34:BA:567:G:OP1   | 2.57                     | 0.50              |
| 34:BA:668:G:H1'   | 48:BS:46:HIS:NE2  | 2.27                     | 0.50              |
| 34:BA:672:U:O2    | 34:BA:673:G:N7    | 2.45                     | 0.50              |
| 34:BA:720:C:H5''  | 51:BV:52:PRO:HB3  | 1.92                     | 0.50              |
| 34:BA:778:G:C4    | 34:BA:779:C:C6    | 3.00                     | 0.50              |
| 34:BA:778:G:C5    | 34:BA:779:C:C5    | 2.99                     | 0.50              |
| 34:BA:957:U:O2    | 34:BA:959:A:C8    | 2.64                     | 0.50              |
| 34:BA:962:C:N3    | 34:BA:974:A:N1    | 2.59                     | 0.50              |
| 34:BA:1102:A:C6   | 34:BA:1103:C:C4   | 2.99                     | 0.50              |
| 34:BA:1224:G:O6   | 34:BA:1322:C:C1'  | 2.59                     | 0.50              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1229:A:O2'   | 34:BA:1230:C:O4'   | 2.29                     | 0.50              |
| 34:BA:1277:C:C2'   | 34:BA:1279:A:H8    | 2.24                     | 0.50              |
| 34:BA:1377:A:C5'   | 34:BA:1378:C:C5    | 2.95                     | 0.50              |
| 35:BF:12:GLU:C     | 35:BF:14:GLY:N     | 2.70                     | 0.50              |
| 35:BF:77:ALA:HA    | 35:BF:208:ILE:CD1  | 2.33                     | 0.50              |
| 35:BF:177:ALA:O    | 35:BF:179:LYS:N    | 2.45                     | 0.50              |
| 36:BG:27:LYS:O     | 36:BG:28:GLN:HB3   | 2.11                     | 0.50              |
| 36:BG:157:ILE:HG13 | 36:BG:164:ARG:NE   | 2.26                     | 0.50              |
| 36:BG:191:THR:HB   | 36:BG:193:TYR:CD2  | 2.47                     | 0.50              |
| 40:BK:147:ALA:C    | 40:BK:149:ARG:H    | 2.19                     | 0.50              |
| 41:BL:60:ARG:HG3   | 41:BL:61:VAL:N     | 2.26                     | 0.50              |
| 42:BM:49:PRO:HB3   | 42:BM:101:PHE:CZ   | 2.46                     | 0.50              |
| 45:BP:35:GLY:HA3   | 45:BP:60:LEU:HB3   | 1.93                     | 0.50              |
| 48:BS:79:ARG:NH1   | 48:BS:79:ARG:CB    | 2.74                     | 0.50              |
| 50:BU:45:HIS:ND1   | 50:BU:46:ASP:N     | 2.60                     | 0.50              |
| 52:BW:71:LEU:O     | 52:BW:72:GLY:C     | 2.54                     | 0.50              |
| 55:BC:34:G:C2'     | 55:BC:35:A:C5'     | 2.86                     | 0.50              |
| 56:BE:21:A:C3'     | 56:BE:22:G:C5'     | 2.87                     | 0.50              |
| 57:BZ:14:VAL:CA    | 57:BZ:78:HIS:HD2   | 2.09                     | 0.50              |
| 57:BZ:81:PHE:HD2   | 57:BZ:342:ASN:OD1  | 1.95                     | 0.50              |
| 57:BZ:204:PRO:O    | 57:BZ:229:GLY:CA   | 2.58                     | 0.50              |
| 57:BZ:209:ILE:HG22 | 57:BZ:211:GLN:O    | 2.12                     | 0.50              |
| 57:BZ:239:ILE:HD13 | 57:BZ:288:VAL:HG22 | 1.92                     | 0.50              |
| 57:BZ:509:LYS:CG   | 57:BZ:561:ILE:CG2  | 2.90                     | 0.50              |
| 57:BZ:556:VAL:C    | 57:BZ:557:LEU:HG   | 2.36                     | 0.50              |
| 1:AA:51:G:C5'      | 1:AA:52:A:OP1      | 2.54                     | 0.50              |
| 1:AA:120:U:C2'     | 1:AA:149:A:N3      | 2.75                     | 0.50              |
| 1:AA:215:G:C4'     | 1:AA:216:A:O5'     | 2.40                     | 0.50              |
| 1:AA:244:A:N3      | 1:AA:255:A:C2      | 2.80                     | 0.50              |
| 1:AA:354:G:OP2     | 1:AA:354:G:H8      | 1.93                     | 0.50              |
| 1:AA:363(A):A:C2'  | 1:AA:363(B):G:O5'  | 2.60                     | 0.50              |
| 1:AA:547:A:C6      | 1:AA:548:A:C6      | 2.99                     | 0.50              |
| 1:AA:563:G:N2      | 1:AA:578:A:C2      | 2.69                     | 0.50              |
| 1:AA:586:A:N6      | 1:AA:809:G:O2'     | 2.43                     | 0.50              |
| 1:AA:588:U:O2'     | 1:AA:589:C:H5'     | 2.11                     | 0.50              |
| 1:AA:602:G:H4'     | 1:AA:603:A:O3'     | 2.12                     | 0.50              |
| 1:AA:660:G:H2'     | 1:AA:661:C:H6      | 1.76                     | 0.50              |
| 1:AA:684:G:N2      | 1:AA:794:G:N2      | 2.60                     | 0.50              |
| 1:AA:740:U:H2'     | 1:AA:741:G:H8      | 1.77                     | 0.50              |
| 1:AA:858:U:C2'     | 1:AA:2268:A:C8     | 2.92                     | 0.50              |
| 1:AA:909:A:C2      | 1:AA:912:C:C1'     | 2.95                     | 0.50              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 1:AA:940:G:N3     | 1:AA:1191:G:H4'  | 2.26                     | 0.50              |
| 1:AA:997:G:H2'    | 1:AA:998:C:C6    | 2.47                     | 0.50              |
| 1:AA:1077:A:H2    | 32:AJ:133:SER:O  | 1.95                     | 0.50              |
| 1:AA:1147:C:H2'   | 1:AA:1148:A:H5'  | 1.92                     | 0.50              |
| 1:AA:1258:C:H2'   | 1:AA:1259:G:C8   | 2.40                     | 0.50              |
| 1:AA:1313:U:OP1   | 19:AU:63:LYS:HG2 | 2.11                     | 0.50              |
| 1:AA:1356:G:N2    | 1:AA:1357:U:H1'  | 2.27                     | 0.50              |
| 1:AA:1403:C:H5''  | 1:AA:1471:A:O4'  | 2.11                     | 0.50              |
| 1:AA:1444(A):A:N7 | 1:AA:1460:A:H2'  | 2.27                     | 0.50              |
| 1:AA:1455:G:OP2   | 1:AA:1456:G:OP2  | 2.29                     | 0.50              |
| 1:AA:1494:A:N3    | 1:AA:1494:A:C2'  | 2.72                     | 0.50              |
| 1:AA:1544:C:H2'   | 1:AA:1545:A:O4'  | 2.12                     | 0.50              |
| 1:AA:1655:A:H61   | 1:AA:2005:A:C1'  | 2.18                     | 0.50              |
| 1:AA:1672:C:O2'   | 1:AA:1673:U:OP1  | 2.25                     | 0.50              |
| 1:AA:1675:C:H2'   | 1:AA:1676:A:H5'  | 1.92                     | 0.50              |
| 1:AA:1689:A:C2    | 1:AA:1690:A:N7   | 2.79                     | 0.50              |
| 1:AA:1729:A:H3'   | 1:AA:1730:U:O4'  | 2.12                     | 0.50              |
| 1:AA:1928:A:C8    | 1:AA:1929:G:C4   | 3.00                     | 0.50              |
| 1:AA:2013:A:C2'   | 1:AA:2014:A:O5'  | 2.59                     | 0.50              |
| 1:AA:2029:G:C4    | 1:AA:2031:A:OP1  | 2.65                     | 0.50              |
| 1:AA:2043:C:O2    | 1:AA:2044:C:C6   | 2.65                     | 0.50              |
| 1:AA:2080:G:C2'   | 1:AA:2081:C:O5'  | 2.60                     | 0.50              |
| 1:AA:2157:G:O2'   | 1:AA:2158:A:OP1  | 2.27                     | 0.50              |
| 1:AA:2247:A:H2'   | 1:AA:2248:C:C6   | 2.47                     | 0.50              |
| 1:AA:2298:A:H2'   | 1:AA:2299:G:C8   | 2.47                     | 0.50              |
| 1:AA:2336:A:O2'   | 1:AA:2385:C:O4'  | 2.29                     | 0.50              |
| 1:AA:2426:A:H3'   | 1:AA:2427:C:H5'  | 1.93                     | 0.50              |
| 1:AA:2427:C:H4'   | 1:AA:2428:G:C5'  | 2.42                     | 0.50              |
| 1:AA:2441:C:H2'   | 1:AA:2442:C:C6   | 2.47                     | 0.50              |
| 1:AA:2639:A:H2'   | 1:AA:2640:G:O5'  | 2.11                     | 0.50              |
| 1:AA:2659:G:C5'   | 1:AA:2660:A:OP2  | 2.52                     | 0.50              |
| 1:AA:2660:A:C5    | 57:BZ:457:THR:CA | 2.92                     | 0.50              |
| 1:AA:2714:G:C2'   | 1:AA:2715:C:C5'  | 2.86                     | 0.50              |
| 1:AA:2723:C:C4'   | 13:AO:2:ARG:O    | 2.58                     | 0.50              |
| 2:AB:38:C:O5'     | 2:AB:38:C:H6     | 1.94                     | 0.50              |
| 3:AC:62:VAL:HG12  | 3:AC:192:PHE:HB2 | 1.93                     | 0.50              |
| 3:AC:71:GLN:CG    | 3:AC:72:VAL:N    | 2.75                     | 0.50              |
| 3:AC:180:PHE:CD2  | 3:AC:184:LYS:HB2 | 2.29                     | 0.50              |
| 4:AD:16:MET:O     | 4:AD:17:THR:O    | 2.30                     | 0.50              |
| 5:AE:8:LYS:CD     | 5:AE:8:LYS:C     | 2.85                     | 0.50              |
| 5:AE:115:GLY:O    | 5:AE:118:LYS:O   | 2.29                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:AF:5:ALA:O      | 6:AF:20:LEU:HD13  | 2.11                     | 0.50              |
| 6:AF:196:LEU:O    | 6:AF:199:TRP:HB2  | 2.11                     | 0.50              |
| 7:AG:55:LYS:CE    | 7:AG:151:ALA:HB1  | 2.37                     | 0.50              |
| 7:AG:68:PRO:HB3   | 7:AG:72:ARG:HH12  | 1.76                     | 0.50              |
| 8:AH:119:GLU:HA   | 8:AH:119:GLU:OE2  | 2.12                     | 0.50              |
| 9:AK:15:LEU:HD21  | 9:AK:137:LYS:HB3  | 1.94                     | 0.50              |
| 9:AK:25:ARG:CA    | 9:AK:28:THR:HG23  | 2.42                     | 0.50              |
| 11:AM:72:PRO:O    | 11:AM:111:ARG:CB  | 2.56                     | 0.50              |
| 11:AM:84:ASN:O    | 11:AM:85:LEU:CG   | 2.60                     | 0.50              |
| 12:AN:8:LYS:NZ    | 12:AN:11:LYS:HZ3  | 2.09                     | 0.50              |
| 12:AN:85:LYS:HG3  | 12:AN:88:GLY:H    | 1.77                     | 0.50              |
| 13:AO:28:LEU:HD21 | 13:AO:115:GLU:HA  | 1.94                     | 0.50              |
| 13:AO:53:HIS:CD2  | 13:AO:56:LYS:NZ   | 2.80                     | 0.50              |
| 14:AP:49:VAL:CG1  | 14:AP:76:LYS:HZ1  | 2.25                     | 0.50              |
| 14:AP:58:LEU:O    | 14:AP:65:VAL:CG1  | 2.60                     | 0.50              |
| 15:AQ:64:ARG:HH11 | 15:AQ:64:ARG:N    | 2.08                     | 0.50              |
| 15:AQ:68:TYR:CE1  | 15:AQ:70:VAL:HA   | 2.47                     | 0.50              |
| 17:AS:7:THR:C     | 17:AS:9:GLY:N     | 2.69                     | 0.50              |
| 17:AS:23:GLU:HA   | 17:AS:93:GLU:CB   | 2.42                     | 0.50              |
| 23:AY:19:LEU:O    | 23:AY:19:LEU:HD22 | 2.11                     | 0.50              |
| 24:AZ:12:PRO:O    | 24:AZ:13:ILE:O    | 2.30                     | 0.50              |
| 25:Aa:65:ASP:HA   | 25:Aa:68:ARG:NH1  | 2.27                     | 0.50              |
| 27:Ac:22:ALA:O    | 27:Ac:23:THR:OG1  | 2.24                     | 0.50              |
| 31:AI:118:THR:C   | 31:AI:120:LYS:H   | 2.20                     | 0.50              |
| 32:AJ:25:PRO:HG3  | 57:BZ:429:MET:CG  | 2.41                     | 0.50              |
| 34:BA:34:C:O4'    | 45:BP:32:PHE:CE2  | 2.64                     | 0.50              |
| 34:BA:134:A:N6    | 34:BA:135:C:N4    | 2.59                     | 0.50              |
| 34:BA:138:G:N2    | 34:BA:226:G:C1'   | 2.74                     | 0.50              |
| 34:BA:355:C:H2'   | 34:BA:356:A:H8    | 1.76                     | 0.50              |
| 34:BA:411:A:C5    | 34:BA:429:U:C4    | 2.99                     | 0.50              |
| 34:BA:423:G:N2    | 34:BA:424:G:C5    | 2.80                     | 0.50              |
| 34:BA:484:G:C8    | 34:BA:486:U:C4    | 3.00                     | 0.50              |
| 34:BA:511:C:O2'   | 34:BA:512:U:P     | 2.69                     | 0.50              |
| 34:BA:527:G:H2'   | 34:BA:528:C:C6    | 2.46                     | 0.50              |
| 34:BA:543:C:P     | 37:BH:10:ARG:NH2  | 2.83                     | 0.50              |
| 34:BA:698:G:C6    | 34:BA:699:C:C4    | 3.00                     | 0.50              |
| 34:BA:836:G:C2    | 34:BA:837:G:C8    | 2.99                     | 0.50              |
| 34:BA:901:A:N3    | 34:BA:902:G:H1'   | 2.22                     | 0.50              |
| 34:BA:946:A:N6    | 34:BA:1236:A:C6   | 2.80                     | 0.50              |
| 34:BA:1055:A:HO2' | 34:BA:1056:U:P    | 2.34                     | 0.50              |
| 34:BA:1128:C:C4   | 34:BA:1139:G:O6   | 2.64                     | 0.50              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1167:A:H2   | 34:BA:1169:A:N3    | 2.09                     | 0.50              |
| 34:BA:1425:U:C2   | 34:BA:1426:C:C5    | 2.98                     | 0.50              |
| 34:BA:1480:G:C2'  | 34:BA:1481:U:O5'   | 2.60                     | 0.50              |
| 35:BF:19:HIS:C    | 35:BF:39:ILE:HD11  | 2.37                     | 0.50              |
| 35:BF:35:GLU:OE2  | 35:BF:39:ILE:N     | 2.44                     | 0.50              |
| 35:BF:101:MET:HB3 | 35:BF:105:PHE:CE1  | 2.46                     | 0.50              |
| 35:BF:123:ALA:O   | 35:BF:124:SER:O    | 2.28                     | 0.50              |
| 35:BF:167:PRO:CG  | 35:BF:168:THR:H    | 2.21                     | 0.50              |
| 35:BF:207:ALA:C   | 35:BF:209:ARG:N    | 2.67                     | 0.50              |
| 37:BH:13:ARG:HA   | 37:BH:32:ALA:CB    | 2.41                     | 0.50              |
| 37:BH:15:GLU:HB2  | 37:BH:19:LEU:HD11  | 1.92                     | 0.50              |
| 37:BH:143:GLY:CA  | 37:BH:185:PHE:HB3  | 2.33                     | 0.50              |
| 37:BH:173:TRP:HD1 | 37:BH:185:PHE:CE2  | 2.30                     | 0.50              |
| 38:BI:44:GLY:O    | 38:BI:58:ALA:HB1   | 2.12                     | 0.50              |
| 39:BJ:79:LEU:O    | 39:BJ:81:ILE:N     | 2.44                     | 0.50              |
| 40:BK:49:ILE:HG12 | 40:BK:121:ALA:HB2  | 1.94                     | 0.50              |
| 41:BL:35:ILE:C    | 41:BL:37:ARG:N     | 2.68                     | 0.50              |
| 41:BL:40:ALA:CB   | 41:BL:45:ILE:HG23  | 2.41                     | 0.50              |
| 42:BM:19:LEU:HD22 | 42:BM:59:PHE:CD2   | 2.40                     | 0.50              |
| 44:BO:57:THR:HG21 | 44:BO:59:TYR:HB3   | 1.93                     | 0.50              |
| 44:BO:63:LEU:HA   | 44:BO:66:LEU:CD1   | 2.41                     | 0.50              |
| 44:BO:85:ARG:NE   | 44:BO:111:ASP:OD2  | 2.45                     | 0.50              |
| 45:BP:85:ILE:CG1  | 45:BP:99:HIS:O     | 2.60                     | 0.50              |
| 46:BQ:10:PRO:HB2  | 46:BQ:45:VAL:CG2   | 2.42                     | 0.50              |
| 47:BR:26:ARG:HB3  | 47:BR:43:CYS:HB3   | 1.94                     | 0.50              |
| 48:BS:15:PHE:N    | 48:BS:15:PHE:CD2   | 2.79                     | 0.50              |
| 48:BS:75:PRO:O    | 48:BS:79:ARG:N     | 2.31                     | 0.50              |
| 48:BS:79:ARG:HA   | 48:BS:82:ILE:CD1   | 2.42                     | 0.50              |
| 49:BT:8:ARG:O     | 49:BT:9:PHE:HD2    | 1.95                     | 0.50              |
| 49:BT:34:GLU:CD   | 49:BT:35:LYS:N     | 2.70                     | 0.50              |
| 49:BT:52:ASP:OD2  | 49:BT:55:ARG:N     | 2.45                     | 0.50              |
| 50:BU:2:PRO:O     | 50:BU:4:LYS:N      | 2.45                     | 0.50              |
| 51:BV:46:GLU:N    | 51:BV:49:LYS:NZ    | 2.56                     | 0.50              |
| 51:BV:83:GLU:HA   | 51:BV:83:GLU:OE1   | 2.09                     | 0.50              |
| 52:BW:19:VAL:CG1  | 52:BW:20:LEU:N     | 2.75                     | 0.50              |
| 52:BW:40:ILE:HB   | 52:BW:68:GLY:HA2   | 1.93                     | 0.50              |
| 52:BW:78:ARG:O    | 52:BW:79:THR:OG1   | 2.21                     | 0.50              |
| 53:BX:13:LEU:H    | 53:BX:13:LEU:CD1   | 1.99                     | 0.50              |
| 53:BX:53:LEU:HB2  | 53:BX:100:ILE:HG13 | 1.94                     | 0.50              |
| 55:BC:38:A:H2'    | 55:BC:39:U:H4'     | 1.93                     | 0.50              |
| 56:BE:6:G:N3      | 56:BE:6:G:C2'      | 2.73                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 56:BE:40:C:H2'    | 56:BE:41:C:H6     | 1.76                     | 0.50              |
| 57:BZ:206:GLN:CB  | 57:BZ:228:ARG:HB2 | 2.41                     | 0.50              |
| 57:BZ:251:VAL:O   | 57:BZ:261:GLU:CA  | 2.50                     | 0.50              |
| 57:BZ:351:GLU:H   | 57:BZ:351:GLU:CD  | 2.19                     | 0.50              |
| 57:BZ:446:ARG:O   | 57:BZ:480:VAL:CG1 | 2.59                     | 0.50              |
| 57:BZ:502:PHE:CZ  | 57:BZ:556:VAL:CA  | 2.94                     | 0.50              |
| 1:AA:51:G:C1'     | 1:AA:118:A:N6     | 2.69                     | 0.50              |
| 1:AA:71:A:C2      | 1:AA:73:A:N1      | 2.80                     | 0.50              |
| 1:AA:270(A):A:H3' | 1:AA:366:C:HO2'   | 1.75                     | 0.50              |
| 1:AA:297:C:C4     | 1:AA:298:G:C2     | 3.00                     | 0.50              |
| 1:AA:397:G:OP2    | 25:Aa:10:VAL:HG11 | 2.11                     | 0.50              |
| 1:AA:493:G:N2     | 1:AA:494:G:C1'    | 2.75                     | 0.50              |
| 1:AA:592:G:N3     | 1:AA:592:G:H2'    | 2.27                     | 0.50              |
| 1:AA:593:G:C5     | 1:AA:594:U:C5     | 3.00                     | 0.50              |
| 1:AA:656:G:C2'    | 1:AA:657:U:O5'    | 2.60                     | 0.50              |
| 1:AA:686:G:N7     | 28:Ad:12:ARG:HB2  | 2.27                     | 0.50              |
| 1:AA:704:G:C2     | 1:AA:725:G:N2     | 2.80                     | 0.50              |
| 1:AA:764:A:OP1    | 4:AD:211:ARG:CB   | 2.60                     | 0.50              |
| 1:AA:774:A:C5'    | 1:AA:778:G:C4'    | 2.90                     | 0.50              |
| 1:AA:851:U:C5'    | 24:AZ:49:LYS:HD2  | 2.37                     | 0.50              |
| 1:AA:855:G:H21    | 22:AX:27:GLU:HB2  | 1.71                     | 0.50              |
| 1:AA:859:G:H3'    | 1:AA:859:G:H8     | 1.77                     | 0.50              |
| 1:AA:863:A:C2     | 1:AA:864:G:C5     | 3.00                     | 0.50              |
| 1:AA:964:C:C2'    | 1:AA:965:C:O5'    | 2.60                     | 0.50              |
| 1:AA:974:G:P      | 1:AA:974(A):C:OP2 | 2.69                     | 0.50              |
| 1:AA:978:G:C2     | 1:AA:979:G:C2     | 3.00                     | 0.50              |
| 1:AA:981:A:H1'    | 1:AA:2037:G:O4'   | 2.11                     | 0.50              |
| 1:AA:1024:G:OP2   | 1:AA:1026:U:OP1   | 2.30                     | 0.50              |
| 1:AA:1026:U:O2    | 1:AA:1026:U:C2'   | 2.40                     | 0.50              |
| 1:AA:1120:G:H2'   | 1:AA:1121:C:C6    | 2.47                     | 0.50              |
| 1:AA:1239:G:H2'   | 1:AA:1240:U:C4'   | 2.42                     | 0.50              |
| 1:AA:1257:C:N4    | 1:AA:1258:C:N4    | 2.59                     | 0.50              |
| 1:AA:1312:U:C6    | 1:AA:1313:U:C5    | 3.00                     | 0.50              |
| 1:AA:1364:G:C5    | 1:AA:1366:A:OP1   | 2.65                     | 0.50              |
| 1:AA:1427:A:O2'   | 1:AA:1428:C:P     | 2.70                     | 0.50              |
| 1:AA:1439:A:H2'   | 1:AA:1440:G:O4'   | 2.12                     | 0.50              |
| 1:AA:1543:A:H3'   | 1:AA:1544:C:C5'   | 2.41                     | 0.50              |
| 1:AA:1845:G:C6    | 1:AA:1896:G:C6    | 3.00                     | 0.50              |
| 1:AA:1910:G:N2    | 1:AA:1911:U:H3    | 2.09                     | 0.50              |
| 1:AA:2059:A:O3'   | 6:AF:69:HIS:O     | 2.30                     | 0.50              |
| 1:AA:2078:C:O2'   | 1:AA:2433:A:O2'   | 2.16                     | 0.50              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:2102:U:C4     | 1:AA:2103:C:N4     | 2.80                     | 0.50              |
| 1:AA:2146:C:N3     | 1:AA:2147:G:C1'    | 2.75                     | 0.50              |
| 1:AA:2178:C:H5''   | 3:AC:46:LYS:HG2    | 0.50                     | 0.50              |
| 1:AA:2296:U:O4     | 14:AP:5:THR:HG23   | 2.12                     | 0.50              |
| 1:AA:2306:C:O2'    | 7:AG:153:ARG:NH1   | 2.45                     | 0.50              |
| 1:AA:2331:G:C2'    | 1:AA:2332:U:O4'    | 2.59                     | 0.50              |
| 1:AA:2471:C:H2'    | 1:AA:2472:G:O5'    | 2.12                     | 0.50              |
| 1:AA:2618:G:C2     | 5:AE:150:VAL:HG11  | 2.45                     | 0.50              |
| 1:AA:2629:A:N7     | 1:AA:2896:C:H6     | 2.07                     | 0.50              |
| 1:AA:2668:G:N1     | 1:AA:2669:G:C6     | 2.80                     | 0.50              |
| 1:AA:2736:G:C2     | 1:AA:2769:C:C2     | 3.00                     | 0.50              |
| 1:AA:2787:C:H5''   | 5:AE:64:LYS:HD2    | 1.92                     | 0.50              |
| 1:AA:2858:C:H3'    | 1:AA:2859:G:C8     | 2.47                     | 0.50              |
| 2:AB:8:U:C2        | 2:AB:9:G:H8        | 2.29                     | 0.50              |
| 4:AD:27:THR:CG2    | 4:AD:82:ILE:CG2    | 2.89                     | 0.50              |
| 4:AD:155:LEU:O     | 4:AD:155:LEU:CD2   | 2.54                     | 0.50              |
| 5:AE:169:ASN:HD22  | 5:AE:170:LEU:N     | 2.04                     | 0.50              |
| 7:AG:43:LEU:CD1    | 7:AG:88:ILE:HG22   | 2.41                     | 0.50              |
| 7:AG:102:PHE:C     | 7:AG:104:GLU:N     | 2.68                     | 0.50              |
| 8:AH:54:ARG:NH1    | 8:AH:57:ASP:HA     | 2.27                     | 0.50              |
| 8:AH:63:SER:O      | 8:AH:67:LEU:HD23   | 2.12                     | 0.50              |
| 8:AH:69:ARG:HG3    | 8:AH:70:THR:HG23   | 1.93                     | 0.50              |
| 8:AH:136:ILE:CG2   | 8:AH:137:ASP:H     | 2.19                     | 0.50              |
| 10:AL:20:MET:HE1   | 10:AL:44:LYS:HE3   | 1.94                     | 0.50              |
| 10:AL:36:GLY:H     | 10:AL:61:VAL:HG12  | 1.76                     | 0.50              |
| 10:AL:106:LEU:O    | 10:AL:109:LYS:N    | 2.44                     | 0.50              |
| 10:AL:109:LYS:O    | 10:AL:110:GLY:C    | 2.54                     | 0.50              |
| 11:AM:122:PRO:CG   | 11:AM:138:LEU:N    | 2.74                     | 0.50              |
| 12:AN:16:ARG:NH1   | 12:AN:72:LYS:HG2   | 2.27                     | 0.50              |
| 12:AN:122:GLY:HA2  | 12:AN:125:LEU:HD12 | 1.94                     | 0.50              |
| 12:AN:134:ARG:HH21 | 12:AN:137:TYR:CB   | 2.25                     | 0.50              |
| 14:AP:57:LYS:NZ    | 14:AP:65:VAL:N     | 2.60                     | 0.50              |
| 14:AP:92:TYR:O     | 14:AP:98:VAL:HG21  | 2.11                     | 0.50              |
| 14:AP:103:GLU:HA   | 14:AP:106:ARG:HB2  | 1.94                     | 0.50              |
| 16:AR:37:GLU:O     | 16:AR:40:PHE:N     | 2.45                     | 0.50              |
| 16:AR:46:ALA:CA    | 16:AR:49:HIS:ND1   | 2.75                     | 0.50              |
| 16:AR:67:ALA:C     | 16:AR:71:GLN:NE2   | 2.70                     | 0.50              |
| 16:AR:81:HIS:CB    | 16:AR:117:GLN:HE22 | 2.25                     | 0.50              |
| 21:AW:91:LEU:CD1   | 21:AW:95:PRO:HG3   | 2.41                     | 0.50              |
| 21:AW:111:VAL:HG22 | 21:AW:117:LEU:HA   | 1.93                     | 0.50              |
| 22:AX:68:GLU:CB    | 22:AX:80:HIS:C     | 2.81                     | 0.50              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 23:AY:19:LEU:C     | 23:AY:19:LEU:HD22  | 2.37                     | 0.50              |
| 23:AY:51:GLN:O     | 23:AY:54:ARG:HG3   | 2.12                     | 0.50              |
| 24:AZ:31:LEU:HD12  | 24:AZ:32:GLN:CD    | 2.37                     | 0.50              |
| 32:AJ:21:PRO:CD    | 32:AJ:22:PRO:CD    | 2.86                     | 0.50              |
| 34:BA:108:G:C2     | 34:BA:109:A:N1     | 2.80                     | 0.50              |
| 34:BA:108:G:O6     | 53:BX:15:ARG:HD2   | 2.12                     | 0.50              |
| 34:BA:110:C:O5'    | 34:BA:110:C:C6     | 2.65                     | 0.50              |
| 34:BA:116:A:O5'    | 34:BA:116:A:C8     | 2.64                     | 0.50              |
| 34:BA:299:G:H2'    | 34:BA:300:A:C5     | 2.46                     | 0.50              |
| 34:BA:393:A:C6     | 34:BA:394:G:N7     | 2.80                     | 0.50              |
| 34:BA:404:U:H5'    | 37:BH:122:ARG:HD3  | 1.94                     | 0.50              |
| 34:BA:408:A:C5'    | 37:BH:116:GLN:HE21 | 2.25                     | 0.50              |
| 34:BA:430:A:H4'    | 37:BH:7:PRO:HA     | 1.94                     | 0.50              |
| 34:BA:465:A:N6     | 49:BT:82:GLN:HE22  | 2.10                     | 0.50              |
| 34:BA:468:A:C5     | 34:BA:474:G:C5     | 3.00                     | 0.50              |
| 34:BA:571:U:OP1    | 34:BA:819:A:C8     | 2.65                     | 0.50              |
| 34:BA:692:U:N3     | 34:BA:695:A:OP2    | 2.44                     | 0.50              |
| 34:BA:714:G:HO2'   | 34:BA:777:A:N6     | 2.10                     | 0.50              |
| 34:BA:809:G:H2'    | 34:BA:810:C:C5'    | 2.40                     | 0.50              |
| 34:BA:929:G:C6     | 34:BA:930:C:C5     | 3.00                     | 0.50              |
| 34:BA:1009:G:N2    | 34:BA:1010:G:H1'   | 2.27                     | 0.50              |
| 34:BA:1134:G:N2    | 34:BA:1136:U:O4    | 2.42                     | 0.50              |
| 34:BA:1219:U:O3'   | 52:BW:34:TRP:CD2   | 2.38                     | 0.50              |
| 34:BA:1251:A:C4'   | 34:BA:1370:G:H4'   | 2.41                     | 0.50              |
| 34:BA:1301:U:C4    | 34:BA:1303:C:C6    | 3.00                     | 0.50              |
| 34:BA:1306:A:H3'   | 34:BA:1307:U:C6    | 2.47                     | 0.50              |
| 34:BA:1316:G:C4'   | 34:BA:1360:A:C4    | 2.93                     | 0.50              |
| 34:BA:1379:G:C5    | 34:BA:1380:U:C5    | 3.00                     | 0.50              |
| 34:BA:1533:C:C2'   | 34:BA:1534:A:O5'   | 2.60                     | 0.50              |
| 35:BF:92:TYR:CD2   | 35:BF:92:TYR:C     | 2.87                     | 0.50              |
| 35:BF:223:ILE:C    | 35:BF:226:ARG:HB3  | 2.37                     | 0.50              |
| 36:BG:84:ILE:CD1   | 36:BG:101:LEU:HD22 | 2.42                     | 0.50              |
| 36:BG:176:HIS:O    | 36:BG:177:THR:C    | 2.55                     | 0.50              |
| 37:BH:104:VAL:HG23 | 37:BH:105:VAL:N    | 2.27                     | 0.50              |
| 37:BH:105:VAL:HG13 | 37:BH:120:LEU:HD21 | 1.94                     | 0.50              |
| 37:BH:108:LEU:HD12 | 37:BH:183:GLY:HA3  | 1.93                     | 0.50              |
| 37:BH:152:SER:OG   | 37:BH:158:ILE:HD12 | 2.12                     | 0.50              |
| 37:BH:188:LEU:O    | 37:BH:189:PRO:C    | 2.53                     | 0.50              |
| 38:BI:78:HIS:CD2   | 38:BI:78:HIS:N     | 2.72                     | 0.50              |
| 39:BJ:52:ILE:CG2   | 39:BJ:53:ALA:H     | 2.24                     | 0.50              |
| 39:BJ:71:ARG:O     | 39:BJ:72:VAL:C     | 2.53                     | 0.50              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 40:BK:6:ARG:HA    | 40:BK:6:ARG:HH11   | 1.77                     | 0.50              |
| 40:BK:75:VAL:HG22 | 40:BK:88:PRO:CB    | 2.42                     | 0.50              |
| 40:BK:135:VAL:O   | 40:BK:139:GLU:OE2  | 2.29                     | 0.50              |
| 40:BK:139:GLU:H   | 40:BK:139:GLU:CD   | 2.20                     | 0.50              |
| 41:BL:33:GLU:OE2  | 41:BL:50:ARG:HD2   | 2.12                     | 0.50              |
| 42:BM:5:TYR:CD2   | 42:BM:6:GLY:N      | 2.80                     | 0.50              |
| 42:BM:23:ASN:HD22 | 42:BM:24:GLY:N     | 2.09                     | 0.50              |
| 44:BO:20:TYR:CD2  | 44:BO:83:ILE:HG21  | 2.47                     | 0.50              |
| 45:BP:22:SER:C    | 45:BP:24:VAL:N     | 2.70                     | 0.50              |
| 45:BP:39:VAL:HG11 | 45:BP:41:ARG:NH2   | 2.26                     | 0.50              |
| 47:BR:34:TYR:CE1  | 47:BR:39:LEU:O     | 2.65                     | 0.50              |
| 47:BR:36:PHE:O    | 47:BR:36:PHE:CD1   | 2.64                     | 0.50              |
| 48:BS:46:HIS:O    | 48:BS:47:LYS:HB2   | 2.11                     | 0.50              |
| 49:BT:7:ALA:O     | 49:BT:17:TYR:HA    | 2.11                     | 0.50              |
| 50:BU:12:SER:OG   | 50:BU:14:LYS:HD2   | 2.11                     | 0.50              |
| 50:BU:58:GLU:OE1  | 50:BU:58:GLU:C     | 2.55                     | 0.50              |
| 51:BV:50:ILE:O    | 51:BV:52:PRO:HD3   | 2.12                     | 0.50              |
| 52:BW:4:SER:HA    | 52:BW:5:LEU:CB     | 2.36                     | 0.50              |
| 53:BX:29:LYS:O    | 53:BX:32:ALA:CB    | 2.56                     | 0.50              |
| 56:BE:4:C:N4      | 56:BE:70:G:H1'     | 2.27                     | 0.50              |
| 57:BZ:13:HIS:CD2  | 57:BZ:109:THR:H    | 2.30                     | 0.50              |
| 57:BZ:93:ASP:C    | 57:BZ:121:LEU:HD22 | 2.36                     | 0.50              |
| 57:BZ:97:LEU:O    | 57:BZ:126:VAL:N    | 2.45                     | 0.50              |
| 57:BZ:305:PRO:HG2 | 57:BZ:306:THR:H    | 1.77                     | 0.50              |
| 1:AA:10:G:C2      | 1:AA:2629:A:N3     | 2.80                     | 0.49              |
| 1:AA:109:G:C6     | 1:AA:110:G:C8      | 3.00                     | 0.49              |
| 1:AA:119:A:C4'    | 1:AA:120:U:H5'     | 2.42                     | 0.49              |
| 1:AA:149:A:N7     | 1:AA:150:C:N1      | 2.60                     | 0.49              |
| 1:AA:184:C:O2     | 1:AA:185:U:C5      | 2.65                     | 0.49              |
| 1:AA:220:G:O2'    | 1:AA:233:A:C2      | 2.65                     | 0.49              |
| 1:AA:270(H):C:O2' | 1:AA:270(I):G:H5'  | 2.12                     | 0.49              |
| 1:AA:296:C:C2'    | 1:AA:297:C:O4'     | 2.60                     | 0.49              |
| 1:AA:379:G:C2     | 1:AA:396:G:C4      | 3.00                     | 0.49              |
| 1:AA:410:G:C2     | 1:AA:2407:G:N7     | 2.80                     | 0.49              |
| 1:AA:410:G:H3'    | 1:AA:411:G:C8      | 2.47                     | 0.49              |
| 1:AA:452:G:C2     | 1:AA:458:G:N2      | 2.79                     | 0.49              |
| 1:AA:459:U:O5'    | 28:Ad:40:TRP:CZ3   | 2.65                     | 0.49              |
| 1:AA:472:A:C2'    | 1:AA:473:G:C5'     | 2.75                     | 0.49              |
| 1:AA:558:G:C2'    | 1:AA:559:G:C5'     | 2.90                     | 0.49              |
| 1:AA:632:A:C2     | 1:AA:633:A:C4      | 3.00                     | 0.49              |
| 1:AA:730:C:C2'    | 1:AA:731:C:H5'     | 2.42                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:758:C:H2'    | 1:AA:759:G:H8     | 1.75                     | 0.49              |
| 1:AA:880:G:H2'    | 1:AA:881:G:C4'    | 2.39                     | 0.49              |
| 1:AA:978:G:H2'    | 1:AA:979:G:C8     | 2.47                     | 0.49              |
| 1:AA:1013:C:H2'   | 1:AA:1014:U:H6    | 1.76                     | 0.49              |
| 1:AA:1061:U:C2    | 32:AJ:11:GLN:NE2  | 2.80                     | 0.49              |
| 1:AA:1066:U:O2'   | 1:AA:1068:G:H3'   | 2.11                     | 0.49              |
| 1:AA:1231:G:C4    | 1:AA:1232:G:C8    | 3.00                     | 0.49              |
| 1:AA:1299:G:O4'   | 1:AA:1301:A:C2    | 2.65                     | 0.49              |
| 1:AA:1305:C:H2'   | 1:AA:1306:C:C6    | 2.46                     | 0.49              |
| 1:AA:1368:G:O6    | 25:Aa:2:LYS:CE    | 2.60                     | 0.49              |
| 1:AA:1483:G:N9    | 1:AA:1507:A:C2    | 2.80                     | 0.49              |
| 1:AA:1658:C:OP1   | 5:AE:134:ILE:CD1  | 2.57                     | 0.49              |
| 1:AA:1663:C:O2'   | 1:AA:1664:A:O4'   | 2.24                     | 0.49              |
| 1:AA:1667:G:N2    | 1:AA:1991:U:O4    | 2.44                     | 0.49              |
| 1:AA:1780:A:H3'   | 1:AA:1781:C:C5'   | 2.25                     | 0.49              |
| 1:AA:1781:C:H2'   | 1:AA:1782:C:OP2   | 2.12                     | 0.49              |
| 1:AA:1789:A:H3'   | 1:AA:1790:C:C4'   | 2.41                     | 0.49              |
| 1:AA:1807:G:H21   | 1:AA:1809:A:C4'   | 2.24                     | 0.49              |
| 1:AA:1854:A:H1'   | 1:AA:2087:G:H21   | 1.77                     | 0.49              |
| 1:AA:1899:G:C8    | 1:AA:1899:G:C3'   | 2.95                     | 0.49              |
| 1:AA:1939:U:O4    | 1:AA:1967:C:H1'   | 2.11                     | 0.49              |
| 1:AA:2047:U:C2'   | 1:AA:2048:G:O5'   | 2.60                     | 0.49              |
| 1:AA:2153:G:H8    | 1:AA:2153:G:O5'   | 1.94                     | 0.49              |
| 1:AA:2251:G:N7    | 59:AA:3003:8AN:C2 | 2.39                     | 0.49              |
| 1:AA:2296:U:C6    | 1:AA:2296:U:O5'   | 2.65                     | 0.49              |
| 1:AA:2426:A:C3'   | 1:AA:2427:C:H5'   | 2.42                     | 0.49              |
| 1:AA:2509:G:C2    | 1:AA:2510:C:H1'   | 2.47                     | 0.49              |
| 1:AA:2589:A:C2'   | 1:AA:2590:A:H5'   | 2.41                     | 0.49              |
| 1:AA:2597:G:O2'   | 1:AA:2598:A:O5'   | 2.30                     | 0.49              |
| 1:AA:2854:G:H2'   | 1:AA:2855:C:C6    | 2.47                     | 0.49              |
| 1:AA:2899:G:C5    | 1:AA:2900:A:N7    | 2.80                     | 0.49              |
| 2:AB:71:C:C2      | 2:AB:72:G:O4'     | 2.65                     | 0.49              |
| 2:AB:77:U:C6      | 2:AB:77:U:C3'     | 2.95                     | 0.49              |
| 3:AC:38:ASP:O     | 3:AC:39:GLU:O     | 2.29                     | 0.49              |
| 3:AC:42:GLU:CB    | 3:AC:215:THR:N    | 2.75                     | 0.49              |
| 3:AC:78:ALA:HA    | 3:AC:119:VAL:CG2  | 2.42                     | 0.49              |
| 3:AC:134:ARG:HB2  | 3:AC:136:LEU:HG   | 1.93                     | 0.49              |
| 3:AC:177:LYS:HB2  | 3:AC:180:PHE:CG   | 2.47                     | 0.49              |
| 3:AC:209:LEU:HD23 | 3:AC:209:LEU:C    | 2.35                     | 0.49              |
| 4:AD:23:GLU:C     | 4:AD:23:GLU:OE1   | 2.55                     | 0.49              |
| 4:AD:150:LYS:C    | 4:AD:152:GLY:N    | 2.65                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 4:AD:224:ALA:HB2  | 4:AD:233:HIS:CG    | 2.47                     | 0.49              |
| 5:AE:154:LYS:C    | 5:AE:154:LYS:CD    | 2.80                     | 0.49              |
| 5:AE:176:ILE:HD11 | 5:AE:179:GLU:HG2   | 1.93                     | 0.49              |
| 5:AE:200:GLU:CA   | 5:AE:202:LYS:HZ3   | 2.24                     | 0.49              |
| 6:AF:43:LYS:HG3   | 6:AF:98:SER:C      | 2.37                     | 0.49              |
| 6:AF:110:LEU:HG   | 6:AF:183:VAL:H     | 1.77                     | 0.49              |
| 6:AF:168:ARG:HD3  | 6:AF:169:ASN:H     | 1.76                     | 0.49              |
| 6:AF:169:ASN:HD21 | 6:AF:171:PRO:HG2   | 1.76                     | 0.49              |
| 8:AH:20:ALA:HB1   | 8:AH:21:PRO:CD     | 2.42                     | 0.49              |
| 8:AH:102:ALA:HA   | 8:AH:115:VAL:HG12  | 1.94                     | 0.49              |
| 8:AH:121:ILE:HD11 | 8:AH:123:PHE:HE1   | 1.73                     | 0.49              |
| 9:AK:18:ALA:HB2   | 9:AK:54:VAL:HG21   | 1.93                     | 0.49              |
| 10:AL:68:GLU:HA   | 10:AL:104:ARG:HH12 | 1.73                     | 0.49              |
| 11:AM:56:SER:HG   | 29:Ae:27:THR:CB    | 2.25                     | 0.49              |
| 11:AM:81:GLN:C    | 11:AM:86:LYS:HG3   | 2.37                     | 0.49              |
| 11:AM:97:PRO:CD   | 11:AM:102:ARG:CZ   | 2.90                     | 0.49              |
| 12:AN:51:ARG:HE   | 12:AN:55:VAL:HG21  | 1.77                     | 0.49              |
| 12:AN:59:ARG:O    | 12:AN:60:ARG:HD2   | 2.12                     | 0.49              |
| 12:AN:85:LYS:HZ2  | 22:AX:10:THR:CB    | 2.25                     | 0.49              |
| 12:AN:134:ARG:C   | 12:AN:134:ARG:NH1  | 2.67                     | 0.49              |
| 13:AO:93:GLY:O    | 13:AO:95:THR:N     | 2.45                     | 0.49              |
| 14:AP:32:LEU:O    | 14:AP:34:HIS:N     | 2.45                     | 0.49              |
| 14:AP:70:GLY:C    | 14:AP:72:ALA:N     | 2.68                     | 0.49              |
| 15:AQ:9:LEU:O     | 15:AQ:10:VAL:C     | 2.51                     | 0.49              |
| 15:AQ:29:ARG:CA   | 15:AQ:51:ARG:HA    | 2.40                     | 0.49              |
| 15:AQ:82:LEU:HD13 | 15:AQ:84:GLN:CB    | 2.41                     | 0.49              |
| 16:AR:96:ALA:O    | 16:AR:97:ASP:C     | 2.54                     | 0.49              |
| 16:AR:113:ALA:HA  | 16:AR:116:ALA:CB   | 2.42                     | 0.49              |
| 19:AU:3:THR:O     | 19:AU:4:ALA:HB3    | 2.11                     | 0.49              |
| 20:AV:14:LEU:HD22 | 20:AV:19:LYS:CB    | 2.39                     | 0.49              |
| 20:AV:17:SER:OG   | 20:AV:19:LYS:HE3   | 2.11                     | 0.49              |
| 20:AV:67:LEU:CD1  | 20:AV:71:LYS:NZ    | 2.75                     | 0.49              |
| 20:AV:75:ILE:O    | 20:AV:75:ILE:HD12  | 2.12                     | 0.49              |
| 21:AW:127:LYS:CA  | 21:AW:164:ALA:HB3  | 2.41                     | 0.49              |
| 21:AW:151:HIS:CG  | 21:AW:170:THR:H    | 2.28                     | 0.49              |
| 25:Aa:59:PHE:CA   | 25:Aa:62:ARG:CZ    | 2.90                     | 0.49              |
| 26:Ab:47:PRO:HG2  | 26:Ab:48:GLU:OE1   | 2.11                     | 0.49              |
| 27:Ac:30:THR:CB   | 27:Ac:31:PRO:HD3   | 2.42                     | 0.49              |
| 29:Ae:54:GLU:O    | 29:Ae:55:ALA:C     | 2.55                     | 0.49              |
| 32:AJ:10:LEU:HG   | 32:AJ:56:GLU:HG2   | 1.94                     | 0.49              |
| 32:AJ:23:VAL:N    | 32:AJ:24:GLY:CA    | 2.75                     | 0.49              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 32:AJ:40:ALA:C     | 32:AJ:66:THR:OG1   | 2.55                     | 0.49              |
| 32:AJ:108:ALA:CA   | 32:AJ:109:LYS:CB   | 2.86                     | 0.49              |
| 33:Ag:290:UNK:N    | 33:Ag:343:UNK:CB   | 2.74                     | 0.49              |
| 33:Ag:327:UNK:CB   | 33:Ag:330:UNK:CB   | 2.89                     | 0.49              |
| 34:BA:132:C:C2     | 34:BA:133:U:C5     | 3.00                     | 0.49              |
| 34:BA:134:A:N1     | 34:BA:135:C:C4     | 2.80                     | 0.49              |
| 34:BA:136:C:H2'    | 34:BA:137:C:C6     | 2.46                     | 0.49              |
| 34:BA:410:G:N2     | 34:BA:429:U:N3     | 2.60                     | 0.49              |
| 34:BA:429:U:O2     | 34:BA:430:A:C8     | 2.65                     | 0.49              |
| 34:BA:446:G:O2'    | 34:BA:447:G:H5'    | 2.11                     | 0.49              |
| 34:BA:494:U:H2'    | 34:BA:495:A:C5'    | 2.42                     | 0.49              |
| 34:BA:520:A:OP2    | 45:BP:51:ALA:CB    | 2.60                     | 0.49              |
| 34:BA:577:G:N2     | 34:BA:578:C:C2     | 2.79                     | 0.49              |
| 34:BA:671:G:H2'    | 34:BA:672:U:H1'    | 1.93                     | 0.49              |
| 34:BA:676:A:C4     | 34:BA:677:U:C5     | 2.99                     | 0.49              |
| 34:BA:736:C:C5'    | 51:BV:72:ARG:HH22  | 2.03                     | 0.49              |
| 34:BA:833:U:C2     | 34:BA:834:C:H5     | 2.30                     | 0.49              |
| 34:BA:888:G:N1     | 34:BA:889:A:N6     | 2.60                     | 0.49              |
| 34:BA:936:C:H2'    | 34:BA:937:A:C5'    | 2.42                     | 0.49              |
| 34:BA:939:G:N2     | 34:BA:940:C:N3     | 2.59                     | 0.49              |
| 34:BA:999:U:C4     | 34:BA:1042:G:N1    | 2.80                     | 0.49              |
| 34:BA:1067:A:C2    | 34:BA:1068:G:H1'   | 2.47                     | 0.49              |
| 34:BA:1217:C:H2'   | 34:BA:1218:C:C6    | 2.47                     | 0.49              |
| 34:BA:1251:A:H2    | 34:BA:1354:C:H1'   | 1.76                     | 0.49              |
| 34:BA:1279:A:O2'   | 34:BA:1282:C:N4    | 2.44                     | 0.49              |
| 34:BA:1298:C:C2    | 40:BK:114:ARG:NH1  | 2.80                     | 0.49              |
| 34:BA:1312:G:O6    | 34:BA:1326:C:C5    | 2.59                     | 0.49              |
| 34:BA:1321:C:C6    | 34:BA:1321:C:C3'   | 2.94                     | 0.49              |
| 34:BA:1326:C:H2'   | 34:BA:1327:C:C6    | 2.45                     | 0.49              |
| 34:BA:1465:C:C2'   | 34:BA:1466:C:C5'   | 2.86                     | 0.49              |
| 34:BA:1494:G:N7    | 58:BA:1601:NMY:H82 | 2.27                     | 0.49              |
| 35:BF:25:ASN:HB3   | 35:BF:191:ASP:CA   | 2.40                     | 0.49              |
| 35:BF:60:ASP:O     | 35:BF:64:ARG:HD2   | 2.12                     | 0.49              |
| 35:BF:114:ARG:O    | 35:BF:118:LEU:HB2  | 2.11                     | 0.49              |
| 35:BF:153:ARG:NH2  | 35:BF:154:LEU:O    | 2.45                     | 0.49              |
| 36:BG:156:ARG:O    | 36:BG:157:ILE:C    | 2.54                     | 0.49              |
| 37:BH:187:ARG:HH21 | 37:BH:188:LEU:HD11 | 1.77                     | 0.49              |
| 38:BI:12:LEU:C     | 38:BI:13:ILE:HD12  | 2.35                     | 0.49              |
| 39:BJ:11:ASN:ND2   | 39:BJ:86:ARG:HH22  | 2.06                     | 0.49              |
| 39:BJ:28:ARG:HD3   | 39:BJ:28:ARG:N     | 2.27                     | 0.49              |
| 39:BJ:36:ARG:NH1   | 39:BJ:36:ARG:CB    | 2.74                     | 0.49              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 39:BJ:37:VAL:HA    | 39:BJ:65:VAL:CB    | 2.41                     | 0.49              |
| 41:BL:122:ARG:HD3  | 41:BL:122:ARG:H    | 1.77                     | 0.49              |
| 41:BL:123:GLU:CD   | 41:BL:124:ALA:H    | 2.13                     | 0.49              |
| 44:BO:18:ARG:CD    | 44:BO:34:ASP:O     | 2.59                     | 0.49              |
| 44:BO:102:GLY:O    | 44:BO:104:GLN:N    | 2.45                     | 0.49              |
| 46:BQ:19:LEU:HD13  | 46:BQ:30:ALA:N     | 2.10                     | 0.49              |
| 46:BQ:67:GLU:C     | 46:BQ:69:GLU:H     | 2.20                     | 0.49              |
| 49:BT:40:ASP:O     | 49:BT:40:ASP:CG    | 2.55                     | 0.49              |
| 50:BU:10:VAL:CG1   | 50:BU:54:GLY:N     | 2.74                     | 0.49              |
| 50:BU:22:LEU:HD13  | 50:BU:41:LYS:CA    | 2.42                     | 0.49              |
| 51:BV:41:LYS:HA    | 51:BV:44:LEU:HD23  | 1.93                     | 0.49              |
| 53:BX:88:VAL:O     | 53:BX:92:LEU:HD12  | 2.11                     | 0.49              |
| 57:BZ:119:TYR:CD2  | 57:BZ:121:LEU:CG   | 2.90                     | 0.49              |
| 57:BZ:130:VAL:HG11 | 57:BZ:164:TYR:HB3  | 1.92                     | 0.49              |
| 57:BZ:133:PRO:HG2  | 57:BZ:134:GLY:H    | 1.77                     | 0.49              |
| 57:BZ:510:LEU:O    | 57:BZ:561:ILE:HG21 | 2.12                     | 0.49              |
| 1:AA:72:U:H1'      | 23:AY:53:ALA:HA    | 1.95                     | 0.49              |
| 1:AA:81:G:HO2'     | 1:AA:294:A:H2'     | 1.75                     | 0.49              |
| 1:AA:82:G:H21      | 1:AA:83:G:N2       | 2.09                     | 0.49              |
| 1:AA:231:C:N4      | 1:AA:232:G:H22     | 2.09                     | 0.49              |
| 1:AA:289:A:C5      | 1:AA:351:G:O6      | 2.65                     | 0.49              |
| 1:AA:311:A:C1'     | 1:AA:332:A:C5      | 2.94                     | 0.49              |
| 1:AA:377:C:H2'     | 1:AA:378:C:C6      | 2.47                     | 0.49              |
| 1:AA:396:G:OP1     | 25:Aa:10:VAL:HG13  | 2.11                     | 0.49              |
| 1:AA:503:A:C5      | 1:AA:505:A:N7      | 2.81                     | 0.49              |
| 1:AA:503:A:H2      | 1:AA:506:G:C2      | 2.30                     | 0.49              |
| 1:AA:531:C:H6      | 1:AA:532:A:C2      | 2.28                     | 0.49              |
| 1:AA:699:A:H1'     | 1:AA:1634:A:C8     | 2.47                     | 0.49              |
| 1:AA:705:A:N6      | 1:AA:727:A:H1'     | 2.27                     | 0.49              |
| 1:AA:724:U:C2      | 1:AA:725:G:C8      | 3.00                     | 0.49              |
| 1:AA:729:G:OP1     | 4:AD:19:ALA:CB     | 2.61                     | 0.49              |
| 1:AA:858:U:H4'     | 1:AA:859:G:OP1     | 2.12                     | 0.49              |
| 1:AA:903:C:O5'     | 1:AA:903:C:H6      | 1.95                     | 0.49              |
| 1:AA:931:G:C2      | 24:AZ:24:LYS:HB3   | 2.46                     | 0.49              |
| 1:AA:989:G:O2'     | 1:AA:990:A:P       | 2.70                     | 0.49              |
| 1:AA:1007:C:H4'    | 9:AK:108:PRO:CD    | 2.41                     | 0.49              |
| 1:AA:1013:C:OP2    | 1:AA:1142:U:O2     | 2.30                     | 0.49              |
| 1:AA:1019:U:H5'    | 1:AA:1035:U:O2'    | 2.12                     | 0.49              |
| 1:AA:1176:G:C8     | 1:AA:1177:A:O4'    | 2.65                     | 0.49              |
| 1:AA:1287:A:H3'    | 1:AA:1288:U:C6     | 2.46                     | 0.49              |
| 1:AA:1331:A:O2'    | 1:AA:1332:G:C8     | 2.65                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1420:U:O2'   | 1:AA:1421:G:C5'   | 2.60                     | 0.49              |
| 1:AA:1453:A:C2    | 1:AA:1454:U:H1'   | 2.47                     | 0.49              |
| 1:AA:1455:G:O2'   | 1:AA:1456:G:H5'   | 2.12                     | 0.49              |
| 1:AA:1489:U:O2'   | 1:AA:1490:A:P     | 2.70                     | 0.49              |
| 1:AA:1558:A:C2    | 1:AA:1560:G:N9    | 2.79                     | 0.49              |
| 1:AA:1568:G:P     | 4:AD:61:LEU:HG    | 2.51                     | 0.49              |
| 1:AA:1583:A:OP2   | 1:AA:1586:A:O3'   | 2.30                     | 0.49              |
| 1:AA:1588:C:H2'   | 1:AA:1589:C:C6    | 2.44                     | 0.49              |
| 1:AA:1615:C:C5    | 1:AA:1617:C:C2    | 3.00                     | 0.49              |
| 1:AA:1685:C:H2'   | 1:AA:1686:C:O5'   | 2.11                     | 0.49              |
| 1:AA:1754:C:C2    | 1:AA:1755:A:C8    | 3.00                     | 0.49              |
| 1:AA:1919:A:H8    | 1:AA:1919:A:O5'   | 1.95                     | 0.49              |
| 1:AA:1964:G:C2    | 1:AA:1967:C:H5    | 2.26                     | 0.49              |
| 1:AA:1999:C:H4'   | 1:AA:2723:C:O2    | 2.12                     | 0.49              |
| 1:AA:2051:A:C2'   | 5:AE:141:ILE:HD11 | 2.43                     | 0.49              |
| 1:AA:2243:U:C2    | 1:AA:2244:U:C5    | 3.00                     | 0.49              |
| 1:AA:2306:C:H5    | 1:AA:2311:A:C6    | 2.30                     | 0.49              |
| 1:AA:2385:C:O2'   | 1:AA:2386:C:O5'   | 2.28                     | 0.49              |
| 1:AA:2466:C:P     | 30:Af:5:ALA:HB3   | 2.52                     | 0.49              |
| 1:AA:2587:A:C3'   | 1:AA:2588:G:H5'   | 2.42                     | 0.49              |
| 1:AA:2627:G:C2'   | 1:AA:2628:C:C5'   | 2.87                     | 0.49              |
| 1:AA:2667:C:H2'   | 1:AA:2668:G:C4'   | 2.42                     | 0.49              |
| 1:AA:2835:A:N6    | 1:AA:2879:C:OP2   | 2.45                     | 0.49              |
| 1:AA:2850:A:C5    | 1:AA:2851:A:N7    | 2.80                     | 0.49              |
| 2:AB:53:A:C6      | 2:AB:54:G:C5      | 3.00                     | 0.49              |
| 2:AB:75:G:O6      | 2:AB:76:G:N2      | 2.46                     | 0.49              |
| 2:AB:79:C:H2'     | 2:AB:80:U:O4'     | 2.12                     | 0.49              |
| 2:AB:80:U:C2'     | 2:AB:81:G:C8      | 2.93                     | 0.49              |
| 3:AC:8:ARG:O      | 3:AC:12:GLU:HG2   | 2.12                     | 0.49              |
| 3:AC:10:LEU:HD12  | 3:AC:32:LEU:HD23  | 1.93                     | 0.49              |
| 3:AC:161:ILE:HB   | 3:AC:174:PRO:HD2  | 1.93                     | 0.49              |
| 4:AD:123:ALA:HB3  | 4:AD:131:LEU:HD22 | 1.94                     | 0.49              |
| 4:AD:141:VAL:HG12 | 4:AD:194:GLY:O    | 2.12                     | 0.49              |
| 5:AE:8:LYS:HD2    | 5:AE:9:VAL:HG22   | 1.91                     | 0.49              |
| 5:AE:27:LEU:O     | 5:AE:28:ALA:C     | 2.55                     | 0.49              |
| 5:AE:38:THR:C     | 5:AE:40:GLU:N     | 2.68                     | 0.49              |
| 5:AE:45:THR:HG1   | 5:AE:46:ALA:H     | 1.58                     | 0.49              |
| 5:AE:127:ASP:O    | 5:AE:128:SER:HB3  | 2.11                     | 0.49              |
| 7:AG:33:ARG:NH2   | 7:AG:34:LEU:C     | 2.70                     | 0.49              |
| 7:AG:77:ILE:O     | 7:AG:78:SER:C     | 2.55                     | 0.49              |
| 7:AG:115:ARG:O    | 7:AG:117:PHE:N    | 2.45                     | 0.49              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AH:17:VAL:HG21   | 8:AH:45:VAL:CG1    | 2.31                     | 0.49              |
| 9:AK:74:ARG:NE     | 9:AK:82:LEU:CD1    | 2.76                     | 0.49              |
| 9:AK:87:LEU:HD23   | 9:AK:88:GLU:N      | 2.27                     | 0.49              |
| 9:AK:91:LEU:HA     | 9:AK:95:PRO:CA     | 2.43                     | 0.49              |
| 9:AK:122:VAL:O     | 9:AK:123:TYR:CD1   | 2.65                     | 0.49              |
| 10:AL:37:ASP:HB2   | 10:AL:61:VAL:HG21  | 1.94                     | 0.49              |
| 10:AL:71:ARG:N     | 10:AL:72:PRO:HD2   | 2.27                     | 0.49              |
| 12:AN:75:THR:C     | 12:AN:77:LYS:HD2   | 2.36                     | 0.49              |
| 12:AN:115:MET:O    | 12:AN:116:GLU:C    | 2.53                     | 0.49              |
| 14:AP:6:ALA:CA     | 14:AP:9:ARG:HH12   | 2.23                     | 0.49              |
| 15:AQ:2:ASN:C      | 15:AQ:6:LEU:HD22   | 2.37                     | 0.49              |
| 16:AR:65:ILE:HG23  | 16:AR:96:ALA:HA    | 1.94                     | 0.49              |
| 18:AT:64:MET:O     | 18:AT:65:LEU:C     | 2.55                     | 0.49              |
| 19:AU:15:GLU:O     | 19:AU:18:TYR:N     | 2.26                     | 0.49              |
| 20:AV:70:SER:O     | 20:AV:71:LYS:O     | 2.30                     | 0.49              |
| 21:AW:105:VAL:HG12 | 21:AW:107:THR:HG23 | 1.94                     | 0.49              |
| 21:AW:145:GLU:O    | 21:AW:147:GLY:N    | 2.45                     | 0.49              |
| 21:AW:152:ALA:HA   | 21:AW:155:LEU:HD22 | 1.93                     | 0.49              |
| 21:AW:152:ALA:HA   | 21:AW:155:LEU:CD2  | 2.42                     | 0.49              |
| 23:AY:20:VAL:CG2   | 23:AY:52:ILE:HG23  | 2.30                     | 0.49              |
| 23:AY:26:GLU:O     | 23:AY:29:GLU:CB    | 2.60                     | 0.49              |
| 23:AY:27:LEU:O     | 23:AY:30:LEU:HG    | 2.11                     | 0.49              |
| 26:Ab:35:GLU:HG2   | 26:Ab:49:CYS:HB3   | 1.94                     | 0.49              |
| 27:Ac:27:LYS:HE3   | 27:Ac:29:ASN:HD21  | 1.77                     | 0.49              |
| 27:Ac:52:VAL:CG1   | 27:Ac:53:LYS:N     | 2.64                     | 0.49              |
| 30:Af:11:CYS:C     | 30:Af:13:LYS:H     | 2.20                     | 0.49              |
| 32:AJ:14:ALA:O     | 32:AJ:49:GLY:C     | 2.52                     | 0.49              |
| 32:AJ:77:LEU:HD21  | 32:AJ:111:LYS:HE3  | 1.94                     | 0.49              |
| 32:AJ:103:GLN:CA   | 32:AJ:106:GLU:HG3  | 2.41                     | 0.49              |
| 34:BA:51:A:C2      | 34:BA:116:A:H1'    | 2.47                     | 0.49              |
| 34:BA:122:G:C2     | 34:BA:123:C:H1'    | 2.47                     | 0.49              |
| 34:BA:160:A:H1'    | 34:BA:344:A:H62    | 1.78                     | 0.49              |
| 34:BA:242:C:C2     | 34:BA:285:G:N2     | 2.81                     | 0.49              |
| 34:BA:327:A:C2     | 34:BA:329:A:N3     | 2.80                     | 0.49              |
| 34:BA:424:G:C4     | 34:BA:425:G:C8     | 3.01                     | 0.49              |
| 34:BA:440:A:N6     | 34:BA:494:U:C6     | 2.80                     | 0.49              |
| 34:BA:505:G:N1     | 34:BA:535:A:C2     | 2.81                     | 0.49              |
| 34:BA:521:G:C5     | 34:BA:529:G:N2     | 2.81                     | 0.49              |
| 34:BA:607:A:N1     | 49:BT:31:LYS:HG3   | 2.27                     | 0.49              |
| 34:BA:787:A:C2'    | 34:BA:788:U:H5'    | 2.35                     | 0.49              |
| 34:BA:843:U:H3     | 35:BF:37:ASN:HA    | 1.77                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:858:G:O5'   | 34:BA:858:G:C8     | 2.66                     | 0.49              |
| 34:BA:872:A:N1    | 34:BA:874:G:C6     | 2.80                     | 0.49              |
| 34:BA:874:G:N2    | 34:BA:875:C:C2     | 2.80                     | 0.49              |
| 34:BA:924:C:H2'   | 34:BA:925:G:C8     | 2.47                     | 0.49              |
| 34:BA:937:A:C2    | 34:BA:1379:G:C6    | 3.00                     | 0.49              |
| 34:BA:947:G:C2    | 34:BA:948:C:N1     | 2.80                     | 0.49              |
| 34:BA:972:C:OP2   | 43:BN:57:LYS:HD2   | 2.13                     | 0.49              |
| 34:BA:978:A:N6    | 34:BA:1318:A:N6    | 2.60                     | 0.49              |
| 34:BA:1037:C:C4   | 34:BA:1038:C:C4    | 3.00                     | 0.49              |
| 34:BA:1095:U:P    | 34:BA:1108:G:N2    | 2.86                     | 0.49              |
| 34:BA:1112:C:C1'  | 36:BG:179:ARG:NH1  | 2.75                     | 0.49              |
| 34:BA:1129:C:C4   | 34:BA:1139:G:C6    | 3.00                     | 0.49              |
| 34:BA:1134:G:H2'  | 34:BA:1135:U:H5'   | 1.94                     | 0.49              |
| 34:BA:1234:C:H4'  | 34:BA:1364:U:C1'   | 2.38                     | 0.49              |
| 34:BA:1242:C:C4   | 34:BA:1243:C:C5    | 3.00                     | 0.49              |
| 34:BA:1301:U:C4   | 34:BA:1303:C:N1    | 2.81                     | 0.49              |
| 34:BA:1308:U:O5'  | 46:BQ:98:VAL:CB    | 2.60                     | 0.49              |
| 34:BA:1316:G:H5'' | 47:BR:17:LYS:HD2   | 1.94                     | 0.49              |
| 34:BA:1409:C:O5'  | 34:BA:1409:C:H6    | 1.96                     | 0.49              |
| 34:BA:1419:G:C2'  | 34:BA:1420:C:C6    | 2.95                     | 0.49              |
| 34:BA:1442:G:H4'  | 34:BA:1443:G:OP2   | 2.13                     | 0.49              |
| 36:BG:10:PHE:CD1  | 36:BG:178:LEU:HD22 | 2.35                     | 0.49              |
| 37:BH:64:LEU:CD1  | 37:BH:75:PHE:CZ    | 2.95                     | 0.49              |
| 38:BI:26:PHE:N    | 38:BI:26:PHE:HD1   | 2.08                     | 0.49              |
| 38:BI:45:PHE:O    | 38:BI:45:PHE:CG    | 2.64                     | 0.49              |
| 38:BI:82:VAL:HG11 | 38:BI:134:ALA:O    | 2.12                     | 0.49              |
| 38:BI:108:ALA:HA  | 38:BI:111:GLU:OE1  | 2.12                     | 0.49              |
| 39:BJ:95:GLU:CD   | 39:BJ:95:GLU:N     | 2.69                     | 0.49              |
| 40:BK:75:VAL:HG11 | 40:BK:86:GLN:HB3   | 1.94                     | 0.49              |
| 41:BL:5:PRO:O     | 41:BL:8:ASP:CB     | 2.54                     | 0.49              |
| 42:BM:94:ALA:O    | 42:BM:95:LYS:HG2   | 2.12                     | 0.49              |
| 45:BP:77:LEU:CD1  | 45:BP:107:ALA:HB2  | 2.39                     | 0.49              |
| 45:BP:82:VAL:CG1  | 45:BP:83:VAL:H     | 2.22                     | 0.49              |
| 48:BS:79:ARG:HA   | 48:BS:82:ILE:HD12  | 1.94                     | 0.49              |
| 49:BT:18:ARG:NH1  | 49:BT:35:LYS:CB    | 2.47                     | 0.49              |
| 49:BT:21:VAL:HG21 | 49:BT:59:TRP:CE2   | 2.47                     | 0.49              |
| 49:BT:67:THR:N    | 49:BT:70:ALA:HB3   | 2.26                     | 0.49              |
| 50:BU:68:ARG:N    | 50:BU:70:ARG:NH2   | 2.46                     | 0.49              |
| 52:BW:51:VAL:CB   | 52:BW:75:ALA:HB2   | 2.42                     | 0.49              |
| 53:BX:13:LEU:N    | 53:BX:13:LEU:CD1   | 2.57                     | 0.49              |
| 53:BX:33:ILE:O    | 53:BX:34:LYS:C     | 2.53                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 53:BX:65:LYS:O    | 53:BX:68:LYS:HG2   | 2.11                     | 0.49              |
| 55:BC:10:G:O2'    | 55:BC:11:C:H5'     | 2.12                     | 0.49              |
| 57:BZ:9:ALA:HA    | 57:BZ:73:VAL:N     | 2.26                     | 0.49              |
| 57:BZ:10:ILE:HG22 | 57:BZ:10:ILE:O     | 2.12                     | 0.49              |
| 57:BZ:137:PRO:CD  | 57:BZ:138:ASP:H    | 2.26                     | 0.49              |
| 57:BZ:146:ASP:O   | 57:BZ:149:VAL:HG12 | 2.12                     | 0.49              |
| 57:BZ:200:ASP:OD2 | 57:BZ:228:ARG:NE   | 2.42                     | 0.49              |
| 57:BZ:236:GLN:CD  | 57:BZ:237:VAL:O    | 2.50                     | 0.49              |
| 57:BZ:251:VAL:CA  | 57:BZ:273:ILE:HA   | 2.39                     | 0.49              |
| 57:BZ:436:ARG:O   | 57:BZ:437:VAL:HB   | 2.11                     | 0.49              |
| 57:BZ:520:GLU:OE1 | 57:BZ:592:LEU:C    | 2.55                     | 0.49              |
| 57:BZ:603:ALA:CB  | 57:BZ:604:PRO:CD   | 2.86                     | 0.49              |
| 1:AA:64:A:C2      | 1:AA:65:C:H1'      | 2.47                     | 0.49              |
| 1:AA:86:C:H2'     | 1:AA:87:C:H6       | 1.77                     | 0.49              |
| 1:AA:227:A:N6     | 1:AA:410:G:H1'     | 2.27                     | 0.49              |
| 1:AA:237:C:O2'    | 1:AA:238:C:H5'     | 2.12                     | 0.49              |
| 1:AA:284:U:H2'    | 1:AA:285:C:C6      | 2.47                     | 0.49              |
| 1:AA:292:C:H2'    | 1:AA:293:U:N3      | 2.25                     | 0.49              |
| 1:AA:354:G:O2'    | 1:AA:355:G:C5'     | 2.61                     | 0.49              |
| 1:AA:520:G:OP1    | 18:AT:25:ARG:NH1   | 2.43                     | 0.49              |
| 1:AA:527:C:H5     | 1:AA:2780:G:OP1    | 1.93                     | 0.49              |
| 1:AA:547:A:N6     | 1:AA:548:A:N1      | 2.60                     | 0.49              |
| 1:AA:558:G:H5''   | 9:AK:109:LYS:CG    | 2.41                     | 0.49              |
| 1:AA:566:U:O4'    | 17:AS:82:ARG:NH2   | 2.44                     | 0.49              |
| 1:AA:572:A:N7     | 1:AA:573:G:C5      | 2.80                     | 0.49              |
| 1:AA:572:A:C5     | 1:AA:573:G:N1      | 2.80                     | 0.49              |
| 1:AA:576:U:O5'    | 1:AA:576:U:H6      | 1.96                     | 0.49              |
| 1:AA:627:A:P      | 1:AA:637:A:N6      | 2.85                     | 0.49              |
| 1:AA:630:G:N1     | 1:AA:634:C:N4      | 2.58                     | 0.49              |
| 1:AA:747:U:HO2'   | 1:AA:748:G:P       | 2.31                     | 0.49              |
| 1:AA:874:G:C2     | 1:AA:904:C:N3      | 2.80                     | 0.49              |
| 1:AA:954:G:O2'    | 1:AA:2274:A:C2     | 2.58                     | 0.49              |
| 1:AA:962:G:C2     | 1:AA:963:U:C2      | 3.00                     | 0.49              |
| 1:AA:988:A:H8     | 1:AA:988:A:O5'     | 1.95                     | 0.49              |
| 1:AA:1123:C:C2    | 1:AA:1124:C:C5     | 3.00                     | 0.49              |
| 1:AA:1132:A:H2'   | 1:AA:1133:U:O2     | 2.12                     | 0.49              |
| 1:AA:1164:G:C2'   | 1:AA:1165:U:O5'    | 2.60                     | 0.49              |
| 1:AA:1281:G:H2'   | 1:AA:1282:U:C5     | 2.46                     | 0.49              |
| 1:AA:1357:U:O4    | 1:AA:1358:G:C2     | 2.65                     | 0.49              |
| 1:AA:1429:G:C3'   | 1:AA:1430:C:H6     | 2.23                     | 0.49              |
| 1:AA:1451:C:OP2   | 1:AA:1451:C:C4'    | 2.60                     | 0.49              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:1496:A:O2'    | 1:AA:1497:U:C5    | 2.49                     | 0.49              |
| 1:AA:1544:C:O2'    | 1:AA:1545:A:O4'   | 2.30                     | 0.49              |
| 1:AA:1560:G:H2'    | 1:AA:1561:G:C8    | 2.48                     | 0.49              |
| 1:AA:1689:A:C6     | 1:AA:1698:A:H2    | 2.27                     | 0.49              |
| 1:AA:1727:U:HO2'   | 1:AA:1728:G:P     | 2.35                     | 0.49              |
| 1:AA:1783:A:C5'    | 1:AA:1784:A:OP1   | 2.57                     | 0.49              |
| 1:AA:1788:C:C6     | 1:AA:1788:C:H3'   | 2.47                     | 0.49              |
| 1:AA:1910:G:N2     | 1:AA:1911:U:N3    | 2.60                     | 0.49              |
| 1:AA:1982:C:H2'    | 1:AA:1983:C:C6    | 2.47                     | 0.49              |
| 1:AA:2024:G:C5     | 1:AA:2025:C:C5    | 3.00                     | 0.49              |
| 1:AA:2076:U:C5'    | 1:AA:2077:A:P     | 3.00                     | 0.49              |
| 1:AA:2146:C:O5'    | 1:AA:2146:C:C6    | 2.66                     | 0.49              |
| 1:AA:2218:G:O3'    | 4:AD:186:HIS:NE2  | 2.46                     | 0.49              |
| 1:AA:2238:G:O2'    | 1:AA:2239:G:O4'   | 2.31                     | 0.49              |
| 1:AA:2302:G:N2     | 1:AA:2303:G:H1'   | 2.27                     | 0.49              |
| 1:AA:2373:G:H2'    | 1:AA:2374:C:C5    | 2.46                     | 0.49              |
| 1:AA:2452:C:H2'    | 1:AA:2453:A:O4'   | 2.12                     | 0.49              |
| 1:AA:2452:C:O2'    | 1:AA:2453:A:H5'   | 2.13                     | 0.49              |
| 1:AA:2464:C:C4     | 1:AA:2465:C:C5    | 3.00                     | 0.49              |
| 1:AA:2469:A:C2     | 1:AA:2482:G:H1'   | 2.48                     | 0.49              |
| 1:AA:2512:C:H2'    | 1:AA:2513:G:C4'   | 2.41                     | 0.49              |
| 1:AA:2553:G:N2     | 1:AA:2554:U:C2'   | 2.61                     | 0.49              |
| 1:AA:2589:A:C4     | 1:AA:2590:A:C8    | 3.01                     | 0.49              |
| 1:AA:2650:U:C2'    | 1:AA:2651:C:H5'   | 2.42                     | 0.49              |
| 1:AA:2681:C:C5     | 1:AA:2727:G:C2    | 2.99                     | 0.49              |
| 1:AA:2695:C:HO2'   | 1:AA:2696:U:H6    | 1.59                     | 0.49              |
| 1:AA:2845:G:O2'    | 1:AA:2846:G:O4'   | 2.23                     | 0.49              |
| 1:AA:2881:C:C2     | 1:AA:2882:A:N7    | 2.80                     | 0.49              |
| 58:AA:3001:NMY:N19 | 34:BA:1517:G:OP1  | 2.44                     | 0.49              |
| 3:AC:77:ILE:HB     | 3:AC:115:ALA:CB   | 2.42                     | 0.49              |
| 3:AC:89:ALA:O      | 3:AC:157:LYS:HE2  | 2.12                     | 0.49              |
| 3:AC:181:PRO:O     | 3:AC:184:LYS:HB2  | 2.11                     | 0.49              |
| 4:AD:127:VAL:HG22  | 4:AD:194:GLY:HA2  | 1.94                     | 0.49              |
| 4:AD:143:HIS:NE2   | 4:AD:192:THR:HG21 | 2.25                     | 0.49              |
| 4:AD:157:ARG:HH11  | 4:AD:178:PRO:CD   | 2.26                     | 0.49              |
| 4:AD:246:PRO:HD2   | 4:AD:250:TRP:CA   | 2.42                     | 0.49              |
| 5:AE:5:LEU:CD1     | 5:AE:197:ILE:HA   | 2.42                     | 0.49              |
| 5:AE:142:GLY:O     | 5:AE:143:ASN:CG   | 2.56                     | 0.49              |
| 5:AE:148:GLY:C     | 5:AE:149:ARG:HG3  | 2.37                     | 0.49              |
| 6:AF:6:VAL:HB      | 6:AF:18:ARG:CD    | 2.40                     | 0.49              |
| 6:AF:47:GLY:O      | 6:AF:95:ARG:O     | 2.30                     | 0.49              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 6:AF:101:LEU:O     | 6:AF:106:ARG:CZ    | 2.60                     | 0.49              |
| 7:AG:179:PRO:O     | 7:AG:181:ARG:NH2   | 2.45                     | 0.49              |
| 8:AH:41:MET:HE3    | 8:AH:68:THR:CG2    | 2.42                     | 0.49              |
| 8:AH:102:ALA:HB1   | 8:AH:115:VAL:H     | 1.76                     | 0.49              |
| 9:AK:2:LYS:N       | 16:AR:61:TRP:CH2   | 2.80                     | 0.49              |
| 9:AK:10:GLU:HB3    | 9:AK:39:ARG:HH12   | 1.76                     | 0.49              |
| 9:AK:63:THR:OG1    | 9:AK:65:LYS:HD3    | 2.12                     | 0.49              |
| 9:AK:69:GLN:NE2    | 9:AK:69:GLN:N      | 2.61                     | 0.49              |
| 11:AM:50:ARG:NH2   | 29:Ae:6:THR:OG1    | 2.45                     | 0.49              |
| 11:AM:108:LYS:CG   | 11:AM:109:GLY:N    | 2.75                     | 0.49              |
| 11:AM:114:ILE:CD1  | 11:AM:129:ALA:O    | 2.44                     | 0.49              |
| 12:AN:11:LYS:NZ    | 12:AN:73:PRO:HB3   | 2.27                     | 0.49              |
| 12:AN:34:LEU:CD2   | 12:AN:118:LEU:HD22 | 2.42                     | 0.49              |
| 12:AN:46:GLN:NE2   | 12:AN:126:PRO:HG3  | 2.28                     | 0.49              |
| 12:AN:66:ILE:O     | 12:AN:67:ARG:HB3   | 2.12                     | 0.49              |
| 12:AN:127:ILE:HD13 | 12:AN:129:THR:HG23 | 1.92                     | 0.49              |
| 15:AQ:33:LYS:HB3   | 15:AQ:45:PHE:C     | 2.36                     | 0.49              |
| 15:AQ:59:THR:N     | 15:AQ:61:PHE:CE2   | 2.80                     | 0.49              |
| 15:AQ:76:PHE:CZ    | 15:AQ:78:LEU:CG    | 2.94                     | 0.49              |
| 15:AQ:80:SER:HB3   | 15:AQ:81:PRO:CD    | 2.40                     | 0.49              |
| 16:AR:16:LYS:HG2   | 16:AR:17:ILE:N     | 2.27                     | 0.49              |
| 16:AR:42:ALA:O     | 16:AR:45:TYR:HB2   | 2.11                     | 0.49              |
| 17:AS:2:PHE:O      | 17:AS:43:GLU:OE1   | 2.30                     | 0.49              |
| 17:AS:56:SER:O     | 17:AS:56:SER:OG    | 2.23                     | 0.49              |
| 20:AV:26:LYS:HD2   | 20:AV:27:VAL:HB    | 1.94                     | 0.49              |
| 21:AW:48:PHE:O     | 21:AW:53:ILE:HG22  | 2.12                     | 0.49              |
| 21:AW:100:VAL:HG12 | 21:AW:133:ILE:HD13 | 1.93                     | 0.49              |
| 22:AX:1:MET:O      | 22:AX:2:ALA:CB     | 2.60                     | 0.49              |
| 22:AX:23:VAL:HA    | 22:AX:38:VAL:CG1   | 2.37                     | 0.49              |
| 27:Ac:17:LYS:HE2   | 27:Ac:49:HIS:O     | 2.12                     | 0.49              |
| 27:Ac:28:ARG:O     | 27:Ac:32:ASN:HA    | 2.13                     | 0.49              |
| 29:Ae:8:LYS:HE2    | 29:Ae:8:LYS:N      | 2.11                     | 0.49              |
| 31:AI:54:ALA:O     | 31:AI:56:ASN:N     | 2.44                     | 0.49              |
| 32:AJ:17:ALA:O     | 32:AJ:41:PHE:HB2   | 2.12                     | 0.49              |
| 32:AJ:108:ALA:HA   | 32:AJ:109:LYS:CB   | 2.41                     | 0.49              |
| 34:BA:5:U:N3       | 37:BH:86:LYS:HB3   | 2.27                     | 0.49              |
| 34:BA:66:G:C4'     | 34:BA:173:U:O4     | 2.59                     | 0.49              |
| 34:BA:96:G:C2      | 34:BA:97:U:C2      | 3.00                     | 0.49              |
| 34:BA:129(A):G:C8  | 34:BA:129(A):G:C3' | 2.89                     | 0.49              |
| 34:BA:307:C:N4     | 34:BA:308:C:N4     | 2.58                     | 0.49              |
| 34:BA:327:A:O3'    | 34:BA:328:C:O4'    | 2.30                     | 0.49              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:519:C:N4     | 34:BA:520:A:N3     | 2.59                     | 0.49              |
| 34:BA:594:G:H2'    | 34:BA:595:G:H1'    | 1.94                     | 0.49              |
| 34:BA:607:A:C2'    | 34:BA:608:A:H5'    | 2.43                     | 0.49              |
| 34:BA:622:A:H2'    | 34:BA:623:C:H5'    | 1.93                     | 0.49              |
| 34:BA:735:C:H4'    | 51:BV:75:ILE:HD11  | 1.94                     | 0.49              |
| 34:BA:737:A:OP1    | 39:BJ:92:LYS:N     | 2.41                     | 0.49              |
| 34:BA:739:C:C2'    | 34:BA:740:U:H5'    | 2.43                     | 0.49              |
| 34:BA:749:C:O2     | 34:BA:749:C:C2'    | 2.59                     | 0.49              |
| 34:BA:1455:G:OP1   | 53:BX:32:ALA:N     | 2.45                     | 0.49              |
| 34:BA:1479:C:H2'   | 34:BA:1480:G:O4'   | 2.12                     | 0.49              |
| 35:BF:88:ALA:HA    | 35:BF:222:ILE:HD11 | 1.93                     | 0.49              |
| 35:BF:165:VAL:O    | 35:BF:187:LEU:O    | 2.30                     | 0.49              |
| 35:BF:208:ILE:HD13 | 35:BF:239:VAL:HG11 | 1.94                     | 0.49              |
| 36:BG:12:LEU:HD11  | 47:BR:57:ARG:HG3   | 1.94                     | 0.49              |
| 36:BG:77:ILE:CG2   | 36:BG:81:GLY:HA2   | 2.42                     | 0.49              |
| 36:BG:114:PRO:HD3  | 36:BG:183:ASP:OD2  | 2.12                     | 0.49              |
| 36:BG:138:VAL:HG12 | 36:BG:170:GLN:HE21 | 1.77                     | 0.49              |
| 36:BG:142:MET:CA   | 36:BG:146:ALA:HB3  | 2.42                     | 0.49              |
| 37:BH:54:TYR:CE2   | 37:BH:58:LEU:HB2   | 2.47                     | 0.49              |
| 37:BH:64:LEU:HD12  | 37:BH:75:PHE:CZ    | 2.47                     | 0.49              |
| 37:BH:81:GLU:O     | 37:BH:85:LYS:HB2   | 2.11                     | 0.49              |
| 37:BH:155:LEU:H    | 37:BH:155:LEU:HD22 | 1.77                     | 0.49              |
| 39:BJ:40:VAL:HA    | 39:BJ:63:TYR:CD1   | 2.46                     | 0.49              |
| 40:BK:37:ASN:O     | 40:BK:38:LEU:C     | 2.53                     | 0.49              |
| 40:BK:149:ARG:O    | 40:BK:152:ALA:N    | 2.46                     | 0.49              |
| 43:BN:5:ARG:O      | 43:BN:6:ILE:HG23   | 2.12                     | 0.49              |
| 44:BO:22:HIS:O     | 44:BO:28:THR:HG23  | 2.12                     | 0.49              |
| 44:BO:62:GLN:OE1   | 44:BO:63:LEU:N     | 2.45                     | 0.49              |
| 44:BO:63:LEU:HA    | 44:BO:66:LEU:CG    | 2.41                     | 0.49              |
| 44:BO:80:VAL:H     | 44:BO:104:GLN:HE21 | 1.57                     | 0.49              |
| 45:BP:26:ALA:C     | 45:BP:27:LEU:O     | 2.52                     | 0.49              |
| 45:BP:117:ARG:O    | 45:BP:121:GLY:HA2  | 2.12                     | 0.49              |
| 48:BS:4:THR:HG22   | 48:BS:6:GLU:OE1    | 2.12                     | 0.49              |
| 48:BS:62:GLN:HA    | 48:BS:65:ARG:HH12  | 1.77                     | 0.49              |
| 56:BD:2:C:C2'      | 56:BD:3:C:C5'      | 2.86                     | 0.49              |
| 56:BE:50:U:H2'     | 56:BE:51:U:O4'     | 2.12                     | 0.49              |
| 57:BZ:26:LEU:C     | 57:BZ:27:GLN:CG    | 2.86                     | 0.49              |
| 57:BZ:26:LEU:HD13  | 57:BZ:26:LEU:N     | 2.27                     | 0.49              |
| 1:AA:7:G:N2        | 1:AA:2896:C:H2'    | 2.26                     | 0.49              |
| 1:AA:18:C:O5'      | 1:AA:18:C:C6       | 2.64                     | 0.49              |
| 1:AA:105:C:H2'     | 1:AA:106:C:C6      | 2.47                     | 0.49              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:215:G:H4'     | 1:AA:216:A:C5'    | 2.41                     | 0.49              |
| 1:AA:271(B):G:H5'' | 1:AA:271(C):U:H5' | 1.92                     | 0.49              |
| 1:AA:307:G:H22     | 1:AA:310:A:C5'    | 2.25                     | 0.49              |
| 1:AA:410:G:O3'     | 1:AA:2407:G:OP2   | 2.29                     | 0.49              |
| 1:AA:527:C:N4      | 1:AA:2780:G:OP1   | 2.42                     | 0.49              |
| 1:AA:530:G:N2      | 1:AA:2021:C:C6    | 2.80                     | 0.49              |
| 1:AA:591:C:C2      | 1:AA:592:G:C8     | 3.01                     | 0.49              |
| 1:AA:625:G:O6      | 11:AM:100:LEU:O   | 2.31                     | 0.49              |
| 1:AA:627:A:H2'     | 1:AA:628:G:C1'    | 2.42                     | 0.49              |
| 1:AA:663:G:C4'     | 11:AM:18:ARG:NE   | 2.69                     | 0.49              |
| 1:AA:711:G:C6      | 1:AA:712:G:N7     | 2.80                     | 0.49              |
| 1:AA:820:A:N7      | 1:AA:973:A:N6     | 2.60                     | 0.49              |
| 1:AA:964:C:O5'     | 1:AA:964:C:H6     | 1.95                     | 0.49              |
| 1:AA:980:A:C5      | 1:AA:981:A:C2     | 3.00                     | 0.49              |
| 1:AA:985:C:H2'     | 1:AA:986:C:C5     | 2.48                     | 0.49              |
| 1:AA:1045:A:O4'    | 1:AA:1111:A:C2    | 2.66                     | 0.49              |
| 1:AA:1059:G:H2'    | 32:AJ:75:SER:H    | 1.68                     | 0.49              |
| 1:AA:1222:C:C4     | 1:AA:1227:A:N6    | 2.79                     | 0.49              |
| 1:AA:1244:G:C5'    | 11:AM:9:ASN:HB2   | 2.41                     | 0.49              |
| 1:AA:1619:G:C2     | 1:AA:1620:G:C4    | 2.99                     | 0.49              |
| 1:AA:1682:G:H5'    | 1:AA:1762:A:O2'   | 2.13                     | 0.49              |
| 1:AA:1690:A:N1     | 1:AA:1691:C:H1'   | 2.27                     | 0.49              |
| 1:AA:1712:C:C2'    | 1:AA:1716:U:H6    | 2.22                     | 0.49              |
| 1:AA:1742:C:C6     | 1:AA:1742:C:OP2   | 2.66                     | 0.49              |
| 1:AA:1775:U:C4     | 4:AD:208:LYS:HD2  | 2.47                     | 0.49              |
| 1:AA:1968:G:O2'    | 1:AA:1969:A:H8    | 1.95                     | 0.49              |
| 1:AA:1975:G:O2'    | 1:AA:1976:U:C5'   | 2.60                     | 0.49              |
| 1:AA:2134:A:H5''   | 1:AA:2134:A:N3    | 2.27                     | 0.49              |
| 1:AA:2158:A:O2'    | 1:AA:2159:G:P     | 2.70                     | 0.49              |
| 1:AA:2178:C:C4'    | 3:AC:46:LYS:CG    | 2.73                     | 0.49              |
| 1:AA:2199:A:O5'    | 1:AA:2199:A:H8    | 1.89                     | 0.49              |
| 1:AA:2227:A:C5     | 1:AA:2228:G:N7    | 2.80                     | 0.49              |
| 1:AA:2347:C:H5     | 1:AA:2382:G:H1'   | 1.77                     | 0.49              |
| 1:AA:2468:G:C5     | 1:AA:2481:G:C2    | 3.00                     | 0.49              |
| 1:AA:2692:C:H1'    | 1:AA:2847:U:O2'   | 2.12                     | 0.49              |
| 2:AB:24:G:C2       | 2:AB:27:C:N4      | 2.77                     | 0.49              |
| 2:AB:76:G:C5'      | 21:AW:85:HIS:ND1  | 2.74                     | 0.49              |
| 3:AC:47:LEU:H      | 3:AC:47:LEU:CD2   | 2.24                     | 0.49              |
| 3:AC:194:ARG:HG3   | 3:AC:194:ARG:NH1  | 2.27                     | 0.49              |
| 5:AE:27:LEU:CD1    | 5:AE:30:PRO:HD3   | 2.32                     | 0.49              |
| 5:AE:66:HIS:NE2    | 5:AE:71:GLY:N     | 2.59                     | 0.49              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 5:AE:104:VAL:HG13  | 5:AE:197:ILE:C    | 2.33                     | 0.49              |
| 6:AF:41:LEU:O      | 6:AF:44:ARG:NH2   | 2.45                     | 0.49              |
| 6:AF:110:LEU:HD23  | 6:AF:186:ILE:CD1  | 2.41                     | 0.49              |
| 6:AF:125:LEU:HD13  | 6:AF:128:ALA:HB2  | 1.93                     | 0.49              |
| 7:AG:14:GLU:CD     | 7:AG:14:GLU:C     | 2.80                     | 0.49              |
| 8:AH:11:VAL:HG11   | 8:AH:17:VAL:HG11  | 1.94                     | 0.49              |
| 10:AL:72:PRO:O     | 15:AQ:84:GLN:NE2  | 2.44                     | 0.49              |
| 10:AL:106:LEU:HD12 | 10:AL:107:ARG:CA  | 2.42                     | 0.49              |
| 11:AM:6:LEU:O      | 11:AM:7:ARG:HG3   | 2.13                     | 0.49              |
| 11:AM:49:ARG:HA    | 11:AM:52:GLU:CG   | 2.43                     | 0.49              |
| 13:AO:31:HIS:C     | 13:AO:33:ARG:H    | 2.20                     | 0.49              |
| 13:AO:63:ARG:NH1   | 13:AO:80:PHE:CG   | 2.81                     | 0.49              |
| 13:AO:72:ASP:OD2   | 13:AO:74:LYS:NZ   | 2.38                     | 0.49              |
| 15:AQ:85:LYS:NZ    | 15:AQ:85:LYS:N    | 2.57                     | 0.49              |
| 15:AQ:104:ASN:O    | 15:AQ:105:LEU:O   | 2.30                     | 0.49              |
| 16:AR:43:GLY:C     | 16:AR:45:TYR:N    | 2.68                     | 0.49              |
| 16:AR:58:ARG:HH11  | 16:AR:58:ARG:CG   | 2.25                     | 0.49              |
| 17:AS:15:GLU:O     | 17:AS:98:GLU:CD   | 2.55                     | 0.49              |
| 18:AT:23:LEU:HD21  | 26:Ab:25:LEU:O    | 2.13                     | 0.49              |
| 20:AV:44:ILE:O     | 20:AV:45:VAL:C    | 2.55                     | 0.49              |
| 21:AW:59:LEU:HD23  | 21:AW:60:GLU:N    | 2.28                     | 0.49              |
| 21:AW:111:VAL:HG22 | 21:AW:117:LEU:CG  | 2.32                     | 0.49              |
| 24:AZ:6:VAL:HG12   | 24:AZ:56:VAL:HA   | 1.93                     | 0.49              |
| 24:AZ:12:PRO:HA    | 24:AZ:15:TYR:CZ   | 2.46                     | 0.49              |
| 27:Ac:8:LYS:O      | 27:Ac:9:LEU:HD22  | 2.13                     | 0.49              |
| 27:Ac:19:ARG:C     | 27:Ac:43:CYS:SG   | 2.87                     | 0.49              |
| 32:AJ:12:LEU:CD1   | 32:AJ:23:VAL:HG21 | 2.43                     | 0.49              |
| 32:AJ:60:TYR:CG    | 32:AJ:61:ALA:N    | 2.80                     | 0.49              |
| 34:BA:41:G:O2'     | 34:BA:42:G:O4'    | 2.21                     | 0.49              |
| 34:BA:78:G:C6      | 34:BA:79:G:C5     | 3.01                     | 0.49              |
| 34:BA:117:G:O6     | 34:BA:289:G:O4'   | 2.30                     | 0.49              |
| 34:BA:208:U:O3'    | 34:BA:209:U:H6    | 1.95                     | 0.49              |
| 34:BA:275:G:O2'    | 34:BA:276:G:H5'   | 2.12                     | 0.49              |
| 34:BA:306:G:C4     | 34:BA:307:C:C6    | 3.00                     | 0.49              |
| 34:BA:333:G:C4'    | 53:BX:16:HIS:CD2  | 2.93                     | 0.49              |
| 34:BA:407:G:C1'    | 37:BH:119:GLN:OE1 | 2.60                     | 0.49              |
| 34:BA:413:G:C2'    | 34:BA:414:A:OP2   | 2.60                     | 0.49              |
| 34:BA:565:U:N3     | 34:BA:566:G:O6    | 2.46                     | 0.49              |
| 34:BA:757:U:H4'    | 34:BA:879:C:O2    | 2.12                     | 0.49              |
| 34:BA:778:G:C6     | 34:BA:779:C:C4    | 2.99                     | 0.49              |
| 34:BA:848:C:N3     | 34:BA:849:C:C5    | 2.79                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:915:A:O5'   | 34:BA:915:A:C8     | 2.62                     | 0.49              |
| 34:BA:935:A:C4    | 34:BA:936:C:C5     | 3.00                     | 0.49              |
| 34:BA:957:U:H1'   | 34:BA:960:U:H5     | 1.76                     | 0.49              |
| 34:BA:960:U:O2    | 34:BA:960:U:H2'    | 2.11                     | 0.49              |
| 34:BA:978:A:O4'   | 34:BA:1322:C:O2    | 2.30                     | 0.49              |
| 34:BA:1100:C:O2   | 34:BA:1102:A:C5'   | 2.56                     | 0.49              |
| 34:BA:1103:C:HO2' | 35:BF:111:ARG:HD2  | 1.76                     | 0.49              |
| 34:BA:1128:C:C3'  | 42:BM:16:ARG:NH2   | 2.72                     | 0.49              |
| 34:BA:1151:A:C8   | 34:BA:1152:A:C8    | 3.00                     | 0.49              |
| 34:BA:1171:G:C2'  | 34:BA:1172:C:C6    | 2.95                     | 0.49              |
| 34:BA:1237:C:H5'' | 34:BA:1238:A:C8    | 2.47                     | 0.49              |
| 34:BA:1300:G:O2'  | 34:BA:1301:U:H6    | 1.95                     | 0.49              |
| 34:BA:1302:U:O2'  | 34:BA:1303:C:OP1   | 2.24                     | 0.49              |
| 34:BA:1350:A:N6   | 34:BA:1373:G:N2    | 2.59                     | 0.49              |
| 34:BA:1369:C:H2'  | 34:BA:1370:G:O4'   | 2.13                     | 0.49              |
| 34:BA:1477:C:H6   | 34:BA:1477:C:O5'   | 1.95                     | 0.49              |
| 35:BF:43:ASP:OD1  | 35:BF:44:LEU:N     | 2.45                     | 0.49              |
| 35:BF:55:PHE:CD2  | 35:BF:58:ILE:HD12  | 2.48                     | 0.49              |
| 35:BF:234:PRO:O   | 35:BF:238:LEU:HD22 | 2.12                     | 0.49              |
| 36:BG:119:ARG:C   | 36:BG:121:ALA:N    | 2.70                     | 0.49              |
| 37:BH:59:ARG:CB   | 37:BH:63:LYS:HZ2   | 2.26                     | 0.49              |
| 38:BI:45:PHE:CD1  | 38:BI:47:LYS:HD2   | 2.47                     | 0.49              |
| 38:BI:71:LEU:HG   | 38:BI:72:GLN:H     | 1.76                     | 0.49              |
| 39:BJ:34:GLY:C    | 39:BJ:68:PRO:HD3   | 2.38                     | 0.49              |
| 41:BL:24:THR:O    | 41:BL:24:THR:HG23  | 2.12                     | 0.49              |
| 41:BL:126:LYS:HZ2 | 41:BL:127:LEU:CD2  | 2.25                     | 0.49              |
| 42:BM:27:THR:HG21 | 42:BM:62:TYR:CE1   | 2.47                     | 0.49              |
| 43:BN:54:PHE:CE1  | 43:BN:55:LYS:HB3   | 2.48                     | 0.49              |
| 43:BN:61:GLU:CG   | 43:BN:62:HIS:N     | 2.75                     | 0.49              |
| 44:BO:44:SER:H    | 44:BO:47:VAL:CB    | 2.25                     | 0.49              |
| 44:BO:84:VAL:HG21 | 51:BV:88:LYS:NZ    | 2.27                     | 0.49              |
| 46:BQ:81:LEU:CD2  | 46:BQ:81:LEU:C     | 2.86                     | 0.49              |
| 46:BQ:86:CYS:SG   | 46:BQ:87:TYR:N     | 2.85                     | 0.49              |
| 47:BR:28:GLY:O    | 47:BR:29:ARG:C     | 2.54                     | 0.49              |
| 48:BS:66:LEU:N    | 48:BS:66:LEU:CD2   | 2.75                     | 0.49              |
| 50:BU:11:VAL:HB   | 50:BU:20:THR:CB    | 2.41                     | 0.49              |
| 50:BU:27:PHE:HB2  | 50:BU:28:PRO:HD2   | 1.95                     | 0.49              |
| 50:BU:29:HIS:CD2  | 50:BU:30:PRO:HD2   | 2.47                     | 0.49              |
| 53:BX:30:LYS:O    | 53:BX:34:LYS:HG3   | 2.12                     | 0.49              |
| 56:BE:5:G:N3      | 56:BE:5:G:C2'      | 2.76                     | 0.49              |
| 57:BZ:77:GLY:CA   | 57:BZ:78:HIS:C     | 2.86                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:BZ:384:ARG:HA  | 57:BZ:384:ARG:NE  | 2.27                     | 0.49              |
| 57:BZ:562:ARG:CG  | 57:BZ:563:MET:CE  | 2.90                     | 0.49              |
| 57:BZ:601:ASN:HA  | 57:BZ:602:ARG:CB  | 2.42                     | 0.49              |
| 1:AA:28:A:C1'     | 1:AA:513:A:C6     | 2.95                     | 0.49              |
| 1:AA:98:G:O2'     | 1:AA:103:A:C1'    | 2.60                     | 0.49              |
| 1:AA:126:A:H5''   | 28:Ad:18:PHE:HD1  | 1.76                     | 0.49              |
| 1:AA:199:A:H5'    | 1:AA:200:U:OP2    | 2.12                     | 0.49              |
| 1:AA:270(A):A:C8  | 1:AA:370:G:O4'    | 2.65                     | 0.49              |
| 1:AA:270(P):C:O2' | 1:AA:270(Q):C:H5' | 2.12                     | 0.49              |
| 1:AA:401:A:C4     | 1:AA:402:A:C8     | 3.00                     | 0.49              |
| 1:AA:411:G:C2     | 1:AA:2407:G:C5    | 3.01                     | 0.49              |
| 1:AA:502:A:C8     | 1:AA:502:A:C3'    | 2.92                     | 0.49              |
| 1:AA:553:U:C4     | 1:AA:554:U:C4     | 3.00                     | 0.49              |
| 1:AA:571:A:C5     | 1:AA:2030:A:C6    | 3.00                     | 0.49              |
| 1:AA:730:C:OP2    | 1:AA:763:G:OP1    | 2.29                     | 0.49              |
| 1:AA:743:G:N1     | 1:AA:755:C:C4     | 2.81                     | 0.49              |
| 1:AA:792:G:N2     | 1:AA:2072:G:C1'   | 2.66                     | 0.49              |
| 1:AA:823:G:H3'    | 1:AA:824:A:C8     | 2.43                     | 0.49              |
| 1:AA:833:U:H1'    | 11:AM:48:PRO:HB2  | 1.95                     | 0.49              |
| 1:AA:972:G:H3'    | 1:AA:973:A:C5'    | 2.41                     | 0.49              |
| 1:AA:1011:G:O2'   | 1:AA:1013:C:C4'   | 2.60                     | 0.49              |
| 1:AA:1062:G:O2'   | 1:AA:1063:G:H3'   | 2.12                     | 0.49              |
| 1:AA:1120:G:H2'   | 1:AA:1121:C:H6    | 1.77                     | 0.49              |
| 1:AA:1263:U:C5    | 1:AA:1265:A:N6    | 2.75                     | 0.49              |
| 1:AA:1296:G:C4    | 1:AA:1297:C:C5    | 3.01                     | 0.49              |
| 1:AA:1314:C:H2'   | 1:AA:1315:C:H6    | 1.78                     | 0.49              |
| 1:AA:1356:G:C2'   | 1:AA:1357:U:H5'   | 2.42                     | 0.49              |
| 1:AA:1542:G:O2'   | 1:AA:1543:A:C4    | 2.62                     | 0.49              |
| 1:AA:1799:G:H8    | 4:AD:268:ARG:NH1  | 2.04                     | 0.49              |
| 1:AA:1800:C:O2'   | 1:AA:1802:A:OP2   | 2.25                     | 0.49              |
| 1:AA:1936:A:C8    | 1:AA:1945:G:O6    | 2.66                     | 0.49              |
| 1:AA:2385:C:C4    | 1:AA:2386:C:C5    | 3.01                     | 0.49              |
| 1:AA:2399:G:N3    | 27:Ac:21:TYR:CE1  | 2.80                     | 0.49              |
| 1:AA:2496:C:C2    | 1:AA:2497:A:H2    | 2.30                     | 0.49              |
| 1:AA:2558:C:C2'   | 1:AA:2559:C:O5'   | 2.60                     | 0.49              |
| 1:AA:2600:A:C2    | 1:AA:2601:C:C5    | 3.01                     | 0.49              |
| 1:AA:2651:C:N3    | 1:AA:2670:A:N1    | 2.32                     | 0.49              |
| 1:AA:2673:G:C2    | 1:AA:2674:G:N7    | 2.80                     | 0.49              |
| 1:AA:2811:G:N1    | 1:AA:2891:G:C2    | 2.80                     | 0.49              |
| 2:AB:16:G:O2'     | 2:AB:17:C:O4'     | 2.24                     | 0.49              |
| 4:AD:60:ARG:CB    | 4:AD:62:TYR:CE2   | 2.96                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 4:AD:63:ARG:CD    | 4:AD:65:ILE:HD11   | 2.42                     | 0.49              |
| 4:AD:82:ILE:CG2   | 4:AD:83:GLU:N      | 2.76                     | 0.49              |
| 4:AD:85:ASP:CB    | 4:AD:87:ASN:HD21   | 2.24                     | 0.49              |
| 4:AD:91:ARG:NH2   | 4:AD:198:ASN:ND2   | 2.61                     | 0.49              |
| 4:AD:116:GLN:O    | 4:AD:117:VAL:HG23  | 2.12                     | 0.49              |
| 4:AD:124:PRO:HG2  | 4:AD:126:GLN:HG2   | 1.94                     | 0.49              |
| 4:AD:136:ILE:HD12 | 4:AD:168:ARG:CZ    | 2.42                     | 0.49              |
| 5:AE:66:HIS:CG    | 5:AE:67:PHE:N      | 2.80                     | 0.49              |
| 5:AE:176:ILE:HD11 | 5:AE:178:GLU:HB2   | 1.94                     | 0.49              |
| 6:AF:45:ARG:HG2   | 6:AF:97:TYR:CG     | 2.47                     | 0.49              |
| 6:AF:64:ILE:HD13  | 6:AF:64:ILE:C      | 2.34                     | 0.49              |
| 6:AF:101:LEU:HD13 | 6:AF:101:LEU:C     | 2.38                     | 0.49              |
| 6:AF:154:VAL:O    | 6:AF:174:VAL:HG22  | 2.11                     | 0.49              |
| 7:AG:30:GLU:HB3   | 7:AG:162:THR:HB    | 1.93                     | 0.49              |
| 7:AG:75:LYS:HA    | 7:AG:84:LYS:HG3    | 1.95                     | 0.49              |
| 7:AG:118:ARG:HG2  | 7:AG:119:GLY:H     | 1.76                     | 0.49              |
| 7:AG:136:ARG:O    | 7:AG:153:ARG:HG2   | 2.12                     | 0.49              |
| 8:AH:87:LEU:O     | 8:AH:131:VAL:C     | 2.55                     | 0.49              |
| 8:AH:137:ASP:OD2  | 8:AH:140:LYS:HB3   | 2.13                     | 0.49              |
| 8:AH:148:ILE:CG2  | 8:AH:149:ARG:N     | 2.76                     | 0.49              |
| 9:AK:69:GLN:HE21  | 9:AK:69:GLN:H      | 1.60                     | 0.49              |
| 10:AL:59:LYS:HE2  | 10:AL:59:LYS:O     | 2.12                     | 0.49              |
| 11:AM:76:LYS:HE2  | 11:AM:81:GLN:CD    | 2.37                     | 0.49              |
| 11:AM:108:LYS:CD  | 11:AM:109:GLY:N    | 2.73                     | 0.49              |
| 11:AM:117:GLU:CD  | 11:AM:117:GLU:H    | 2.19                     | 0.49              |
| 12:AN:43:THR:O    | 12:AN:44:ALA:C     | 2.54                     | 0.49              |
| 13:AO:88:ARG:C    | 13:AO:89:ASP:CG    | 2.80                     | 0.49              |
| 14:AP:100:ALA:O   | 14:AP:101:LEU:C    | 2.56                     | 0.49              |
| 15:AQ:30:VAL:CB   | 15:AQ:90:GLN:HA    | 2.39                     | 0.49              |
| 16:AR:39:LEU:O    | 16:AR:42:ALA:N     | 2.46                     | 0.49              |
| 17:AS:10:LYS:O    | 17:AS:12:TYR:N     | 2.44                     | 0.49              |
| 17:AS:43:GLU:O    | 17:AS:44:LYS:CD    | 2.52                     | 0.49              |
| 19:AU:60:ARG:CD   | 19:AU:62:LYS:NZ    | 2.72                     | 0.49              |
| 24:AZ:6:VAL:HA    | 24:AZ:55:ARG:O     | 2.12                     | 0.49              |
| 24:AZ:17:LYS:HA   | 24:AZ:20:LYS:HZ3   | 1.78                     | 0.49              |
| 25:Aa:64:GLY:C    | 25:Aa:68:ARG:NH2   | 2.70                     | 0.49              |
| 26:Ab:34:PRO:HB3  | 26:Ab:40:LYS:NZ    | 2.26                     | 0.49              |
| 28:Ad:5:TRP:HA    | 28:Ad:5:TRP:HE3    | 1.77                     | 0.49              |
| 28:Ad:32:LYS:O    | 28:Ad:33:ARG:C     | 2.55                     | 0.49              |
| 32:AJ:107:ILE:O   | 32:AJ:107:ILE:HG22 | 2.12                     | 0.49              |
| 34:BA:35:G:C6     | 34:BA:550:G:N1     | 2.80                     | 0.49              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:50:A:C2      | 34:BA:360:A:C2'    | 2.94                     | 0.49              |
| 34:BA:68:G:H5'     | 34:BA:171:A:H1'    | 1.94                     | 0.49              |
| 34:BA:151:A:C5     | 34:BA:152:A:N3     | 2.80                     | 0.49              |
| 34:BA:447:G:N2     | 34:BA:486:U:C5     | 2.81                     | 0.49              |
| 34:BA:450:G:H5''   | 34:BA:451:A:O5'    | 2.11                     | 0.49              |
| 34:BA:453:A:N6     | 34:BA:480:U:C2     | 2.73                     | 0.49              |
| 34:BA:531:U:H5''   | 34:BA:532:A:OP1    | 2.11                     | 0.49              |
| 34:BA:643:C:C2     | 34:BA:644:G:C8     | 3.00                     | 0.49              |
| 34:BA:792:A:C4     | 34:BA:794:A:N6     | 2.79                     | 0.49              |
| 34:BA:931:C:N3     | 34:BA:1387:G:N1    | 2.60                     | 0.49              |
| 34:BA:956:U:O2'    | 34:BA:957:U:H5'    | 2.13                     | 0.49              |
| 34:BA:1081:G:OP2   | 38:BI:27:ARG:HD2   | 2.11                     | 0.49              |
| 34:BA:1117:G:O3'   | 42:BM:103:THR:CG2  | 2.60                     | 0.49              |
| 34:BA:1240:U:H4'   | 34:BA:1241:G:OP2   | 2.12                     | 0.49              |
| 34:BA:1306:A:C2    | 34:BA:1332:A:C8    | 3.00                     | 0.49              |
| 34:BA:1307:U:N3    | 34:BA:1308:U:C5    | 2.80                     | 0.49              |
| 34:BA:1316:G:H5''  | 47:BR:17:LYS:HZ3   | 1.77                     | 0.49              |
| 34:BA:1320:C:H3'   | 34:BA:1321:C:C5    | 2.46                     | 0.49              |
| 34:BA:1347:G:H4'   | 34:BA:1348:U:C5'   | 2.42                     | 0.49              |
| 34:BA:1410:G:H2'   | 34:BA:1411:C:C6    | 2.47                     | 0.49              |
| 34:BA:1415:G:H2'   | 34:BA:1416:G:O5'   | 2.12                     | 0.49              |
| 34:BA:1491:G:C8    | 58:BA:1601:NMY:O3  | 2.63                     | 0.49              |
| 35:BF:97:TRP:CZ3   | 35:BF:172:ILE:HB   | 2.46                     | 0.49              |
| 35:BF:134:GLU:O    | 35:BF:138:LEU:CG   | 2.56                     | 0.49              |
| 35:BF:167:PRO:HG2  | 35:BF:168:THR:N    | 2.24                     | 0.49              |
| 35:BF:179:LYS:O    | 35:BF:180:LEU:C    | 2.53                     | 0.49              |
| 36:BG:11:ARG:HG3   | 36:BG:16:ARG:CZ    | 2.43                     | 0.49              |
| 36:BG:29:TYR:HB3   | 47:BR:36:PHE:CE1   | 2.45                     | 0.49              |
| 36:BG:187:ALA:CB   | 36:BG:198:VAL:HG22 | 2.43                     | 0.49              |
| 36:BG:188:LEU:HD13 | 36:BG:189:ALA:N    | 2.28                     | 0.49              |
| 37:BH:24:GLU:C     | 37:BH:24:GLU:OE2   | 2.55                     | 0.49              |
| 37:BH:178:VAL:O    | 37:BH:179:GLU:O    | 2.31                     | 0.49              |
| 40:BK:115:ARG:O    | 40:BK:118:VAL:CB   | 2.60                     | 0.49              |
| 40:BK:149:ARG:HB3  | 44:BO:59:TYR:CE2   | 2.47                     | 0.49              |
| 42:BM:47:LEU:CD1   | 42:BM:50:LEU:HB3   | 2.31                     | 0.49              |
| 43:BN:19:SER:CA    | 43:BN:91:PRO:HG3   | 2.41                     | 0.49              |
| 44:BO:13:GLN:CA    | 44:BO:76:GLY:HA3   | 2.42                     | 0.49              |
| 44:BO:18:ARG:HG2   | 44:BO:18:ARG:NH1   | 2.26                     | 0.49              |
| 45:BP:25:PRO:CD    | 45:BP:98:TYR:OH    | 2.61                     | 0.49              |
| 45:BP:25:PRO:HD2   | 45:BP:98:TYR:OH    | 2.12                     | 0.49              |
| 45:BP:110:VAL:HG21 | 45:BP:113:ARG:HG3  | 1.95                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 51:BV:40:LEU:O    | 51:BV:41:LYS:C     | 2.54                     | 0.49              |
| 52:BW:9:VAL:HA    | 52:BW:42:PRO:HD2   | 1.94                     | 0.49              |
| 53:BX:16:HIS:O    | 53:BX:19:SER:N     | 2.46                     | 0.49              |
| 53:BX:84:LEU:CD1  | 53:BX:84:LEU:C     | 2.86                     | 0.49              |
| 55:BC:65:G:H2'    | 55:BC:66:U:C6      | 2.46                     | 0.49              |
| 56:BD:52:G:C5     | 56:BD:63:G:N1      | 2.66                     | 0.49              |
| 57:BZ:175:ASP:O   | 57:BZ:176:HIS:HB2  | 2.11                     | 0.49              |
| 57:BZ:233:PRO:HG2 | 57:BZ:248:ASN:CG   | 2.31                     | 0.49              |
| 57:BZ:234:ASN:HA  | 57:BZ:235:GLN:HB3  | 1.89                     | 0.49              |
| 57:BZ:490:SER:C   | 57:BZ:534:THR:HG22 | 2.38                     | 0.49              |
| 57:BZ:538:LEU:CA  | 57:BZ:539:THR:CB   | 2.90                     | 0.49              |
| 1:AA:46:C:OP2     | 1:AA:215:G:C3'     | 2.55                     | 0.49              |
| 1:AA:149:A:C8     | 1:AA:150:C:O4'     | 2.66                     | 0.49              |
| 1:AA:181:A:H5'    | 1:AA:181:A:H8      | 1.77                     | 0.49              |
| 1:AA:303:U:C2     | 1:AA:304:G:C8      | 3.00                     | 0.49              |
| 1:AA:388:G:OP2    | 25:Aa:23:GLU:OE2   | 2.31                     | 0.49              |
| 1:AA:400:G:H3'    | 1:AA:400:G:H8      | 1.78                     | 0.49              |
| 1:AA:411:G:H5'    | 1:AA:2407:G:OP2    | 2.12                     | 0.49              |
| 1:AA:467:G:C2'    | 1:AA:468:G:H5'     | 2.43                     | 0.49              |
| 1:AA:540:G:C5     | 1:AA:541:C:C5      | 3.00                     | 0.49              |
| 1:AA:587:C:O2'    | 1:AA:588:U:P       | 2.71                     | 0.49              |
| 1:AA:616:A:H3'    | 1:AA:616:A:P       | 2.51                     | 0.49              |
| 1:AA:640:C:H42    | 1:AA:647:G:H1      | 1.58                     | 0.49              |
| 1:AA:793:A:OP2    | 1:AA:2072:G:H5'    | 2.13                     | 0.49              |
| 1:AA:1027:A:N6    | 1:AA:1126:A:H1'    | 2.27                     | 0.49              |
| 1:AA:1076:C:H3'   | 1:AA:1076:C:H6     | 1.78                     | 0.49              |
| 1:AA:1142(A):A:C2 | 1:AA:1143:A:O4'    | 2.66                     | 0.49              |
| 1:AA:1143:A:C2    | 1:AA:1144:G:C4     | 3.01                     | 0.49              |
| 1:AA:1200:C:C2    | 1:AA:1246:A:C2     | 3.01                     | 0.49              |
| 1:AA:1264:G:C5    | 1:AA:1265:A:C5     | 3.01                     | 0.49              |
| 1:AA:1272:A:C2    | 1:AA:1618:A:C2     | 3.01                     | 0.49              |
| 1:AA:1324:G:H1'   | 1:AA:1616:A:H61    | 1.67                     | 0.49              |
| 1:AA:1357:U:N3    | 1:AA:1358:G:C2     | 2.80                     | 0.49              |
| 1:AA:1426:G:N3    | 1:AA:1573:G:N2     | 2.61                     | 0.49              |
| 1:AA:1439:A:N7    | 1:AA:1440:G:N9     | 2.61                     | 0.49              |
| 1:AA:1534:G:H2'   | 1:AA:1536:A:N7     | 2.27                     | 0.49              |
| 1:AA:1559:G:C8    | 1:AA:1559:G:H5''   | 2.47                     | 0.49              |
| 1:AA:1567:A:N3    | 1:AA:1567:A:C2'    | 2.74                     | 0.49              |
| 1:AA:1622:G:H8    | 1:AA:1622:G:O5'    | 1.95                     | 0.49              |
| 1:AA:1661:G:C6    | 1:AA:1662:C:C4     | 3.01                     | 0.49              |
| 1:AA:1673:U:HO2'  | 1:AA:1674:G:P      | 2.34                     | 0.49              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:AA:1729:A:H2'  | 1:AA:1730:U:H5'  | 1.94                     | 0.49              |
| 1:AA:1752:C:C5'  | 1:AA:2862:G:OP1  | 2.61                     | 0.49              |
| 1:AA:1991:U:H3'  | 1:AA:1991:U:C6   | 2.48                     | 0.49              |
| 1:AA:2007:C:N3   | 1:AA:2008:C:C5   | 2.80                     | 0.49              |
| 1:AA:2074:U:HO2' | 1:AA:2598:A:H1'  | 1.75                     | 0.49              |
| 1:AA:2128:C:C3'  | 3:AC:35:ALA:HB1  | 2.43                     | 0.49              |
| 1:AA:2135:A:N7   | 1:AA:2160:G:O2'  | 2.38                     | 0.49              |
| 1:AA:2252:G:N7   | 1:AA:2253:G:C5   | 2.81                     | 0.49              |
| 1:AA:2254:C:O2   | 22:AX:7:LEU:HD11 | 2.13                     | 0.49              |
| 1:AA:2257:U:OP1  | 22:AX:11:ARG:NH2 | 2.45                     | 0.49              |
| 1:AA:2304:G:N2   | 7:AG:156:ASP:OD1 | 2.46                     | 0.49              |
| 1:AA:2453:A:C2   | 1:AA:2499:C:N4   | 2.80                     | 0.49              |
| 1:AA:2525:G:C2   | 1:AA:2539:C:N4   | 2.80                     | 0.49              |
| 1:AA:2548:G:C6   | 1:AA:2561:A:C6   | 3.00                     | 0.49              |
| 1:AA:2600:A:O2'  | 1:AA:2601:C:H5'  | 2.13                     | 0.49              |
| 1:AA:2617:C:C2   | 1:AA:2618:G:H8   | 2.30                     | 0.49              |
| 1:AA:2679:A:O2'  | 5:AE:189:PRO:HA  | 2.13                     | 0.49              |
| 1:AA:2718:G:C6   | 1:AA:2719:G:C6   | 3.01                     | 0.49              |
| 1:AA:2731:G:N2   | 1:AA:2732:G:N2   | 2.60                     | 0.49              |
| 1:AA:2805:G:H2'  | 1:AA:2807:G:H4'  | 1.93                     | 0.49              |
| 1:AA:2812:G:C2   | 1:AA:2813:A:C5   | 3.01                     | 0.49              |
| 1:AA:2828:C:H2'  | 1:AA:2829:C:C6   | 2.48                     | 0.49              |
| 1:AA:2839:G:C4   | 1:AA:2840:C:C6   | 3.00                     | 0.49              |
| 2:AB:12:C:C5'    | 22:AX:74:ARG:CG  | 2.86                     | 0.49              |
| 2:AB:16:G:O2'    | 2:AB:17:C:C5'    | 2.60                     | 0.49              |
| 2:AB:59:A:N1     | 2:AB:60:C:H1'    | 2.27                     | 0.49              |
| 2:AB:65:C:C5     | 2:AB:108:C:C5    | 3.01                     | 0.49              |
| 2:AB:87:G:C2     | 2:AB:90:C:C4     | 3.00                     | 0.49              |
| 4:AD:23:GLU:CD   | 4:AD:24:ILE:O    | 2.55                     | 0.49              |
| 4:AD:68:LYS:HB3  | 4:AD:70:TRP:CE2  | 2.48                     | 0.49              |
| 4:AD:210:GLY:O   | 4:AD:214:TRP:HB2 | 2.11                     | 0.49              |
| 4:AD:246:PRO:CB  | 4:AD:250:TRP:HB3 | 2.42                     | 0.49              |
| 5:AE:54:GLN:CG   | 5:AE:57:LYS:HG3  | 2.43                     | 0.49              |
| 5:AE:55:ASN:HA   | 5:AE:73:GLU:OE2  | 2.13                     | 0.49              |
| 5:AE:55:ASN:O    | 5:AE:57:LYS:N    | 2.45                     | 0.49              |
| 6:AF:200:GLU:CD  | 6:AF:201:VAL:H   | 2.14                     | 0.49              |
| 7:AG:33:ARG:HH22 | 7:AG:34:LEU:C    | 2.20                     | 0.49              |
| 7:AG:120:LEU:HA  | 7:AG:181:ARG:CB  | 2.42                     | 0.49              |
| 8:AH:13:LYS:CE   | 8:AH:80:SER:HA   | 2.42                     | 0.49              |
| 8:AH:69:ARG:HB2  | 8:AH:69:ARG:NH2  | 2.27                     | 0.49              |
| 8:AH:125:VAL:N   | 8:AH:126:PRO:CD  | 2.76                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:AK:22:THR:HG21  | 9:AK:61:ARG:HH12  | 1.78                     | 0.49              |
| 9:AK:71:ILE:HB    | 9:AK:90:MET:HE2   | 1.95                     | 0.49              |
| 10:AL:23:ARG:NH1  | 10:AL:30:ALA:HB2  | 2.27                     | 0.49              |
| 10:AL:107:ARG:O   | 10:AL:108:GLU:C   | 2.54                     | 0.49              |
| 11:AM:23:PRO:CB   | 11:AM:28:GLY:HA2  | 2.25                     | 0.49              |
| 12:AN:51:ARG:HD3  | 12:AN:52:VAL:CG2  | 2.43                     | 0.49              |
| 12:AN:85:LYS:HE3  | 12:AN:88:GLY:HA3  | 1.95                     | 0.49              |
| 13:AO:47:PHE:C    | 13:AO:49:ASP:H    | 2.20                     | 0.49              |
| 13:AO:82:GLU:O    | 13:AO:83:ILE:HD13 | 2.11                     | 0.49              |
| 14:AP:24:LEU:H    | 14:AP:86:ALA:HB1  | 1.77                     | 0.49              |
| 15:AQ:35:LYS:CG   | 15:AQ:84:GLN:O    | 2.53                     | 0.49              |
| 15:AQ:103:ARG:O   | 15:AQ:105:LEU:C   | 2.55                     | 0.49              |
| 16:AR:39:LEU:O    | 16:AR:41:ALA:N    | 2.44                     | 0.49              |
| 16:AR:55:ARG:HB3  | 16:AR:58:ARG:NE   | 2.15                     | 0.49              |
| 17:AS:79:VAL:CG1  | 17:AS:81:TYR:CD1  | 2.95                     | 0.49              |
| 20:AV:97:ARG:C    | 20:AV:98:VAL:CG2  | 2.85                     | 0.49              |
| 21:AW:6:LYS:CB    | 21:AW:37:VAL:HG13 | 2.42                     | 0.49              |
| 21:AW:95:PRO:HD2  | 21:AW:131:ARG:N   | 2.28                     | 0.49              |
| 22:AX:74:ARG:O    | 22:AX:75:LEU:C    | 2.53                     | 0.49              |
| 23:AY:28:MET:O    | 23:AY:31:ARG:N    | 2.46                     | 0.49              |
| 23:AY:54:ARG:O    | 23:AY:55:LEU:C    | 2.55                     | 0.49              |
| 24:AZ:4:LEU:HD23  | 24:AZ:5:LYS:O     | 2.12                     | 0.49              |
| 24:AZ:6:VAL:CG1   | 24:AZ:55:ARG:O    | 2.52                     | 0.49              |
| 24:AZ:52:HIS:CG   | 24:AZ:53:LEU:H    | 2.30                     | 0.49              |
| 27:Ac:16:CYS:O    | 27:Ac:18:ARG:N    | 2.46                     | 0.49              |
| 28:Ad:19:ARG:CB   | 28:Ad:23:ARG:NH2  | 2.73                     | 0.49              |
| 34:BA:60:A:O2'    | 34:BA:61:G:P      | 2.71                     | 0.49              |
| 34:BA:102:G:H2'   | 34:BA:103:C:O4'   | 2.11                     | 0.49              |
| 34:BA:247:G:O2'   | 34:BA:248:C:H5'   | 2.12                     | 0.49              |
| 34:BA:390:C:H2'   | 34:BA:391:G:C8    | 2.46                     | 0.49              |
| 34:BA:429:U:H4'   | 34:BA:430:A:C5'   | 2.41                     | 0.49              |
| 34:BA:433:C:H2'   | 34:BA:434:U:C6    | 2.47                     | 0.49              |
| 34:BA:640:A:C2'   | 34:BA:641:U:C5'   | 2.91                     | 0.49              |
| 34:BA:720:C:H4'   | 51:BV:50:ILE:HG22 | 1.94                     | 0.49              |
| 34:BA:748:C:O2'   | 34:BA:749:C:C5'   | 2.61                     | 0.49              |
| 34:BA:908:A:C2    | 34:BA:909:A:C5    | 3.01                     | 0.49              |
| 34:BA:945:G:C2    | 34:BA:1337:G:C4   | 3.00                     | 0.49              |
| 34:BA:1191:A:H5'' | 36:BG:4:LYS:HD3   | 1.94                     | 0.49              |
| 34:BA:1268:A:H1'  | 34:BA:1326:C:O2'  | 2.12                     | 0.49              |
| 34:BA:1377:A:O2'  | 34:BA:1378:C:P    | 2.71                     | 0.49              |
| 34:BA:1429:C:H2'  | 34:BA:1430:C:H6   | 1.78                     | 0.49              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1502:A:N1    | 34:BA:1504:G:C2    | 2.80                     | 0.49              |
| 35:BF:28:PHE:CE1   | 35:BF:31:TYR:HB2   | 2.48                     | 0.49              |
| 36:BG:64:VAL:HG12  | 36:BG:66:VAL:HG23  | 1.95                     | 0.49              |
| 37:BH:199:ASN:OD1  | 37:BH:202:LEU:HG   | 2.12                     | 0.49              |
| 38:BI:19:MET:HE3   | 38:BI:20:GLN:N     | 2.27                     | 0.49              |
| 38:BI:56:GLN:N     | 38:BI:56:GLN:HE21  | 2.11                     | 0.49              |
| 39:BJ:30:LEU:HD23  | 39:BJ:75:LEU:CD1   | 2.43                     | 0.49              |
| 40:BK:2:ALA:CB     | 40:BK:5:ARG:O      | 2.60                     | 0.49              |
| 40:BK:68:ASN:ND2   | 40:BK:128:ALA:HA   | 2.27                     | 0.49              |
| 41:BL:88:LYS:HZ3   | 41:BL:88:LYS:CB    | 2.25                     | 0.49              |
| 42:BM:69:GLY:O     | 42:BM:73:GLN:HG3   | 2.12                     | 0.49              |
| 44:BO:62:GLN:HA    | 44:BO:97:ALA:HB2   | 1.94                     | 0.49              |
| 44:BO:69:ALA:O     | 44:BO:72:ALA:N     | 2.44                     | 0.49              |
| 46:BQ:27:LYS:NZ    | 46:BQ:31:LYS:NZ    | 2.60                     | 0.49              |
| 48:BS:24:SER:O     | 48:BS:25:THR:C     | 2.55                     | 0.49              |
| 48:BS:59:MET:O     | 48:BS:62:GLN:HB3   | 2.13                     | 0.49              |
| 48:BS:63:ARG:O     | 48:BS:64:ARG:C     | 2.56                     | 0.49              |
| 49:BT:3:LYS:HA     | 49:BT:4:ILE:HD13   | 1.94                     | 0.49              |
| 50:BU:75:ARG:HH12  | 50:BU:77:VAL:CG2   | 2.23                     | 0.49              |
| 51:BV:22:VAL:HG13  | 51:BV:55:ARG:HH12  | 1.77                     | 0.49              |
| 51:BV:72:ARG:HA    | 51:BV:75:ILE:CD1   | 2.20                     | 0.49              |
| 51:BV:74:ARG:NH1   | 51:BV:81:PHE:HB3   | 2.27                     | 0.49              |
| 51:BV:79:LEU:CD1   | 51:BV:79:LEU:N     | 2.75                     | 0.49              |
| 53:BX:12:ALA:C     | 53:BX:14:LYS:N     | 2.68                     | 0.49              |
| 53:BX:40:ALA:CA    | 53:BX:55:ILE:HG21  | 2.42                     | 0.49              |
| 54:BY:12:LYS:HB3   | 54:BY:17:THR:O     | 2.12                     | 0.49              |
| 55:BC:39:U:C3'     | 55:BC:40:C:C5'     | 2.91                     | 0.49              |
| 56:BD:16:U:C2'     | 56:BD:17:C:H5'     | 2.43                     | 0.49              |
| 57:BZ:143:GLN:O    | 57:BZ:147:LEU:HD13 | 2.13                     | 0.49              |
| 57:BZ:206:GLN:CB   | 57:BZ:228:ARG:H    | 2.21                     | 0.49              |
| 57:BZ:240:ILE:HG22 | 57:BZ:241:ASP:N    | 2.28                     | 0.49              |
| 57:BZ:243:GLU:CD   | 57:BZ:243:GLU:H    | 2.20                     | 0.49              |
| 57:BZ:320:GLY:CA   | 57:BZ:321:LYS:CB   | 2.90                     | 0.49              |
| 1:AA:71:A:H4'      | 1:AA:72:U:C5'      | 2.23                     | 0.49              |
| 1:AA:193:U:O4      | 1:AA:202:U:O2      | 2.30                     | 0.49              |
| 1:AA:220:G:O6      | 1:AA:427:U:H3'     | 2.12                     | 0.49              |
| 1:AA:226:G:O2'     | 1:AA:227:A:O4'     | 2.28                     | 0.49              |
| 1:AA:257:A:C2'     | 1:AA:258:G:H5'     | 2.42                     | 0.49              |
| 1:AA:301:G:C2'     | 1:AA:302:C:C6      | 2.89                     | 0.49              |
| 1:AA:331:A:C6      | 1:AA:1209:G:C4     | 3.00                     | 0.49              |
| 1:AA:348:G:N3      | 1:AA:349:G:N7      | 2.61                     | 0.49              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:AA:372:G:OP2   | 1:AA:373:U:OP2   | 2.31                     | 0.49              |
| 1:AA:379:G:O6    | 1:AA:380:U:C4    | 2.65                     | 0.49              |
| 1:AA:462:C:C5    | 1:AA:468:G:N2    | 2.80                     | 0.49              |
| 1:AA:532:A:N7    | 16:AR:45:TYR:CE2 | 2.80                     | 0.49              |
| 1:AA:575:A:C2'   | 1:AA:576:U:H5'   | 2.42                     | 0.49              |
| 1:AA:606:U:OP2   | 1:AA:606:U:H5    | 1.95                     | 0.49              |
| 1:AA:618:G:N7    | 1:AA:618(A):C:C5 | 2.80                     | 0.49              |
| 1:AA:631:A:C2    | 1:AA:2416:C:O4'  | 2.66                     | 0.49              |
| 1:AA:646:A:C2    | 1:AA:647:G:C5    | 3.00                     | 0.49              |
| 1:AA:744:G:C6    | 1:AA:745:G:O6    | 2.66                     | 0.49              |
| 1:AA:813:U:C4    | 11:AM:25:SER:HB3 | 2.47                     | 0.49              |
| 1:AA:829:A:C5'   | 1:AA:830:G:H5''  | 2.36                     | 0.49              |
| 1:AA:836:G:C4    | 1:AA:837:C:C5    | 3.01                     | 0.49              |
| 1:AA:849:A:N3    | 1:AA:850:C:C6    | 2.81                     | 0.49              |
| 1:AA:879:G:N3    | 1:AA:898:C:O2    | 2.45                     | 0.49              |
| 1:AA:980:A:N1    | 1:AA:1135:C:H4'  | 2.28                     | 0.49              |
| 1:AA:993:G:C6    | 1:AA:994:C:N4    | 2.81                     | 0.49              |
| 1:AA:1085:A:C1'  | 1:AA:1086:A:P    | 3.00                     | 0.49              |
| 1:AA:1128:A:C5   | 1:AA:2518:A:N6   | 2.80                     | 0.49              |
| 1:AA:1316:U:H2'  | 1:AA:1317:A:H8   | 1.78                     | 0.49              |
| 1:AA:1351:C:N4   | 1:AA:1381:G:C6   | 2.81                     | 0.49              |
| 1:AA:1451:C:H2'  | 1:AA:1451:C:O2   | 2.12                     | 0.49              |
| 1:AA:1464:C:H2'  | 1:AA:1465:G:C8   | 2.44                     | 0.49              |
| 1:AA:1491:G:C4   | 1:AA:1492:G:O2'  | 2.61                     | 0.49              |
| 1:AA:1530:G:H2'  | 1:AA:1531:C:C2   | 2.47                     | 0.49              |
| 1:AA:1544:C:O2'  | 1:AA:1545:A:C4'  | 2.61                     | 0.49              |
| 1:AA:1586:A:O2'  | 1:AA:1587:A:N7   | 2.45                     | 0.49              |
| 1:AA:1638:C:O5'  | 1:AA:1638:C:H6   | 1.95                     | 0.49              |
| 1:AA:1650:G:HO2' | 1:AA:1651:G:P    | 2.33                     | 0.49              |
| 1:AA:1790:C:O3'  | 4:AD:213:ARG:HD3 | 2.13                     | 0.49              |
| 1:AA:1807:G:N2   | 1:AA:1809:A:P    | 2.85                     | 0.49              |
| 1:AA:1821:A:N6   | 1:AA:1822:G:O6   | 2.46                     | 0.49              |
| 1:AA:1824:G:OP1  | 4:AD:53:PHE:CZ   | 2.66                     | 0.49              |
| 1:AA:1953:A:H62  | 1:AA:2550:G:C5'  | 2.25                     | 0.49              |
| 1:AA:1969:A:O2'  | 1:AA:1972:A:H1'  | 2.12                     | 0.49              |
| 1:AA:1997:G:N1   | 1:AA:1998:G:C5   | 2.80                     | 0.49              |
| 1:AA:2111:C:N3   | 1:AA:2145:C:H2'  | 2.27                     | 0.49              |
| 1:AA:2132:U:H2'  | 1:AA:2134:A:N7   | 2.28                     | 0.49              |
| 1:AA:2213:U:O2   | 1:AA:2213:U:C2'  | 2.60                     | 0.49              |
| 1:AA:2491:U:H5   | 1:AA:2492:U:OP2  | 1.94                     | 0.49              |
| 1:AA:2527:C:O2'  | 1:AA:2528:U:C5'  | 2.61                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2532:G:C5'   | 1:AA:2657:A:C2     | 2.89                     | 0.49              |
| 1:AA:2557:G:H2'   | 1:AA:2558:C:C5     | 2.46                     | 0.49              |
| 1:AA:2562:U:H2'   | 1:AA:2563:U:H5'    | 1.94                     | 0.49              |
| 1:AA:2623:G:H2'   | 1:AA:2623:G:N3     | 2.26                     | 0.49              |
| 1:AA:2681:C:C5    | 1:AA:2727:G:N2     | 2.81                     | 0.49              |
| 1:AA:2766:G:C2    | 1:AA:2767:C:C6     | 3.00                     | 0.49              |
| 2:AB:99:A:H2'     | 2:AB:100:G:C5'     | 2.43                     | 0.49              |
| 2:AB:109:G:N1     | 2:AB:110:G:C6      | 2.80                     | 0.49              |
| 3:AC:21:THR:N     | 3:AC:24:GLU:OE1    | 2.45                     | 0.49              |
| 3:AC:108:MET:CE   | 3:AC:131:LEU:HD23  | 2.42                     | 0.49              |
| 3:AC:156:ILE:C    | 3:AC:159:GLY:CA    | 2.85                     | 0.49              |
| 4:AD:5:LYS:CB     | 4:AD:82:ILE:HB     | 2.33                     | 0.49              |
| 4:AD:85:ASP:C     | 4:AD:87:ASN:HD22   | 2.20                     | 0.49              |
| 4:AD:92:ILE:HG13  | 4:AD:93:ALA:N      | 2.26                     | 0.49              |
| 4:AD:109:ASP:O    | 4:AD:111:LEU:N     | 2.46                     | 0.49              |
| 4:AD:144:ALA:HB3  | 4:AD:192:THR:HB    | 1.95                     | 0.49              |
| 4:AD:174:ILE:HD11 | 4:AD:184:LYS:HE3   | 1.93                     | 0.49              |
| 4:AD:246:PRO:HG2  | 4:AD:250:TRP:HB3   | 1.89                     | 0.49              |
| 4:AD:273:ARG:HD3  | 4:AD:273:ARG:N     | 2.28                     | 0.49              |
| 5:AE:4:ILE:HD11   | 5:AE:76:ARG:NH2    | 2.24                     | 0.49              |
| 5:AE:8:LYS:HZ3    | 5:AE:9:VAL:HG13    | 1.71                     | 0.49              |
| 5:AE:47:VAL:CG1   | 5:AE:79:ARG:HB2    | 2.41                     | 0.49              |
| 5:AE:119:ARG:CZ   | 5:AE:155:LYS:HD2   | 2.42                     | 0.49              |
| 5:AE:132:HIS:O    | 5:AE:133:LYS:CB    | 2.59                     | 0.49              |
| 5:AE:150:VAL:HG12 | 5:AE:150:VAL:O     | 2.13                     | 0.49              |
| 6:AF:93:LYS:O     | 6:AF:94:PRO:C      | 2.54                     | 0.49              |
| 6:AF:163:VAL:HG11 | 6:AF:195:ASP:OD2   | 2.13                     | 0.49              |
| 7:AG:57:ALA:CA    | 7:AG:68:PRO:N      | 2.68                     | 0.49              |
| 8:AH:33:LEU:HD23  | 8:AH:34:GLU:C      | 2.38                     | 0.49              |
| 8:AH:35:VAL:CG2   | 8:AH:75:ALA:CB     | 2.91                     | 0.49              |
| 10:AL:8:LEU:CD2   | 10:AL:81:ASP:O     | 2.60                     | 0.49              |
| 10:AL:62:VAL:CB   | 10:AL:82:ASN:O     | 2.59                     | 0.49              |
| 11:AM:23:PRO:HB3  | 11:AM:29:LYS:H     | 1.74                     | 0.49              |
| 11:AM:127:ALA:HB3 | 11:AM:130:PHE:CE2  | 2.48                     | 0.49              |
| 12:AN:6:ARG:CZ    | 12:AN:8:LYS:H      | 2.25                     | 0.49              |
| 12:AN:59:ARG:NH2  | 12:AN:62:GLY:H     | 2.10                     | 0.49              |
| 12:AN:130:LYS:NZ  | 12:AN:132:VAL:CG1  | 2.70                     | 0.49              |
| 13:AO:98:LEU:N    | 13:AO:114:VAL:HG22 | 2.27                     | 0.49              |
| 13:AO:105:ARG:HA  | 13:AO:105:ARG:NH1  | 2.24                     | 0.49              |
| 13:AO:105:ARG:CA  | 13:AO:105:ARG:NH1  | 2.76                     | 0.49              |
| 14:AP:27:SER:O    | 14:AP:28:VAL:O     | 2.30                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 14:AP:28:VAL:O    | 14:AP:29:PHE:CB    | 2.58                     | 0.49              |
| 14:AP:57:LYS:HD3  | 14:AP:57:LYS:C     | 2.37                     | 0.49              |
| 15:AQ:3:ARG:O     | 15:AQ:6:LEU:CD2    | 2.57                     | 0.49              |
| 18:AT:25:ARG:HA   | 18:AT:71:VAL:HG21  | 1.95                     | 0.49              |
| 18:AT:42:ARG:CG   | 18:AT:43:GLY:H     | 2.26                     | 0.49              |
| 18:AT:50:VAL:HG21 | 18:AT:103:ILE:HG13 | 1.94                     | 0.49              |
| 19:AU:61:GLY:N    | 19:AU:73:ARG:NH1   | 2.61                     | 0.49              |
| 20:AV:7:VAL:HG11  | 20:AV:72:VAL:H     | 1.78                     | 0.49              |
| 20:AV:81:LYS:CE   | 20:AV:96:ILE:HG12  | 2.42                     | 0.49              |
| 21:AW:9:TYR:HB3   | 21:AW:14:LYS:HG2   | 1.93                     | 0.49              |
| 21:AW:31:ARG:O    | 21:AW:31:ARG:CZ    | 2.60                     | 0.49              |
| 21:AW:79:ARG:O    | 21:AW:80:ARG:HG3   | 2.12                     | 0.49              |
| 23:AY:32:PHE:HB2  | 23:AY:33:GLN:HE22  | 1.78                     | 0.49              |
| 25:Aa:56:VAL:CG1  | 25:Aa:61:ARG:HG2   | 2.43                     | 0.49              |
| 26:Ab:8:LYS:C     | 26:Ab:9:LYS:HG3    | 2.36                     | 0.49              |
| 29:Ae:52:LYS:O    | 29:Ae:56:GLU:OE1   | 2.31                     | 0.49              |
| 31:AI:116:ILE:CB  | 31:AI:123:GLU:CB   | 2.91                     | 0.49              |
| 34:BA:44:G:H2'    | 34:BA:45:U:H5'     | 1.94                     | 0.49              |
| 34:BA:67:C:O2     | 34:BA:171:A:C2     | 2.64                     | 0.49              |
| 34:BA:113:G:C4'   | 34:BA:354:G:H5''   | 2.43                     | 0.49              |
| 34:BA:124:G:OP1   | 34:BA:310:G:N2     | 2.33                     | 0.49              |
| 34:BA:323:U:H3'   | 34:BA:323:U:C6     | 2.47                     | 0.49              |
| 34:BA:344:A:H5''  | 34:BA:345:C:H5     | 1.78                     | 0.49              |
| 34:BA:404:U:OP1   | 37:BH:118:ARG:CZ   | 2.61                     | 0.49              |
| 34:BA:552:U:HO2'  | 34:BA:553:A:H5'    | 1.78                     | 0.49              |
| 34:BA:584:G:H2'   | 34:BA:585:G:O5'    | 2.13                     | 0.49              |
| 34:BA:588:G:N3    | 34:BA:588:G:H2'    | 2.28                     | 0.49              |
| 34:BA:663:A:C5'   | 34:BA:836:G:OP1    | 2.57                     | 0.49              |
| 34:BA:907:A:C4    | 34:BA:908:A:C8     | 3.00                     | 0.49              |
| 34:BA:947:G:C2    | 34:BA:948:C:C2     | 3.00                     | 0.49              |
| 34:BA:1058:G:C2'  | 34:BA:1059:C:H5'   | 2.42                     | 0.49              |
| 34:BA:1117:G:C8   | 34:BA:1184:G:C2    | 3.00                     | 0.49              |
| 34:BA:1248:A:HO2' | 42:BM:36:TYR:HE1   | 1.49                     | 0.49              |
| 34:BA:1346:A:C8   | 34:BA:1348:U:N3    | 2.81                     | 0.49              |
| 34:BA:1348:U:OP2  | 42:BM:109:VAL:HA   | 2.13                     | 0.49              |
| 34:BA:1368:G:OP1  | 42:BM:113:LYS:HA   | 2.13                     | 0.49              |
| 34:BA:1413:A:C2   | 34:BA:1414:U:N1    | 2.81                     | 0.49              |
| 34:BA:1478:C:O2'  | 34:BA:1479:C:H5'   | 2.12                     | 0.49              |
| 35:BF:70:PHE:HB3  | 35:BF:163:PHE:C    | 2.38                     | 0.49              |
| 35:BF:131:PRO:O   | 35:BF:134:GLU:CB   | 2.61                     | 0.49              |
| 35:BF:187:LEU:HA  | 35:BF:201:ILE:HB   | 1.93                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BF:192:SER:C   | 35:BF:194:PRO:CD   | 2.79                     | 0.49              |
| 37:BH:12:CYS:SG   | 37:BH:19:LEU:O     | 2.70                     | 0.49              |
| 37:BH:101:LEU:O   | 37:BH:102:ASP:C    | 2.56                     | 0.49              |
| 37:BH:193:ASP:O   | 37:BH:194:LEU:HD13 | 2.13                     | 0.49              |
| 37:BH:200:GLU:OE2 | 37:BH:201:GLN:NE2  | 2.45                     | 0.49              |
| 38:BI:80:ILE:HG22 | 41:BL:104:ARG:HH22 | 1.78                     | 0.49              |
| 39:BJ:52:ILE:CG2  | 39:BJ:87:ARG:HH22  | 2.25                     | 0.49              |
| 40:BK:15:ASP:CB   | 40:BK:20:ASP:H     | 2.25                     | 0.49              |
| 43:BN:6:ILE:CG1   | 43:BN:73:ASP:H     | 2.26                     | 0.49              |
| 43:BN:31:GLY:N    | 43:BN:81:THR:OG1   | 2.46                     | 0.49              |
| 44:BO:45:GLY:O    | 44:BO:50:TYR:CB    | 2.60                     | 0.49              |
| 45:BP:52:LEU:HG   | 45:BP:52:LEU:O     | 2.11                     | 0.49              |
| 48:BS:33:THR:O    | 48:BS:34:LEU:C     | 2.56                     | 0.49              |
| 49:BT:16:HIS:C    | 49:BT:17:TYR:HD1   | 2.20                     | 0.49              |
| 49:BT:56:ALA:HB1  | 49:BT:79:VAL:HG11  | 1.92                     | 0.49              |
| 49:BT:72:ARG:NH2  | 49:BT:73:LEU:HD23  | 2.19                     | 0.49              |
| 51:BV:52:PRO:C    | 51:BV:54:ARG:N     | 2.67                     | 0.49              |
| 57:BZ:13:HIS:HB3  | 57:BZ:109:THR:HG22 | 1.91                     | 0.49              |
| 57:BZ:15:ASP:CG   | 57:BZ:16:HIS:CD2   | 2.91                     | 0.49              |
| 57:BZ:63:ALA:HB1  | 57:BZ:65:LYS:CD    | 2.43                     | 0.49              |
| 57:BZ:137:PRO:O   | 57:BZ:141:VAL:HG23 | 2.12                     | 0.49              |
| 57:BZ:205:PHE:HE1 | 57:BZ:226:ILE:CG2  | 2.21                     | 0.49              |
| 57:BZ:230:LYS:CA  | 57:BZ:231:VAL:CB   | 2.85                     | 0.49              |
| 57:BZ:309:MET:HE1 | 57:BZ:370:ILE:HD11 | 1.94                     | 0.49              |
| 57:BZ:374:ARG:O   | 57:BZ:377:GLY:N    | 2.43                     | 0.49              |
| 57:BZ:381:ALA:HB1 | 57:BZ:577:LEU:CA   | 2.43                     | 0.49              |
| 1:AA:28:A:N3      | 1:AA:29:U:O4'      | 2.46                     | 0.49              |
| 1:AA:49:A:N1      | 1:AA:120:U:O4      | 2.46                     | 0.49              |
| 1:AA:193:U:H4'    | 1:AA:803:U:H5'     | 1.95                     | 0.49              |
| 1:AA:385:C:O2'    | 1:AA:386:G:C5'     | 2.60                     | 0.49              |
| 1:AA:470:A:N6     | 1:AA:471:A:C2      | 2.80                     | 0.49              |
| 1:AA:497:A:H8     | 1:AA:497:A:O5'     | 1.95                     | 0.49              |
| 1:AA:547:A:H2'    | 1:AA:548:A:C8      | 2.47                     | 0.49              |
| 1:AA:557:U:O3'    | 9:AK:112:LEU:CD2   | 2.61                     | 0.49              |
| 1:AA:566:U:H3'    | 1:AA:567:A:H8      | 1.77                     | 0.49              |
| 1:AA:591:C:C4     | 1:AA:592:G:N7      | 2.80                     | 0.49              |
| 1:AA:635:C:H2'    | 1:AA:636:G:O4'     | 2.13                     | 0.49              |
| 1:AA:680:G:C4     | 1:AA:798:G:N2      | 2.81                     | 0.49              |
| 1:AA:764:A:N3     | 4:AD:214:TRP:CD1   | 2.81                     | 0.49              |
| 1:AA:819:A:N7     | 1:AA:973:A:C2      | 2.81                     | 0.49              |
| 1:AA:888:C:C2     | 1:AA:889:C:N3      | 2.81                     | 0.49              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:AA:942:G:C5'  | 11:AM:32:THR:CG2 | 2.91                     | 0.49              |
| 1:AA:1051:G:C3' | 1:AA:1052:C:C5'  | 2.91                     | 0.49              |
| 1:AA:1064:C:C6  | 1:AA:1065:U:C5   | 3.00                     | 0.49              |
| 1:AA:1147:C:H2' | 1:AA:1148:A:C5'  | 2.42                     | 0.49              |
| 1:AA:1224:G:O6  | 1:AA:1225:C:N3   | 2.46                     | 0.49              |
| 1:AA:1314:C:H6  | 1:AA:1314:C:O5'  | 1.96                     | 0.49              |
| 1:AA:1331:A:O2' | 1:AA:1332:G:H8   | 1.95                     | 0.49              |
| 1:AA:1348:G:C6  | 1:AA:1349:A:C6   | 3.01                     | 0.49              |
| 1:AA:1349:A:H5' | 1:AA:1350:C:C5'  | 2.42                     | 0.49              |
| 1:AA:1352:U:O2' | 1:AA:1353:A:C5'  | 2.61                     | 0.49              |
| 1:AA:1365:A:OP2 | 25:Aa:3:GLU:OE2  | 2.29                     | 0.49              |
| 1:AA:1419:A:C5  | 1:AA:1421:G:C6   | 3.01                     | 0.49              |
| 1:AA:1458:C:C4' | 1:AA:1459:G:C8   | 2.92                     | 0.49              |
| 1:AA:1510:A:C5' | 1:AA:1511:A:OP2  | 2.60                     | 0.49              |
| 1:AA:1525:G:C2  | 1:AA:1526:G:C4   | 3.00                     | 0.49              |
| 1:AA:1643:G:N2  | 1:AA:1644:C:H1'  | 2.28                     | 0.49              |
| 1:AA:1651:G:N2  | 1:AA:1652:A:C2   | 2.80                     | 0.49              |
| 1:AA:1769:G:N1  | 1:AA:1984:G:C5   | 2.80                     | 0.49              |
| 1:AA:1789:A:O4' | 4:AD:222:ARG:CZ  | 2.60                     | 0.49              |
| 1:AA:1857:G:C5  | 1:AA:1858:G:O6   | 2.66                     | 0.49              |
| 1:AA:1924:C:C6  | 1:AA:1925:C:C5   | 2.90                     | 0.49              |
| 1:AA:1943:U:C4' | 1:AA:1944:U:O5'  | 2.53                     | 0.49              |
| 1:AA:2029:G:O6  | 1:AA:2033:A:OP1  | 2.30                     | 0.49              |
| 1:AA:2031:A:N6  | 1:AA:2498:C:C6   | 2.80                     | 0.49              |
| 1:AA:2107:C:C5  | 1:AA:2109:U:C5   | 3.00                     | 0.49              |
| 1:AA:2278:A:H62 | 22:AX:14:ARG:CB  | 2.23                     | 0.49              |
| 1:AA:2297:C:C2  | 1:AA:2333:A:N6   | 2.80                     | 0.49              |
| 1:AA:2312:U:O4' | 7:AG:43:LEU:HD13 | 2.12                     | 0.49              |
| 1:AA:2331:G:H4' | 22:AX:42:GLY:CA  | 2.43                     | 0.49              |
| 1:AA:2348:U:H2' | 1:AA:2349:G:C5'  | 2.42                     | 0.49              |
| 1:AA:2377:A:C2  | 1:AA:2378:A:C8   | 3.01                     | 0.49              |
| 1:AA:2389:G:OP1 | 1:AA:2390:U:H5'  | 2.13                     | 0.49              |
| 1:AA:2457:U:C2' | 1:AA:2458:G:H5'  | 2.43                     | 0.49              |
| 1:AA:2459:A:C2  | 1:AA:2492:U:O4   | 2.54                     | 0.49              |
| 1:AA:2472:G:C3' | 1:AA:2475:C:H42  | 2.25                     | 0.49              |
| 1:AA:2497:A:H3' | 1:AA:2497:A:C8   | 2.48                     | 0.49              |
| 1:AA:2631:G:C6  | 1:AA:2632:A:C8   | 3.01                     | 0.49              |
| 1:AA:2706:G:H5' | 1:AA:2852:G:P    | 2.53                     | 0.49              |
| 1:AA:2722:G:C2  | 1:AA:2723:C:C2   | 3.00                     | 0.49              |
| 1:AA:2729:G:C6  | 1:AA:2730:C:C4   | 3.00                     | 0.49              |
| 1:AA:2751:G:N3  | 1:AA:2751:G:C2'  | 2.76                     | 0.49              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2764:A:N7     | 1:AA:2766:G:O6    | 2.45                     | 0.49              |
| 1:AA:2791:C:C4     | 1:AA:2892:A:H3'   | 2.47                     | 0.49              |
| 1:AA:2810:A:C2'    | 1:AA:2811:G:H5'   | 2.43                     | 0.49              |
| 1:AA:2831:G:OP2    | 5:AE:57:LYS:HD3   | 2.13                     | 0.49              |
| 2:AB:32:C:C2       | 2:AB:33:G:C8      | 3.01                     | 0.49              |
| 3:AC:59:ARG:NH1    | 3:AC:164:ARG:CG   | 2.75                     | 0.49              |
| 3:AC:115:ALA:CB    | 3:AC:123:VAL:HG21 | 2.43                     | 0.49              |
| 4:AD:79:VAL:HG12   | 4:AD:81:ALA:HA    | 1.94                     | 0.49              |
| 4:AD:91:ARG:NH1    | 4:AD:198:ASN:HD22 | 2.11                     | 0.49              |
| 4:AD:176:ARG:HH12  | 4:AD:270:ILE:HD12 | 1.78                     | 0.49              |
| 4:AD:219:PRO:HB2   | 4:AD:220:HIS:CD2  | 2.48                     | 0.49              |
| 5:AE:8:LYS:HG3     | 15:AQ:6:LEU:HD11  | 1.92                     | 0.49              |
| 5:AE:32:PRO:HB3    | 5:AE:35:GLN:HE22  | 1.76                     | 0.49              |
| 7:AG:38:VAL:C      | 7:AG:39:ILE:HD12  | 2.38                     | 0.49              |
| 7:AG:96:ARG:O      | 7:AG:99:MET:CB    | 2.54                     | 0.49              |
| 8:AH:69:ARG:CG     | 8:AH:69:ARG:NH2   | 2.74                     | 0.49              |
| 8:AH:76:VAL:O      | 8:AH:78:GLY:N     | 2.46                     | 0.49              |
| 9:AK:96:GLU:HG2    | 9:AK:97:ARG:HD3   | 1.94                     | 0.49              |
| 10:AL:57:VAL:CG2   | 10:AL:58:VAL:N    | 2.72                     | 0.49              |
| 10:AL:77:ILE:HG21  | 15:AQ:65:LYS:CE   | 2.29                     | 0.49              |
| 11:AM:80:TYR:CE2   | 11:AM:85:LEU:HD22 | 2.46                     | 0.49              |
| 12:AN:61:GLY:HA2   | 21:AW:178:GLU:HG3 | 1.94                     | 0.49              |
| 12:AN:112:GLU:HA   | 12:AN:115:MET:HB2 | 1.95                     | 0.49              |
| 13:AO:58:GLY:CA    | 13:AO:80:PHE:CZ   | 2.94                     | 0.49              |
| 19:AU:88:LYS:O     | 19:AU:89:ILE:HB   | 2.12                     | 0.49              |
| 20:AV:2:ARG:C      | 20:AV:4:LYS:N     | 2.69                     | 0.49              |
| 20:AV:57:GLN:O     | 20:AV:58:GLY:C    | 2.55                     | 0.49              |
| 21:AW:25:PRO:HG2   | 21:AW:84:GLU:O    | 2.12                     | 0.49              |
| 26:Ab:11:THR:CG2   | 26:Ab:15:ARG:HB3  | 2.42                     | 0.49              |
| 32:AJ:115:LEU:HD22 | 32:AJ:116:ASN:H   | 1.78                     | 0.49              |
| 34:BA:152:A:H3'    | 34:BA:152:A:C8    | 2.46                     | 0.49              |
| 34:BA:264:U:O2     | 34:BA:265:G:O4'   | 2.31                     | 0.49              |
| 34:BA:295:C:N4     | 34:BA:303:A:C2    | 2.80                     | 0.49              |
| 34:BA:465:A:H61    | 49:BT:82:GLN:HE22 | 1.58                     | 0.49              |
| 34:BA:850:U:C2     | 34:BA:851:G:N7    | 2.80                     | 0.49              |
| 34:BA:986:A:C1'    | 52:BW:55:LYS:HG2  | 2.42                     | 0.49              |
| 34:BA:1053:G:C2    | 34:BA:1199:U:C4   | 3.01                     | 0.49              |
| 34:BA:1068:G:O2'   | 34:BA:1069:C:C5'  | 2.55                     | 0.49              |
| 34:BA:1215:G:H2'   | 34:BA:1215:G:N3   | 2.28                     | 0.49              |
| 34:BA:1284:C:C6    | 34:BA:1285:A:N7   | 2.81                     | 0.49              |
| 34:BA:1299:A:N7    | 34:BA:1301:U:N1   | 2.61                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1313:U:C4   | 34:BA:1325:C:N3    | 2.80                     | 0.49              |
| 34:BA:1338:G:C2   | 34:BA:1339:A:C5    | 3.01                     | 0.49              |
| 34:BA:1340:A:H2'  | 34:BA:1341:U:C6    | 2.47                     | 0.49              |
| 34:BA:1388:C:O2'  | 34:BA:1389:C:H5'   | 2.13                     | 0.49              |
| 35:BF:50:GLU:HG3  | 35:BF:200:ILE:C    | 2.32                     | 0.49              |
| 35:BF:60:ASP:CB   | 35:BF:64:ARG:NH1   | 2.74                     | 0.49              |
| 36:BG:8:ILE:HG13  | 36:BG:16:ARG:HD2   | 1.95                     | 0.49              |
| 36:BG:66:VAL:HB   | 36:BG:99:VAL:HG21  | 1.95                     | 0.49              |
| 36:BG:110:ASN:ND2 | 36:BG:144:SER:OG   | 2.46                     | 0.49              |
| 36:BG:142:MET:HB3 | 36:BG:170:GLN:CD   | 2.38                     | 0.49              |
| 36:BG:176:HIS:O   | 36:BG:178:LEU:N    | 2.46                     | 0.49              |
| 38:BI:91:LEU:HD12 | 38:BI:118:ILE:HG23 | 1.94                     | 0.49              |
| 38:BI:144:THR:C   | 38:BI:146:ALA:N    | 2.68                     | 0.49              |
| 39:BJ:1:MET:HB3   | 39:BJ:67:MET:O     | 2.12                     | 0.49              |
| 39:BJ:67:MET:N    | 39:BJ:67:MET:HE3   | 2.27                     | 0.49              |
| 40:BK:79:ARG:NE   | 40:BK:84:ASN:HB3   | 2.27                     | 0.49              |
| 41:BL:14:ARG:CA   | 41:BL:17:THR:OG1   | 2.54                     | 0.49              |
| 41:BL:46:LYS:HZ2  | 41:BL:64:LYS:CA    | 2.18                     | 0.49              |
| 41:BL:84:ARG:O    | 41:BL:135:CYS:SG   | 2.69                     | 0.49              |
| 41:BL:89:PRO:HA   | 41:BL:92:ARG:NE    | 2.28                     | 0.49              |
| 41:BL:126:LYS:HZ1 | 41:BL:127:LEU:HD23 | 1.75                     | 0.49              |
| 42:BM:47:LEU:O    | 42:BM:50:LEU:HB3   | 2.13                     | 0.49              |
| 42:BM:78:LYS:HD3  | 42:BM:79:LEU:CD2   | 2.41                     | 0.49              |
| 44:BO:73:MET:CG   | 44:BO:103:LEU:HD13 | 2.37                     | 0.49              |
| 44:BO:114:VAL:CG2 | 44:BO:115:PRO:N    | 2.74                     | 0.49              |
| 45:BP:126:LYS:NZ  | 45:BP:128:ALA:N    | 2.57                     | 0.49              |
| 46:BQ:14:ARG:HH21 | 46:BQ:42:ALA:CB    | 2.24                     | 0.49              |
| 46:BQ:90:LEU:HD21 | 46:BQ:93:ARG:CZ    | 2.43                     | 0.49              |
| 46:BQ:97:PRO:CG   | 46:BQ:101:GLN:HB2  | 2.42                     | 0.49              |
| 47:BR:26:ARG:HB3  | 47:BR:43:CYS:CB    | 2.43                     | 0.49              |
| 48:BS:53:HIS:O    | 48:BS:57:LEU:CD1   | 2.56                     | 0.49              |
| 50:BU:88:TYR:HA   | 50:BU:91:ARG:HE    | 1.77                     | 0.49              |
| 51:BV:25:THR:HG22 | 51:BV:42:ARG:NE    | 2.28                     | 0.49              |
| 51:BV:74:ARG:CA   | 51:BV:79:LEU:HD21  | 2.42                     | 0.49              |
| 52:BW:19:VAL:HG22 | 52:BW:43:GLU:OE2   | 2.12                     | 0.49              |
| 52:BW:29:ARG:HG2  | 52:BW:48:THR:CB    | 2.42                     | 0.49              |
| 52:BW:33:THR:OG1  | 52:BW:49:ILE:HD12  | 2.12                     | 0.49              |
| 53:BX:59:ALA:O    | 53:BX:61:SER:N     | 2.46                     | 0.49              |
| 56:BE:72:C:C3'    | 56:BE:73:A:C5'     | 2.91                     | 0.49              |
| 57:BZ:229:GLY:O   | 57:BZ:266:ASP:O    | 2.31                     | 0.49              |
| 57:BZ:476:ARG:HD3 | 57:BZ:477:PRO:N    | 2.28                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:BZ:491:ASN:OD1 | 57:BZ:536:ASN:OD1 | 2.31                     | 0.49              |
| 57:BZ:569:LEU:C   | 57:BZ:569:LEU:CD2 | 2.86                     | 0.49              |
| 1:AA:245:G:C5     | 1:AA:246:C:C5     | 2.96                     | 0.49              |
| 1:AA:247:G:N1     | 29:Ae:8:LYS:HD2   | 2.28                     | 0.49              |
| 1:AA:279:C:H2'    | 1:AA:280:C:C5     | 2.48                     | 0.49              |
| 1:AA:493:G:C2     | 1:AA:494:G:N9     | 2.81                     | 0.49              |
| 1:AA:583:G:C2'    | 1:AA:584:C:O5'    | 2.61                     | 0.49              |
| 1:AA:728:G:C1'    | 1:AA:729:G:H8     | 2.25                     | 0.49              |
| 1:AA:832:G:OP1    | 11:AM:36:LYS:CE   | 2.61                     | 0.49              |
| 1:AA:870:A:H2'    | 1:AA:871:U:O4'    | 2.13                     | 0.49              |
| 1:AA:884:C:C1'    | 1:AA:885:C:P      | 3.00                     | 0.49              |
| 1:AA:897:C:C3'    | 1:AA:898:C:H5     | 2.25                     | 0.49              |
| 1:AA:917:A:C3'    | 1:AA:918:A:C5'    | 2.79                     | 0.49              |
| 1:AA:947:G:C2     | 1:AA:948:G:C8     | 3.01                     | 0.49              |
| 1:AA:1058:G:H1'   | 32:AJ:116:ASN:CB  | 2.42                     | 0.49              |
| 1:AA:1109:C:H2'   | 1:AA:1110:G:C1'   | 2.43                     | 0.49              |
| 1:AA:1125:G:H5''  | 30:Af:4:ARG:HD2   | 1.94                     | 0.49              |
| 1:AA:1137:G:O2'   | 9:AK:102:ALA:HA   | 2.13                     | 0.49              |
| 1:AA:1143:A:O2'   | 1:AA:1144:G:C5'   | 2.61                     | 0.49              |
| 1:AA:1154:G:O2'   | 1:AA:1155:A:C5'   | 2.61                     | 0.49              |
| 1:AA:1157:G:OP2   | 1:AA:1158:C:OP2   | 2.30                     | 0.49              |
| 1:AA:1175:U:H3'   | 1:AA:1176:G:O4'   | 2.13                     | 0.49              |
| 1:AA:1223:C:C5    | 1:AA:1227:A:N1    | 2.80                     | 0.49              |
| 1:AA:1238:G:C2    | 1:AA:1239:G:N9    | 2.81                     | 0.49              |
| 1:AA:1256:G:O2'   | 1:AA:1257:C:H5'   | 2.13                     | 0.49              |
| 1:AA:1257:C:H2'   | 1:AA:1258:C:C6    | 2.48                     | 0.49              |
| 1:AA:1314:C:C6    | 1:AA:1314:C:O5'   | 2.65                     | 0.49              |
| 1:AA:1364:G:P     | 1:AA:1364:G:C8    | 3.06                     | 0.49              |
| 1:AA:1471:A:N7    | 1:AA:1519:G:C6    | 2.81                     | 0.49              |
| 1:AA:1500:G:O2'   | 1:AA:1501:C:H5'   | 2.12                     | 0.49              |
| 1:AA:1563:G:C4    | 1:AA:1564:C:C5    | 3.00                     | 0.49              |
| 1:AA:1563:G:C6    | 1:AA:1564:C:N4    | 2.81                     | 0.49              |
| 1:AA:1595:G:N2    | 1:AA:1596:A:H1'   | 2.27                     | 0.49              |
| 1:AA:1657:C:OP1   | 5:AE:136:ARG:O    | 2.30                     | 0.49              |
| 1:AA:1729:A:H5''  | 1:AA:1730:U:C5    | 2.47                     | 0.49              |
| 1:AA:1753:G:C8    | 1:AA:1753:G:C3'   | 2.95                     | 0.49              |
| 1:AA:1801:G:OP1   | 1:AA:1801:G:H8    | 1.96                     | 0.49              |
| 1:AA:1816:G:O3'   | 1:AA:1817:G:H8    | 1.96                     | 0.49              |
| 1:AA:1869:G:O2'   | 1:AA:1871:A:N7    | 2.36                     | 0.49              |
| 1:AA:1893:C:C2'   | 1:AA:1894:C:H5'   | 2.43                     | 0.49              |
| 1:AA:1924:C:N1    | 1:AA:1925:C:H5    | 2.10                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1937:A:N7    | 1:AA:1939:U:C4     | 2.81                     | 0.49              |
| 1:AA:2024:G:C4    | 1:AA:2025:C:C6     | 3.01                     | 0.49              |
| 1:AA:2114:A:H61   | 1:AA:2170:A:H61    | 1.59                     | 0.49              |
| 1:AA:2265:U:C2'   | 1:AA:2266:A:OP1    | 2.60                     | 0.49              |
| 1:AA:2358:G:N2    | 1:AA:2359:C:C1'    | 2.75                     | 0.49              |
| 1:AA:2405:G:C2'   | 1:AA:2406:U:OP2    | 2.60                     | 0.49              |
| 1:AA:2469:A:H2'   | 1:AA:2470:G:H5'    | 1.95                     | 0.49              |
| 1:AA:2486:G:N2    | 1:AA:2487:G:C4     | 2.81                     | 0.49              |
| 1:AA:2507:C:C4    | 1:AA:2508:G:N7     | 2.80                     | 0.49              |
| 1:AA:2532:G:C2'   | 1:AA:2664:G:O2'    | 2.59                     | 0.49              |
| 1:AA:2556:C:O2    | 57:BZ:546:MET:HE2  | 2.09                     | 0.49              |
| 1:AA:2680:C:H4'   | 5:AE:188:VAL:HB    | 1.95                     | 0.49              |
| 1:AA:2691:C:N3    | 1:AA:2719:G:N2     | 2.61                     | 0.49              |
| 1:AA:2707:G:H2'   | 1:AA:2708:G:O5'    | 2.13                     | 0.49              |
| 1:AA:2752:C:N3    | 1:AA:2753:A:C8     | 2.81                     | 0.49              |
| 1:AA:2787:C:H2'   | 1:AA:2788:C:C5     | 2.48                     | 0.49              |
| 1:AA:2841:C:O2    | 1:AA:2842:G:C8     | 2.66                     | 0.49              |
| 1:AA:2866:U:O2    | 1:AA:2868:A:C1'    | 2.61                     | 0.49              |
| 2:AB:83:G:H5'     | 24:AZ:52:HIS:CE1   | 2.48                     | 0.49              |
| 3:AC:102:LYS:HZ1  | 3:AC:107:TRP:HB2   | 1.77                     | 0.49              |
| 4:AD:40:THR:HG21  | 4:AD:43:ARG:HE     | 1.77                     | 0.49              |
| 4:AD:46:GLN:HE22  | 4:AD:51:VAL:HG23   | 1.78                     | 0.49              |
| 4:AD:85:ASP:HB2   | 4:AD:87:ASN:ND2    | 2.23                     | 0.49              |
| 4:AD:149:PRO:C    | 4:AD:151:LYS:H     | 2.21                     | 0.49              |
| 4:AD:166:GLN:O    | 4:AD:167:GLY:O     | 2.31                     | 0.49              |
| 4:AD:172:TYR:CD2  | 4:AD:186:HIS:N     | 2.80                     | 0.49              |
| 4:AD:177:LEU:HD23 | 4:AD:177:LEU:N     | 2.23                     | 0.49              |
| 5:AE:13:ARG:CZ    | 5:AE:20:ALA:C      | 2.86                     | 0.49              |
| 5:AE:93:VAL:O     | 5:AE:94:GLU:HG2    | 2.13                     | 0.49              |
| 6:AF:136:THR:O    | 6:AF:139:PHE:HB3   | 2.13                     | 0.49              |
| 6:AF:201:VAL:HG12 | 6:AF:205:ARG:HH21  | 1.73                     | 0.49              |
| 7:AG:4:ASP:C      | 7:AG:7:LEU:HB2     | 2.37                     | 0.49              |
| 8:AH:33:LEU:HD22  | 8:AH:75:ALA:HB2    | 1.94                     | 0.49              |
| 10:AL:39:ILE:CA   | 10:AL:59:LYS:HZ1   | 2.25                     | 0.49              |
| 10:AL:64:ARG:CZ   | 10:AL:67:LYS:N     | 2.76                     | 0.49              |
| 10:AL:68:GLU:CA   | 10:AL:104:ARG:NH1  | 2.65                     | 0.49              |
| 10:AL:69:VAL:H    | 10:AL:104:ARG:HH22 | 1.58                     | 0.49              |
| 11:AM:126:VAL:HB  | 11:AM:146:VAL:CB   | 2.43                     | 0.49              |
| 12:AN:44:ALA:O    | 12:AN:48:GLU:OE2   | 2.31                     | 0.49              |
| 13:AO:10:LEU:CB   | 13:AO:17:ARG:NH1   | 2.76                     | 0.49              |
| 13:AO:14:SER:CA   | 13:AO:17:ARG:HG2   | 2.42                     | 0.49              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 13:AO:37:THR:O     | 13:AO:38:VAL:C     | 2.55                     | 0.49              |
| 13:AO:39:PRO:HA    | 13:AO:42:LYS:HB2   | 1.94                     | 0.49              |
| 13:AO:61:HIS:CE1   | 13:AO:64:ARG:NH2   | 2.81                     | 0.49              |
| 14:AP:30:ARG:HD2   | 14:AP:91:PRO:CG    | 2.42                     | 0.49              |
| 15:AQ:21:GLU:O     | 15:AQ:23:ARG:CD    | 2.53                     | 0.49              |
| 15:AQ:67:SER:HA    | 15:AQ:75:ILE:HG22  | 1.95                     | 0.49              |
| 16:AR:59:ARG:C     | 16:AR:62:ILE:HB    | 2.36                     | 0.49              |
| 17:AS:32:THR:HA    | 17:AS:64:HIS:C     | 2.26                     | 0.49              |
| 17:AS:60:GLU:OE1   | 17:AS:101:GLY:CA   | 2.60                     | 0.49              |
| 17:AS:72:VAL:HG12  | 17:AS:73:SER:N     | 2.26                     | 0.49              |
| 20:AV:32:PRO:HB2   | 20:AV:34:LYS:CD    | 2.43                     | 0.49              |
| 20:AV:97:ARG:CZ    | 20:AV:101:LYS:CG   | 2.90                     | 0.49              |
| 21:AW:37:VAL:C     | 21:AW:38:TYR:CD2   | 2.91                     | 0.49              |
| 21:AW:129:SER:CB   | 21:AW:133:ILE:HG22 | 2.36                     | 0.49              |
| 21:AW:171:ILE:HG23 | 21:AW:172:ALA:N    | 2.28                     | 0.49              |
| 22:AX:46:LYS:CG    | 22:AX:78:TYR:CD2   | 2.96                     | 0.49              |
| 23:AY:12:SER:N     | 23:AY:15:GLU:OE1   | 2.45                     | 0.49              |
| 25:Aa:64:GLY:O     | 25:Aa:65:ASP:C     | 2.56                     | 0.49              |
| 25:Aa:65:ASP:HA    | 25:Aa:68:ARG:HH12  | 1.78                     | 0.49              |
| 28:Ad:45:ALA:O     | 28:Ad:46:VAL:C     | 2.56                     | 0.49              |
| 29:Ae:37:SER:O     | 29:Ae:41:ILE:HG13  | 2.13                     | 0.49              |
| 30:Af:13:LYS:HB3   | 30:Af:13:LYS:NZ    | 2.27                     | 0.49              |
| 31:AI:52:PHE:C     | 31:AI:54:ALA:N     | 2.71                     | 0.49              |
| 32:AJ:64:SER:CB    | 32:AJ:65:PHE:CB    | 2.86                     | 0.49              |
| 34:BA:251:G:C5'    | 34:BA:252:U:OP1    | 2.61                     | 0.49              |
| 34:BA:294:U:H2'    | 34:BA:295:C:C6     | 2.48                     | 0.49              |
| 34:BA:325:A:H2'    | 34:BA:326:G:O5'    | 2.13                     | 0.49              |
| 34:BA:442:C:O2     | 34:BA:442:C:C2'    | 2.61                     | 0.49              |
| 34:BA:580:U:C4'    | 48:BS:58:MET:HG2   | 2.42                     | 0.49              |
| 34:BA:593:G:H2'    | 34:BA:594:G:O4'    | 2.13                     | 0.49              |
| 34:BA:684:A:O2'    | 44:BO:39:PRO:O     | 2.30                     | 0.49              |
| 34:BA:686:U:OP1    | 34:BA:686:U:C4'    | 2.60                     | 0.49              |
| 34:BA:714:G:O2'    | 34:BA:777:A:N6     | 2.46                     | 0.49              |
| 34:BA:723:U:O2     | 34:BA:723:U:H2'    | 2.12                     | 0.49              |
| 34:BA:826:C:C2     | 34:BA:827:U:C5     | 3.01                     | 0.49              |
| 34:BA:874:G:C2     | 34:BA:875:C:C6     | 3.00                     | 0.49              |
| 34:BA:888:G:H3'    | 34:BA:889:A:H8     | 1.78                     | 0.49              |
| 34:BA:972:C:P      | 43:BN:57:LYS:NZ    | 2.86                     | 0.49              |
| 34:BA:1045:C:C2'   | 34:BA:1046:A:H8    | 2.19                     | 0.49              |
| 34:BA:1080:A:N7    | 34:BA:1081:G:H1'   | 2.28                     | 0.49              |
| 34:BA:1085:U:O2    | 34:BA:1094:G:C6    | 2.66                     | 0.49              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1152:A:P     | 43:BN:13:HIS:NE2   | 2.82                     | 0.49              |
| 34:BA:1229:A:O3'   | 56:BE:30:G:OP1     | 2.30                     | 0.49              |
| 34:BA:1285:A:C4'   | 34:BA:1286:A:C8    | 2.95                     | 0.49              |
| 34:BA:1300:G:HO2'  | 34:BA:1301:U:H6    | 1.59                     | 0.49              |
| 34:BA:1455:G:H3'   | 53:BX:31:SER:OG    | 2.00                     | 0.49              |
| 35:BF:76:GLN:O     | 35:BF:211:ILE:CD1  | 2.61                     | 0.49              |
| 35:BF:169:LYS:HE2  | 35:BF:170:GLU:HA   | 1.95                     | 0.49              |
| 36:BG:6:HIS:O      | 36:BG:8:ILE:N      | 2.45                     | 0.49              |
| 36:BG:46:GLU:HB3   | 36:BG:47:LEU:CD2   | 2.38                     | 0.49              |
| 37:BH:65:ARG:HG3   | 37:BH:72:GLU:CD    | 2.38                     | 0.49              |
| 37:BH:128:VAL:HG21 | 37:BH:133:VAL:HG23 | 1.94                     | 0.49              |
| 37:BH:148:VAL:HG13 | 37:BH:152:SER:OG   | 2.13                     | 0.49              |
| 38:BI:33:VAL:C     | 38:BI:34:VAL:HG22  | 2.38                     | 0.49              |
| 39:BJ:53:ALA:O     | 39:BJ:55:ASP:OD1   | 2.31                     | 0.49              |
| 39:BJ:86:ARG:O     | 39:BJ:87:ARG:HG2   | 2.12                     | 0.49              |
| 40:BK:17:VAL:O     | 40:BK:17:VAL:HG13  | 2.12                     | 0.49              |
| 40:BK:57:GLU:HB3   | 40:BK:58:PRO:HD2   | 1.94                     | 0.49              |
| 40:BK:106:GLN:O    | 40:BK:109:ASN:N    | 2.45                     | 0.49              |
| 41:BL:36:LEU:HD12  | 41:BL:48:TYR:CD1   | 2.48                     | 0.49              |
| 41:BL:44:PHE:O     | 41:BL:64:LYS:HD2   | 2.12                     | 0.49              |
| 42:BM:93:ARG:C     | 42:BM:95:LYS:H     | 2.20                     | 0.49              |
| 44:BO:79:SER:HA    | 44:BO:104:GLN:HE21 | 1.76                     | 0.49              |
| 44:BO:85:ARG:NE    | 44:BO:113:PRO:HD3  | 2.28                     | 0.49              |
| 45:BP:33:ARG:HG2   | 45:BP:60:LEU:CD2   | 2.43                     | 0.49              |
| 45:BP:59:ARG:HE    | 45:BP:65:GLU:CG    | 2.26                     | 0.49              |
| 48:BS:63:ARG:NH2   | 48:BS:87:ILE:HD13  | 2.26                     | 0.49              |
| 49:BT:21:VAL:HG22  | 49:BT:36:ILE:HD13  | 1.95                     | 0.49              |
| 49:BT:35:LYS:HD2   | 49:BT:35:LYS:C     | 2.38                     | 0.49              |
| 49:BT:42:ARG:C     | 49:BT:43:LYS:HD2   | 2.38                     | 0.49              |
| 49:BT:74:LEU:HD22  | 49:BT:79:VAL:CG2   | 2.42                     | 0.49              |
| 50:BU:20:THR:O     | 50:BU:21:VAL:HG13  | 2.13                     | 0.49              |
| 50:BU:28:PRO:CB    | 50:BU:33:GLY:O     | 2.59                     | 0.49              |
| 52:BW:30:LEU:HD23  | 52:BW:30:LEU:C     | 2.38                     | 0.49              |
| 53:BX:45:GLN:NE2   | 53:BX:91:LEU:HB3   | 2.28                     | 0.49              |
| 55:BC:12:U:H2'     | 55:BC:13:C:O4'     | 2.13                     | 0.49              |
| 56:BE:4:C:O2       | 56:BE:6:G:C8       | 2.62                     | 0.49              |
| 57:BZ:32:PHE:CG    | 57:BZ:33:ASP:N     | 2.80                     | 0.49              |
| 57:BZ:93:ASP:HA    | 57:BZ:121:LEU:HD22 | 1.95                     | 0.49              |
| 57:BZ:95:VAL:O     | 57:BZ:124:ILE:N    | 2.46                     | 0.49              |
| 57:BZ:137:PRO:CB   | 57:BZ:164:TYR:CE2  | 2.94                     | 0.49              |
| 57:BZ:204:PRO:O    | 57:BZ:229:GLY:HA3  | 2.13                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:BZ:253:LYS:CG  | 57:BZ:262:ARG:HG3 | 2.43                     | 0.49              |
| 57:BZ:580:VAL:CB  | 57:BZ:585:ILE:CD1 | 2.91                     | 0.49              |
| 1:AA:5:A:C2       | 1:AA:2899:G:N9    | 2.80                     | 0.49              |
| 1:AA:30:G:OP1     | 16:AR:8:VAL:CG1   | 2.61                     | 0.49              |
| 1:AA:92:G:O2'     | 1:AA:93:C:H5'     | 2.13                     | 0.49              |
| 1:AA:187:G:C2'    | 1:AA:1365:A:C2    | 2.95                     | 0.49              |
| 1:AA:245:G:C6     | 1:AA:246:C:N4     | 2.80                     | 0.49              |
| 1:AA:245:G:H21    | 1:AA:254:G:H1'    | 1.75                     | 0.49              |
| 1:AA:260:G:O4'    | 1:AA:621:A:O4'    | 2.31                     | 0.49              |
| 1:AA:270(K):C:H3' | 1:AA:270(L):U:C6  | 2.45                     | 0.49              |
| 1:AA:348:G:C2     | 1:AA:349:G:N7     | 2.81                     | 0.49              |
| 1:AA:387:U:H2'    | 1:AA:387:U:O2     | 2.13                     | 0.49              |
| 1:AA:393:C:C2'    | 1:AA:394:A:H5'    | 2.43                     | 0.49              |
| 1:AA:468:G:C8     | 1:AA:469:G:C8     | 3.01                     | 0.49              |
| 1:AA:476:G:O4'    | 1:AA:505:A:C2     | 2.65                     | 0.49              |
| 1:AA:483:A:H2'    | 1:AA:484:C:H5'    | 1.95                     | 0.49              |
| 1:AA:556:G:H8     | 1:AA:556:G:P      | 2.35                     | 0.49              |
| 1:AA:585:G:O2'    | 1:AA:586:A:C8     | 2.57                     | 0.49              |
| 1:AA:629:G:N2     | 1:AA:635:C:C2     | 2.81                     | 0.49              |
| 1:AA:671:C:N4     | 1:AA:672:C:H41    | 2.11                     | 0.49              |
| 1:AA:715:G:C2'    | 1:AA:716:A:O5'    | 2.61                     | 0.49              |
| 1:AA:728:G:H1'    | 1:AA:729:G:H8     | 1.75                     | 0.49              |
| 1:AA:749:C:H4'    | 1:AA:1271:G:N3    | 2.28                     | 0.49              |
| 1:AA:751:A:OP1    | 1:AA:1614:A:OP1   | 2.30                     | 0.49              |
| 1:AA:764:A:OP1    | 4:AD:211:ARG:HB3  | 2.12                     | 0.49              |
| 1:AA:776:G:N3     | 1:AA:793:A:C6     | 2.81                     | 0.49              |
| 1:AA:800:A:N9     | 1:AA:802:A:H5'    | 2.27                     | 0.49              |
| 1:AA:814:C:H2'    | 1:AA:815:C:H6     | 1.77                     | 0.49              |
| 1:AA:974:G:H1'    | 1:AA:1186:G:C5    | 2.48                     | 0.49              |
| 1:AA:1025:G:H8    | 1:AA:1134:G:H1'   | 1.78                     | 0.49              |
| 1:AA:1027:A:C6    | 1:AA:1126:A:N3    | 2.81                     | 0.49              |
| 1:AA:1176:G:H8    | 1:AA:1177:A:O4'   | 1.95                     | 0.49              |
| 1:AA:1235:G:C2    | 1:AA:1236:G:N2    | 2.80                     | 0.49              |
| 1:AA:1240:U:O2    | 1:AA:1240:U:C2'   | 2.61                     | 0.49              |
| 1:AA:1324:G:C1'   | 1:AA:1616:A:H62   | 2.24                     | 0.49              |
| 1:AA:1479:G:N2    | 1:AA:1515:C:N3    | 2.61                     | 0.49              |
| 1:AA:1529:A:H3'   | 1:AA:1530:G:C8    | 2.46                     | 0.49              |
| 1:AA:1539:G:N7    | 1:AA:1540:G:C8    | 2.81                     | 0.49              |
| 1:AA:1578:U:O2'   | 1:AA:1579:A:H5'   | 2.13                     | 0.49              |
| 1:AA:1633:G:C5    | 1:AA:1635:G:N1    | 2.81                     | 0.49              |
| 1:AA:1636:C:C1'   | 1:AA:1761:C:H1'   | 2.41                     | 0.49              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 1:AA:1767:C:C2    | 1:AA:1768:U:C6   | 3.00                     | 0.49              |
| 1:AA:1903:G:C2'   | 1:AA:1904:G:H8   | 2.11                     | 0.49              |
| 1:AA:2075:U:O2    | 1:AA:2076:U:O5'  | 2.31                     | 0.49              |
| 1:AA:2115:G:H1    | 1:AA:2118:U:H5'' | 1.77                     | 0.49              |
| 1:AA:2169:A:N3    | 1:AA:2169:A:H2'  | 2.28                     | 0.49              |
| 1:AA:2230:G:O2'   | 25:Aa:40:HIS:O   | 2.13                     | 0.49              |
| 1:AA:2343:C:O2    | 1:AA:2344:U:C6   | 2.65                     | 0.49              |
| 1:AA:2358:G:C2    | 1:AA:2359:C:C6   | 3.01                     | 0.49              |
| 1:AA:2373:G:C5    | 1:AA:2374:C:N4   | 2.81                     | 0.49              |
| 1:AA:2377:A:N3    | 1:AA:2378:A:C8   | 2.81                     | 0.49              |
| 1:AA:2377:A:C2    | 1:AA:2378:A:N7   | 2.81                     | 0.49              |
| 1:AA:2393:A:H5''  | 11:AM:56:SER:C   | 2.37                     | 0.49              |
| 1:AA:2508:G:H5'   | 56:BD:75:C:N4    | 2.28                     | 0.49              |
| 1:AA:2520:C:H2'   | 1:AA:2521:C:C6   | 2.48                     | 0.49              |
| 1:AA:2520:C:C2    | 1:AA:2521:C:C5   | 3.01                     | 0.49              |
| 1:AA:2553:G:C2    | 1:AA:2554:U:H1'  | 2.39                     | 0.49              |
| 1:AA:2560:C:H2'   | 1:AA:2561:A:H5'  | 1.95                     | 0.49              |
| 1:AA:2576:G:O2'   | 1:AA:2612:C:N4   | 2.46                     | 0.49              |
| 1:AA:2632:A:C6    | 1:AA:2787:C:N4   | 2.81                     | 0.49              |
| 1:AA:2720:U:C3'   | 1:AA:2721:A:C8   | 2.96                     | 0.49              |
| 1:AA:2734:A:H3'   | 1:AA:2735:G:O4'  | 2.13                     | 0.49              |
| 1:AA:2745:C:C4    | 1:AA:2746:U:C5   | 3.00                     | 0.49              |
| 1:AA:2773:C:OP1   | 5:AE:164:ARG:NH2 | 2.46                     | 0.49              |
| 2:AB:83:G:H5'     | 24:AZ:52:HIS:NE2 | 2.27                     | 0.49              |
| 2:AB:86:G:C2      | 2:AB:91:C:C2     | 3.01                     | 0.49              |
| 3:AC:211:SER:HA   | 3:AC:223:ARG:HE  | 1.78                     | 0.49              |
| 3:AC:213:TYR:HB3  | 3:AC:223:ARG:CA  | 2.23                     | 0.49              |
| 4:AD:63:ARG:CG    | 4:AD:65:ILE:HG12 | 2.43                     | 0.49              |
| 5:AE:32:PRO:CD    | 5:AE:88:GLY:C    | 2.85                     | 0.49              |
| 5:AE:55:ASN:HA    | 5:AE:58:ARG:HH22 | 1.78                     | 0.49              |
| 5:AE:60:ASN:O     | 5:AE:63:LEU:N    | 2.46                     | 0.49              |
| 5:AE:104:VAL:HG22 | 5:AE:198:VAL:HA  | 1.95                     | 0.49              |
| 6:AF:23:ASP:O     | 6:AF:24:LEU:HD23 | 2.13                     | 0.49              |
| 6:AF:31:HIS:ND1   | 11:AM:11:GLY:CA  | 2.72                     | 0.49              |
| 6:AF:40:GLN:O     | 6:AF:41:LEU:C    | 2.55                     | 0.49              |
| 6:AF:110:LEU:HG   | 6:AF:183:VAL:N   | 2.28                     | 0.49              |
| 6:AF:119:ARG:HB2  | 6:AF:119:ARG:CZ  | 2.40                     | 0.49              |
| 6:AF:119:ARG:HH21 | 6:AF:119:ARG:C   | 2.21                     | 0.49              |
| 6:AF:123:LEU:HB2  | 6:AF:193:VAL:HA  | 1.95                     | 0.49              |
| 7:AG:36:LYS:HZ3   | 7:AG:38:VAL:HG13 | 1.78                     | 0.49              |
| 9:AK:74:ARG:HG2   | 9:AK:76:SER:CB   | 2.43                     | 0.49              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 9:AK:95:PRO:HG2    | 9:AK:124:ALA:HB2  | 1.94                     | 0.49              |
| 9:AK:99:LEU:HD12   | 9:AK:100:GLU:HA   | 1.95                     | 0.49              |
| 10:AL:3:GLN:OE1    | 10:AL:3:GLN:C     | 2.56                     | 0.49              |
| 11:AM:76:LYS:HB3   | 11:AM:113:LYS:O   | 2.13                     | 0.49              |
| 12:AN:16:ARG:HD3   | 12:AN:16:ARG:N    | 2.28                     | 0.49              |
| 12:AN:25:ASP:HB3   | 12:AN:102:VAL:CG1 | 2.35                     | 0.49              |
| 12:AN:80:GLU:O     | 12:AN:81:VAL:O    | 2.31                     | 0.49              |
| 15:AQ:17:THR:CB    | 15:AQ:20:PRO:CD   | 2.85                     | 0.49              |
| 15:AQ:30:VAL:CG2   | 15:AQ:32:TYR:HE2  | 2.24                     | 0.49              |
| 16:AR:89:GLU:N     | 17:AS:52:VAL:HA   | 2.23                     | 0.49              |
| 16:AR:105:VAL:HG13 | 16:AR:106:PHE:N   | 2.27                     | 0.49              |
| 17:AS:3:ALA:C      | 17:AS:12:TYR:CE2  | 2.90                     | 0.49              |
| 17:AS:73:SER:HG    | 17:AS:89:GLN:CB   | 2.22                     | 0.49              |
| 18:AT:65:LEU:O     | 18:AT:66:GLU:C    | 2.56                     | 0.49              |
| 19:AU:29:TRP:CD1   | 19:AU:76:ARG:HH21 | 2.31                     | 0.49              |
| 19:AU:36:LYS:NZ    | 19:AU:36:LYS:HB2  | 2.28                     | 0.49              |
| 22:AX:21:LEU:CG    | 22:AX:22:GLY:H    | 2.21                     | 0.49              |
| 24:AZ:23:LEU:HA    | 24:AZ:26:LEU:CD2  | 2.43                     | 0.49              |
| 26:Ab:45:VAL:HB    | 26:Ab:50:GLY:C    | 2.38                     | 0.49              |
| 27:Ac:19:ARG:NH2   | 27:Ac:41:PRO:HG3  | 2.27                     | 0.49              |
| 29:Ae:16:ILE:CD1   | 29:Ae:60:LEU:HD22 | 2.42                     | 0.49              |
| 32:AJ:12:LEU:CB    | 32:AJ:13:PRO:CD   | 2.90                     | 0.49              |
| 34:BA:16:A:O4'     | 38:BI:17:ALA:HB3  | 2.12                     | 0.49              |
| 34:BA:41:G:C4      | 34:BA:42:G:N7     | 2.81                     | 0.49              |
| 34:BA:50:A:C2      | 34:BA:360:A:O2'   | 2.64                     | 0.49              |
| 34:BA:136:C:H2'    | 34:BA:137:C:H6    | 1.77                     | 0.49              |
| 34:BA:166:G:H2'    | 34:BA:167:G:O5'   | 2.13                     | 0.49              |
| 34:BA:186(A):C:N4  | 34:BA:191:G:C6    | 2.80                     | 0.49              |
| 34:BA:198:G:C2'    | 34:BA:199:G:O5'   | 2.61                     | 0.49              |
| 34:BA:262:A:C5     | 34:BA:263:A:N6    | 2.81                     | 0.49              |
| 34:BA:293:G:OP2    | 34:BA:293:G:C8    | 2.66                     | 0.49              |
| 34:BA:375:U:C2'    | 34:BA:376:G:H5'   | 2.43                     | 0.49              |
| 34:BA:430:A:N7     | 34:BA:431:A:N7    | 2.60                     | 0.49              |
| 34:BA:451:A:OP1    | 34:BA:481:G:N2    | 2.40                     | 0.49              |
| 34:BA:552:U:H4'    | 45:BP:87:GLY:O    | 2.13                     | 0.49              |
| 34:BA:818:G:N2     | 34:BA:820:U:C5    | 2.81                     | 0.49              |
| 34:BA:1065:U:O2'   | 34:BA:1066:C:P    | 2.71                     | 0.49              |
| 34:BA:1084:G:H2'   | 34:BA:1085:U:H6   | 1.77                     | 0.49              |
| 34:BA:1269:A:H2'   | 34:BA:1270:C:C4'  | 2.09                     | 0.49              |
| 34:BA:1284:C:N1    | 34:BA:1285:A:N7   | 2.61                     | 0.49              |
| 34:BA:1305:G:P     | 34:BA:1305:G:O4'  | 2.71                     | 0.49              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1347:G:H22   | 34:BA:1373:G:H3'   | 1.78                     | 0.49              |
| 34:BA:1371:G:O2'   | 34:BA:1372:U:H5'   | 2.13                     | 0.49              |
| 34:BA:1469:G:N2    | 34:BA:1470:G:C4    | 2.81                     | 0.49              |
| 34:BA:1524:C:H5''  | 44:BO:120:ARG:HH22 | 1.78                     | 0.49              |
| 35:BF:78:GLN:NE2   | 35:BF:96:ARG:NH1   | 2.57                     | 0.49              |
| 35:BF:91:PRO:CG    | 35:BF:155:LEU:HD23 | 2.42                     | 0.49              |
| 35:BF:178:ARG:O    | 41:BL:71:GLY:O     | 2.30                     | 0.49              |
| 36:BG:28:GLN:HA    | 36:BG:30:ARG:NH1   | 2.27                     | 0.49              |
| 36:BG:124:ILE:HG23 | 36:BG:130:VAL:CG2  | 2.43                     | 0.49              |
| 36:BG:179:ARG:HG2  | 36:BG:206:GLU:OE1  | 2.13                     | 0.49              |
| 37:BH:127:THR:O    | 37:BH:146:ILE:CG2  | 2.59                     | 0.49              |
| 38:BI:40:ARG:CA    | 38:BI:68:GLU:OE1   | 2.61                     | 0.49              |
| 38:BI:145:LYS:O    | 38:BI:148:VAL:CB   | 2.50                     | 0.49              |
| 40:BK:15:ASP:OD2   | 40:BK:23:VAL:HG11  | 2.12                     | 0.49              |
| 40:BK:27:ILE:HG12  | 40:BK:43:PHE:CG    | 2.48                     | 0.49              |
| 40:BK:70:LYS:O     | 40:BK:138:LYS:CE   | 2.61                     | 0.49              |
| 42:BM:2:GLU:O      | 42:BM:21:PRO:HD2   | 2.13                     | 0.49              |
| 42:BM:97:LYS:HZ2   | 42:BM:102:LEU:HD22 | 1.77                     | 0.49              |
| 43:BN:43:ARG:O     | 43:BN:66:ARG:CB    | 2.47                     | 0.49              |
| 44:BO:18:ARG:HD3   | 44:BO:18:ARG:N     | 2.28                     | 0.49              |
| 44:BO:42:TRP:CE3   | 44:BO:43:SER:N     | 2.81                     | 0.49              |
| 44:BO:90:GLY:C     | 44:BO:92:GLU:N     | 2.67                     | 0.49              |
| 44:BO:120:ARG:HE   | 44:BO:126:ARG:HH21 | 1.60                     | 0.49              |
| 45:BP:32:PHE:C     | 45:BP:84:LEU:HD11  | 2.38                     | 0.49              |
| 46:BQ:5:ALA:CB     | 46:BQ:67:GLU:OE1   | 2.61                     | 0.49              |
| 46:BQ:64:TRP:CH2   | 46:BQ:66:LEU:HD13  | 2.48                     | 0.49              |
| 47:BR:22:THR:HG22  | 47:BR:33:VAL:HG23  | 1.94                     | 0.49              |
| 48:BS:62:GLN:N     | 48:BS:65:ARG:HH12  | 2.10                     | 0.49              |
| 49:BT:14:ASN:CA    | 49:BT:42:ARG:NH2   | 2.76                     | 0.49              |
| 50:BU:32:TYR:O     | 50:BU:34:LYS:N     | 2.46                     | 0.49              |
| 53:BX:81:LYS:HB3   | 53:BX:85:MET:CE    | 2.36                     | 0.49              |
| 56:BD:67:C:H6      | 56:BD:67:C:O5'     | 1.96                     | 0.49              |
| 56:BE:5:G:C5'      | 56:BE:6:G:N2       | 2.76                     | 0.49              |
| 57:BZ:102:PHE:HA   | 57:BZ:135:ALA:CB   | 2.42                     | 0.49              |
| 57:BZ:231:VAL:N    | 57:BZ:265:THR:O    | 2.41                     | 0.49              |
| 57:BZ:309:MET:CE   | 57:BZ:370:ILE:HD11 | 2.43                     | 0.49              |
| 57:BZ:514:HIS:HA   | 57:BZ:516:ALA:N    | 2.27                     | 0.49              |
| 1:AA:3:U:H6        | 1:AA:3:U:O5'       | 1.96                     | 0.48              |
| 1:AA:24:G:C4       | 1:AA:25:U:C5       | 3.01                     | 0.48              |
| 1:AA:179:G:C5'     | 28:Ad:32:LYS:HZ3   | 2.26                     | 0.48              |
| 1:AA:239:U:C1'     | 1:AA:259:G:N2      | 2.67                     | 0.48              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:AA:249:C:C5    | 1:AA:2395:C:OP1  | 2.66                     | 0.48              |
| 1:AA:250:G:C2'   | 1:AA:251:A:O5'   | 2.61                     | 0.48              |
| 1:AA:411:G:O4'   | 1:AA:2407:G:OP2  | 2.31                     | 0.48              |
| 1:AA:415:A:C2    | 1:AA:416:C:H1'   | 2.47                     | 0.48              |
| 1:AA:532:A:OP1   | 1:AA:532:A:C4'   | 2.57                     | 0.48              |
| 1:AA:588:U:O4'   | 6:AF:90:PHE:CD1  | 2.66                     | 0.48              |
| 1:AA:604:G:O2'   | 1:AA:605:C:O5'   | 2.31                     | 0.48              |
| 1:AA:642:G:C8    | 1:AA:642:G:C3'   | 2.96                     | 0.48              |
| 1:AA:678:C:C2    | 1:AA:679:C:C6    | 3.00                     | 0.48              |
| 1:AA:684:G:N1    | 1:AA:775:G:C5    | 2.81                     | 0.48              |
| 1:AA:688:U:P     | 28:Ad:2:LYS:HE2  | 2.52                     | 0.48              |
| 1:AA:700:G:C6    | 1:AA:701:G:N7    | 2.80                     | 0.48              |
| 1:AA:746:A:O2'   | 1:AA:747:U:OP1   | 2.30                     | 0.48              |
| 1:AA:800:A:O2'   | 1:AA:801:G:O5'   | 2.31                     | 0.48              |
| 1:AA:868:U:C4    | 1:AA:869:G:N7    | 2.80                     | 0.48              |
| 1:AA:917:A:C8    | 1:AA:918:A:H5'   | 2.48                     | 0.48              |
| 1:AA:917:A:N6    | 1:AA:918:A:N1    | 2.60                     | 0.48              |
| 1:AA:980:A:N3    | 1:AA:2037:G:O2'  | 2.42                     | 0.48              |
| 1:AA:1022:G:C5   | 1:AA:1139:G:N1   | 2.81                     | 0.48              |
| 1:AA:1046:A:C2   | 31:Al:11:ALA:HB3 | 2.47                     | 0.48              |
| 1:AA:1095:A:N7   | 1:AA:1097:U:O4   | 2.45                     | 0.48              |
| 1:AA:1196:C:H2'  | 1:AA:1197:G:C1'  | 2.42                     | 0.48              |
| 1:AA:1267:U:H3'  | 1:AA:1267:U:C6   | 2.47                     | 0.48              |
| 1:AA:1304:C:C4   | 1:AA:1305:C:C5   | 3.01                     | 0.48              |
| 1:AA:1511:A:H3'  | 1:AA:1512:G:H5'' | 1.95                     | 0.48              |
| 1:AA:1638:C:H4'  | 1:AA:2710:C:H1'  | 1.94                     | 0.48              |
| 1:AA:1655:A:H5'' | 5:AE:114:ALA:CA  | 2.42                     | 0.48              |
| 1:AA:1678:G:H8   | 1:AA:1678:G:O5'  | 1.97                     | 0.48              |
| 1:AA:1747:G:C2   | 1:AA:1748:G:C8   | 3.01                     | 0.48              |
| 1:AA:1747:G:H2'  | 1:AA:1748:G:H8   | 1.77                     | 0.48              |
| 1:AA:1815:A:N3   | 1:AA:1817:G:C6   | 2.81                     | 0.48              |
| 1:AA:1825:A:O2'  | 4:AD:252:TRP:CZ3 | 2.64                     | 0.48              |
| 1:AA:1936:A:C4   | 1:AA:1945:G:C5   | 3.00                     | 0.48              |
| 1:AA:1942:C:C5   | 1:AA:1943:U:C4   | 3.00                     | 0.48              |
| 1:AA:1996:C:C2'  | 1:AA:1997:G:H4'  | 2.38                     | 0.48              |
| 1:AA:2014:A:H2   | 1:AA:2613:U:C2   | 2.29                     | 0.48              |
| 1:AA:2021:C:O4'  | 1:AA:2021:C:OP1  | 2.31                     | 0.48              |
| 1:AA:2056:G:O5'  | 1:AA:2057:A:P    | 2.71                     | 0.48              |
| 1:AA:2076:U:H2'  | 1:AA:2076:U:O2   | 2.12                     | 0.48              |
| 1:AA:2078:C:H4'  | 1:AA:2433:A:O2'  | 2.12                     | 0.48              |
| 1:AA:2103:C:C2   | 1:AA:2104:G:C8   | 3.01                     | 0.48              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2297:C:N3     | 1:AA:2333:A:N6    | 2.60                     | 0.48              |
| 1:AA:2349:G:C4     | 1:AA:2369:A:C2    | 3.01                     | 0.48              |
| 1:AA:2415:G:C2     | 1:AA:2416:C:C2    | 3.00                     | 0.48              |
| 1:AA:2418:A:C2     | 1:AA:2419:U:C2    | 3.00                     | 0.48              |
| 1:AA:2626:C:C2'    | 1:AA:2627:G:O4'   | 2.61                     | 0.48              |
| 1:AA:2656:U:C2'    | 1:AA:2657:A:H5''  | 2.40                     | 0.48              |
| 1:AA:2827:C:H2'    | 1:AA:2828:C:C5'   | 2.43                     | 0.48              |
| 1:AA:2872:G:C2     | 1:AA:2873:A:C6    | 3.00                     | 0.48              |
| 2:AB:15:A:C5'      | 2:AB:16:G:O5'     | 2.61                     | 0.48              |
| 2:AB:100:G:H2'     | 2:AB:101:A:O4'    | 2.13                     | 0.48              |
| 5:AE:37:ARG:O      | 5:AE:39:PRO:CD    | 2.60                     | 0.48              |
| 5:AE:55:ASN:HA     | 5:AE:58:ARG:NH2   | 2.28                     | 0.48              |
| 5:AE:55:ASN:O      | 5:AE:56:PRO:C     | 2.56                     | 0.48              |
| 5:AE:108:SER:OG    | 5:AE:163:GLU:O    | 2.31                     | 0.48              |
| 5:AE:128:SER:O     | 5:AE:129:HIS:C    | 2.56                     | 0.48              |
| 5:AE:182:LEU:HD23  | 5:AE:182:LEU:C    | 2.38                     | 0.48              |
| 6:AF:33:LEU:HD23   | 6:AF:112:MET:SD   | 2.52                     | 0.48              |
| 6:AF:52:LYS:NZ     | 6:AF:88:VAL:HG21  | 2.28                     | 0.48              |
| 6:AF:103:LYS:HA    | 6:AF:106:ARG:CD   | 2.42                     | 0.48              |
| 7:AG:9:ARG:HH11    | 7:AG:9:ARG:CG     | 2.25                     | 0.48              |
| 7:AG:35:GLU:HG2    | 7:AG:36:LYS:N     | 2.28                     | 0.48              |
| 7:AG:103:LEU:C     | 7:AG:103:LEU:HD12 | 2.38                     | 0.48              |
| 7:AG:111:LEU:HD23  | 7:AG:178:PHE:HD2  | 1.77                     | 0.48              |
| 8:AH:152:ARG:HH21  | 8:AH:152:ARG:CG   | 2.26                     | 0.48              |
| 10:AL:78:ARG:HD2   | 10:AL:78:ARG:H    | 1.78                     | 0.48              |
| 10:AL:107:ARG:C    | 10:AL:109:LYS:N   | 2.65                     | 0.48              |
| 11:AM:97:PRO:HD3   | 11:AM:102:ARG:NH1 | 2.28                     | 0.48              |
| 11:AM:116:GLY:HA3  | 11:AM:121:LYS:C   | 2.37                     | 0.48              |
| 11:AM:123:LEU:HD12 | 11:AM:130:PHE:CZ  | 2.48                     | 0.48              |
| 12:AN:16:ARG:O     | 12:AN:17:LEU:HD12 | 2.12                     | 0.48              |
| 12:AN:85:LYS:HZ1   | 22:AX:10:THR:HG21 | 1.77                     | 0.48              |
| 13:AO:67:LEU:O     | 13:AO:67:LEU:HD22 | 2.13                     | 0.48              |
| 15:AQ:76:PHE:CZ    | 15:AQ:78:LEU:CD1  | 2.94                     | 0.48              |
| 16:AR:99:ALA:HB2   | 16:AR:106:PHE:CD1 | 2.48                     | 0.48              |
| 17:AS:52:VAL:O     | 17:AS:55:ALA:N    | 2.46                     | 0.48              |
| 17:AS:73:SER:C     | 17:AS:74:LYS:HD3  | 2.38                     | 0.48              |
| 18:AT:25:ARG:HD3   | 18:AT:74:ALA:C    | 2.38                     | 0.48              |
| 21:AW:60:GLU:HG3   | 21:AW:69:THR:HG22 | 1.95                     | 0.48              |
| 22:AX:44:ARG:O     | 22:AX:77:ARG:HG3  | 2.13                     | 0.48              |
| 22:AX:77:ARG:C     | 22:AX:78:TYR:CD1  | 2.91                     | 0.48              |
| 24:AZ:50:VAL:HG13  | 24:AZ:53:LEU:CB   | 2.42                     | 0.48              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:Aa:56:VAL:CG1   | 25:Aa:57:GLU:H     | 2.09                     | 0.48              |
| 28:Ad:10:ARG:HG2   | 28:Ad:14:LYS:HE3   | 1.95                     | 0.48              |
| 28:Ad:40:TRP:O     | 28:Ad:41:ARG:CB    | 2.58                     | 0.48              |
| 29:Ae:29:LYS:C     | 29:Ae:34:TRP:CZ2   | 2.91                     | 0.48              |
| 32:AJ:24:GLY:C     | 32:AJ:26:ALA:H     | 2.21                     | 0.48              |
| 32:AJ:37:PHE:CZ    | 32:AJ:63:ARG:NE    | 2.79                     | 0.48              |
| 32:AJ:79:ARG:NH1   | 32:AJ:84:LEU:CD2   | 2.49                     | 0.48              |
| 34:BA:60:A:H62     | 34:BA:110:C:N4     | 2.10                     | 0.48              |
| 34:BA:156:G:C6     | 34:BA:157:G:N7     | 2.80                     | 0.48              |
| 34:BA:277:C:P      | 50:BU:68:ARG:HH12  | 2.36                     | 0.48              |
| 34:BA:423:G:N2     | 34:BA:424:G:C4     | 2.80                     | 0.48              |
| 34:BA:570:G:O3'    | 34:BA:819:A:H2'    | 2.13                     | 0.48              |
| 34:BA:611:A:H2'    | 34:BA:612:C:C6     | 2.46                     | 0.48              |
| 34:BA:675:A:N3     | 44:BO:116:HIS:CB   | 2.76                     | 0.48              |
| 34:BA:819:A:C5'    | 34:BA:820:U:OP2    | 2.54                     | 0.48              |
| 34:BA:886:G:HO2'   | 34:BA:887:G:H5'    | 1.70                     | 0.48              |
| 34:BA:1014:A:C2'   | 52:BW:34:TRP:CZ3   | 2.96                     | 0.48              |
| 34:BA:1110:A:C2'   | 34:BA:1111:A:H5'   | 2.31                     | 0.48              |
| 34:BA:1213:A:C5    | 34:BA:1215:G:C6    | 3.01                     | 0.48              |
| 34:BA:1274:G:H21   | 34:BA:1275:A:H62   | 1.59                     | 0.48              |
| 34:BA:1309:G:H21   | 34:BA:1328:C:C2'   | 2.22                     | 0.48              |
| 34:BA:1400:C:OP1   | 34:BA:1400:C:C6    | 2.66                     | 0.48              |
| 34:BA:1480:G:H2'   | 34:BA:1481:U:C5'   | 2.43                     | 0.48              |
| 35:BF:50:GLU:CD    | 35:BF:200:ILE:C    | 2.81                     | 0.48              |
| 35:BF:69:LEU:CD2   | 35:BF:91:PRO:CB    | 2.90                     | 0.48              |
| 35:BF:80:ILE:HB    | 35:BF:208:ILE:CD1  | 2.42                     | 0.48              |
| 35:BF:104:ASN:OD1  | 35:BF:104:ASN:O    | 2.31                     | 0.48              |
| 36:BG:11:ARG:HH22  | 36:BG:178:LEU:HA   | 1.77                     | 0.48              |
| 36:BG:98:ASN:C     | 36:BG:99:VAL:CG1   | 2.86                     | 0.48              |
| 36:BG:108:ASN:ND2  | 36:BG:111:LEU:CD1  | 2.72                     | 0.48              |
| 37:BH:118:ARG:HA   | 37:BH:136:PRO:HB3  | 1.95                     | 0.48              |
| 37:BH:125:HIS:CB   | 37:BH:152:SER:HB2  | 2.36                     | 0.48              |
| 37:BH:144:ASP:O    | 37:BH:184:LYS:HA   | 2.13                     | 0.48              |
| 37:BH:148:VAL:HG21 | 37:BH:162:LEU:HD21 | 1.93                     | 0.48              |
| 37:BH:187:ARG:HG3  | 37:BH:188:LEU:N    | 2.28                     | 0.48              |
| 38:BI:54:ALA:O     | 38:BI:57:LYS:HB3   | 2.13                     | 0.48              |
| 38:BI:145:LYS:HA   | 38:BI:148:VAL:HG21 | 1.94                     | 0.48              |
| 39:BJ:41:GLU:O     | 39:BJ:42:GLU:CB    | 2.60                     | 0.48              |
| 39:BJ:57:GLN:NE2   | 39:BJ:57:GLN:O     | 2.45                     | 0.48              |
| 40:BK:71:PRO:CG    | 40:BK:96:GLN:HG3   | 2.40                     | 0.48              |
| 40:BK:94:ARG:O     | 40:BK:97:GLN:HB3   | 2.13                     | 0.48              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 40:BK:99:LEU:O    | 40:BK:99:LEU:CD2   | 2.61                     | 0.48              |
| 41:BL:92:ARG:N    | 41:BL:92:ARG:CD    | 2.75                     | 0.48              |
| 42:BM:9:ARG:HD2   | 42:BM:14:VAL:CG1   | 2.43                     | 0.48              |
| 42:BM:10:ARG:O    | 42:BM:11:LYS:C     | 2.56                     | 0.48              |
| 42:BM:85:LEU:HD12 | 42:BM:89:ASN:ND2   | 2.28                     | 0.48              |
| 42:BM:116:LYS:HD3 | 42:BM:116:LYS:N    | 2.27                     | 0.48              |
| 43:BN:49:VAL:O    | 43:BN:60:ARG:HA    | 2.12                     | 0.48              |
| 44:BO:29:ILE:HG22 | 44:BO:44:SER:OG    | 2.13                     | 0.48              |
| 44:BO:84:VAL:O    | 44:BO:85:ARG:HD3   | 2.13                     | 0.48              |
| 44:BO:102:GLY:O   | 44:BO:104:GLN:O    | 2.31                     | 0.48              |
| 45:BP:42:THR:CA   | 45:BP:55:VAL:HG23  | 2.42                     | 0.48              |
| 46:BQ:8:GLU:CG    | 46:BQ:21:TYR:C     | 2.86                     | 0.48              |
| 46:BQ:36:LYS:NZ   | 46:BQ:59:TYR:CB    | 2.73                     | 0.48              |
| 48:BS:8:LYS:HE2   | 48:BS:9:GLN:HE22   | 1.77                     | 0.48              |
| 49:BT:6:LEU:CG    | 49:BT:17:TYR:HD2   | 2.26                     | 0.48              |
| 49:BT:26:ARG:HB3  | 49:BT:30:GLY:HA3   | 1.95                     | 0.48              |
| 52:BW:30:LEU:CD1  | 52:BW:59:PRO:HB3   | 2.43                     | 0.48              |
| 56:BD:1:G:C5      | 56:BD:2:C:C4       | 3.01                     | 0.48              |
| 56:BE:5:G:H1'     | 56:BE:7:A:C4'      | 2.42                     | 0.48              |
| 57:BZ:11:ILE:HG13 | 57:BZ:112:VAL:HG12 | 1.93                     | 0.48              |
| 57:BZ:18:LYS:C    | 57:BZ:19:THR:CG2   | 2.86                     | 0.48              |
| 57:BZ:27:GLN:N    | 57:BZ:29:SER:H     | 2.10                     | 0.48              |
| 57:BZ:146:ASP:C   | 57:BZ:149:VAL:HG12 | 2.37                     | 0.48              |
| 57:BZ:381:ALA:HB1 | 57:BZ:577:LEU:C    | 2.38                     | 0.48              |
| 57:BZ:390:ARG:CB  | 57:BZ:391:GLU:CB   | 2.89                     | 0.48              |
| 1:AA:2:G:C5       | 1:AA:2902:C:C5     | 2.74                     | 0.48              |
| 1:AA:14:A:C8      | 1:AA:15:G:O4'      | 2.66                     | 0.48              |
| 1:AA:137(A):G:C6  | 1:AA:138:G:O6      | 2.67                     | 0.48              |
| 1:AA:149:A:H2'    | 1:AA:150:C:C5'     | 2.41                     | 0.48              |
| 1:AA:182:A:O2'    | 1:AA:183:C:O4'     | 2.29                     | 0.48              |
| 1:AA:243:U:C4     | 1:AA:244:A:C8      | 3.00                     | 0.48              |
| 1:AA:245:G:C4     | 1:AA:246:C:C5      | 2.95                     | 0.48              |
| 1:AA:247:G:C4'    | 1:AA:386:G:C2      | 2.95                     | 0.48              |
| 1:AA:292:C:O5'    | 1:AA:293:U:O4      | 2.31                     | 0.48              |
| 1:AA:459:U:OP2    | 28:Ad:40:TRP:CD2   | 2.66                     | 0.48              |
| 1:AA:583:G:H2'    | 1:AA:584:C:O5'     | 2.14                     | 0.48              |
| 1:AA:600:G:C1'    | 6:AF:105:VAL:HG21  | 2.43                     | 0.48              |
| 1:AA:616:A:H1'    | 6:AF:180:GLY:CA    | 2.42                     | 0.48              |
| 1:AA:675:A:C5'    | 6:AF:67:GLN:NE2    | 2.76                     | 0.48              |
| 1:AA:715:G:C4     | 1:AA:716:A:C6      | 3.01                     | 0.48              |
| 1:AA:734:A:C2     | 1:AA:735:A:N9      | 2.80                     | 0.48              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:AA:820:A:C2    | 1:AA:943:U:H2'   | 2.48                     | 0.48              |
| 1:AA:904:C:O4'   | 21:AW:169:GLU:CD | 2.55                     | 0.48              |
| 1:AA:918:A:H2    | 1:AA:919:G:C4    | 2.30                     | 0.48              |
| 1:AA:956:G:OP1   | 12:AN:87:LYS:HG3 | 2.13                     | 0.48              |
| 1:AA:980:A:N6    | 1:AA:1135:C:H4'  | 2.28                     | 0.48              |
| 1:AA:997:G:H2'   | 1:AA:998:C:H5    | 1.75                     | 0.48              |
| 1:AA:1077:A:H2   | 32:AJ:133:SER:CA | 2.27                     | 0.48              |
| 1:AA:1148:A:N6   | 1:AA:1149:G:O6   | 2.46                     | 0.48              |
| 1:AA:1161:C:O2'  | 1:AA:1162:G:H5'  | 2.14                     | 0.48              |
| 1:AA:1189:A:C3'  | 1:AA:1190:G:H5'  | 2.43                     | 0.48              |
| 1:AA:1250:G:O3'  | 1:AA:1251:C:C4'  | 2.61                     | 0.48              |
| 1:AA:1263:U:C5'  | 26:Ab:10:LYS:HZ3 | 2.26                     | 0.48              |
| 1:AA:1284:A:C2   | 1:AA:1285:G:N2   | 2.81                     | 0.48              |
| 1:AA:1284:A:C5   | 1:AA:1285:G:N1   | 2.81                     | 0.48              |
| 1:AA:1326:U:O4   | 1:AA:1648:C:O2'  | 2.31                     | 0.48              |
| 1:AA:1343:G:H2'  | 1:AA:1384:A:C2   | 2.48                     | 0.48              |
| 1:AA:1401:G:H8   | 1:AA:1401:G:O5'  | 1.95                     | 0.48              |
| 1:AA:1472:A:C2'  | 1:AA:1473:G:O5'  | 2.61                     | 0.48              |
| 1:AA:1524:G:C4   | 1:AA:1525:G:N7   | 2.82                     | 0.48              |
| 1:AA:1624:G:N3   | 1:AA:1625:C:N4   | 2.60                     | 0.48              |
| 1:AA:1746:G:C2'  | 1:AA:1747:G:O4'  | 2.61                     | 0.48              |
| 1:AA:1762:A:H5'  | 1:AA:1763:G:OP2  | 2.13                     | 0.48              |
| 1:AA:1797:C:N3   | 1:AA:1798:U:O4   | 2.47                     | 0.48              |
| 1:AA:1815:A:HO2' | 1:AA:1816:G:H4'  | 1.78                     | 0.48              |
| 1:AA:1869:G:N3   | 1:AA:1878:G:O6   | 2.47                     | 0.48              |
| 1:AA:1970:A:HO2' | 1:AA:1971:A:P    | 2.33                     | 0.48              |
| 1:AA:2019:A:C6   | 1:AA:2020:A:C4   | 3.01                     | 0.48              |
| 1:AA:2041:U:C6   | 1:AA:2041:U:OP2  | 2.66                     | 0.48              |
| 1:AA:2044:C:C4   | 1:AA:2625:G:C2   | 3.01                     | 0.48              |
| 1:AA:2048:G:N2   | 1:AA:2049:G:C4   | 2.82                     | 0.48              |
| 1:AA:2051:A:O2'  | 1:AA:2052:G:P    | 2.71                     | 0.48              |
| 1:AA:2053:G:N1   | 1:AA:2054:A:C5   | 2.80                     | 0.48              |
| 1:AA:2093:G:C2'  | 1:AA:2094:G:O5'  | 2.61                     | 0.48              |
| 1:AA:2113:U:N3   | 1:AA:2169:A:N6   | 2.60                     | 0.48              |
| 1:AA:2125:G:C4   | 3:AC:218:MET:N   | 2.31                     | 0.48              |
| 1:AA:2176:A:O5'  | 3:AC:221:SER:N   | 2.44                     | 0.48              |
| 1:AA:2186:G:C2   | 1:AA:2187:G:C5   | 3.01                     | 0.48              |
| 1:AA:2213:U:C3'  | 1:AA:2213:U:C2   | 2.96                     | 0.48              |
| 1:AA:2258:C:C4   | 1:AA:2426:A:O4'  | 2.66                     | 0.48              |
| 1:AA:2322:A:O4'  | 1:AA:2322:A:OP1  | 2.31                     | 0.48              |
| 1:AA:2346:A:C5'  | 1:AA:2383:G:O4'  | 2.60                     | 0.48              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:2352:A:H2     | 22:AX:33:ALA:O     | 1.96                     | 0.48              |
| 1:AA:2573:C:P      | 1:AA:2574:G:OP1    | 2.71                     | 0.48              |
| 1:AA:2588:G:C5     | 1:AA:2589:A:N7     | 2.80                     | 0.48              |
| 1:AA:2648:C:C2     | 1:AA:2649:U:C4     | 3.01                     | 0.48              |
| 1:AA:2656:U:N3     | 1:AA:2665:A:N6     | 2.61                     | 0.48              |
| 1:AA:2705:A:H2'    | 1:AA:2706:G:O5'    | 2.13                     | 0.48              |
| 1:AA:2728:U:H2'    | 1:AA:2729:G:H8     | 1.79                     | 0.48              |
| 1:AA:2753:A:C2'    | 1:AA:2754:U:O5'    | 2.61                     | 0.48              |
| 1:AA:2771:C:H2'    | 1:AA:2772:C:H6     | 1.75                     | 0.48              |
| 1:AA:2799:A:C1'    | 1:AA:2802:G:N1     | 2.76                     | 0.48              |
| 1:AA:2818:G:H4'    | 1:AA:2837:G:C4'    | 2.43                     | 0.48              |
| 2:AB:81:G:C5       | 2:AB:82:G:N7       | 2.80                     | 0.48              |
| 2:AB:112:G:N3      | 2:AB:112:G:C2'     | 2.74                     | 0.48              |
| 3:AC:49:ILE:HG13   | 3:AC:50:ASP:N      | 2.26                     | 0.48              |
| 3:AC:117:PRO:HD3   | 3:AC:146:GLY:O     | 2.13                     | 0.48              |
| 4:AD:9:TYR:CE1     | 4:AD:25:THR:HG21   | 2.48                     | 0.48              |
| 4:AD:23:GLU:OE1    | 4:AD:24:ILE:O      | 2.30                     | 0.48              |
| 4:AD:24:ILE:CG2    | 4:AD:25:THR:N      | 2.76                     | 0.48              |
| 4:AD:65:ILE:HG23   | 4:AD:104:TYR:O     | 2.14                     | 0.48              |
| 4:AD:92:ILE:CD1    | 4:AD:104:TYR:CD1   | 2.96                     | 0.48              |
| 5:AE:81:ILE:CG2    | 5:AE:82:ARG:HG2    | 2.40                     | 0.48              |
| 6:AF:80:ALA:O      | 6:AF:81:PRO:C      | 2.55                     | 0.48              |
| 6:AF:110:LEU:HD21  | 6:AF:186:ILE:HD11  | 1.95                     | 0.48              |
| 7:AG:104:GLU:O     | 7:AG:105:LYS:C     | 2.56                     | 0.48              |
| 9:AK:9:VAL:O       | 9:AK:11:PRO:HD3    | 2.13                     | 0.48              |
| 9:AK:23:LEU:HB2    | 9:AK:63:THR:HG23   | 1.94                     | 0.48              |
| 9:AK:139:GLU:C     | 9:AK:140:VAL:HG23  | 2.38                     | 0.48              |
| 10:AL:12:ASP:O     | 10:AL:94:ARG:NH2   | 2.46                     | 0.48              |
| 10:AL:105:GLU:O    | 10:AL:106:LEU:C    | 2.56                     | 0.48              |
| 10:AL:122:LEU:HB2  | 15:AQ:71:GLY:HA3   | 1.95                     | 0.48              |
| 11:AM:130:PHE:C    | 11:AM:134:ALA:HB3  | 2.39                     | 0.48              |
| 12:AN:42:ILE:HD13  | 12:AN:43:THR:O     | 2.13                     | 0.48              |
| 13:AO:67:LEU:C     | 13:AO:69:ASP:N     | 2.71                     | 0.48              |
| 13:AO:116:LEU:HD23 | 13:AO:116:LEU:H    | 1.77                     | 0.48              |
| 15:AQ:51:ARG:NH1   | 15:AQ:114:LEU:CD1  | 2.76                     | 0.48              |
| 15:AQ:54:ARG:H     | 15:AQ:64:ARG:CB    | 2.25                     | 0.48              |
| 15:AQ:108:ARG:HH11 | 15:AQ:108:ARG:N    | 2.10                     | 0.48              |
| 16:AR:69:CYS:SG    | 16:AR:70:ARG:N     | 2.85                     | 0.48              |
| 16:AR:96:ALA:O     | 16:AR:100:VAL:HG23 | 2.12                     | 0.48              |
| 16:AR:108:GLU:CA   | 16:AR:111:GLU:HG2  | 2.43                     | 0.48              |
| 17:AS:20:LEU:HB2   | 17:AS:93:GLU:OE2   | 2.12                     | 0.48              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 18:AT:21:VAL:CG2   | 18:AT:75:TYR:HD2   | 2.25                     | 0.48              |
| 18:AT:76:VAL:HG22  | 18:AT:102:HIS:O    | 2.13                     | 0.48              |
| 20:AV:53:PRO:HG2   | 20:AV:55:TYR:O     | 2.12                     | 0.48              |
| 20:AV:97:ARG:CA    | 20:AV:101:LYS:CG   | 2.89                     | 0.48              |
| 21:AW:39:VAL:CG2   | 21:AW:44:PHE:CE2   | 2.87                     | 0.48              |
| 21:AW:102:LEU:HB2  | 21:AW:124:ILE:CA   | 2.41                     | 0.48              |
| 23:AY:28:MET:HE2   | 23:AY:32:PHE:CZ    | 2.47                     | 0.48              |
| 25:Aa:29:PRO:O     | 25:Aa:31:ILE:HD12  | 2.12                     | 0.48              |
| 25:Aa:57:GLU:O     | 25:Aa:60:GLN:HG3   | 2.12                     | 0.48              |
| 27:Ac:22:ALA:O     | 27:Ac:23:THR:CB    | 2.61                     | 0.48              |
| 28:Ad:10:ARG:O     | 28:Ad:11:LYS:C     | 2.56                     | 0.48              |
| 28:Ad:41:ARG:CG    | 28:Ad:42:LEU:N     | 2.73                     | 0.48              |
| 29:Ae:16:ILE:HG22  | 29:Ae:21:LYS:O     | 2.12                     | 0.48              |
| 32:AJ:44:ALA:CB    | 32:AJ:66:THR:CG2   | 2.88                     | 0.48              |
| 32:AJ:55:VAL:CB    | 32:AJ:56:GLU:HA    | 2.28                     | 0.48              |
| 34:BA:68:G:H21     | 34:BA:152:A:H1'    | 1.78                     | 0.48              |
| 34:BA:84:U:H2'     | 34:BA:85:U:C1'     | 2.43                     | 0.48              |
| 34:BA:123:C:O2'    | 34:BA:290:C:H1'    | 2.13                     | 0.48              |
| 34:BA:138:G:C2     | 34:BA:226:G:C4     | 3.01                     | 0.48              |
| 34:BA:173:U:C5'    | 34:BA:197:A:H1'    | 2.43                     | 0.48              |
| 34:BA:181:G:C2'    | 34:BA:182:U:OP2    | 2.59                     | 0.48              |
| 34:BA:186(A):C:C2' | 34:BA:186(B):C:H5' | 2.44                     | 0.48              |
| 34:BA:186(B):C:H4' | 53:BX:89:ARG:CZ    | 2.42                     | 0.48              |
| 34:BA:262:A:C2     | 34:BA:263:A:C6     | 3.01                     | 0.48              |
| 34:BA:328:C:O2'    | 34:BA:329:A:OP2    | 2.31                     | 0.48              |
| 34:BA:345:C:H5'    | 34:BA:346:G:C4     | 2.48                     | 0.48              |
| 34:BA:685:G:H2'    | 34:BA:686:U:H6     | 1.76                     | 0.48              |
| 34:BA:701:C:H4'    | 34:BA:702:A:OP2    | 2.12                     | 0.48              |
| 34:BA:745:C:H2'    | 34:BA:746:A:H8     | 1.77                     | 0.48              |
| 34:BA:769:G:O2'    | 34:BA:770:C:C5'    | 2.61                     | 0.48              |
| 34:BA:852:G:C6     | 34:BA:853:G:N7     | 2.81                     | 0.48              |
| 34:BA:901:A:N3     | 34:BA:902:G:C1'    | 2.74                     | 0.48              |
| 34:BA:1251:A:C2    | 34:BA:1252:A:C6    | 3.01                     | 0.48              |
| 34:BA:1300:G:C2'   | 34:BA:1301:U:OP2   | 2.61                     | 0.48              |
| 34:BA:1399:C:O2    | 34:BA:1401:G:C5    | 2.66                     | 0.48              |
| 34:BA:1431:C:H2'   | 34:BA:1432:G:C4'   | 2.42                     | 0.48              |
| 34:BA:1512:U:O2'   | 34:BA:1513:A:H5'   | 2.13                     | 0.48              |
| 35:BF:95:GLN:HG3   | 35:BF:148:TYR:HB2  | 1.91                     | 0.48              |
| 35:BF:149:LEU:C    | 35:BF:149:LEU:HD23 | 2.38                     | 0.48              |
| 35:BF:213:LEU:HD23 | 35:BF:217:ARG:HD3  | 1.95                     | 0.48              |
| 36:BG:64:VAL:O     | 36:BG:64:VAL:HG12  | 2.13                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 36:BG:179:ARG:CD  | 36:BG:206:GLU:OE1 | 2.61                     | 0.48              |
| 37:BH:54:TYR:O    | 37:BH:56:VAL:N    | 2.46                     | 0.48              |
| 37:BH:135:LEU:CD1 | 37:BH:138:TYR:HB2 | 2.39                     | 0.48              |
| 37:BH:207:TYR:O   | 37:BH:208:SER:C   | 2.57                     | 0.48              |
| 38:BI:74:GLY:O    | 38:BI:115:VAL:CG1 | 2.60                     | 0.48              |
| 39:BJ:7:ASN:O     | 39:BJ:89:MET:O    | 2.30                     | 0.48              |
| 40:BK:10:ARG:CB   | 40:BK:10:ARG:NH1  | 2.76                     | 0.48              |
| 41:BL:40:ALA:O    | 41:BL:41:ARG:C    | 2.57                     | 0.48              |
| 42:BM:75:ASP:O    | 42:BM:78:LYS:HB3  | 2.13                     | 0.48              |
| 44:BO:22:HIS:HD2  | 44:BO:23:ALA:N    | 2.11                     | 0.48              |
| 44:BO:31:THR:HG22 | 44:BO:32:ILE:N    | 2.27                     | 0.48              |
| 46:BQ:14:ARG:CZ   | 46:BQ:42:ALA:HA   | 2.43                     | 0.48              |
| 47:BR:48:ALA:O    | 47:BR:51:GLY:N    | 2.46                     | 0.48              |
| 50:BU:18:THR:O    | 50:BU:19:VAL:HG13 | 2.13                     | 0.48              |
| 50:BU:44:ALA:HB2  | 50:BU:59:ILE:HD13 | 1.95                     | 0.48              |
| 52:BW:24:ALA:C    | 52:BW:26:GLY:N    | 2.70                     | 0.48              |
| 52:BW:30:LEU:HA   | 52:BW:48:THR:C    | 2.38                     | 0.48              |
| 56:BD:67:C:C5'    | 56:BD:68:C:C5'    | 2.86                     | 0.48              |
| 57:BZ:6:ARG:HE    | 57:BZ:194:VAL:C   | 2.21                     | 0.48              |
| 57:BZ:12:ALA:C    | 57:BZ:109:THR:CG2 | 2.68                     | 0.48              |
| 57:BZ:35:ARG:N    | 57:BZ:36:ALA:HB3  | 2.28                     | 0.48              |
| 57:BZ:134:GLY:O   | 57:BZ:135:ALA:HB2 | 2.12                     | 0.48              |
| 57:BZ:233:PRO:HB3 | 57:BZ:235:GLN:O   | 2.13                     | 0.48              |
| 57:BZ:274:VAL:C   | 57:BZ:276:ILE:H   | 2.21                     | 0.48              |
| 57:BZ:394:GLY:O   | 57:BZ:395:ARG:HB3 | 2.13                     | 0.48              |
| 57:BZ:407:VAL:CA  | 57:BZ:436:ARG:NH1 | 2.77                     | 0.48              |
| 57:BZ:562:ARG:CG  | 57:BZ:563:MET:N   | 2.75                     | 0.48              |
| 1:AA:66:C:N4      | 1:AA:67:U:O4      | 2.47                     | 0.48              |
| 1:AA:193:U:H4'    | 1:AA:803:U:C5'    | 2.42                     | 0.48              |
| 1:AA:209:C:C5'    | 1:AA:681:G:H4'    | 2.41                     | 0.48              |
| 1:AA:215:G:HO2'   | 1:AA:216:A:P      | 2.36                     | 0.48              |
| 1:AA:283:A:H2'    | 1:AA:284:U:H5'    | 1.93                     | 0.48              |
| 1:AA:344:G:C8     | 1:AA:344:G:H3'    | 2.48                     | 0.48              |
| 1:AA:425:G:C2     | 1:AA:426:C:C5     | 3.01                     | 0.48              |
| 1:AA:464:U:C1'    | 28:Ad:12:ARG:NH2  | 2.76                     | 0.48              |
| 1:AA:578:A:H2     | 16:AR:34:LYS:NZ   | 2.03                     | 0.48              |
| 1:AA:613:U:C5     | 1:AA:614:U:O2     | 2.64                     | 0.48              |
| 1:AA:649:G:O2'    | 29:Ae:17:THR:HG21 | 2.14                     | 0.48              |
| 1:AA:656:G:C5     | 1:AA:657:U:C4     | 3.01                     | 0.48              |
| 1:AA:692:C:HO2'   | 1:AA:693:C:H5'    | 1.78                     | 0.48              |
| 1:AA:717:G:N2     | 1:AA:718:A:H1'    | 2.27                     | 0.48              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:AA:1036:G:C2   | 1:AA:1120:G:C2   | 3.02                     | 0.48              |
| 1:AA:1044:G:O2'  | 1:AA:1046:A:H5'  | 2.14                     | 0.48              |
| 1:AA:1047:G:H2'  | 1:AA:1047:G:N3   | 2.20                     | 0.48              |
| 1:AA:1139:G:OP1  | 9:AK:23:LEU:HB2  | 2.13                     | 0.48              |
| 1:AA:1169:G:H2'  | 1:AA:1170:G:C1'  | 2.44                     | 0.48              |
| 1:AA:1210:A:C1'  | 1:AA:1212:G:H21  | 2.25                     | 0.48              |
| 1:AA:1277:G:O2'  | 13:AO:24:GLN:NE2 | 2.41                     | 0.48              |
| 1:AA:1288:U:C2   | 1:AA:1327:C:O2   | 2.66                     | 0.48              |
| 1:AA:1342:A:C4   | 1:AA:1397:U:H1'  | 2.48                     | 0.48              |
| 1:AA:1343:G:H1'  | 1:AA:1597:A:N1   | 2.28                     | 0.48              |
| 1:AA:1368:G:O6   | 25:Aa:2:LYS:NZ   | 2.45                     | 0.48              |
| 1:AA:1394:U:H5'' | 1:AA:1603:A:O3'  | 2.13                     | 0.48              |
| 1:AA:1408:C:C2   | 1:AA:1409:C:C5   | 3.01                     | 0.48              |
| 1:AA:1456:G:N3   | 1:AA:1457:A:C8   | 2.82                     | 0.48              |
| 1:AA:1759:A:N1   | 1:AA:1760:A:C2   | 2.80                     | 0.48              |
| 1:AA:1790:C:H4'  | 4:AD:213:ARG:CZ  | 2.40                     | 0.48              |
| 1:AA:1853:A:H2'  | 1:AA:1854:A:O4'  | 2.13                     | 0.48              |
| 1:AA:1890:A:H8   | 1:AA:1890:A:O5'  | 1.96                     | 0.48              |
| 1:AA:1897:G:C6   | 1:AA:1898:U:C2   | 3.01                     | 0.48              |
| 1:AA:1921:G:H2'  | 1:AA:1922:G:C8   | 2.48                     | 0.48              |
| 1:AA:2051:A:H3'  | 1:AA:2578:G:C5'  | 2.43                     | 0.48              |
| 1:AA:2157:G:H4'  | 1:AA:2158:A:OP1  | 2.13                     | 0.48              |
| 1:AA:2163:C:OP1  | 1:AA:2172:U:C5   | 2.67                     | 0.48              |
| 1:AA:2168:G:N9   | 1:AA:2170:A:OP2  | 2.46                     | 0.48              |
| 1:AA:2305:A:H1'  | 7:AG:155:MET:N   | 2.28                     | 0.48              |
| 1:AA:2307:G:OP2  | 1:AA:2307:G:O4'  | 2.31                     | 0.48              |
| 1:AA:2354:G:H1'  | 22:AX:34:GLY:O   | 2.14                     | 0.48              |
| 1:AA:2406:U:O5'  | 1:AA:2407:G:OP1  | 2.32                     | 0.48              |
| 1:AA:2526:G:C2'  | 1:AA:2527:C:O5'  | 2.61                     | 0.48              |
| 1:AA:2532:G:H2'  | 1:AA:2664:G:HO2' | 1.79                     | 0.48              |
| 1:AA:2573:C:H3'  | 1:AA:2573:C:C6   | 2.48                     | 0.48              |
| 1:AA:2619:C:C5'  | 5:AE:152:LYS:CA  | 2.90                     | 0.48              |
| 1:AA:2693:A:O2'  | 1:AA:2848:G:C5'  | 2.61                     | 0.48              |
| 1:AA:2777:G:O5'  | 1:AA:2777:G:H8   | 1.93                     | 0.48              |
| 1:AA:2787:C:C2   | 5:AE:61:ARG:CZ   | 2.96                     | 0.48              |
| 1:AA:2788:C:N3   | 1:AA:2789:C:C5   | 2.69                     | 0.48              |
| 2:AB:99:A:N6     | 2:AB:100:G:C6    | 2.82                     | 0.48              |
| 2:AB:100:G:C2'   | 2:AB:101:A:C8    | 2.88                     | 0.48              |
| 4:AD:9:TYR:O     | 4:AD:10:THR:CB   | 2.61                     | 0.48              |
| 4:AD:77:ALA:O    | 4:AD:116:GLN:HA  | 2.13                     | 0.48              |
| 4:AD:89:SER:HB2  | 4:AD:202:LYS:NZ  | 2.26                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:AD:131:LEU:HA   | 4:AD:190:TYR:CE2  | 2.47                     | 0.48              |
| 4:AD:147:LEU:O    | 4:AD:154:LYS:HE3  | 2.14                     | 0.48              |
| 5:AE:47:VAL:C     | 5:AE:48:GLN:CD    | 2.82                     | 0.48              |
| 5:AE:55:ASN:CB    | 5:AE:73:GLU:CD    | 2.86                     | 0.48              |
| 5:AE:136:ARG:NH1  | 5:AE:137:HIS:HA   | 2.28                     | 0.48              |
| 6:AF:18:ARG:C     | 6:AF:19:GLU:CG    | 2.77                     | 0.48              |
| 6:AF:30:PRO:HG2   | 6:AF:31:HIS:H     | 1.78                     | 0.48              |
| 6:AF:35:GLU:HA    | 6:AF:38:ARG:HD2   | 1.94                     | 0.48              |
| 7:AG:22:ARG:HG3   | 7:AG:23:PHE:N     | 2.23                     | 0.48              |
| 7:AG:72:ARG:HA    | 7:AG:88:ILE:HD11  | 1.95                     | 0.48              |
| 7:AG:91:ARG:HH21  | 7:AG:91:ARG:CG    | 2.25                     | 0.48              |
| 7:AG:107:LEU:HD12 | 7:AG:111:LEU:HD22 | 1.94                     | 0.48              |
| 9:AK:7:LYS:HD3    | 9:AK:39:ARG:NH2   | 2.28                     | 0.48              |
| 9:AK:21:LYS:HD3   | 9:AK:26:LEU:HD22  | 1.96                     | 0.48              |
| 9:AK:42:TRP:O     | 9:AK:43:THR:CB    | 2.61                     | 0.48              |
| 10:AL:31:LYS:C    | 10:AL:32:TYR:CD2  | 2.92                     | 0.48              |
| 11:AM:18:ARG:O    | 11:AM:20:GLY:N    | 2.42                     | 0.48              |
| 11:AM:86:LYS:HZ1  | 11:AM:99:LEU:HD11 | 1.77                     | 0.48              |
| 11:AM:114:ILE:N   | 11:AM:129:ALA:O   | 2.45                     | 0.48              |
| 12:AN:15:GLY:HA2  | 12:AN:73:PRO:HG2  | 1.96                     | 0.48              |
| 12:AN:134:ARG:CZ  | 12:AN:137:TYR:N   | 2.62                     | 0.48              |
| 13:AO:49:ASP:O    | 13:AO:50:HIS:C    | 2.56                     | 0.48              |
| 14:AP:19:LYS:HD3  | 14:AP:20:ARG:N    | 2.29                     | 0.48              |
| 14:AP:107:GLU:O   | 14:AP:108:GLY:C   | 2.56                     | 0.48              |
| 14:AP:112:PHE:CD1 | 14:AP:112:PHE:C   | 2.91                     | 0.48              |
| 15:AQ:51:ARG:HH12 | 15:AQ:114:LEU:CD1 | 2.26                     | 0.48              |
| 15:AQ:103:ARG:C   | 15:AQ:107:ASP:OD2 | 2.56                     | 0.48              |
| 16:AR:5:LYS:O     | 16:AR:7:GLY:N     | 2.46                     | 0.48              |
| 16:AR:47:TYR:CE2  | 17:AS:75:PHE:HB3  | 2.48                     | 0.48              |
| 16:AR:93:LYS:O    | 17:AS:6:LYS:NZ    | 2.32                     | 0.48              |
| 18:AT:20:VAL:CG1  | 18:AT:21:VAL:H    | 2.23                     | 0.48              |
| 18:AT:25:ARG:O    | 18:AT:27:LYS:N    | 2.46                     | 0.48              |
| 19:AU:58:HIS:NE2  | 19:AU:77:LYS:NZ   | 2.56                     | 0.48              |
| 19:AU:73:ARG:NH1  | 19:AU:74:PRO:O    | 2.44                     | 0.48              |
| 20:AV:15:VAL:HG12 | 20:AV:16:ALA:H    | 1.77                     | 0.48              |
| 20:AV:37:VAL:HG13 | 20:AV:39:VAL:CG2  | 2.42                     | 0.48              |
| 20:AV:98:VAL:C    | 20:AV:99:CYS:SG   | 2.96                     | 0.48              |
| 21:AW:42:VAL:C    | 21:AW:46:LYS:NZ   | 2.71                     | 0.48              |
| 21:AW:44:PHE:O    | 21:AW:48:PHE:CD1  | 2.67                     | 0.48              |
| 21:AW:151:HIS:CD2 | 21:AW:170:THR:HA  | 2.48                     | 0.48              |
| 23:AY:32:PHE:HB2  | 23:AY:33:GLN:NE2  | 2.28                     | 0.48              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 23:AY:33:GLN:O     | 23:AY:36:ILE:HG22  | 2.13                     | 0.48              |
| 25:Aa:28:LYS:CB    | 25:Aa:29:PRO:CD    | 2.91                     | 0.48              |
| 25:Aa:65:ASP:O     | 25:Aa:68:ARG:NH1   | 2.45                     | 0.48              |
| 26:Ab:12:SER:OG    | 26:Ab:13:LYS:N     | 2.43                     | 0.48              |
| 26:Ab:31:VAL:HB    | 26:Ab:32:PRO:CD    | 2.44                     | 0.48              |
| 31:AI:54:ALA:CB    | 31:AI:83:TYR:CB    | 2.91                     | 0.48              |
| 32:AJ:17:ALA:HB3   | 32:AJ:42:ASN:CB    | 2.43                     | 0.48              |
| 32:AJ:27:LEU:HD11  | 32:AJ:57:ILE:HG22  | 1.95                     | 0.48              |
| 32:AJ:56:GLU:O     | 32:AJ:57:ILE:HG23  | 2.13                     | 0.48              |
| 32:AJ:64:SER:HB2   | 32:AJ:65:PHE:CB    | 2.42                     | 0.48              |
| 32:AJ:76:TYR:CD2   | 32:AJ:80:LYS:CE    | 2.96                     | 0.48              |
| 34:BA:9:G:C8       | 38:BI:126:ARG:CZ   | 2.95                     | 0.48              |
| 34:BA:41:G:N3      | 34:BA:42:G:C8      | 2.81                     | 0.48              |
| 34:BA:50:A:N1      | 34:BA:360:A:O2'    | 2.31                     | 0.48              |
| 34:BA:52:G:C2'     | 34:BA:53:A:O4'     | 2.59                     | 0.48              |
| 34:BA:85:U:C2'     | 34:BA:86:U:H5'     | 2.43                     | 0.48              |
| 34:BA:186(D):C:H2' | 34:BA:186(E):C:C5  | 2.46                     | 0.48              |
| 34:BA:295:C:C4     | 34:BA:303:A:C2     | 3.01                     | 0.48              |
| 34:BA:297:G:O2'    | 34:BA:299:G:N7     | 2.37                     | 0.48              |
| 34:BA:467:G:C2     | 34:BA:468:A:C5     | 3.01                     | 0.48              |
| 34:BA:527:G:H2'    | 34:BA:528:C:H6     | 1.78                     | 0.48              |
| 34:BA:595:G:N7     | 34:BA:641:U:C4     | 2.80                     | 0.48              |
| 34:BA:609:A:H2'    | 34:BA:610:G:O4'    | 2.13                     | 0.48              |
| 34:BA:683:G:H2'    | 34:BA:684:A:C8     | 2.48                     | 0.48              |
| 34:BA:705:U:C4     | 34:BA:706:A:N7     | 2.81                     | 0.48              |
| 34:BA:890:G:O2'    | 34:BA:891:U:O5'    | 2.31                     | 0.48              |
| 34:BA:936:C:H2'    | 34:BA:937:A:H5'    | 1.95                     | 0.48              |
| 34:BA:1157:A:H4'   | 34:BA:1158:C:O5'   | 2.13                     | 0.48              |
| 34:BA:1191:A:O5'   | 36:BG:4:LYS:NZ     | 2.46                     | 0.48              |
| 35:BF:115:LEU:CD2  | 35:BF:149:LEU:HD22 | 2.36                     | 0.48              |
| 36:BG:11:ARG:NH2   | 36:BG:178:LEU:HA   | 2.27                     | 0.48              |
| 37:BH:62:GLN:HE21  | 37:BH:62:GLN:CA    | 2.26                     | 0.48              |
| 37:BH:106:TYR:CE2  | 37:BH:113:SER:HA   | 2.48                     | 0.48              |
| 37:BH:159:ARG:HD2  | 37:BH:163:GLU:OE2  | 2.12                     | 0.48              |
| 37:BH:195:ALA:C    | 37:BH:196:LEU:HG   | 2.35                     | 0.48              |
| 38:BI:48:ALA:HB1   | 38:BI:53:LEU:CD1   | 2.40                     | 0.48              |
| 40:BK:36:LYS:HA    | 40:BK:36:LYS:HZ2   | 1.75                     | 0.48              |
| 41:BL:95:VAL:HB    | 41:BL:99:GLU:CD    | 2.38                     | 0.48              |
| 41:BL:114:THR:OG1  | 41:BL:119:LEU:CD2  | 2.61                     | 0.48              |
| 42:BM:41:VAL:O     | 42:BM:44:VAL:HG22  | 2.13                     | 0.48              |
| 42:BM:53:VAL:HG21  | 42:BM:92:TYR:CD1   | 2.48                     | 0.48              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 42:BM:85:LEU:HD11 | 42:BM:92:TYR:CE1   | 2.48                     | 0.48              |
| 43:BN:12:ASP:HB3  | 43:BN:15:THR:CG2   | 2.43                     | 0.48              |
| 43:BN:56:HIS:O    | 43:BN:58:ASP:N     | 2.42                     | 0.48              |
| 44:BO:44:SER:N    | 44:BO:47:VAL:CG2   | 2.76                     | 0.48              |
| 44:BO:94:ALA:O    | 44:BO:98:LEU:HG    | 2.13                     | 0.48              |
| 45:BP:24:VAL:HG13 | 45:BP:26:ALA:H     | 1.77                     | 0.48              |
| 45:BP:34:ARG:HB2  | 45:BP:105:TYR:HH   | 1.79                     | 0.48              |
| 45:BP:57:LYS:C    | 45:BP:58:VAL:HG23  | 2.38                     | 0.48              |
| 45:BP:78:GLN:O    | 45:BP:79:GLU:C     | 2.55                     | 0.48              |
| 46:BQ:95:GLY:O    | 46:BQ:110:ARG:HB3  | 2.12                     | 0.48              |
| 46:BQ:97:PRO:HB3  | 46:BQ:101:GLN:HE21 | 1.77                     | 0.48              |
| 47:BR:3:ARG:O     | 47:BR:3:ARG:HG3    | 2.13                     | 0.48              |
| 50:BU:27:PHE:CD2  | 50:BU:27:PHE:C     | 2.87                     | 0.48              |
| 51:BV:26:LEU:HD23 | 51:BV:29:PHE:HB2   | 1.93                     | 0.48              |
| 53:BX:23:ARG:HA   | 53:BX:26:ASN:CG    | 2.37                     | 0.48              |
| 53:BX:51:GLU:HA   | 53:BX:54:LYS:HG3   | 1.94                     | 0.48              |
| 53:BX:54:LYS:N    | 53:BX:100:ILE:HD11 | 2.28                     | 0.48              |
| 56:BD:15:G:N2     | 56:BD:59:U:O2      | 2.46                     | 0.48              |
| 56:BD:16:U:H2'    | 56:BD:17:C:H5'     | 1.94                     | 0.48              |
| 56:BD:72:C:C2     | 56:BD:73:A:C2      | 3.01                     | 0.48              |
| 56:BE:3:C:O5'     | 56:BE:3:C:H6       | 1.97                     | 0.48              |
| 57:BZ:309:MET:HG2 | 57:BZ:366:LEU:HD13 | 1.94                     | 0.48              |
| 57:BZ:383:SER:OG  | 57:BZ:385:PRO:HD3  | 2.12                     | 0.48              |
| 1:AA:30:G:C2'     | 1:AA:31:C:O4'      | 2.54                     | 0.48              |
| 1:AA:189:G:N2     | 1:AA:206:U:H5      | 2.12                     | 0.48              |
| 1:AA:218:A:N1     | 1:AA:235:U:H4'     | 2.29                     | 0.48              |
| 1:AA:297:C:C5'    | 20:AV:83:THR:HG21  | 2.43                     | 0.48              |
| 1:AA:546:C:C2     | 1:AA:547:A:C6      | 3.01                     | 0.48              |
| 1:AA:625:G:O2'    | 1:AA:656:G:O3'     | 2.30                     | 0.48              |
| 1:AA:696:G:C2     | 1:AA:697:C:C6      | 3.01                     | 0.48              |
| 1:AA:744:G:H5'    | 1:AA:1659:U:OP1    | 2.12                     | 0.48              |
| 1:AA:773:U:O2'    | 1:AA:774:A:OP1     | 2.30                     | 0.48              |
| 1:AA:1005:C:C5    | 1:AA:1143:A:P      | 3.07                     | 0.48              |
| 1:AA:1057:A:O2'   | 31:AI:38:HIS:CB    | 2.62                     | 0.48              |
| 1:AA:1064:C:N4    | 1:AA:1065:U:N3     | 2.61                     | 0.48              |
| 1:AA:1083:U:C6    | 1:AA:1085:A:N7     | 2.80                     | 0.48              |
| 1:AA:1241:A:C2'   | 1:AA:1242:A:OP1    | 2.60                     | 0.48              |
| 1:AA:1287:A:OP1   | 13:AO:105:ARG:HB2  | 2.14                     | 0.48              |
| 1:AA:1296:G:O2'   | 1:AA:1297:C:O5'    | 2.30                     | 0.48              |
| 1:AA:1340:U:C6    | 19:AU:57:LEU:HD11  | 2.48                     | 0.48              |
| 1:AA:1353:A:O2'   | 1:AA:1354:A:O4'    | 2.30                     | 0.48              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1366:A:H5'   | 25:Aa:1:MET:N      | 2.26                     | 0.48              |
| 1:AA:1432:C:C2    | 1:AA:1433:U:C2     | 3.02                     | 0.48              |
| 1:AA:1525:G:C2'   | 1:AA:1526:G:O5'    | 2.62                     | 0.48              |
| 1:AA:1575:C:C4    | 1:AA:1576:U:N3     | 2.82                     | 0.48              |
| 1:AA:1689:A:H2'   | 1:AA:1690:A:H8     | 1.77                     | 0.48              |
| 1:AA:1777:U:C2'   | 1:AA:1778:U:H5'    | 2.42                     | 0.48              |
| 1:AA:1812:A:C5    | 1:AA:1813:G:C8     | 3.01                     | 0.48              |
| 1:AA:1829:A:H2'   | 1:AA:1829:A:N3     | 2.28                     | 0.48              |
| 1:AA:1834:U:OP1   | 1:AA:1834:U:C4'    | 2.61                     | 0.48              |
| 1:AA:1907:G:N2    | 1:AA:1908:C:C2     | 2.81                     | 0.48              |
| 1:AA:1965:C:H5'   | 1:AA:1966:A:H3'    | 1.96                     | 0.48              |
| 1:AA:2016:U:C1'   | 26:Ab:6:VAL:HG11   | 2.43                     | 0.48              |
| 1:AA:2026:C:N3    | 1:AA:2027:G:C8     | 2.81                     | 0.48              |
| 1:AA:2048:G:C2'   | 1:AA:2049:G:O5'    | 2.61                     | 0.48              |
| 1:AA:2080:G:C6    | 1:AA:2241:A:C6     | 3.00                     | 0.48              |
| 1:AA:2235:G:N2    | 1:AA:2236:C:C2     | 2.81                     | 0.48              |
| 1:AA:2245:U:C2    | 1:AA:2435:A:C8     | 3.01                     | 0.48              |
| 1:AA:2251:G:C2    | 1:AA:2450:A:H1'    | 2.49                     | 0.48              |
| 1:AA:2270:G:H2'   | 1:AA:2271:G:O4'    | 2.13                     | 0.48              |
| 1:AA:2281:C:HO2'  | 1:AA:2282:G:C5'    | 2.26                     | 0.48              |
| 1:AA:2307:G:N9    | 1:AA:2308:G:H1'    | 2.27                     | 0.48              |
| 1:AA:2320:A:H8    | 1:AA:2320:A:P      | 2.36                     | 0.48              |
| 1:AA:2320:A:C6    | 14:AP:4:LEU:HD13   | 2.48                     | 0.48              |
| 1:AA:2394:C:H5'   | 29:Ae:12:LYS:HZ1   | 1.77                     | 0.48              |
| 1:AA:2456:C:C2'   | 1:AA:2457:U:H5'    | 2.44                     | 0.48              |
| 1:AA:2471:C:H4'   | 57:BZ:529:ARG:HH21 | 1.53                     | 0.48              |
| 1:AA:2682:U:C4    | 5:AE:21:VAL:HG11   | 2.49                     | 0.48              |
| 1:AA:2691:C:O4'   | 1:AA:2872:G:C6     | 2.67                     | 0.48              |
| 2:AB:2:C:H2'      | 2:AB:3:C:O5'       | 2.13                     | 0.48              |
| 2:AB:12:C:O5'     | 22:AX:74:ARG:NE    | 2.46                     | 0.48              |
| 2:AB:42:C:H2'     | 2:AB:43:C:C6       | 2.48                     | 0.48              |
| 2:AB:48:A:OP1     | 14:AP:92:TYR:CD2   | 2.66                     | 0.48              |
| 2:AB:105:G:H4'    | 21:AW:32:HIS:ND1   | 2.29                     | 0.48              |
| 3:AC:190:ARG:O    | 3:AC:193:ILE:HB    | 2.14                     | 0.48              |
| 4:AD:5:LYS:CA     | 4:AD:28:GLU:HB2    | 2.42                     | 0.48              |
| 4:AD:97:TYR:HB3   | 4:AD:99:ASP:OD1    | 2.12                     | 0.48              |
| 4:AD:106:ILE:HG13 | 4:AD:108:PRO:CD    | 2.37                     | 0.48              |
| 5:AE:12:THR:HA    | 5:AE:21:VAL:HG23   | 1.96                     | 0.48              |
| 5:AE:71:GLY:C     | 5:AE:72:VAL:HG13   | 2.39                     | 0.48              |
| 5:AE:104:VAL:CG1  | 5:AE:105:THR:H     | 2.23                     | 0.48              |
| 5:AE:110:GLY:O    | 13:AO:4:LEU:HD13   | 2.13                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 5:AE:116:VAL:HG12 | 5:AE:120:TRP:NE1  | 2.27                     | 0.48              |
| 5:AE:136:ARG:C    | 5:AE:136:ARG:CD   | 2.87                     | 0.48              |
| 6:AF:37:VAL:O     | 6:AF:184:TYR:CZ   | 2.66                     | 0.48              |
| 6:AF:162:LEU:HA   | 6:AF:165:ARG:HB3  | 1.95                     | 0.48              |
| 7:AG:4:ASP:HB3    | 7:AG:104:GLU:CG   | 2.43                     | 0.48              |
| 7:AG:35:GLU:OE1   | 7:AG:36:LYS:HB3   | 2.14                     | 0.48              |
| 7:AG:53:LEU:HD21  | 7:AG:72:ARG:N     | 2.28                     | 0.48              |
| 7:AG:68:PRO:CG    | 7:AG:90:LEU:HD21  | 2.43                     | 0.48              |
| 7:AG:84:LYS:HZ3   | 56:BE:54:U:H5     | 1.41                     | 0.48              |
| 9:AK:17:ASP:OD1   | 9:AK:19:GLU:O     | 2.31                     | 0.48              |
| 9:AK:42:TRP:CZ3   | 16:AR:71:GLN:NE2  | 2.82                     | 0.48              |
| 10:AL:64:ARG:NH2  | 10:AL:78:ARG:HH11 | 2.12                     | 0.48              |
| 11:AM:60:MET:SD   | 11:AM:60:MET:N    | 2.86                     | 0.48              |
| 11:AM:107:LYS:O   | 11:AM:107:LYS:HG3 | 2.13                     | 0.48              |
| 12:AN:99:PRO:O    | 12:AN:100:GLY:O   | 2.32                     | 0.48              |
| 13:AO:75:LEU:O    | 13:AO:78:LYS:HB3  | 2.11                     | 0.48              |
| 14:AP:12:PHE:CG   | 14:AP:13:ARG:N    | 2.80                     | 0.48              |
| 14:AP:73:LEU:CD1  | 14:AP:73:LEU:N    | 2.74                     | 0.48              |
| 16:AR:43:GLY:O    | 16:AR:44:ASN:C    | 2.55                     | 0.48              |
| 16:AR:52:ARG:HB2  | 16:AR:55:ARG:HD3  | 1.94                     | 0.48              |
| 16:AR:74:LEU:CG   | 16:AR:78:THR:HG21 | 2.43                     | 0.48              |
| 17:AS:6:LYS:CE    | 17:AS:10:LYS:HB3  | 2.44                     | 0.48              |
| 17:AS:15:GLU:OE1  | 17:AS:16:PRO:HD3  | 2.13                     | 0.48              |
| 17:AS:28:GLU:HB3  | 17:AS:94:LEU:CD1  | 2.25                     | 0.48              |
| 18:AT:33:ARG:NH1  | 18:AT:48:ALA:HB2  | 2.21                     | 0.48              |
| 18:AT:64:MET:HB3  | 18:AT:109:GLU:HG3 | 1.94                     | 0.48              |
| 18:AT:95:ILE:HD12 | 18:AT:95:ILE:N    | 2.15                     | 0.48              |
| 20:AV:8:LYS:O     | 20:AV:9:LYS:C     | 2.55                     | 0.48              |
| 20:AV:85:VAL:O    | 20:AV:87:LYS:N    | 2.47                     | 0.48              |
| 21:AW:20:ARG:HB2  | 21:AW:20:ARG:NH1  | 2.28                     | 0.48              |
| 23:AY:22:GLU:O    | 23:AY:25:ARG:HB2  | 2.13                     | 0.48              |
| 24:AZ:38:GLU:O    | 24:AZ:40:THR:N    | 2.47                     | 0.48              |
| 25:Aa:17:GLY:O    | 25:Aa:18:CYS:HB3  | 2.13                     | 0.48              |
| 26:Ab:20:ARG:C    | 26:Ab:23:HIS:HB2  | 2.33                     | 0.48              |
| 28:Ad:21:ARG:HG2  | 28:Ad:31:LEU:CG   | 2.44                     | 0.48              |
| 29:Ae:8:LYS:NZ    | 29:Ae:11:LYS:NZ   | 2.61                     | 0.48              |
| 31:AI:152:VAL:CB  | 33:Ag:18:UNK:C    | 2.90                     | 0.48              |
| 34:BA:28:G:C6     | 34:BA:556:C:N4    | 2.81                     | 0.48              |
| 34:BA:34:C:H2'    | 34:BA:35:G:C8     | 2.43                     | 0.48              |
| 34:BA:68:G:C4'    | 34:BA:171:A:H1'   | 2.43                     | 0.48              |
| 34:BA:73:G:C6     | 34:BA:74:C:N4     | 2.82                     | 0.48              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BA:190:G:HO2'   | 34:BA:191(A):G:P  | 2.36                     | 0.48              |
| 34:BA:194:C:O2'    | 34:BA:195:A:H4'   | 2.13                     | 0.48              |
| 34:BA:250:A:C2     | 34:BA:274:A:N1    | 2.81                     | 0.48              |
| 34:BA:341:C:C2'    | 34:BA:342:C:O5'   | 2.61                     | 0.48              |
| 34:BA:497:U:O2'    | 34:BA:498:A:H5'   | 2.13                     | 0.48              |
| 34:BA:537:G:H5''   | 45:BP:113:ARG:NH1 | 2.28                     | 0.48              |
| 34:BA:539:A:OP2    | 45:BP:115:LYS:CE  | 2.58                     | 0.48              |
| 34:BA:543:C:C2     | 34:BA:544:G:N7    | 2.81                     | 0.48              |
| 34:BA:572:A:C2     | 34:BA:916:G:N2    | 2.81                     | 0.48              |
| 34:BA:610:G:H2'    | 34:BA:611:A:H5'   | 1.92                     | 0.48              |
| 34:BA:621:A:H2'    | 34:BA:622:A:H8    | 1.77                     | 0.48              |
| 34:BA:707:C:H2'    | 34:BA:708:C:O5'   | 2.13                     | 0.48              |
| 34:BA:739:C:H2'    | 34:BA:740:U:H5'   | 1.93                     | 0.48              |
| 34:BA:924:C:C2'    | 34:BA:925:G:O5'   | 2.61                     | 0.48              |
| 34:BA:983:A:N3     | 34:BA:983:A:C2'   | 2.76                     | 0.48              |
| 34:BA:1003:G:H2'   | 34:BA:1004:A:H4'  | 1.96                     | 0.48              |
| 34:BA:1117:G:N9    | 34:BA:1184:G:N2   | 2.61                     | 0.48              |
| 34:BA:1119:C:H2'   | 34:BA:1120:G:N7   | 2.27                     | 0.48              |
| 34:BA:1158:C:H4'   | 35:BF:133:LYS:HD2 | 1.95                     | 0.48              |
| 34:BA:1181:G:N7    | 34:BA:1182:G:C2   | 2.80                     | 0.48              |
| 34:BA:1242:C:HO2'  | 34:BA:1303:C:H5'' | 1.70                     | 0.48              |
| 34:BA:1318:A:H3'   | 52:BW:37:ARG:CB   | 2.09                     | 0.48              |
| 34:BA:1321:C:C5    | 34:BA:1322:C:C3'  | 2.97                     | 0.48              |
| 34:BA:1484:C:N4    | 34:BA:1485:U:C4   | 2.81                     | 0.48              |
| 35:BF:15:VAL:HG21  | 35:BF:209:ARG:CB  | 2.42                     | 0.48              |
| 35:BF:140:HIS:C    | 35:BF:143:GLU:HB3 | 2.39                     | 0.48              |
| 36:BG:88:ARG:HG3   | 36:BG:99:VAL:O    | 2.13                     | 0.48              |
| 36:BG:120:VAL:HG21 | 36:BG:137:ALA:HB2 | 1.96                     | 0.48              |
| 37:BH:82:ALA:CB    | 37:BH:92:VAL:HB   | 2.39                     | 0.48              |
| 37:BH:128:VAL:CG1  | 37:BH:129:ASN:N   | 2.75                     | 0.48              |
| 38:BI:77:PRO:HG2   | 38:BI:78:HIS:CD2  | 2.49                     | 0.48              |
| 38:BI:133:TYR:HA   | 38:BI:136:MET:HG2 | 1.96                     | 0.48              |
| 39:BJ:62:TRP:CD1   | 51:BV:35:ARG:HH22 | 2.31                     | 0.48              |
| 40:BK:5:ARG:HH11   | 40:BK:5:ARG:CB    | 2.26                     | 0.48              |
| 40:BK:46:ALA:O     | 40:BK:49:ILE:N    | 2.46                     | 0.48              |
| 40:BK:47:CYS:O     | 40:BK:51:GLN:HG2  | 2.12                     | 0.48              |
| 40:BK:65:ALA:HA    | 40:BK:128:ALA:N   | 2.28                     | 0.48              |
| 40:BK:71:PRO:CA    | 40:BK:138:LYS:HE3 | 2.43                     | 0.48              |
| 41:BL:49:GLU:OE2   | 41:BL:51:VAL:HG23 | 2.14                     | 0.48              |
| 41:BL:82:HIS:CE1   | 41:BL:84:ARG:HG3  | 2.48                     | 0.48              |
| 41:BL:89:PRO:HA    | 41:BL:92:ARG:HE   | 1.78                     | 0.48              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 41:BL:102:ARG:CB   | 41:BL:102:ARG:NH1 | 2.77                     | 0.48              |
| 42:BM:97:LYS:HZ2   | 42:BM:102:LEU:HB3 | 1.79                     | 0.48              |
| 44:BO:95:ILE:CG2   | 44:BO:98:LEU:HD12 | 2.41                     | 0.48              |
| 45:BP:24:VAL:HG12  | 45:BP:24:VAL:O    | 2.12                     | 0.48              |
| 45:BP:86:ARG:HH22  | 45:BP:119:LYS:CD  | 2.26                     | 0.48              |
| 46:BQ:15:VAL:C     | 46:BQ:34:LEU:CD2  | 2.85                     | 0.48              |
| 46:BQ:74:VAL:HA    | 46:BQ:77:ASN:OD1  | 2.12                     | 0.48              |
| 46:BQ:92:HIS:C     | 46:BQ:94:ARG:H    | 2.21                     | 0.48              |
| 49:BT:14:ASN:O     | 49:BT:14:ASN:CG   | 2.56                     | 0.48              |
| 51:BV:39:VAL:O     | 51:BV:43:PHE:HE1  | 1.95                     | 0.48              |
| 52:BW:22:LEU:C     | 52:BW:24:ALA:N    | 2.64                     | 0.48              |
| 52:BW:34:TRP:NE1   | 52:BW:52:TYR:CD2  | 2.81                     | 0.48              |
| 56:BE:2:C:C4       | 56:BE:3:C:N4      | 2.81                     | 0.48              |
| 57:BZ:127:ILE:HB   | 57:BZ:164:TYR:CB  | 2.42                     | 0.48              |
| 57:BZ:316:SER:HB2  | 57:BZ:317:PRO:HD2 | 1.94                     | 0.48              |
| 57:BZ:381:ALA:CB   | 57:BZ:577:LEU:CB  | 2.77                     | 0.48              |
| 57:BZ:407:VAL:HG23 | 57:BZ:436:ARG:HA  | 1.95                     | 0.48              |
| 57:BZ:489:ILE:HD12 | 57:BZ:533:LEU:O   | 2.13                     | 0.48              |
| 1:AA:128:C:C4      | 1:AA:129:C:N4     | 2.81                     | 0.48              |
| 1:AA:188:G:O4'     | 1:AA:1365:A:C2    | 2.66                     | 0.48              |
| 1:AA:350:U:H2'     | 1:AA:351:G:OP1    | 2.13                     | 0.48              |
| 1:AA:374:A:N6      | 1:AA:401:A:H1'    | 2.27                     | 0.48              |
| 1:AA:458:G:H5''    | 28:Ad:39:ARG:NE   | 2.29                     | 0.48              |
| 1:AA:462:C:C4      | 1:AA:468:G:N2     | 2.82                     | 0.48              |
| 1:AA:478:A:N6      | 1:AA:480:A:N1     | 2.61                     | 0.48              |
| 1:AA:533:G:C5      | 1:AA:534:U:C2     | 3.01                     | 0.48              |
| 1:AA:588:U:C4      | 1:AA:589:C:N4     | 2.81                     | 0.48              |
| 1:AA:637:A:C2      | 1:AA:651:G:O3'    | 2.67                     | 0.48              |
| 1:AA:692:C:H2'     | 1:AA:693:C:O5'    | 2.13                     | 0.48              |
| 1:AA:721:C:O2'     | 1:AA:722:A:H5'    | 2.13                     | 0.48              |
| 1:AA:733:G:N7      | 1:AA:761:A:N6     | 2.61                     | 0.48              |
| 1:AA:733:G:C5      | 1:AA:761:A:C5     | 3.01                     | 0.48              |
| 1:AA:753:C:OP1     | 28:Ad:1:MET:HE1   | 2.14                     | 0.48              |
| 1:AA:781:A:O2'     | 4:AD:222:ARG:NH1  | 2.46                     | 0.48              |
| 1:AA:867:C:N3      | 1:AA:912:C:O2'    | 2.45                     | 0.48              |
| 1:AA:869:G:C3'     | 1:AA:870:A:H5''   | 2.43                     | 0.48              |
| 1:AA:908:C:C2'     | 1:AA:909:A:O5'    | 2.61                     | 0.48              |
| 1:AA:957:A:H2      | 1:AA:2459:A:OP1   | 1.95                     | 0.48              |
| 1:AA:979:G:C8      | 1:AA:981:A:OP2    | 2.66                     | 0.48              |
| 1:AA:1013:C:H2'    | 1:AA:1014:U:C6    | 2.49                     | 0.48              |
| 1:AA:1053:C:N4     | 1:AA:1054:A:N6    | 2.62                     | 0.48              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 1:AA:1083:U:O2'  | 1:AA:1084:A:H8     | 1.95                     | 0.48              |
| 1:AA:1097:U:H2'  | 1:AA:1098:A:O4'    | 2.14                     | 0.48              |
| 1:AA:1305:C:H2'  | 1:AA:1306:C:H6     | 1.78                     | 0.48              |
| 1:AA:1391:U:O2   | 1:AA:1391:U:C2'    | 2.61                     | 0.48              |
| 1:AA:1469:A:H8   | 1:AA:1469:A:H3'    | 1.76                     | 0.48              |
| 1:AA:1542:G:C2'  | 1:AA:1543:A:C5     | 2.96                     | 0.48              |
| 1:AA:1583:A:HO2' | 1:AA:1585:C:H6     | 1.61                     | 0.48              |
| 1:AA:1635:G:C8   | 1:AA:1635:G:O5'    | 2.67                     | 0.48              |
| 1:AA:1637:A:H2'  | 1:AA:1638:C:H6     | 1.78                     | 0.48              |
| 1:AA:1664:A:C2'  | 1:AA:1665:A:C8     | 2.92                     | 0.48              |
| 1:AA:1667:G:O5'  | 10:AL:7:TYR:CD1    | 2.66                     | 0.48              |
| 1:AA:1676:A:O2'  | 1:AA:1677:A:H5'    | 2.13                     | 0.48              |
| 1:AA:1857:G:H2'  | 1:AA:1858:G:C4     | 2.48                     | 0.48              |
| 1:AA:1908:C:H42  | 58:AA:3001:NMY:H92 | 0.58                     | 0.48              |
| 1:AA:1935:G:C2   | 1:AA:1962:C:C2     | 3.02                     | 0.48              |
| 1:AA:2048:G:N1   | 1:AA:2049:G:C5     | 2.81                     | 0.48              |
| 1:AA:2053:G:O4'  | 5:AE:149:ARG:HA    | 2.13                     | 0.48              |
| 1:AA:2094:G:C5   | 1:AA:2095:C:C4     | 3.01                     | 0.48              |
| 1:AA:2133:G:C6   | 1:AA:2157:G:H1'    | 2.49                     | 0.48              |
| 1:AA:2217:G:C1'  | 4:AD:150:LYS:HZ2   | 2.27                     | 0.48              |
| 1:AA:2244:U:O4'  | 1:AA:2434:A:N6     | 2.47                     | 0.48              |
| 1:AA:2259:G:O4'  | 1:AA:2427:C:C5     | 2.66                     | 0.48              |
| 1:AA:2306:C:N3   | 7:AG:42:GLY:O      | 2.46                     | 0.48              |
| 1:AA:2357:U:H6   | 1:AA:2357:U:P      | 2.36                     | 0.48              |
| 1:AA:2371:G:N2   | 1:AA:2372:G:C4     | 2.82                     | 0.48              |
| 1:AA:2476:A:N7   | 1:AA:2477:C:C5     | 2.82                     | 0.48              |
| 1:AA:2509:G:H2'  | 1:AA:2510:C:O4'    | 2.13                     | 0.48              |
| 1:AA:2564:A:N6   | 1:AA:2647:U:O4'    | 2.47                     | 0.48              |
| 1:AA:2618:G:H2'  | 1:AA:2619:C:H6     | 1.77                     | 0.48              |
| 1:AA:2627:G:N2   | 1:AA:2628:C:C6     | 2.81                     | 0.48              |
| 1:AA:2701:C:H5'  | 1:AA:2701:C:H6     | 1.78                     | 0.48              |
| 1:AA:2731:G:H22  | 1:AA:2732:G:N2     | 2.11                     | 0.48              |
| 1:AA:2733:A:H2'  | 1:AA:2734:A:C4'    | 2.43                     | 0.48              |
| 1:AA:2773:C:H5'' | 5:AE:165:VAL:HG13  | 1.95                     | 0.48              |
| 1:AA:2897:U:H2'  | 1:AA:2898:U:C6     | 2.48                     | 0.48              |
| 2:AB:16:G:H22    | 2:AB:69:G:H1'      | 1.77                     | 0.48              |
| 2:AB:43:C:N3     | 7:AG:95:ARG:NH2    | 2.59                     | 0.48              |
| 2:AB:48:A:OP1    | 14:AP:92:TYR:CG    | 2.66                     | 0.48              |
| 2:AB:57:A:O4'    | 7:AG:29:TRP:CZ3    | 2.67                     | 0.48              |
| 2:AB:100:G:C6    | 2:AB:101:A:N6      | 2.82                     | 0.48              |
| 3:AC:116:THR:C   | 3:AC:120:MET:HG2   | 2.38                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:AD:16:MET:O     | 4:AD:17:THR:C     | 2.57                     | 0.48              |
| 4:AD:85:ASP:CB    | 4:AD:87:ASN:ND2   | 2.77                     | 0.48              |
| 4:AD:183:ARG:NE   | 4:AD:268:ARG:HD2  | 2.29                     | 0.48              |
| 4:AD:201:HIS:CD2  | 4:AD:202:LYS:CE   | 2.93                     | 0.48              |
| 5:AE:4:ILE:HG23   | 5:AE:30:PRO:HG3   | 1.91                     | 0.48              |
| 6:AF:34:TRP:O     | 6:AF:38:ARG:HD2   | 2.13                     | 0.48              |
| 6:AF:116:ASP:HA   | 6:AF:119:ARG:HD2  | 1.96                     | 0.48              |
| 6:AF:122:LYS:HZ3  | 6:AF:122:LYS:CA   | 2.21                     | 0.48              |
| 8:AH:23:ARG:NE    | 8:AH:34:GLU:HB3   | 2.27                     | 0.48              |
| 8:AH:43:VAL:CG1   | 8:AH:44:VAL:H     | 2.25                     | 0.48              |
| 8:AH:45:VAL:HG13  | 8:AH:50:VAL:CG1   | 2.44                     | 0.48              |
| 9:AK:23:LEU:CG    | 9:AK:61:ARG:O     | 2.60                     | 0.48              |
| 9:AK:30:ILE:O     | 9:AK:31:ALA:O     | 2.31                     | 0.48              |
| 9:AK:30:ILE:HG22  | 9:AK:34:LEU:HD11  | 1.96                     | 0.48              |
| 9:AK:31:ALA:C     | 9:AK:33:LEU:N     | 2.69                     | 0.48              |
| 9:AK:38:HIS:O     | 9:AK:42:TRP:CZ3   | 2.67                     | 0.48              |
| 9:AK:44:PRO:HG2   | 9:AK:45:ASN:H     | 1.77                     | 0.48              |
| 9:AK:70:LYS:HD3   | 9:AK:86:PRO:HA    | 1.94                     | 0.48              |
| 9:AK:126:PRO:HB2  | 9:AK:127:ASP:OD2  | 2.13                     | 0.48              |
| 10:AL:86:ILE:CG2  | 10:AL:90:GLN:HA   | 2.43                     | 0.48              |
| 10:AL:99:PHE:CA   | 10:AL:122:LEU:O   | 2.61                     | 0.48              |
| 10:AL:120:GLU:O   | 10:AL:121:VAL:C   | 2.56                     | 0.48              |
| 11:AM:7:ARG:H     | 11:AM:8:PRO:HD2   | 1.79                     | 0.48              |
| 12:AN:91:GLU:CD   | 12:AN:91:GLU:N    | 2.72                     | 0.48              |
| 13:AO:54:LEU:H    | 13:AO:54:LEU:CD1  | 2.27                     | 0.48              |
| 13:AO:88:ARG:O    | 13:AO:89:ASP:HB3  | 2.13                     | 0.48              |
| 13:AO:102:GLU:HG3 | 13:AO:103:ARG:N   | 2.26                     | 0.48              |
| 14:AP:49:VAL:HB   | 14:AP:80:LEU:HD12 | 1.95                     | 0.48              |
| 16:AR:66:ASN:O    | 16:AR:67:ALA:C    | 2.56                     | 0.48              |
| 18:AT:78:GLU:OE2  | 18:AT:101:SER:N   | 2.46                     | 0.48              |
| 19:AU:27:THR:C    | 19:AU:28:PHE:CG   | 2.91                     | 0.48              |
| 19:AU:71:GLY:C    | 19:AU:72:LYS:HG3  | 2.38                     | 0.48              |
| 19:AU:85:PRO:HG2  | 19:AU:87:GLN:CG   | 2.31                     | 0.48              |
| 21:AW:60:GLU:CG   | 21:AW:69:THR:HG22 | 2.44                     | 0.48              |
| 21:AW:78:LYS:CE   | 21:AW:84:GLU:OE2  | 2.55                     | 0.48              |
| 22:AX:7:LEU:HD12  | 56:BE:75:C:N4     | 2.28                     | 0.48              |
| 22:AX:22:GLY:C    | 22:AX:38:VAL:HG13 | 2.37                     | 0.48              |
| 23:AY:27:LEU:HD12 | 23:AY:27:LEU:H    | 1.77                     | 0.48              |
| 24:AZ:55:ARG:CZ   | 24:AZ:55:ARG:CA   | 2.90                     | 0.48              |
| 25:Aa:24:THR:O    | 25:Aa:25:TYR:CD2  | 2.66                     | 0.48              |
| 28:Ad:22:MET:CA   | 28:Ad:28:ARG:HG2  | 2.42                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 28:Ad:34:ARG:NH2  | 28:Ad:42:LEU:HD23 | 2.28                     | 0.48              |
| 29:Ae:5:LYS:HE3   | 29:Ae:10:ALA:HB3  | 1.96                     | 0.48              |
| 29:Ae:60:LEU:O    | 29:Ae:61:LEU:C    | 2.57                     | 0.48              |
| 34:BA:21:G:N2     | 34:BA:916:G:C6    | 2.80                     | 0.48              |
| 34:BA:76:G:H2'    | 34:BA:77:C:C6     | 2.48                     | 0.48              |
| 34:BA:134:A:P     | 34:BA:134:A:H8    | 2.36                     | 0.48              |
| 34:BA:137:C:H1'   | 49:BT:62:VAL:HA   | 1.96                     | 0.48              |
| 34:BA:176:C:O2'   | 34:BA:177:C:H5'   | 2.12                     | 0.48              |
| 34:BA:279:A:H5''  | 34:BA:280:C:H3'   | 1.93                     | 0.48              |
| 34:BA:445:G:H2'   | 34:BA:446:G:H8    | 1.77                     | 0.48              |
| 34:BA:458:C:H3'   | 34:BA:464:G:C8    | 2.48                     | 0.48              |
| 34:BA:521:G:C6    | 34:BA:529:G:N2    | 2.81                     | 0.48              |
| 34:BA:529:G:N1    | 45:BP:49:ASN:CG   | 2.71                     | 0.48              |
| 34:BA:559:A:C3'   | 34:BA:560:U:H5'   | 2.43                     | 0.48              |
| 34:BA:580:U:O4    | 34:BA:761:G:O6    | 2.31                     | 0.48              |
| 34:BA:644:G:H2'   | 34:BA:645:C:H5'   | 1.96                     | 0.48              |
| 34:BA:752:G:C2'   | 34:BA:753:A:OP2   | 2.61                     | 0.48              |
| 34:BA:949:A:H4'   | 34:BA:1364:U:O4   | 2.13                     | 0.48              |
| 34:BA:965:A:O2'   | 34:BA:966:G:O5'   | 2.24                     | 0.48              |
| 34:BA:967:C:OP2   | 34:BA:968:A:H3'   | 2.13                     | 0.48              |
| 34:BA:982:U:H1'   | 34:BA:983:A:H62   | 1.77                     | 0.48              |
| 34:BA:1042:G:O2'  | 34:BA:1043:C:H5'  | 2.12                     | 0.48              |
| 34:BA:1132:C:H2'  | 34:BA:1133:G:C8   | 2.47                     | 0.48              |
| 34:BA:1171:G:H2'  | 34:BA:1172:C:H6   | 1.78                     | 0.48              |
| 34:BA:1179:A:O3'  | 42:BM:103:THR:OG1 | 2.32                     | 0.48              |
| 34:BA:1387:G:C4   | 34:BA:1388:C:C5   | 3.02                     | 0.48              |
| 34:BA:1428:A:C4   | 34:BA:1429:C:C5   | 3.01                     | 0.48              |
| 34:BA:1496:C:C6   | 34:BA:1497:G:N7   | 2.80                     | 0.48              |
| 35:BF:25:ASN:O    | 35:BF:26:PRO:C    | 2.56                     | 0.48              |
| 35:BF:36:ARG:HE   | 35:BF:36:ARG:HA   | 1.79                     | 0.48              |
| 35:BF:49:GLU:O    | 35:BF:50:GLU:C    | 2.56                     | 0.48              |
| 35:BF:181:PHE:HE1 | 41:BL:70:GLN:NE2  | 2.11                     | 0.48              |
| 36:BG:77:ILE:HG22 | 36:BG:81:GLY:HA2  | 1.95                     | 0.48              |
| 37:BH:14:ARG:CZ   | 37:BH:14:ARG:O    | 2.62                     | 0.48              |
| 37:BH:59:ARG:HB3  | 37:BH:63:LYS:NZ   | 2.29                     | 0.48              |
| 37:BH:98:GLU:OE2  | 37:BH:107:ARG:HG3 | 2.12                     | 0.48              |
| 37:BH:121:VAL:O   | 37:BH:134:ASP:CB  | 2.61                     | 0.48              |
| 38:BI:69:VAL:HG12 | 38:BI:76:ILE:HD11 | 1.96                     | 0.48              |
| 38:BI:109:ILE:CG2 | 38:BI:110:LEU:N   | 2.75                     | 0.48              |
| 39:BJ:49:ALA:HB3  | 51:BV:79:LEU:N    | 2.28                     | 0.48              |
| 40:BK:15:ASP:N    | 40:BK:20:ASP:H    | 2.09                     | 0.48              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 41:BL:10:LEU:C    | 41:BL:14:ARG:HH12  | 2.20                     | 0.48              |
| 41:BL:91:ARG:CG   | 50:BU:34:LYS:HB2   | 2.27                     | 0.48              |
| 41:BL:114:THR:CG2 | 41:BL:119:LEU:HD23 | 2.41                     | 0.48              |
| 42:BM:27:THR:CG2  | 42:BM:62:TYR:CE1   | 2.96                     | 0.48              |
| 43:BN:60:ARG:CA   | 43:BN:60:ARG:NH1   | 2.76                     | 0.48              |
| 44:BO:80:VAL:N    | 44:BO:104:GLN:NE2  | 2.56                     | 0.48              |
| 45:BP:125:PRO:C   | 45:BP:127:GLU:H    | 2.20                     | 0.48              |
| 45:BP:126:LYS:HD2 | 45:BP:126:LYS:O    | 2.14                     | 0.48              |
| 46:BQ:70:LEU:HD12 | 46:BQ:74:VAL:HG23  | 1.95                     | 0.48              |
| 49:BT:68:ASP:C    | 49:BT:70:ALA:N     | 2.69                     | 0.48              |
| 50:BU:60:ILE:O    | 50:BU:62:SER:OG    | 2.26                     | 0.48              |
| 50:BU:81:ARG:HG3  | 50:BU:84:LEU:HG    | 1.93                     | 0.48              |
| 52:BW:31:ILE:O    | 52:BW:33:THR:N     | 2.46                     | 0.48              |
| 52:BW:46:GLY:C    | 52:BW:61:TYR:HE2   | 2.22                     | 0.48              |
| 52:BW:81:ARG:HB2  | 52:BW:81:ARG:HH11  | 1.78                     | 0.48              |
| 53:BX:84:LEU:C    | 53:BX:84:LEU:HD13  | 2.39                     | 0.48              |
| 55:BC:38:A:C3'    | 55:BC:39:U:C5'     | 2.87                     | 0.48              |
| 56:BE:15:G:N3     | 56:BE:16:U:C5      | 2.82                     | 0.48              |
| 56:BE:18:G:N2     | 56:BE:58:A:C4'     | 2.69                     | 0.48              |
| 57:BZ:99:VAL:HG13 | 57:BZ:105:PRO:CA   | 2.44                     | 0.48              |
| 57:BZ:173:GLY:CA  | 57:BZ:174:LEU:O    | 2.61                     | 0.48              |
| 57:BZ:205:PHE:CD1 | 57:BZ:229:GLY:C    | 2.71                     | 0.48              |
| 57:BZ:402:ASN:C   | 57:BZ:403:VAL:CG2  | 2.86                     | 0.48              |
| 1:AA:24:G:C6      | 1:AA:25:U:O4       | 2.66                     | 0.48              |
| 1:AA:151:C:C2'    | 1:AA:152:G:C8      | 2.96                     | 0.48              |
| 1:AA:226:G:H21    | 1:AA:228:A:N6      | 2.11                     | 0.48              |
| 1:AA:270(C):C:OP1 | 1:AA:365:C:C1'     | 2.61                     | 0.48              |
| 1:AA:270(G):C:H2' | 1:AA:270(H):C:C5   | 2.48                     | 0.48              |
| 1:AA:354:G:O2'    | 1:AA:355:G:O4'     | 2.31                     | 0.48              |
| 1:AA:386:G:O2'    | 1:AA:387:U:OP2     | 2.31                     | 0.48              |
| 1:AA:410:G:C3'    | 1:AA:411:G:C8      | 2.96                     | 0.48              |
| 1:AA:443:A:OP1    | 6:AF:46:ARG:O      | 2.32                     | 0.48              |
| 1:AA:548:A:H3'    | 1:AA:549:G:C4'     | 2.44                     | 0.48              |
| 1:AA:572:A:N6     | 1:AA:2029:G:H1'    | 2.27                     | 0.48              |
| 1:AA:662:G:H5''   | 11:AM:19:VAL:CG1   | 2.40                     | 0.48              |
| 1:AA:673:C:H2'    | 1:AA:674:G:O5'     | 2.12                     | 0.48              |
| 1:AA:689:A:C2'    | 1:AA:690:G:O5'     | 2.62                     | 0.48              |
| 1:AA:852:G:C5     | 1:AA:926:A:C2      | 3.01                     | 0.48              |
| 1:AA:888:C:C2     | 1:AA:889:C:N4      | 2.78                     | 0.48              |
| 1:AA:912:C:C2'    | 1:AA:913:U:H5'     | 2.44                     | 0.48              |
| 1:AA:942:G:C6     | 1:AA:943:U:C4      | 3.01                     | 0.48              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:973:A:H1'   | 1:AA:1188:U:C4    | 2.45                     | 0.48              |
| 1:AA:977:G:C6    | 1:AA:987:G:C5     | 3.02                     | 0.48              |
| 1:AA:1043:C:H6   | 1:AA:1043:C:H3'   | 1.78                     | 0.48              |
| 1:AA:1109:C:H2'  | 1:AA:1110:G:H1'   | 1.95                     | 0.48              |
| 1:AA:1156:A:OP1  | 16:AR:55:ARG:NH2  | 2.45                     | 0.48              |
| 1:AA:1223:C:O2   | 1:AA:1223:C:H2'   | 2.13                     | 0.48              |
| 1:AA:1266:G:C4   | 18:AT:15:ARG:NH1  | 2.82                     | 0.48              |
| 1:AA:1348:G:N1   | 1:AA:1599:C:N3    | 2.62                     | 0.48              |
| 1:AA:1413:G:N2   | 1:AA:1590:U:H1'   | 2.29                     | 0.48              |
| 1:AA:1414:G:N2   | 1:AA:1415:U:C2    | 2.81                     | 0.48              |
| 1:AA:1428:C:O2'  | 1:AA:1429:G:P     | 2.72                     | 0.48              |
| 1:AA:1515:C:H6   | 1:AA:1515:C:P     | 2.37                     | 0.48              |
| 1:AA:1613:G:N2   | 1:AA:1619:G:C8    | 2.76                     | 0.48              |
| 1:AA:1746:G:H3'  | 1:AA:1746:G:P     | 2.54                     | 0.48              |
| 1:AA:1782:C:O5'  | 1:AA:1783:A:OP2   | 2.32                     | 0.48              |
| 1:AA:1829:A:C6   | 1:AA:1830:C:H1'   | 2.49                     | 0.48              |
| 1:AA:1837:C:C4   | 1:AA:1899:G:O6    | 2.67                     | 0.48              |
| 1:AA:1882:C:C4   | 1:AA:1883:G:H1'   | 2.48                     | 0.48              |
| 1:AA:2014:A:N3   | 1:AA:2015:A:C2    | 2.81                     | 0.48              |
| 1:AA:2021:C:N4   | 16:AR:28:ARG:HH12 | 2.12                     | 0.48              |
| 1:AA:2021:C:H41  | 16:AR:28:ARG:HH22 | 1.60                     | 0.48              |
| 1:AA:2057:A:C2'  | 1:AA:2058:A:H8    | 2.23                     | 0.48              |
| 1:AA:2287:A:N1   | 1:AA:2346:A:C6    | 2.82                     | 0.48              |
| 1:AA:2305:A:H3'  | 1:AA:2306:C:C5'   | 2.43                     | 0.48              |
| 1:AA:2333:A:H1'  | 1:AA:2335:A:C2    | 2.41                     | 0.48              |
| 1:AA:2405:G:O5'  | 1:AA:2405:G:H8    | 1.97                     | 0.48              |
| 1:AA:2472:G:C2   | 1:AA:2475:C:C2    | 3.02                     | 0.48              |
| 1:AA:2487:G:N3   | 1:AA:2488:A:C8    | 2.81                     | 0.48              |
| 1:AA:2551:C:H2'  | 1:AA:2552:U:O4'   | 2.14                     | 0.48              |
| 1:AA:2625:G:N1   | 1:AA:2777:G:N2    | 2.61                     | 0.48              |
| 1:AA:2680:C:H5'' | 5:AE:188:VAL:O    | 2.13                     | 0.48              |
| 1:AA:2696:U:H2'  | 1:AA:2697:G:H8    | 1.79                     | 0.48              |
| 1:AA:2699:C:H2'  | 1:AA:2700:C:H5'   | 1.95                     | 0.48              |
| 1:AA:2740:A:C4   | 1:AA:2741:A:N7    | 2.82                     | 0.48              |
| 1:AA:2848:G:O5'  | 15:AQ:99:LEU:HG   | 2.13                     | 0.48              |
| 2:AB:6:C:H5'     | 2:AB:27:C:H2'     | 1.95                     | 0.48              |
| 2:AB:85:G:C2     | 2:AB:86:G:C4      | 3.01                     | 0.48              |
| 3:AC:59:ARG:HB2  | 3:AC:164:ARG:HG2  | 1.96                     | 0.48              |
| 3:AC:97:GLU:HG2  | 3:AC:122:ALA:CB   | 2.34                     | 0.48              |
| 4:AD:79:VAL:HG12 | 4:AD:81:ALA:CA    | 2.43                     | 0.48              |
| 5:AE:40:GLU:OE2  | 5:AE:41:LYS:HE2   | 2.13                     | 0.48              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 5:AE:80:GLU:O      | 5:AE:83:ASP:OD2    | 2.31                     | 0.48              |
| 5:AE:91:VAL:HG22   | 5:AE:92:THR:N      | 2.28                     | 0.48              |
| 5:AE:148:GLY:O     | 5:AE:149:ARG:HB3   | 2.12                     | 0.48              |
| 7:AG:1:MET:HB3     | 7:AG:2:PRO:HD2     | 1.95                     | 0.48              |
| 7:AG:47:LYS:HB3    | 7:AG:72:ARG:CB     | 2.44                     | 0.48              |
| 7:AG:50:ALA:O      | 7:AG:54:GLU:CD     | 2.56                     | 0.48              |
| 7:AG:170:ARG:HG2   | 7:AG:170:ARG:HH11  | 1.77                     | 0.48              |
| 8:AH:6:ARG:C       | 8:AH:69:ARG:NE     | 2.70                     | 0.48              |
| 8:AH:11:VAL:HG22   | 8:AH:76:VAL:HG11   | 1.94                     | 0.48              |
| 8:AH:137:ASP:O     | 8:AH:141:VAL:HG23  | 2.13                     | 0.48              |
| 8:AH:154:PRO:O     | 8:AH:155:SER:CB    | 2.54                     | 0.48              |
| 10:AL:11:ALA:HB3   | 10:AL:97:ARG:NH2   | 2.28                     | 0.48              |
| 10:AL:106:LEU:CD1  | 10:AL:107:ARG:N    | 2.75                     | 0.48              |
| 11:AM:97:PRO:CA    | 11:AM:102:ARG:NE   | 2.75                     | 0.48              |
| 13:AO:72:ASP:OD2   | 13:AO:74:LYS:HB2   | 2.14                     | 0.48              |
| 14:AP:16:ASN:O     | 14:AP:17:ARG:C     | 2.57                     | 0.48              |
| 14:AP:92:TYR:CE2   | 14:AP:93:LYS:HB3   | 2.48                     | 0.48              |
| 15:AQ:70:VAL:CB    | 15:AQ:74:ARG:HH11  | 2.14                     | 0.48              |
| 16:AR:39:LEU:C     | 16:AR:41:ALA:N     | 2.68                     | 0.48              |
| 17:AS:78:LYS:HB2   | 17:AS:84:LYS:CB    | 2.42                     | 0.48              |
| 18:AT:5:ALA:O      | 18:AT:105:VAL:CG1  | 2.61                     | 0.48              |
| 18:AT:21:VAL:HG22  | 18:AT:75:TYR:CD2   | 2.47                     | 0.48              |
| 18:AT:45:TYR:O     | 18:AT:46:PHE:C     | 2.55                     | 0.48              |
| 18:AT:88:ARG:CA    | 18:AT:88:ARG:HE    | 2.26                     | 0.48              |
| 19:AU:84:ALA:CB    | 19:AU:85:PRO:HD3   | 2.40                     | 0.48              |
| 22:AX:27:GLU:N     | 22:AX:69:PHE:CZ    | 2.82                     | 0.48              |
| 22:AX:50:ASN:O     | 22:AX:81:VAL:HG21  | 2.13                     | 0.48              |
| 24:AZ:29:ARG:HB2   | 24:AZ:30:ARG:HH21  | 1.72                     | 0.48              |
| 26:Ab:13:LYS:N     | 26:Ab:13:LYS:CD    | 2.65                     | 0.48              |
| 26:Ab:13:LYS:O     | 26:Ab:16:ARG:N     | 2.46                     | 0.48              |
| 26:Ab:58:LEU:HD13  | 26:Ab:59:GLU:N     | 2.29                     | 0.48              |
| 28:Ad:12:ARG:O     | 28:Ad:13:ALA:C     | 2.57                     | 0.48              |
| 28:Ad:43:THR:O     | 28:Ad:45:ALA:N     | 2.46                     | 0.48              |
| 32:AJ:10:LEU:N     | 32:AJ:56:GLU:HG2   | 2.28                     | 0.48              |
| 32:AJ:53:VAL:HG22  | 32:AJ:71:THR:O     | 2.13                     | 0.48              |
| 33:Ag:11:UNK:CB    | 33:Ag:148:UNK:HA   | 2.43                     | 0.48              |
| 34:BA:15:G:C2      | 34:BA:16:A:C5      | 3.01                     | 0.48              |
| 34:BA:59:A:H4'     | 34:BA:388:G:O5'    | 2.13                     | 0.48              |
| 34:BA:136:C:H4'    | 49:BT:65:GLN:NE2   | 2.29                     | 0.48              |
| 34:BA:191(C):G:C2' | 34:BA:191(D):U:O4' | 2.59                     | 0.48              |
| 34:BA:225:C:O2     | 34:BA:226:G:O4'    | 2.32                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 34:BA:228:A:O2'   | 34:BA:229:U:H5'   | 2.12                     | 0.48              |
| 34:BA:298:A:N6    | 34:BA:299:G:C2    | 2.82                     | 0.48              |
| 34:BA:372:C:N4    | 34:BA:389:A:N6    | 2.61                     | 0.48              |
| 34:BA:376:G:OP1   | 49:BT:6:LEU:CD1   | 2.62                     | 0.48              |
| 34:BA:428:G:O2'   | 34:BA:429:U:OP2   | 2.30                     | 0.48              |
| 34:BA:432:A:C8    | 34:BA:433:C:C6    | 3.01                     | 0.48              |
| 34:BA:451:A:O2'   | 34:BA:452:A:C8    | 2.65                     | 0.48              |
| 34:BA:529:G:C6    | 45:BP:49:ASN:ND2  | 2.81                     | 0.48              |
| 34:BA:536:C:O5'   | 34:BA:536:C:H6    | 1.96                     | 0.48              |
| 34:BA:538:G:O2'   | 34:BA:539:A:H5'   | 2.14                     | 0.48              |
| 34:BA:666:G:N1    | 34:BA:741:G:C4    | 2.82                     | 0.48              |
| 34:BA:812:C:O4'   | 34:BA:813:U:H5    | 1.95                     | 0.48              |
| 34:BA:874:G:N1    | 34:BA:875:C:C4    | 2.81                     | 0.48              |
| 34:BA:1054:C:OP2  | 34:BA:1197:G:OP2  | 2.30                     | 0.48              |
| 34:BA:1177:G:O5'  | 34:BA:1177:G:H8   | 1.96                     | 0.48              |
| 34:BA:1225:A:C3'  | 52:BW:80:TYR:HB2  | 2.43                     | 0.48              |
| 34:BA:1226:C:C5   | 46:BQ:104:ARG:CA  | 2.96                     | 0.48              |
| 34:BA:1261:A:H5'  | 34:BA:1284:C:OP1  | 2.14                     | 0.48              |
| 34:BA:1311:G:C4   | 34:BA:1327:C:H1'  | 2.46                     | 0.48              |
| 34:BA:1353:G:C2   | 34:BA:1370:G:C2   | 3.01                     | 0.48              |
| 34:BA:1354:C:H2'  | 34:BA:1355:G:C8   | 2.48                     | 0.48              |
| 34:BA:1402:C:H2'  | 34:BA:1403:C:C6   | 2.45                     | 0.48              |
| 34:BA:1483:A:H2'  | 34:BA:1484:C:O4'  | 2.13                     | 0.48              |
| 35:BF:59:GLU:HB2  | 35:BF:225:ALA:HB2 | 1.94                     | 0.48              |
| 35:BF:73:THR:CG2  | 35:BF:95:GLN:O    | 2.59                     | 0.48              |
| 36:BG:14:ILE:HG13 | 36:BG:178:LEU:CD1 | 2.43                     | 0.48              |
| 36:BG:25:GLY:N    | 36:BG:28:GLN:NE2  | 2.61                     | 0.48              |
| 36:BG:189:ALA:HB3 | 36:BG:196:LEU:N   | 2.12                     | 0.48              |
| 37:BH:54:TYR:C    | 37:BH:56:VAL:N    | 2.67                     | 0.48              |
| 37:BH:63:LYS:CG   | 37:BH:64:LEU:N    | 2.77                     | 0.48              |
| 37:BH:152:SER:O   | 37:BH:154:ASN:ND2 | 2.45                     | 0.48              |
| 38:BI:71:LEU:HD23 | 38:BI:72:GLN:N    | 2.28                     | 0.48              |
| 40:BK:47:CYS:HA   | 40:BK:50:ILE:CG1  | 2.43                     | 0.48              |
| 40:BK:113:GLU:CB  | 40:BK:118:VAL:CG1 | 2.91                     | 0.48              |
| 41:BL:15:ASN:O    | 41:BL:16:ALA:C    | 2.55                     | 0.48              |
| 42:BM:37:PHE:O    | 42:BM:40:LEU:HB2  | 2.13                     | 0.48              |
| 44:BO:84:VAL:HG21 | 51:BV:88:LYS:HZ2  | 1.78                     | 0.48              |
| 45:BP:100:ILE:H   | 45:BP:100:ILE:CD1 | 2.21                     | 0.48              |
| 49:BT:32:TYR:C    | 49:BT:34:GLU:N    | 2.70                     | 0.48              |
| 49:BT:66:PRO:C    | 49:BT:67:THR:O    | 2.52                     | 0.48              |
| 50:BU:86:GLU:O    | 50:BU:87:LYS:C    | 2.56                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 51:BV:25:THR:HG22 | 51:BV:42:ARG:CZ   | 2.43                     | 0.48              |
| 51:BV:31:LEU:HD23 | 51:BV:65:ILE:HG13 | 1.95                     | 0.48              |
| 52:BW:5:LEU:HD23  | 52:BW:41:VAL:HG12 | 1.94                     | 0.48              |
| 52:BW:10:PHE:C    | 52:BW:11:VAL:CG2  | 2.87                     | 0.48              |
| 52:BW:40:ILE:O    | 52:BW:68:GLY:CA   | 2.59                     | 0.48              |
| 52:BW:63:THR:O    | 52:BW:64:GLU:C    | 2.56                     | 0.48              |
| 52:BW:70:LYS:O    | 52:BW:71:LEU:C    | 2.57                     | 0.48              |
| 53:BX:40:ALA:HB2  | 53:BX:55:ILE:HG22 | 1.95                     | 0.48              |
| 54:BY:12:LYS:O    | 54:BY:13:ILE:C    | 2.56                     | 0.48              |
| 57:BZ:189:ALA:HA  | 57:BZ:193:HIS:CD2 | 2.48                     | 0.48              |
| 57:BZ:213:ASP:CG  | 57:BZ:221:ILE:HB  | 2.38                     | 0.48              |
| 57:BZ:325:PHE:HD2 | 57:BZ:330:GLN:HG2 | 1.79                     | 0.48              |
| 1:AA:61:G:C2      | 1:AA:62:C:C2      | 3.02                     | 0.48              |
| 1:AA:63:U:O2'     | 1:AA:64:A:N7      | 2.40                     | 0.48              |
| 1:AA:215:G:O2'    | 1:AA:216:A:OP2    | 2.30                     | 0.48              |
| 1:AA:253:C:C2'    | 1:AA:254:G:O5'    | 2.62                     | 0.48              |
| 1:AA:270(T):G:N3  | 1:AA:270(T):G:H2' | 2.29                     | 0.48              |
| 1:AA:371:A:C2     | 1:AA:372:G:C6     | 3.02                     | 0.48              |
| 1:AA:386:G:O2'    | 1:AA:387:U:C5     | 2.60                     | 0.48              |
| 1:AA:393:C:O2'    | 1:AA:394:A:H5'    | 2.14                     | 0.48              |
| 1:AA:411:G:N3     | 1:AA:2408:U:C4    | 2.81                     | 0.48              |
| 1:AA:445:C:H5''   | 16:AR:3:ARG:HG2   | 1.95                     | 0.48              |
| 1:AA:462:C:C6     | 1:AA:468:G:N2     | 2.82                     | 0.48              |
| 1:AA:514:A:C2'    | 1:AA:515:A:H5'    | 2.44                     | 0.48              |
| 1:AA:663:G:C2'    | 1:AA:940:G:H4'    | 2.43                     | 0.48              |
| 1:AA:720:C:O2'    | 1:AA:721:C:C5'    | 2.61                     | 0.48              |
| 1:AA:729:G:O2'    | 1:AA:730:C:O3'    | 2.30                     | 0.48              |
| 1:AA:742:G:O2'    | 1:AA:743:G:H5'    | 2.13                     | 0.48              |
| 1:AA:850:C:H5''   | 24:AZ:18:ASP:CB   | 2.43                     | 0.48              |
| 1:AA:856:C:C1'    | 22:AX:69:PHE:CD1  | 2.96                     | 0.48              |
| 1:AA:956:G:P      | 12:AN:87:LYS:HG3  | 2.53                     | 0.48              |
| 1:AA:1000:A:C2    | 1:AA:1155:A:N3    | 2.81                     | 0.48              |
| 1:AA:1011:G:H5'   | 1:AA:1012:U:OP2   | 2.13                     | 0.48              |
| 1:AA:1011:G:C6    | 1:AA:1151:G:C6    | 3.01                     | 0.48              |
| 1:AA:1029:A:N6    | 1:AA:1125:G:C2    | 2.81                     | 0.48              |
| 1:AA:1050:A:N6    | 1:AA:2751:G:C5    | 2.81                     | 0.48              |
| 1:AA:1114:G:H21   | 1:AA:1115:G:H1'   | 1.69                     | 0.48              |
| 1:AA:1153:C:N1    | 1:AA:1154:G:N7    | 2.62                     | 0.48              |
| 1:AA:1244:G:C5'   | 11:AM:9:ASN:CB    | 2.81                     | 0.48              |
| 1:AA:1255:U:O2    | 6:AF:72:ARG:HB3   | 2.14                     | 0.48              |
| 1:AA:1275:A:O2'   | 1:AA:1276:A:O5'   | 2.17                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1298:C:C4'   | 1:AA:1302:A:N6    | 2.76                     | 0.48              |
| 1:AA:1313:U:C2    | 1:AA:1314:C:C5    | 3.02                     | 0.48              |
| 1:AA:1334:G:C6    | 1:AA:1335:U:C4    | 3.01                     | 0.48              |
| 1:AA:1540:G:H3'   | 1:AA:1541:U:O4'   | 2.12                     | 0.48              |
| 1:AA:1578:U:C2'   | 1:AA:1579:A:O5'   | 2.61                     | 0.48              |
| 1:AA:1655:A:H4'   | 5:AE:114:ALA:HA   | 1.96                     | 0.48              |
| 1:AA:1916:A:H3'   | 1:AA:1916:A:P     | 2.54                     | 0.48              |
| 1:AA:2096:U:C2    | 1:AA:2097:C:C5    | 3.01                     | 0.48              |
| 1:AA:2114:A:H8    | 1:AA:2114:A:P     | 2.36                     | 0.48              |
| 1:AA:2126:A:O2'   | 1:AA:2127:G:P     | 2.72                     | 0.48              |
| 1:AA:2160:G:C2    | 1:AA:2161:C:C2    | 3.01                     | 0.48              |
| 1:AA:2232:U:C2'   | 1:AA:2233:U:C5'   | 2.92                     | 0.48              |
| 1:AA:2259:G:C5    | 1:AA:2260:C:C5    | 3.01                     | 0.48              |
| 1:AA:2350:C:O2'   | 1:AA:2351:G:P     | 2.71                     | 0.48              |
| 1:AA:2449:U:O4'   | 1:AA:2449:U:P     | 2.72                     | 0.48              |
| 1:AA:2505:G:H3'   | 1:AA:2505:G:H8    | 1.78                     | 0.48              |
| 1:AA:2507:C:C1'   | 59:AA:3002:8AN:N9 | 2.33                     | 0.48              |
| 1:AA:2512:C:C6    | 1:AA:2512:C:C3'   | 2.97                     | 0.48              |
| 1:AA:2528:U:C2    | 1:AA:2536:G:N2    | 2.82                     | 0.48              |
| 1:AA:2528:U:O2    | 1:AA:2536:G:N2    | 2.47                     | 0.48              |
| 1:AA:2597:G:C6    | 1:AA:2598:A:C6    | 3.02                     | 0.48              |
| 1:AA:2660:A:N3    | 57:BZ:457:THR:N   | 2.54                     | 0.48              |
| 1:AA:2741:A:H2'   | 1:AA:2742:C:H6    | 1.78                     | 0.48              |
| 1:AA:2756:U:C4    | 1:AA:2758:A:C6    | 3.00                     | 0.48              |
| 1:AA:2850:A:C2'   | 1:AA:2851:A:O5'   | 2.61                     | 0.48              |
| 2:AB:31:C:N4      | 2:AB:32:C:H41     | 2.12                     | 0.48              |
| 2:AB:61:G:C4      | 2:AB:62:C:C5      | 3.02                     | 0.48              |
| 2:AB:75:G:N2      | 21:AW:87:ASP:OD1  | 2.46                     | 0.48              |
| 2:AB:103:U:H6     | 2:AB:103:U:H5''   | 1.79                     | 0.48              |
| 3:AC:18:LYS:O     | 3:AC:20:TYR:CE1   | 2.66                     | 0.48              |
| 3:AC:132:GLY:C    | 3:AC:134:ARG:H    | 2.21                     | 0.48              |
| 3:AC:190:ARG:O    | 3:AC:191:ALA:C    | 2.57                     | 0.48              |
| 4:AD:33:LEU:CD1   | 4:AD:61:LEU:HD11  | 2.44                     | 0.48              |
| 4:AD:147:LEU:H    | 4:AD:154:LYS:CG   | 2.27                     | 0.48              |
| 5:AE:49:LEU:HD11  | 5:AE:51:PHE:HD1   | 1.78                     | 0.48              |
| 5:AE:149:ARG:HH11 | 5:AE:151:TYR:CA   | 2.26                     | 0.48              |
| 5:AE:197:ILE:N    | 5:AE:197:ILE:CD1  | 2.60                     | 0.48              |
| 6:AF:18:ARG:CG    | 6:AF:18:ARG:NH1   | 2.72                     | 0.48              |
| 6:AF:35:GLU:CA    | 6:AF:38:ARG:HD2   | 2.43                     | 0.48              |
| 6:AF:202:PHE:CD2  | 6:AF:205:ARG:HD2  | 2.48                     | 0.48              |
| 7:AG:107:LEU:HD21 | 7:AG:173:LEU:HD21 | 1.95                     | 0.48              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 7:AG:163:ALA:CB   | 7:AG:169:ALA:HA    | 2.25                     | 0.48              |
| 8:AH:26:VAL:C     | 8:AH:79:VAL:HG11   | 2.39                     | 0.48              |
| 8:AH:136:ILE:H    | 8:AH:141:VAL:HG21  | 1.78                     | 0.48              |
| 8:AH:155:SER:O    | 8:AH:158:HIS:O     | 2.32                     | 0.48              |
| 9:AK:74:ARG:O     | 9:AK:74:ARG:CG     | 2.50                     | 0.48              |
| 10:AL:6:THR:HA    | 10:AL:7:TYR:CE1    | 2.49                     | 0.48              |
| 10:AL:9:GLU:HA    | 10:AL:9:GLU:OE1    | 2.13                     | 0.48              |
| 10:AL:122:LEU:CA  | 15:AQ:74:ARG:NH1   | 2.68                     | 0.48              |
| 12:AN:11:LYS:HZ3  | 12:AN:73:PRO:HB3   | 1.77                     | 0.48              |
| 13:AO:54:LEU:O    | 13:AO:55:ALA:C     | 2.56                     | 0.48              |
| 13:AO:96:ARG:NE   | 13:AO:117:VAL:HG23 | 2.28                     | 0.48              |
| 13:AO:96:ARG:O    | 13:AO:114:VAL:HA   | 2.13                     | 0.48              |
| 14:AP:26:LEU:O    | 14:AP:88:ASP:CB    | 2.53                     | 0.48              |
| 14:AP:43:GLU:O    | 14:AP:44:LYS:C     | 2.56                     | 0.48              |
| 15:AQ:30:VAL:HG23 | 15:AQ:31:SER:H     | 1.77                     | 0.48              |
| 15:AQ:70:VAL:HG23 | 15:AQ:74:ARG:HD3   | 1.89                     | 0.48              |
| 15:AQ:85:LYS:HG3  | 15:AQ:88:ILE:HG12  | 1.95                     | 0.48              |
| 15:AQ:110:ILE:O   | 15:AQ:111:ARG:C    | 2.57                     | 0.48              |
| 16:AR:33:ARG:NH1  | 16:AR:33:ARG:HB2   | 2.28                     | 0.48              |
| 16:AR:50:ARG:NE   | 17:AS:75:PHE:CD2   | 2.74                     | 0.48              |
| 18:AT:25:ARG:CZ   | 18:AT:74:ALA:O     | 2.62                     | 0.48              |
| 18:AT:70:TYR:CD1  | 18:AT:70:TYR:C     | 2.92                     | 0.48              |
| 19:AU:26:TYR:C    | 19:AU:28:PHE:CZ    | 2.92                     | 0.48              |
| 20:AV:26:LYS:CE   | 20:AV:36:ALA:HB3   | 2.44                     | 0.48              |
| 20:AV:81:LYS:CG   | 20:AV:96:ILE:HG23  | 2.38                     | 0.48              |
| 22:AX:27:GLU:HA   | 22:AX:67:VAL:HG11  | 1.96                     | 0.48              |
| 22:AX:40:GLN:HG2  | 22:AX:45:PHE:CD1   | 2.48                     | 0.48              |
| 24:AZ:6:VAL:CG2   | 24:AZ:35:ARG:NH2   | 2.77                     | 0.48              |
| 24:AZ:9:VAL:HG13  | 24:AZ:54:VAL:CA    | 2.37                     | 0.48              |
| 25:Aa:33:VAL:CG1  | 25:Aa:35:VAL:CG2   | 2.92                     | 0.48              |
| 25:Aa:64:GLY:O    | 25:Aa:68:ARG:NH1   | 2.46                     | 0.48              |
| 27:Ac:7:ILE:HG23  | 27:Ac:8:LYS:H      | 1.79                     | 0.48              |
| 28:Ad:30:VAL:HG13 | 28:Ad:33:ARG:NH1   | 2.24                     | 0.48              |
| 30:Af:9:ARG:O     | 30:Af:10:ILE:HG23  | 2.14                     | 0.48              |
| 34:BA:292:G:OP2   | 34:BA:293:G:N7     | 2.47                     | 0.48              |
| 34:BA:293:G:C4    | 34:BA:294:U:C5     | 3.02                     | 0.48              |
| 34:BA:323:U:H5    | 34:BA:324:G:N9     | 2.11                     | 0.48              |
| 34:BA:342:C:C2    | 34:BA:343:U:C5     | 3.02                     | 0.48              |
| 34:BA:409:G:C4    | 34:BA:410:G:C8     | 3.02                     | 0.48              |
| 34:BA:430:A:C5    | 34:BA:431:A:C8     | 3.01                     | 0.48              |
| 34:BA:443:C:C2    | 34:BA:492:G:C2     | 3.02                     | 0.48              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:786:G:N2     | 34:BA:787:A:H1'    | 2.28                     | 0.48              |
| 34:BA:946:A:C2'    | 34:BA:947:G:H8     | 2.21                     | 0.48              |
| 34:BA:960:U:O2'    | 34:BA:961:U:P      | 2.72                     | 0.48              |
| 34:BA:1025:U:H4'   | 34:BA:1025:U:OP1   | 2.13                     | 0.48              |
| 34:BA:1067:A:HO2'  | 34:BA:1068:G:P     | 2.37                     | 0.48              |
| 34:BA:1212:U:OP2   | 34:BA:1212:U:O4'   | 2.32                     | 0.48              |
| 34:BA:1287:A:H2'   | 34:BA:1288:A:N7    | 2.28                     | 0.48              |
| 34:BA:1323:G:C2    | 34:BA:1324:A:C5    | 3.02                     | 0.48              |
| 34:BA:1405:G:C2    | 34:BA:1406:U:C5    | 3.01                     | 0.48              |
| 34:BA:1422:G:O2'   | 34:BA:1423:G:H5'   | 2.13                     | 0.48              |
| 34:BA:1454:G:OP2   | 53:BX:39:LYS:NZ    | 2.45                     | 0.48              |
| 34:BA:1502:A:C6    | 34:BA:1504:G:C2    | 3.01                     | 0.48              |
| 35:BF:59:GLU:CA    | 35:BF:221:LEU:HD21 | 2.43                     | 0.48              |
| 35:BF:81:VAL:HB    | 35:BF:94:ASN:OD1   | 2.14                     | 0.48              |
| 35:BF:168:THR:CB   | 35:BF:192:SER:HA   | 2.43                     | 0.48              |
| 35:BF:208:ILE:HA   | 35:BF:211:ILE:CD1  | 2.42                     | 0.48              |
| 36:BG:58:GLU:HB2   | 36:BG:65:ALA:CB    | 2.44                     | 0.48              |
| 36:BG:91:LEU:O     | 36:BG:92:ALA:C     | 2.56                     | 0.48              |
| 37:BH:179:GLU:C    | 37:BH:181:MET:N    | 2.72                     | 0.48              |
| 38:BI:7:GLU:HG2    | 38:BI:112:LEU:CD2  | 2.41                     | 0.48              |
| 38:BI:77:PRO:HG2   | 38:BI:78:HIS:H     | 1.79                     | 0.48              |
| 38:BI:82:VAL:HG11  | 38:BI:134:ALA:C    | 2.39                     | 0.48              |
| 39:BJ:12:PRO:HG2   | 39:BJ:13:ASN:ND2   | 2.28                     | 0.48              |
| 40:BK:37:ASN:O     | 40:BK:39:ALA:N     | 2.47                     | 0.48              |
| 40:BK:65:ALA:CB    | 40:BK:124:LEU:HD23 | 2.43                     | 0.48              |
| 40:BK:102:ARG:O    | 40:BK:105:VAL:N    | 2.47                     | 0.48              |
| 41:BL:3:THR:HB     | 41:BL:4:ASP:OD1    | 2.14                     | 0.48              |
| 41:BL:25:ASP:HA    | 41:BL:59:LEU:O     | 2.14                     | 0.48              |
| 42:BM:82:ALA:CB    | 42:BM:101:PHE:CE1  | 2.97                     | 0.48              |
| 42:BM:113:LYS:O    | 42:BM:115:GLY:N    | 2.38                     | 0.48              |
| 43:BN:31:GLY:CA    | 43:BN:81:THR:OG1   | 2.62                     | 0.48              |
| 43:BN:46:ARG:NH1   | 47:BR:59:ALA:CB    | 2.77                     | 0.48              |
| 45:BP:24:VAL:CG1   | 45:BP:26:ALA:H     | 2.26                     | 0.48              |
| 48:BS:63:ARG:HH12  | 48:BS:87:ILE:HD13  | 1.76                     | 0.48              |
| 49:BT:53:VAL:HA    | 49:BT:79:VAL:HG22  | 1.95                     | 0.48              |
| 51:BV:52:PRO:O     | 51:BV:55:ARG:N     | 2.40                     | 0.48              |
| 53:BX:62:LEU:O     | 53:BX:63:ILE:C     | 2.53                     | 0.48              |
| 55:BC:26:A:C6      | 55:BC:27:G:C5      | 3.01                     | 0.48              |
| 56:BD:38:A:H2'     | 56:BD:39:U:O4'     | 2.14                     | 0.48              |
| 57:BZ:158:LEU:CA   | 57:BZ:159:ASP:CB   | 2.88                     | 0.48              |
| 57:BZ:212:LEU:HD11 | 57:BZ:220:VAL:HG11 | 1.95                     | 0.48              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 57:BZ:236:GLN:CA | 57:BZ:247:ARG:CA   | 2.53                     | 0.48              |
| 1:AA:116:C:C2'   | 1:AA:117:G:O5'     | 2.62                     | 0.48              |
| 1:AA:149:A:C8    | 1:AA:150:C:N1      | 2.81                     | 0.48              |
| 1:AA:270(J):G:N1 | 1:AA:270(K):C:C2   | 2.82                     | 0.48              |
| 1:AA:276:A:H2'   | 1:AA:276:A:N3      | 2.28                     | 0.48              |
| 1:AA:278:A:N7    | 1:AA:359:A:H2      | 2.12                     | 0.48              |
| 1:AA:289:A:C4    | 1:AA:351:G:C6      | 3.01                     | 0.48              |
| 1:AA:307:G:H21   | 1:AA:330:A:N6      | 2.12                     | 0.48              |
| 1:AA:323:G:C2    | 1:AA:333:G:H1'     | 2.49                     | 0.48              |
| 1:AA:332:A:C8    | 1:AA:335:C:C4      | 3.01                     | 0.48              |
| 1:AA:400:G:C8    | 1:AA:400:G:C3'     | 2.95                     | 0.48              |
| 1:AA:408:G:O5'   | 1:AA:408:G:C8      | 2.64                     | 0.48              |
| 1:AA:484:C:C2'   | 1:AA:485:C:H6      | 2.13                     | 0.48              |
| 1:AA:498:G:O5'   | 1:AA:498:G:C8      | 2.61                     | 0.48              |
| 1:AA:501:A:N7    | 1:AA:502:A:N6      | 2.61                     | 0.48              |
| 1:AA:531:C:C5'   | 1:AA:532:A:N3      | 2.77                     | 0.48              |
| 1:AA:573:G:C2'   | 1:AA:574:C:C5'     | 2.91                     | 0.48              |
| 1:AA:603:A:H5''  | 11:AM:100:LEU:HD21 | 1.95                     | 0.48              |
| 1:AA:627:A:N6    | 1:AA:637:A:H1'     | 2.26                     | 0.48              |
| 1:AA:697:C:C3'   | 1:AA:698:C:H5''    | 2.43                     | 0.48              |
| 1:AA:735:A:O5'   | 1:AA:735:A:C8      | 2.57                     | 0.48              |
| 1:AA:878:A:H2'   | 1:AA:879:G:C8      | 2.47                     | 0.48              |
| 1:AA:954:G:C6    | 1:AA:955:C:C2      | 3.02                     | 0.48              |
| 1:AA:1008:C:O2'  | 1:AA:1009:A:P      | 2.71                     | 0.48              |
| 1:AA:1056:G:P    | 31:AI:34:ALA:H     | 2.37                     | 0.48              |
| 1:AA:1067:A:C4'  | 32:AJ:21:PRO:CB    | 2.91                     | 0.48              |
| 1:AA:1119:C:H2'  | 1:AA:1119:C:O2     | 2.13                     | 0.48              |
| 1:AA:1221:C:C2   | 1:AA:1229:G:C2     | 3.02                     | 0.48              |
| 1:AA:1234:U:H2'  | 1:AA:1235:G:O4'    | 2.14                     | 0.48              |
| 1:AA:1267:U:C5   | 1:AA:1268:A:N7     | 2.82                     | 0.48              |
| 1:AA:1457:A:H2'  | 1:AA:1458:C:H5'    | 1.94                     | 0.48              |
| 1:AA:1488:G:H3'  | 1:AA:1489:U:C5'    | 2.44                     | 0.48              |
| 1:AA:1588:C:C2'  | 1:AA:1589:C:O5'    | 2.62                     | 0.48              |
| 1:AA:1620:G:C2   | 1:AA:1621:U:C2     | 3.01                     | 0.48              |
| 1:AA:1665:A:C4'  | 10:AL:66:LYS:HB2   | 2.43                     | 0.48              |
| 1:AA:1697:G:O6   | 1:AA:1698:A:N1     | 2.47                     | 0.48              |
| 1:AA:1775:U:C1'  | 4:AD:208:LYS:NZ    | 2.76                     | 0.48              |
| 1:AA:1800:C:C4   | 1:AA:1818:U:C2     | 3.02                     | 0.48              |
| 1:AA:1802:A:H5'  | 1:AA:1803:A:P      | 2.54                     | 0.48              |
| 1:AA:1864:U:O2'  | 1:AA:1869:G:H5'    | 2.12                     | 0.48              |
| 1:AA:1958:C:H2'  | 1:AA:1959:G:O5'    | 2.13                     | 0.48              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2053:G:C2     | 1:AA:2054:A:C8    | 3.02                     | 0.48              |
| 1:AA:2058:A:N1     | 1:AA:2059:A:N6    | 2.52                     | 0.48              |
| 1:AA:2286:A:N6     | 27:Ac:32:ASN:HA   | 2.29                     | 0.48              |
| 1:AA:2346:A:H2     | 1:AA:2383:G:C2    | 2.32                     | 0.48              |
| 1:AA:2387:U:O5'    | 1:AA:2387:U:H6    | 1.97                     | 0.48              |
| 1:AA:2398:U:H2'    | 1:AA:2399:G:C8    | 2.45                     | 0.48              |
| 1:AA:2423:U:C6     | 1:AA:2425:A:C5    | 3.02                     | 0.48              |
| 1:AA:2440:C:H2'    | 1:AA:2441:C:O5'   | 2.13                     | 0.48              |
| 1:AA:2471:C:H2'    | 1:AA:2472:G:C5'   | 2.44                     | 0.48              |
| 1:AA:2543:G:N2     | 1:AA:2765:A:N3    | 2.61                     | 0.48              |
| 1:AA:2723:C:OP2    | 5:AE:109:LYS:NZ   | 2.46                     | 0.48              |
| 1:AA:2872:G:C2     | 1:AA:2873:A:N6    | 2.82                     | 0.48              |
| 1:AA:2877:G:N2     | 1:AA:2878:U:C2    | 2.82                     | 0.48              |
| 2:AB:45:A:C6       | 2:AB:46:A:C4      | 3.02                     | 0.48              |
| 2:AB:80:U:O2'      | 2:AB:81:G:H8      | 1.89                     | 0.48              |
| 3:AC:155:GLU:OE1   | 3:AC:155:GLU:HA   | 2.13                     | 0.48              |
| 4:AD:79:VAL:HG12   | 4:AD:81:ALA:N     | 2.28                     | 0.48              |
| 4:AD:117:VAL:C     | 4:AD:118:VAL:HG22 | 2.39                     | 0.48              |
| 4:AD:159:ALA:HB1   | 4:AD:198:ASN:O    | 2.14                     | 0.48              |
| 4:AD:226:MET:HB3   | 4:AD:227:ASN:H    | 1.36                     | 0.48              |
| 5:AE:52:LEU:CB     | 5:AE:73:GLU:O     | 2.57                     | 0.48              |
| 5:AE:59:VAL:O      | 5:AE:62:PRO:HD2   | 2.14                     | 0.48              |
| 5:AE:60:ASN:OD1    | 5:AE:61:ARG:N     | 2.47                     | 0.48              |
| 5:AE:61:ARG:CB     | 5:AE:62:PRO:HD3   | 2.44                     | 0.48              |
| 5:AE:91:VAL:O      | 5:AE:92:THR:CB    | 2.62                     | 0.48              |
| 5:AE:102:VAL:CA    | 5:AE:202:LYS:HZ2  | 2.27                     | 0.48              |
| 5:AE:128:SER:OG    | 5:AE:129:HIS:CD2  | 2.67                     | 0.48              |
| 6:AF:80:ALA:HB1    | 6:AF:81:PRO:HD2   | 1.95                     | 0.48              |
| 6:AF:106:ARG:HH21  | 6:AF:106:ARG:CB   | 2.27                     | 0.48              |
| 6:AF:119:ARG:HD3   | 6:AF:120:GLU:OE1  | 2.14                     | 0.48              |
| 7:AG:57:ALA:HA     | 7:AG:67:LYS:CA    | 2.44                     | 0.48              |
| 8:AH:9:ILE:HD13    | 8:AH:73:ALA:HB1   | 1.95                     | 0.48              |
| 8:AH:71:LEU:O      | 8:AH:74:ASN:CB    | 2.61                     | 0.48              |
| 8:AH:88:LEU:C      | 8:AH:88:LEU:CD2   | 2.85                     | 0.48              |
| 8:AH:90:LYS:NZ     | 8:AH:163:TYR:CG   | 2.76                     | 0.48              |
| 9:AK:78:TYR:O      | 9:AK:80:GLY:N     | 2.46                     | 0.48              |
| 10:AL:1:MET:HG3    | 10:AL:2:ILE:N     | 2.28                     | 0.48              |
| 10:AL:64:ARG:NH2   | 10:AL:78:ARG:NH1  | 2.61                     | 0.48              |
| 10:AL:70:LYS:CB    | 10:AL:72:PRO:HD2  | 2.43                     | 0.48              |
| 11:AM:23:PRO:HG2   | 11:AM:28:GLY:C    | 2.38                     | 0.48              |
| 11:AM:101:VAL:HG23 | 11:AM:101:VAL:O   | 2.12                     | 0.48              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 11:AM:113:LYS:HZ2  | 11:AM:115:LEU:CD1 | 2.24                     | 0.48              |
| 12:AN:69:PHE:C     | 12:AN:71:ASP:H    | 2.21                     | 0.48              |
| 12:AN:134:ARG:HH11 | 12:AN:134:ARG:CG  | 2.26                     | 0.48              |
| 13:AO:74:LYS:N     | 13:AO:77:ARG:NH2  | 2.61                     | 0.48              |
| 13:AO:75:LEU:HA    | 13:AO:75:LEU:HD23 | 1.46                     | 0.48              |
| 14:AP:14:VAL:CG1   | 14:AP:15:ARG:N    | 2.64                     | 0.48              |
| 14:AP:49:VAL:CG2   | 14:AP:50:SER:N    | 2.76                     | 0.48              |
| 14:AP:58:LEU:C     | 14:AP:60:GLY:N    | 2.72                     | 0.48              |
| 15:AQ:50:ILE:CG2   | 15:AQ:68:TYR:HB2  | 2.44                     | 0.48              |
| 15:AQ:65:LYS:NZ    | 15:AQ:75:ILE:HD13 | 2.28                     | 0.48              |
| 15:AQ:100:TYR:C    | 15:AQ:102:ILE:N   | 2.70                     | 0.48              |
| 16:AR:32:PHE:O     | 16:AR:36:ARG:HG2  | 2.14                     | 0.48              |
| 16:AR:47:TYR:O     | 16:AR:48:ALA:C    | 2.56                     | 0.48              |
| 17:AS:4:ILE:N      | 17:AS:4:ILE:CD1   | 2.73                     | 0.48              |
| 18:AT:29:LEU:O     | 18:AT:30:GLU:C    | 2.55                     | 0.48              |
| 20:AV:22:GLY:HA3   | 20:AV:73:ARG:CZ   | 2.38                     | 0.48              |
| 20:AV:31:LEU:O     | 20:AV:32:PRO:C    | 2.49                     | 0.48              |
| 20:AV:46:LYS:HB3   | 20:AV:46:LYS:HZ3  | 1.79                     | 0.48              |
| 20:AV:84:ARG:HG2   | 20:AV:85:VAL:N    | 2.28                     | 0.48              |
| 21:AW:79:ARG:C     | 21:AW:80:ARG:CD   | 2.82                     | 0.48              |
| 22:AX:14:ARG:HD3   | 22:AX:14:ARG:N    | 2.29                     | 0.48              |
| 24:AZ:16:PRO:O     | 24:AZ:19:GLN:N    | 2.47                     | 0.48              |
| 25:Aa:47:GLN:CA    | 25:Aa:52:THR:HG21 | 2.37                     | 0.48              |
| 25:Aa:57:GLU:CA    | 25:Aa:61:ARG:HG3  | 2.40                     | 0.48              |
| 25:Aa:61:ARG:O     | 25:Aa:62:ARG:C    | 2.56                     | 0.48              |
| 27:Ac:21:TYR:CD2   | 27:Ac:21:TYR:O    | 2.66                     | 0.48              |
| 34:BA:22:G:P       | 34:BA:561:U:O2    | 2.72                     | 0.48              |
| 34:BA:30:U:O2'     | 34:BA:31:G:P      | 2.71                     | 0.48              |
| 34:BA:48:C:C5      | 34:BA:364:A:H2    | 2.32                     | 0.48              |
| 34:BA:247:G:N2     | 34:BA:282:A:C2    | 2.77                     | 0.48              |
| 34:BA:430:A:P      | 37:BH:9:CYS:H     | 2.36                     | 0.48              |
| 34:BA:432:A:C8     | 34:BA:433:C:C5    | 3.02                     | 0.48              |
| 34:BA:464:G:N2     | 34:BA:474:G:O6    | 2.47                     | 0.48              |
| 34:BA:729:A:C2'    | 34:BA:730:G:O5'   | 2.62                     | 0.48              |
| 34:BA:744:C:H2'    | 34:BA:745:C:C6    | 2.48                     | 0.48              |
| 34:BA:761:G:H1'    | 50:BU:103:GLY:O   | 2.13                     | 0.48              |
| 34:BA:878:G:O2'    | 34:BA:879:C:H5'   | 2.13                     | 0.48              |
| 34:BA:1031:G:C6    | 34:BA:1032:A:C6   | 3.01                     | 0.48              |
| 34:BA:1081:G:H2'   | 34:BA:1082:G:C8   | 2.48                     | 0.48              |
| 34:BA:1138:G:C2    | 34:BA:1140:C:C5   | 3.02                     | 0.48              |
| 34:BA:1142:G:H2'   | 34:BA:1143:G:C8   | 2.41                     | 0.48              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1181:G:H2'   | 34:BA:1182:G:C4'   | 2.44                     | 0.48              |
| 34:BA:1237:C:C4'   | 34:BA:1334:G:N2    | 2.76                     | 0.48              |
| 34:BA:1325:C:C2    | 34:BA:1326:C:C5    | 3.01                     | 0.48              |
| 34:BA:1338:G:N2    | 56:BE:29:G:H22     | 2.12                     | 0.48              |
| 34:BA:1414:U:C2'   | 34:BA:1415:G:H8    | 2.23                     | 0.48              |
| 35:BF:84:GLU:CD    | 35:BF:233:SER:HB3  | 2.38                     | 0.48              |
| 35:BF:181:PHE:CE1  | 41:BL:70:GLN:NE2   | 2.82                     | 0.48              |
| 35:BF:187:LEU:HD23 | 35:BF:201:ILE:O    | 2.14                     | 0.48              |
| 35:BF:207:ALA:O    | 35:BF:209:ARG:N    | 2.46                     | 0.48              |
| 36:BG:57:ILE:HG23  | 36:BG:66:VAL:HG22  | 1.96                     | 0.48              |
| 36:BG:114:PRO:O    | 36:BG:117:ALA:HB3  | 2.14                     | 0.48              |
| 37:BH:200:GLU:C    | 37:BH:204:ILE:HD12 | 2.38                     | 0.48              |
| 38:BI:34:VAL:CG2   | 38:BI:62:ALA:CB    | 2.91                     | 0.48              |
| 38:BI:72:GLN:HE22  | 38:BI:144:THR:HG23 | 1.74                     | 0.48              |
| 38:BI:76:ILE:CG2   | 38:BI:142:LEU:HD13 | 2.44                     | 0.48              |
| 38:BI:144:THR:HG22 | 38:BI:146:ALA:CB   | 2.44                     | 0.48              |
| 39:BJ:69:GLU:HB2   | 39:BJ:70:ASP:H     | 1.43                     | 0.48              |
| 40:BK:123:GLU:OE1  | 40:BK:134:ALA:CB   | 2.62                     | 0.48              |
| 41:BL:85:ARG:CD    | 41:BL:134:ILE:O    | 2.59                     | 0.48              |
| 42:BM:4:TYR:HB3    | 42:BM:87:GLN:HB2   | 1.95                     | 0.48              |
| 42:BM:17:VAL:CG2   | 42:BM:77:ILE:HG23  | 2.44                     | 0.48              |
| 44:BO:85:ARG:CZ    | 44:BO:111:ASP:OD2  | 2.61                     | 0.48              |
| 44:BO:91:ARG:CD    | 44:BO:95:ILE:HD11  | 2.44                     | 0.48              |
| 44:BO:99:GLN:HA    | 44:BO:105:VAL:CG2  | 2.44                     | 0.48              |
| 45:BP:59:ARG:CA    | 45:BP:64:TYR:O     | 2.51                     | 0.48              |
| 45:BP:79:GLU:O     | 45:BP:81:SER:N     | 2.43                     | 0.48              |
| 45:BP:82:VAL:HB    | 45:BP:106:ASP:OD2  | 2.13                     | 0.48              |
| 45:BP:86:ARG:HD3   | 45:BP:101:VAL:HG11 | 1.96                     | 0.48              |
| 46:BQ:108:ARG:HH12 | 46:BQ:111:LYS:HB3  | 1.75                     | 0.48              |
| 48:BS:77:ARG:C     | 48:BS:77:ARG:CZ    | 2.86                     | 0.48              |
| 49:BT:71:ARG:NH1   | 49:BT:71:ARG:HB2   | 2.29                     | 0.48              |
| 50:BU:41:LYS:C     | 50:BU:42:TYR:CD1   | 2.91                     | 0.48              |
| 51:BV:87:ARG:HG2   | 51:BV:87:ARG:HH11  | 1.79                     | 0.48              |
| 52:BW:68:GLY:O     | 52:BW:69:HIS:ND1   | 2.46                     | 0.48              |
| 56:BE:4:C:H2'      | 56:BE:6:G:C8       | 2.48                     | 0.48              |
| 56:BE:7:A:C1'      | 56:BE:49:C:OP2     | 2.62                     | 0.48              |
| 57:BZ:61:THR:HG21  | 57:BZ:65:LYS:HB3   | 1.90                     | 0.48              |
| 57:BZ:64:ILE:CB    | 57:BZ:65:LYS:HA    | 2.42                     | 0.48              |
| 57:BZ:73:VAL:HB    | 57:BZ:74:ASP:O     | 2.14                     | 0.48              |
| 57:BZ:240:ILE:HG22 | 57:BZ:241:ASP:H    | 1.78                     | 0.48              |
| 57:BZ:311:PHE:O    | 57:BZ:356:PHE:N    | 2.45                     | 0.48              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 57:BZ:382:VAL:HG23 | 57:BZ:569:LEU:HG  | 1.92                     | 0.48              |
| 57:BZ:401:GLU:HB3  | 57:BZ:467:SER:CB  | 2.42                     | 0.48              |
| 57:BZ:443:ILE:CD1  | 57:BZ:447:GLY:O   | 2.61                     | 0.48              |
| 57:BZ:495:LYS:C    | 57:BZ:516:ALA:O   | 2.53                     | 0.48              |
| 1:AA:83:G:C6       | 1:AA:102:G:N3     | 2.81                     | 0.48              |
| 1:AA:107:C:H2'     | 1:AA:108:U:C6     | 2.48                     | 0.48              |
| 1:AA:141:A:N3      | 1:AA:1596:A:O2'   | 2.41                     | 0.48              |
| 1:AA:215:G:C4'     | 1:AA:216:A:H4'    | 2.44                     | 0.48              |
| 1:AA:253:C:C2'     | 1:AA:254:G:C5'    | 2.91                     | 0.48              |
| 1:AA:323:G:H2'     | 6:AF:170:LEU:CG   | 2.42                     | 0.48              |
| 1:AA:352:G:C2      | 1:AA:353:G:H1'    | 2.48                     | 0.48              |
| 1:AA:363(B):G:O2'  | 1:AA:363(C):G:O5' | 2.31                     | 0.48              |
| 1:AA:606:U:OP2     | 1:AA:606:U:C5     | 2.67                     | 0.48              |
| 1:AA:628:G:N1      | 1:AA:629:G:C6     | 2.81                     | 0.48              |
| 1:AA:729:G:OP1     | 4:AD:19:ALA:HB1   | 2.14                     | 0.48              |
| 1:AA:740:U:O4'     | 1:AA:1784:A:C6    | 2.67                     | 0.48              |
| 1:AA:768:G:O5'     | 1:AA:768:G:H8     | 1.96                     | 0.48              |
| 1:AA:936:C:C2      | 1:AA:937:U:C5     | 3.02                     | 0.48              |
| 1:AA:1066:U:O3'    | 1:AA:1068:G:OP2   | 2.31                     | 0.48              |
| 1:AA:1080:C:O2'    | 32:AJ:125:ARG:HB3 | 2.12                     | 0.48              |
| 1:AA:1115:G:N2     | 1:AA:1116:C:O2    | 2.47                     | 0.48              |
| 1:AA:1144:G:O2'    | 1:AA:1145:C:H5'   | 2.13                     | 0.48              |
| 1:AA:1165:U:O2'    | 1:AA:1166:C:O4'   | 2.32                     | 0.48              |
| 1:AA:1238:G:N1     | 1:AA:1239:G:C5    | 2.82                     | 0.48              |
| 1:AA:1281:G:C4     | 1:AA:1282:U:C5    | 3.01                     | 0.48              |
| 1:AA:1299:G:O3'    | 1:AA:1300:U:C6    | 2.67                     | 0.48              |
| 1:AA:1348:G:C2'    | 1:AA:1349:A:O5'   | 2.62                     | 0.48              |
| 1:AA:1359:A:C4     | 1:AA:1373:A:C2    | 3.02                     | 0.48              |
| 1:AA:1388:G:H4'    | 1:AA:1524:G:HO2'  | 1.79                     | 0.48              |
| 1:AA:1453:A:N7     | 13:AO:73:VAL:CG1  | 2.77                     | 0.48              |
| 1:AA:1475:G:C2     | 1:AA:1476:C:H6    | 2.31                     | 0.48              |
| 1:AA:1513:C:H2'    | 1:AA:1514:U:H5    | 1.79                     | 0.48              |
| 1:AA:1569:A:O3'    | 4:AD:39:LYS:HE2   | 2.13                     | 0.48              |
| 1:AA:1609:A:N6     | 1:AA:1616:A:H2    | 2.04                     | 0.48              |
| 1:AA:1645:G:OP2    | 1:AA:1645:G:H8    | 1.97                     | 0.48              |
| 1:AA:1651:G:H5''   | 1:AA:1652:A:OP1   | 2.13                     | 0.48              |
| 1:AA:1703:G:C2'    | 1:AA:1704:G:H5'   | 2.44                     | 0.48              |
| 1:AA:1761:C:H5''   | 1:AA:1762:A:C2    | 2.49                     | 0.48              |
| 1:AA:1820:U:C5     | 4:AD:159:ALA:C    | 2.89                     | 0.48              |
| 1:AA:1859:A:H8     | 1:AA:1859:A:O5'   | 1.96                     | 0.48              |
| 1:AA:1949:G:O2'    | 1:AA:1950:G:C5'   | 2.59                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2020:A:H2'   | 1:AA:2021:C:C5'   | 2.34                     | 0.48              |
| 1:AA:2072:G:C6    | 1:AA:2073:C:C4    | 3.02                     | 0.48              |
| 1:AA:2324:C:C2'   | 1:AA:2325:G:OP1   | 2.61                     | 0.48              |
| 1:AA:2373:G:O2'   | 1:AA:2374:C:C6    | 2.61                     | 0.48              |
| 1:AA:2397:G:C2    | 1:AA:2420:C:C2    | 3.02                     | 0.48              |
| 1:AA:2406:U:O2'   | 11:AM:67:MET:CG   | 2.62                     | 0.48              |
| 1:AA:2415:G:C2    | 1:AA:2416:C:C4    | 3.01                     | 0.48              |
| 1:AA:2465:C:O3'   | 30:Af:5:ALA:HB3   | 2.14                     | 0.48              |
| 1:AA:2585:U:C2'   | 1:AA:2586:C:OP2   | 2.62                     | 0.48              |
| 1:AA:2601:C:C2    | 1:AA:2603:G:N7    | 2.82                     | 0.48              |
| 1:AA:2604:U:H2'   | 1:AA:2605:U:C6    | 2.49                     | 0.48              |
| 1:AA:2623:G:N2    | 1:AA:2624:G:C4    | 2.81                     | 0.48              |
| 1:AA:2623:G:H22   | 26:Ab:22:HIS:CE1  | 2.22                     | 0.48              |
| 1:AA:2630:G:C2    | 1:AA:2789:C:N3    | 2.80                     | 0.48              |
| 1:AA:2640:G:C4    | 1:AA:2641:G:C8    | 3.01                     | 0.48              |
| 1:AA:2787:C:H1'   | 5:AE:61:ARG:CZ    | 2.43                     | 0.48              |
| 1:AA:2799:A:C4'   | 1:AA:2802:G:C2    | 2.96                     | 0.48              |
| 1:AA:2828:C:H2'   | 1:AA:2829:C:H6    | 1.78                     | 0.48              |
| 1:AA:2847:U:H5'   | 1:AA:2848:G:OP2   | 2.13                     | 0.48              |
| 2:AB:61:G:C2      | 2:AB:62:C:C2      | 3.01                     | 0.48              |
| 3:AC:23:ASP:O     | 3:AC:24:GLU:C     | 2.57                     | 0.48              |
| 3:AC:43:VAL:CB    | 3:AC:224:ILE:CD1  | 2.85                     | 0.48              |
| 4:AD:6:PHE:O      | 4:AD:28:GLU:OE1   | 2.31                     | 0.48              |
| 4:AD:9:TYR:CE1    | 4:AD:25:THR:CG2   | 2.96                     | 0.48              |
| 4:AD:38:LYS:HD2   | 4:AD:38:LYS:H     | 1.78                     | 0.48              |
| 4:AD:95:LEU:CD2   | 4:AD:96:HIS:N     | 2.70                     | 0.48              |
| 4:AD:105:ILE:CD1  | 4:AD:106:ILE:N    | 2.70                     | 0.48              |
| 4:AD:144:ALA:O    | 4:AD:145:VAL:C    | 2.57                     | 0.48              |
| 4:AD:149:PRO:HG3  | 4:AD:189:CYS:SG   | 2.54                     | 0.48              |
| 5:AE:8:LYS:CA     | 5:AE:8:LYS:CE     | 2.78                     | 0.48              |
| 5:AE:8:LYS:CE     | 15:AQ:3:ARG:HG3   | 2.44                     | 0.48              |
| 5:AE:37:ARG:CB    | 5:AE:40:GLU:HB2   | 2.43                     | 0.48              |
| 6:AF:132:VAL:HG23 | 6:AF:135:LYS:HB2  | 1.96                     | 0.48              |
| 6:AF:169:ASN:ND2  | 6:AF:171:PRO:O    | 2.47                     | 0.48              |
| 7:AG:59:GLU:O     | 7:AG:60:LEU:C     | 2.56                     | 0.48              |
| 7:AG:94:LEU:CD1   | 7:AG:94:LEU:N     | 2.76                     | 0.48              |
| 7:AG:100:TRP:O    | 7:AG:101:ILE:C    | 2.55                     | 0.48              |
| 7:AG:148:MET:HB3  | 7:AG:151:ALA:CB   | 2.40                     | 0.48              |
| 7:AG:162:THR:C    | 7:AG:164:GLU:N    | 2.61                     | 0.48              |
| 8:AH:28:GLY:HA3   | 8:AH:79:VAL:C     | 2.38                     | 0.48              |
| 8:AH:118:PRO:CG   | 8:AH:144:VAL:HG21 | 2.37                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:AK:12:ARG:CD    | 9:AK:50:ASP:OD1   | 2.62                     | 0.48              |
| 10:AL:88:ASN:C    | 10:AL:90:GLN:N    | 2.71                     | 0.48              |
| 12:AN:96:VAL:HG12 | 12:AN:98:LYS:HZ1  | 1.76                     | 0.48              |
| 12:AN:122:GLY:O   | 12:AN:124:LYS:N   | 2.46                     | 0.48              |
| 14:AP:5:THR:HG22  | 14:AP:6:ALA:N     | 2.29                     | 0.48              |
| 14:AP:57:LYS:HD2  | 14:AP:65:VAL:HA   | 1.95                     | 0.48              |
| 14:AP:103:GLU:CD  | 14:AP:103:GLU:H   | 2.21                     | 0.48              |
| 16:AR:70:ARG:C    | 16:AR:72:HIS:N    | 2.67                     | 0.48              |
| 17:AS:22:VAL:O    | 17:AS:93:GLU:OE1  | 2.31                     | 0.48              |
| 18:AT:59:VAL:HG21 | 18:AT:66:GLU:HG3  | 1.94                     | 0.48              |
| 21:AW:75:ASN:O    | 21:AW:84:GLU:N    | 2.45                     | 0.48              |
| 21:AW:95:PRO:HG2  | 21:AW:131:ARG:CD  | 2.44                     | 0.48              |
| 22:AX:21:LEU:HA   | 22:AX:39:ARG:HB2  | 1.96                     | 0.48              |
| 23:AY:36:ILE:C    | 23:AY:38:GLN:HG3  | 2.39                     | 0.48              |
| 24:AZ:35:ARG:NH1  | 24:AZ:47:VAL:CG2  | 2.74                     | 0.48              |
| 25:Aa:7:PRO:HG2   | 25:Aa:60:GLN:CG   | 2.44                     | 0.48              |
| 25:Aa:48:ARG:H    | 25:Aa:52:THR:CG2  | 2.27                     | 0.48              |
| 26:Ab:4:HIS:CG    | 26:Ab:5:PRO:CD    | 2.97                     | 0.48              |
| 26:Ab:50:GLY:O    | 26:Ab:57:VAL:HG22 | 2.14                     | 0.48              |
| 28:Ad:34:ARG:O    | 28:Ad:35:ARG:C    | 2.56                     | 0.48              |
| 28:Ad:41:ARG:HD3  | 28:Ad:42:LEU:H    | 1.79                     | 0.48              |
| 34:BA:20:U:H5     | 34:BA:916:G:H1    | 1.61                     | 0.48              |
| 34:BA:22:G:O4'    | 34:BA:885:G:H1'   | 2.14                     | 0.48              |
| 34:BA:22:G:C4'    | 34:BA:885:G:O4'   | 2.62                     | 0.48              |
| 34:BA:87:A:N7     | 34:BA:88:C:C5     | 2.81                     | 0.48              |
| 34:BA:124:G:N2    | 34:BA:238:G:H1'   | 2.28                     | 0.48              |
| 34:BA:261:U:O4    | 53:BX:79:ARG:NH2  | 2.46                     | 0.48              |
| 34:BA:439:A:H3'   | 34:BA:440:A:C8    | 2.45                     | 0.48              |
| 34:BA:439:A:C2    | 34:BA:496:A:H1'   | 2.49                     | 0.48              |
| 34:BA:502:G:O2'   | 34:BA:503:C:H5'   | 2.13                     | 0.48              |
| 34:BA:521:G:N2    | 34:BA:522:C:C2    | 2.81                     | 0.48              |
| 34:BA:541:G:C8    | 34:BA:541:G:OP2   | 2.67                     | 0.48              |
| 34:BA:690:G:H3'   | 34:BA:691:G:C8    | 2.49                     | 0.48              |
| 34:BA:778:G:C2    | 34:BA:779:C:C6    | 3.02                     | 0.48              |
| 34:BA:821:G:O6    | 34:BA:880:C:N4    | 2.46                     | 0.48              |
| 34:BA:842:C:H5'   | 34:BA:848:C:O2    | 2.13                     | 0.48              |
| 34:BA:862:C:N3    | 34:BA:863:U:H5    | 2.12                     | 0.48              |
| 34:BA:872:A:C4    | 34:BA:874:G:N7    | 2.82                     | 0.48              |
| 34:BA:891:U:C5    | 34:BA:906:G:N2    | 2.82                     | 0.48              |
| 34:BA:1011:G:C2   | 34:BA:1012:U:H1'  | 2.49                     | 0.48              |
| 34:BA:1087:G:N2   | 34:BA:1099:G:C4   | 2.82                     | 0.48              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1134:G:C6    | 34:BA:1141:C:N4    | 2.82                     | 0.48              |
| 34:BA:1181:G:H2'   | 34:BA:1182:G:H5'   | 1.96                     | 0.48              |
| 34:BA:1201:A:HO2'  | 34:BA:1202:G:H5''  | 1.79                     | 0.48              |
| 34:BA:1226:C:P     | 52:BW:80:TYR:HB3   | 2.54                     | 0.48              |
| 34:BA:1261:A:H2'   | 34:BA:1261:A:N3    | 2.28                     | 0.48              |
| 34:BA:1274:G:H21   | 34:BA:1275:A:N6    | 2.11                     | 0.48              |
| 34:BA:1370:G:H5''  | 42:BM:12:GLU:CG    | 2.44                     | 0.48              |
| 34:BA:1455:G:H5''  | 53:BX:31:SER:CB    | 2.40                     | 0.48              |
| 34:BA:1495:U:C2'   | 34:BA:1496:C:H5'   | 2.38                     | 0.48              |
| 35:BF:115:LEU:HD23 | 35:BF:149:LEU:HD13 | 1.94                     | 0.48              |
| 35:BF:144:ARG:O    | 35:BF:147:LYS:CB   | 2.60                     | 0.48              |
| 35:BF:168:THR:HG21 | 35:BF:192:SER:HA   | 1.96                     | 0.48              |
| 36:BG:5:ILE:CG2    | 43:BN:51:ARG:HH22  | 2.27                     | 0.48              |
| 36:BG:16:ARG:O     | 36:BG:17:ASP:OD1   | 2.31                     | 0.48              |
| 36:BG:29:TYR:CD1   | 47:BR:36:PHE:HZ    | 2.32                     | 0.48              |
| 36:BG:116:VAL:HG13 | 36:BG:119:ARG:HD3  | 1.96                     | 0.48              |
| 37:BH:14:ARG:HD3   | 37:BH:15:GLU:OE1   | 2.14                     | 0.48              |
| 37:BH:47:ARG:NH2   | 37:BH:48:ALA:O     | 2.46                     | 0.48              |
| 37:BH:75:PHE:HE1   | 37:BH:97:LEU:CD2   | 2.27                     | 0.48              |
| 37:BH:104:VAL:CG2  | 37:BH:105:VAL:N    | 2.76                     | 0.48              |
| 37:BH:128:VAL:HB   | 37:BH:132:ARG:HA   | 1.95                     | 0.48              |
| 38:BI:91:LEU:HA    | 38:BI:119:LEU:O    | 2.14                     | 0.48              |
| 38:BI:108:ALA:HA   | 38:BI:111:GLU:CD   | 2.38                     | 0.48              |
| 40:BK:49:ILE:CG2   | 40:BK:121:ALA:HB1  | 2.33                     | 0.48              |
| 40:BK:104:LEU:O    | 40:BK:105:VAL:C    | 2.55                     | 0.48              |
| 41:BL:68:ARG:CD    | 41:BL:69:ARG:N     | 2.73                     | 0.48              |
| 42:BM:5:TYR:HD2    | 42:BM:6:GLY:H      | 1.62                     | 0.48              |
| 42:BM:10:ARG:HH21  | 42:BM:75:ASP:CG    | 2.22                     | 0.48              |
| 42:BM:38:GLN:O     | 42:BM:39:GLY:C     | 2.57                     | 0.48              |
| 42:BM:79:LEU:O     | 42:BM:82:ALA:HB3   | 2.12                     | 0.48              |
| 42:BM:85:LEU:HD11  | 42:BM:92:TYR:HE1   | 1.77                     | 0.48              |
| 43:BN:63:PHE:HA    | 47:BR:59:ALA:N     | 2.28                     | 0.48              |
| 43:BN:74:ILE:HD11  | 43:BN:85:LEU:HD21  | 1.96                     | 0.48              |
| 44:BO:60:ALA:O     | 44:BO:63:LEU:N     | 2.47                     | 0.48              |
| 44:BO:85:ARG:HD3   | 44:BO:85:ARG:HA    | 1.56                     | 0.48              |
| 45:BP:53:ARG:CZ    | 45:BP:92:ASP:OD2   | 2.62                     | 0.48              |
| 48:BS:17:ARG:HH11  | 48:BS:77:ARG:HD3   | 1.72                     | 0.48              |
| 50:BU:36:ILE:HD13  | 50:BU:36:ILE:H     | 1.74                     | 0.48              |
| 51:BV:63:GLN:HA    | 51:BV:66:LEU:HD21  | 1.94                     | 0.48              |
| 53:BX:59:ALA:C     | 53:BX:61:SER:N     | 2.72                     | 0.48              |
| 54:BY:23:PRO:C     | 54:BY:25:LYS:N     | 2.69                     | 0.48              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 57:BZ:11:ILE:CG2   | 57:BZ:112:VAL:CG2 | 2.88                     | 0.48              |
| 57:BZ:18:LYS:HG3   | 57:BZ:76:PRO:HB3  | 1.43                     | 0.48              |
| 57:BZ:51:GLU:CD    | 57:BZ:52:ARG:H    | 2.22                     | 0.48              |
| 57:BZ:95:VAL:O     | 57:BZ:124:ILE:HB  | 2.14                     | 0.48              |
| 57:BZ:258:LEU:HD23 | 57:BZ:259:GLY:HA3 | 1.95                     | 0.48              |
| 57:BZ:578:VAL:HG13 | 57:BZ:587:ILE:CG1 | 2.24                     | 0.48              |
| 60:BZ:701:GCP:H8   | 60:BZ:701:GCP:O5' | 2.14                     | 0.48              |
| 1:AA:7:G:H2'       | 1:AA:8:A:C8       | 2.47                     | 0.48              |
| 1:AA:29:U:C2       | 1:AA:30:G:O6      | 2.67                     | 0.48              |
| 1:AA:48:G:H8       | 1:AA:48:G:O5'     | 1.97                     | 0.48              |
| 1:AA:128:C:N4      | 1:AA:129:C:H41    | 2.12                     | 0.48              |
| 1:AA:270(B):A:C1'  | 1:AA:270(C):C:C5  | 2.92                     | 0.48              |
| 1:AA:270(W):G:N7   | 1:AA:270(X):G:N7  | 2.61                     | 0.48              |
| 1:AA:285:C:H2'     | 1:AA:286:C:H6     | 1.78                     | 0.48              |
| 1:AA:295:G:N2      | 1:AA:296:C:C2     | 2.82                     | 0.48              |
| 1:AA:454:A:H3'     | 1:AA:454:A:C8     | 2.49                     | 0.48              |
| 1:AA:459:U:H3'     | 28:Ad:40:TRP:CZ3  | 2.47                     | 0.48              |
| 1:AA:468:G:H2'     | 1:AA:469:G:C4'    | 2.43                     | 0.48              |
| 1:AA:500:G:O2'     | 1:AA:501:A:H3'    | 2.14                     | 0.48              |
| 1:AA:531:C:C2'     | 1:AA:532:A:OP1    | 2.62                     | 0.48              |
| 1:AA:600:G:H4'     | 6:AF:105:VAL:HG13 | 1.96                     | 0.48              |
| 1:AA:616:A:O3'     | 1:AA:617:G:O4'    | 2.32                     | 0.48              |
| 1:AA:617:G:P       | 6:AF:40:GLN:OE1   | 2.71                     | 0.48              |
| 1:AA:638:G:H2'     | 1:AA:639:U:C4'    | 2.44                     | 0.48              |
| 1:AA:740:U:O5'     | 1:AA:1784:A:C2    | 2.67                     | 0.48              |
| 1:AA:775:G:O2'     | 1:AA:794:G:C8     | 2.61                     | 0.48              |
| 1:AA:786:C:H2'     | 1:AA:787:U:O4'    | 2.14                     | 0.48              |
| 1:AA:791:C:H5'     | 1:AA:792:G:OP1    | 2.14                     | 0.48              |
| 1:AA:819:A:C2      | 1:AA:820:A:C5     | 3.02                     | 0.48              |
| 1:AA:851:U:H1'     | 24:AZ:46:ASN:HB2  | 1.96                     | 0.48              |
| 1:AA:892:G:C2      | 1:AA:893:C:C4     | 3.02                     | 0.48              |
| 1:AA:949:C:H2'     | 1:AA:950:G:C8     | 2.34                     | 0.48              |
| 1:AA:954:G:O2'     | 1:AA:955:C:H5'    | 2.14                     | 0.48              |
| 1:AA:1002:G:H2'    | 1:AA:1003:G:O5'   | 2.13                     | 0.48              |
| 1:AA:1024:G:O6     | 1:AA:1134:G:H1'   | 2.14                     | 0.48              |
| 1:AA:1078:U:H1'    | 1:AA:1088:A:N3    | 2.29                     | 0.48              |
| 1:AA:1084:A:C5     | 1:AA:1085:A:C2    | 3.02                     | 0.48              |
| 1:AA:1091:G:N1     | 1:AA:1101:U:O4    | 2.47                     | 0.48              |
| 1:AA:1223:C:C2     | 1:AA:1225:C:H5''  | 2.49                     | 0.48              |
| 1:AA:1294:U:H2'    | 1:AA:1295:C:H5'   | 1.96                     | 0.48              |
| 1:AA:1310:G:N7     | 1:AA:1311:G:C2    | 2.81                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1334:G:C2'   | 1:AA:1335:U:O5'   | 2.62                     | 0.48              |
| 1:AA:1351:C:C4    | 1:AA:1381:G:C6    | 3.02                     | 0.48              |
| 1:AA:1355:G:H22   | 1:AA:1377:G:C1'   | 2.26                     | 0.48              |
| 1:AA:1366:A:H5''  | 25:Aa:1:MET:H2    | 1.78                     | 0.48              |
| 1:AA:1392:A:N6    | 1:AA:1393:A:N6    | 2.62                     | 0.48              |
| 1:AA:1433:U:H3'   | 1:AA:1433:U:C6    | 2.49                     | 0.48              |
| 1:AA:1466:G:O4'   | 1:AA:1545(A):A:H2 | 1.97                     | 0.48              |
| 1:AA:1528:A:H8    | 1:AA:1529:A:C4    | 2.31                     | 0.48              |
| 1:AA:1607:C:C2'   | 1:AA:1608:A:OP2   | 2.62                     | 0.48              |
| 1:AA:1612:C:H1'   | 28:Ad:6:GLN:NE2   | 2.29                     | 0.48              |
| 1:AA:1684:C:O2    | 1:AA:1685:C:C6    | 2.67                     | 0.48              |
| 1:AA:1819:A:C5    | 4:AD:179:SER:HB3  | 2.49                     | 0.48              |
| 1:AA:1936:A:N3    | 1:AA:1940:U:C2    | 2.82                     | 0.48              |
| 1:AA:1968:G:H2'   | 1:AA:1969:A:OP2   | 2.14                     | 0.48              |
| 1:AA:2025:C:C2'   | 1:AA:2026:C:H6    | 2.23                     | 0.48              |
| 1:AA:2289:G:N2    | 1:AA:2344:U:C6    | 2.82                     | 0.48              |
| 1:AA:2298:A:C2'   | 1:AA:2299:G:H8    | 2.27                     | 0.48              |
| 1:AA:2312:U:H2'   | 1:AA:2313:C:H6    | 1.78                     | 0.48              |
| 1:AA:2371:G:O2'   | 1:AA:2372:G:O4'   | 2.31                     | 0.48              |
| 1:AA:2482:G:C5    | 1:AA:2483:C:C5    | 3.02                     | 0.48              |
| 1:AA:2505:G:O2'   | 1:AA:2506:U:H5''  | 2.14                     | 0.48              |
| 1:AA:2579:C:O2'   | 1:AA:2580:U:H5'   | 2.14                     | 0.48              |
| 1:AA:2607:G:C6    | 1:AA:2608:G:C2    | 3.01                     | 0.48              |
| 1:AA:2619:C:H5'   | 5:AE:151:TYR:O    | 2.13                     | 0.48              |
| 1:AA:2751:G:O4'   | 8:AH:6:ARG:NH2    | 2.47                     | 0.48              |
| 1:AA:2793:G:C6    | 1:AA:2794:C:C5    | 3.02                     | 0.48              |
| 2:AB:73:A:N7      | 2:AB:104:A:C5     | 2.81                     | 0.48              |
| 2:AB:85:G:C4      | 2:AB:92:G:C2      | 3.02                     | 0.48              |
| 3:AC:46:LYS:CD    | 3:AC:210:ARG:CB   | 2.77                     | 0.48              |
| 4:AD:85:ASP:CG    | 4:AD:87:ASN:ND2   | 2.72                     | 0.48              |
| 4:AD:160:GLY:C    | 4:AD:196:VAL:CG2  | 2.87                     | 0.48              |
| 5:AE:8:LYS:HB3    | 5:AE:24:THR:CG2   | 2.43                     | 0.48              |
| 5:AE:38:THR:O     | 5:AE:39:PRO:C     | 2.56                     | 0.48              |
| 5:AE:97:LYS:CG    | 5:AE:100:GLU:CD   | 2.87                     | 0.48              |
| 5:AE:105:THR:HB   | 5:AE:166:THR:HG1  | 1.76                     | 0.48              |
| 5:AE:149:ARG:HH11 | 5:AE:151:TYR:C    | 2.21                     | 0.48              |
| 6:AF:11:VAL:HB    | 6:AF:17:ARG:HH12  | 1.78                     | 0.48              |
| 6:AF:22:ALA:HB1   | 6:AF:115:ALA:CB   | 2.43                     | 0.48              |
| 6:AF:156:LEU:N    | 6:AF:156:LEU:HD23 | 2.29                     | 0.48              |
| 6:AF:163:VAL:HG21 | 6:AF:195:ASP:OD2  | 2.14                     | 0.48              |
| 6:AF:181:LEU:O    | 6:AF:182:ASN:HB3  | 2.13                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:AG:174:GLU:OE2  | 7:AG:175:LEU:CG   | 2.61                     | 0.48              |
| 8:AH:103:LEU:H    | 8:AH:115:VAL:H    | 1.62                     | 0.48              |
| 8:AH:156:ALA:C    | 8:AH:157:TYR:CG   | 2.92                     | 0.48              |
| 11:AM:16:ARG:HG2  | 11:AM:19:VAL:CG1  | 2.39                     | 0.48              |
| 11:AM:85:LEU:C    | 11:AM:86:LYS:HG2  | 2.39                     | 0.48              |
| 12:AN:66:ILE:HG22 | 12:AN:67:ARG:O    | 2.14                     | 0.48              |
| 13:AO:33:ARG:NH2  | 26:Ab:56:LYS:CE   | 2.77                     | 0.48              |
| 14:AP:58:LEU:C    | 14:AP:60:GLY:H    | 2.20                     | 0.48              |
| 14:AP:79:ALA:O    | 14:AP:81:GLY:N    | 2.47                     | 0.48              |
| 15:AQ:55:ASN:O    | 15:AQ:57:PHE:CE2  | 2.66                     | 0.48              |
| 15:AQ:71:GLY:N    | 15:AQ:74:ARG:HH12 | 2.12                     | 0.48              |
| 15:AQ:82:LEU:O    | 15:AQ:83:ILE:C    | 2.56                     | 0.48              |
| 16:AR:105:VAL:O   | 16:AR:108:GLU:OE2 | 2.32                     | 0.48              |
| 16:AR:112:ARG:O   | 16:AR:115:ALA:N   | 2.47                     | 0.48              |
| 17:AS:61:VAL:O    | 17:AS:99:ILE:O    | 2.32                     | 0.48              |
| 17:AS:64:HIS:CG   | 17:AS:96:ILE:HG22 | 2.49                     | 0.48              |
| 17:AS:78:LYS:CA   | 17:AS:83:ARG:O    | 2.61                     | 0.48              |
| 17:AS:83:ARG:C    | 17:AS:84:LYS:HG3  | 2.39                     | 0.48              |
| 18:AT:13:SER:CB   | 18:AT:16:LYS:HE2  | 2.43                     | 0.48              |
| 18:AT:28:SER:O    | 18:AT:31:GLU:OE1  | 2.32                     | 0.48              |
| 18:AT:59:VAL:HA   | 18:AT:63:ASP:O    | 2.14                     | 0.48              |
| 19:AU:35:THR:O    | 19:AU:38:GLU:CB   | 2.62                     | 0.48              |
| 20:AV:2:ARG:HD2   | 20:AV:3:VAL:CG2   | 2.44                     | 0.48              |
| 20:AV:39:VAL:O    | 20:AV:39:VAL:HG12 | 2.13                     | 0.48              |
| 20:AV:75:ILE:O    | 20:AV:75:ILE:CD1  | 2.62                     | 0.48              |
| 21:AW:68:PRO:O    | 21:AW:90:VAL:CA   | 2.55                     | 0.48              |
| 21:AW:122:ARG:NH2 | 21:AW:169:GLU:OE1 | 2.47                     | 0.48              |
| 21:AW:169:GLU:O   | 21:AW:170:THR:HB  | 2.13                     | 0.48              |
| 26:Ab:34:PRO:HG3  | 26:Ab:40:LYS:HZ1  | 1.79                     | 0.48              |
| 26:Ab:56:LYS:C    | 26:Ab:57:VAL:HG13 | 2.38                     | 0.48              |
| 28:Ad:46:VAL:O    | 28:Ad:47:ARG:O    | 2.32                     | 0.48              |
| 29:Ae:61:LEU:O    | 29:Ae:62:LEU:HD23 | 2.13                     | 0.48              |
| 34:BA:13:U:C5'    | 34:BA:13:U:H6     | 2.27                     | 0.48              |
| 34:BA:20:U:H5     | 34:BA:916:G:N1    | 2.12                     | 0.48              |
| 34:BA:44:G:C5     | 34:BA:45:U:C6     | 3.02                     | 0.48              |
| 34:BA:68:G:C2     | 34:BA:69:G:H1'    | 2.49                     | 0.48              |
| 34:BA:95:G:N2     | 34:BA:96:G:H1'    | 2.29                     | 0.48              |
| 34:BA:174:C:N3    | 34:BA:175:C:C5    | 2.82                     | 0.48              |
| 34:BA:230:G:N1    | 34:BA:231:G:C4    | 2.82                     | 0.48              |
| 34:BA:344:A:HO2'  | 34:BA:345:C:P     | 2.35                     | 0.48              |
| 34:BA:515:G:C2    | 34:BA:537:G:C2    | 3.02                     | 0.48              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:566:G:H4'   | 34:BA:567:G:C5'    | 2.43                     | 0.48              |
| 34:BA:687:A:C2    | 34:BA:704:A:C6     | 3.01                     | 0.48              |
| 34:BA:824:C:C1'   | 41:BL:1:MET:N      | 2.77                     | 0.48              |
| 34:BA:859:A:C2'   | 34:BA:860:A:O4'    | 2.58                     | 0.48              |
| 34:BA:904:C:H2'   | 34:BA:905:U:C6     | 2.49                     | 0.48              |
| 34:BA:997:U:OP2   | 34:BA:997:U:C6     | 2.67                     | 0.48              |
| 34:BA:1034:G:N3   | 34:BA:1035:A:N7    | 2.61                     | 0.48              |
| 34:BA:1075:C:C4'  | 34:BA:1101:A:N6    | 2.71                     | 0.48              |
| 34:BA:1084:G:O2'  | 34:BA:1085:U:OP1   | 2.32                     | 0.48              |
| 34:BA:1104:G:H2'  | 34:BA:1105:A:O4'   | 2.13                     | 0.48              |
| 34:BA:1111:A:O2'  | 34:BA:1112:C:H5'   | 2.14                     | 0.48              |
| 34:BA:1237:C:O4'  | 34:BA:1334:G:N2    | 2.42                     | 0.48              |
| 34:BA:1407:C:O5'  | 34:BA:1407:C:H6    | 1.97                     | 0.48              |
| 35:BF:28:PHE:HE1  | 35:BF:31:TYR:C     | 2.22                     | 0.48              |
| 35:BF:82:ARG:HB3  | 35:BF:83:MET:HE2   | 1.94                     | 0.48              |
| 35:BF:112:VAL:CG1 | 35:BF:149:LEU:HD21 | 2.44                     | 0.48              |
| 35:BF:126:GLU:O   | 35:BF:127:ILE:C    | 2.57                     | 0.48              |
| 36:BG:6:HIS:HA    | 36:BG:7:PRO:HD2    | 1.78                     | 0.48              |
| 36:BG:40:ARG:C    | 36:BG:43:LEU:HB3   | 2.38                     | 0.48              |
| 36:BG:89:GLU:O    | 36:BG:90:GLU:C     | 2.56                     | 0.48              |
| 40:BK:69:VAL:HG11 | 40:BK:104:LEU:HD21 | 1.94                     | 0.48              |
| 40:BK:94:ARG:HH11 | 40:BK:94:ARG:C     | 2.22                     | 0.48              |
| 40:BK:139:GLU:O   | 40:BK:143:ARG:HG3  | 2.14                     | 0.48              |
| 40:BK:152:ALA:C   | 40:BK:154:TYR:H    | 2.22                     | 0.48              |
| 41:BL:6:ILE:HD12  | 41:BL:85:ARG:CZ    | 2.44                     | 0.48              |
| 41:BL:112:LEU:HG  | 41:BL:113:SER:N    | 2.28                     | 0.48              |
| 42:BM:5:TYR:HD2   | 42:BM:6:GLY:N      | 2.10                     | 0.48              |
| 42:BM:10:ARG:NH2  | 42:BM:75:ASP:CG    | 2.72                     | 0.48              |
| 42:BM:70:LYS:O    | 42:BM:71:SER:C     | 2.56                     | 0.48              |
| 42:BM:100:GLY:C   | 42:BM:101:PHE:CG   | 2.91                     | 0.48              |
| 43:BN:9:ARG:O     | 43:BN:9:ARG:HG3    | 2.14                     | 0.48              |
| 44:BO:23:ALA:CB   | 44:BO:88:GLY:CA    | 2.91                     | 0.48              |
| 44:BO:40:ILE:N    | 44:BO:40:ILE:CD1   | 2.61                     | 0.48              |
| 45:BP:5:PRO:HB3   | 45:BP:10:LEU:CD1   | 2.40                     | 0.48              |
| 45:BP:48:PRO:HG3  | 45:BP:92:ASP:OD1   | 2.14                     | 0.48              |
| 48:BS:81:LEU:O    | 48:BS:85:LEU:HD12  | 2.14                     | 0.48              |
| 50:BU:5:VAL:HG13  | 50:BU:59:ILE:C     | 2.31                     | 0.48              |
| 55:BC:53:G:O2'    | 55:BC:54:U:H5'     | 2.13                     | 0.48              |
| 56:BE:15:G:N1     | 56:BE:16:U:C4      | 2.82                     | 0.48              |
| 57:BZ:59:LYS:CB   | 57:BZ:66:TRP:HH2   | 2.27                     | 0.48              |
| 57:BZ:67:ASP:H    | 57:BZ:68:TYR:CB    | 2.27                     | 0.48              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:BZ:281:GLU:O    | 57:BZ:282:LEU:HB2  | 2.14                     | 0.48              |
| 57:BZ:446:ARG:CB   | 57:BZ:480:VAL:HG11 | 2.40                     | 0.48              |
| 57:BZ:504:LEU:HD22 | 57:BZ:507:ARG:CZ   | 2.44                     | 0.48              |
| 57:BZ:556:VAL:O    | 57:BZ:557:LEU:HG   | 2.13                     | 0.48              |
| 57:BZ:558:VAL:HG12 | 57:BZ:559:PRO:CD   | 2.44                     | 0.48              |
| 1:AA:14:A:H2       | 1:AA:2625:G:O2'    | 1.97                     | 0.47              |
| 1:AA:28:A:N3       | 1:AA:29:U:C4'      | 2.77                     | 0.47              |
| 1:AA:48:G:N2       | 1:AA:177:G:N7      | 2.62                     | 0.47              |
| 1:AA:94:G:O2'      | 23:AY:39:LEU:HD22  | 2.14                     | 0.47              |
| 1:AA:96:G:H4'      | 23:AY:43:HIS:NE2   | 2.29                     | 0.47              |
| 1:AA:125:G:N2      | 28:Ad:10:ARG:CA    | 2.68                     | 0.47              |
| 1:AA:225:A:N3      | 1:AA:225:A:H2'     | 2.29                     | 0.47              |
| 1:AA:253:C:H41     | 29:Ae:7:HIS:HD1    | 1.62                     | 0.47              |
| 1:AA:270(Z):U:O2   | 1:AA:271(B):G:OP1  | 2.32                     | 0.47              |
| 1:AA:332:A:O2'     | 1:AA:333:G:O5'     | 2.31                     | 0.47              |
| 1:AA:349:G:C2'     | 1:AA:350:U:H6      | 2.24                     | 0.47              |
| 1:AA:537:C:H2'     | 1:AA:539:G:H8      | 1.79                     | 0.47              |
| 1:AA:569:U:OP1     | 1:AA:945:A:N1      | 2.47                     | 0.47              |
| 1:AA:592:G:O2'     | 29:Ae:2:PRO:CA     | 2.49                     | 0.47              |
| 1:AA:597:U:C2      | 1:AA:598:G:N7      | 2.82                     | 0.47              |
| 1:AA:740:U:HO2'    | 1:AA:741:G:P       | 2.27                     | 0.47              |
| 1:AA:764:A:N3      | 4:AD:214:TRP:HD1   | 2.12                     | 0.47              |
| 1:AA:936:C:O2'     | 1:AA:937:U:O5'     | 2.32                     | 0.47              |
| 1:AA:1142(A):A:H3' | 1:AA:1143:A:H5'    | 1.94                     | 0.47              |
| 1:AA:1264:G:H5'    | 26:Ab:15:ARG:HH11  | 1.79                     | 0.47              |
| 1:AA:1326:U:C3'    | 1:AA:1327:C:H5'    | 2.41                     | 0.47              |
| 1:AA:1345:C:C2'    | 1:AA:1346:G:H5'    | 2.44                     | 0.47              |
| 1:AA:1444(A):A:N6  | 1:AA:1461:G:H5''   | 2.29                     | 0.47              |
| 1:AA:1689:A:C6     | 1:AA:1700:A:C2     | 3.02                     | 0.47              |
| 1:AA:1709:U:C5'    | 1:AA:1709:U:H6     | 2.25                     | 0.47              |
| 1:AA:1782:C:C2     | 1:AA:2609:U:C6     | 3.01                     | 0.47              |
| 1:AA:1786:A:C5'    | 1:AA:1938:A:H61    | 2.26                     | 0.47              |
| 1:AA:1801:G:C6     | 1:AA:2207:C:O4'    | 2.67                     | 0.47              |
| 1:AA:1826:G:H21    | 1:AA:1970:A:H2     | 1.61                     | 0.47              |
| 1:AA:1852:C:OP1    | 55:BC:72:C:H4'     | 2.14                     | 0.47              |
| 1:AA:2051:A:N3     | 1:AA:2614:A:N6     | 2.61                     | 0.47              |
| 1:AA:2063:C:H2'    | 1:AA:2064:C:O4'    | 2.13                     | 0.47              |
| 1:AA:2065:C:C5     | 1:AA:2066:C:C5     | 3.02                     | 0.47              |
| 1:AA:2219:G:C2'    | 1:AA:2224:G:O5'    | 2.61                     | 0.47              |
| 1:AA:2255:G:C4     | 1:AA:2256:G:C8     | 3.01                     | 0.47              |
| 1:AA:2286:A:N7     | 27:Ac:31:PRO:CD    | 2.77                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2309:A:C5    | 1:AA:2310:A:C5     | 3.02                     | 0.47              |
| 1:AA:2416:C:N3    | 1:AA:2417:C:C5     | 2.82                     | 0.47              |
| 1:AA:2458:G:N7    | 1:AA:2490:G:C5     | 2.82                     | 0.47              |
| 1:AA:2460:U:H3'   | 1:AA:2461:C:C6     | 2.48                     | 0.47              |
| 1:AA:2470:G:C2    | 1:AA:2471:C:C5     | 3.01                     | 0.47              |
| 1:AA:2507:C:C5'   | 59:AA:3002:8AN:O5' | 2.62                     | 0.47              |
| 1:AA:2645:G:O2'   | 1:AA:2732:G:O3'    | 2.29                     | 0.47              |
| 1:AA:2666:C:H2'   | 1:AA:2667:C:H5'    | 1.96                     | 0.47              |
| 1:AA:2668:G:N2    | 1:AA:2669:G:C6     | 2.82                     | 0.47              |
| 1:AA:2670:A:N1    | 1:AA:2671:A:C6     | 2.82                     | 0.47              |
| 1:AA:2746:U:H5'   | 8:AH:138:LYS:O     | 2.14                     | 0.47              |
| 1:AA:2786:U:H4'   | 5:AE:64:LYS:C      | 2.39                     | 0.47              |
| 1:AA:2801:A:C3'   | 1:AA:2801:A:P      | 3.02                     | 0.47              |
| 1:AA:2813:A:O2'   | 1:AA:2814:C:H5'    | 2.14                     | 0.47              |
| 1:AA:2822:G:N7    | 13:AO:4:LEU:CD2    | 2.77                     | 0.47              |
| 1:AA:2854:G:C2    | 1:AA:2864:G:C5     | 3.02                     | 0.47              |
| 1:AA:2858:C:C5'   | 1:AA:2859:G:OP2    | 2.61                     | 0.47              |
| 2:AB:68:C:H3'     | 2:AB:69:G:C8       | 2.37                     | 0.47              |
| 2:AB:103:U:C3'    | 2:AB:104:A:H5'     | 2.42                     | 0.47              |
| 3:AC:68:LEU:HD23  | 3:AC:69:GLY:CA     | 2.44                     | 0.47              |
| 3:AC:75:LEU:HG    | 3:AC:77:ILE:HG12   | 1.96                     | 0.47              |
| 4:AD:75:ILE:O     | 4:AD:76:PRO:O      | 2.32                     | 0.47              |
| 4:AD:251:GLY:HA2  | 4:AD:255:LYS:HZ2   | 1.77                     | 0.47              |
| 5:AE:58:ARG:HG2   | 5:AE:63:LEU:HD21   | 1.92                     | 0.47              |
| 5:AE:136:ARG:NH2  | 5:AE:137:HIS:HA    | 2.29                     | 0.47              |
| 5:AE:196:VAL:HG13 | 5:AE:197:ILE:H     | 1.77                     | 0.47              |
| 6:AF:37:VAL:O     | 6:AF:41:LEU:HG     | 2.14                     | 0.47              |
| 7:AG:3:LEU:HD22   | 7:AG:4:ASP:OD2     | 2.14                     | 0.47              |
| 7:AG:19:LEU:N     | 7:AG:19:LEU:CD1    | 2.76                     | 0.47              |
| 7:AG:36:LYS:HZ2   | 7:AG:160:VAL:HG23  | 1.79                     | 0.47              |
| 7:AG:103:LEU:HD12 | 7:AG:103:LEU:O     | 2.13                     | 0.47              |
| 9:AK:26:LEU:O     | 9:AK:30:ILE:CG1    | 2.60                     | 0.47              |
| 9:AK:116:LEU:O    | 9:AK:117:PHE:C     | 2.57                     | 0.47              |
| 10:AL:9:GLU:CB    | 10:AL:81:ASP:O     | 2.62                     | 0.47              |
| 10:AL:87:ILE:O    | 10:AL:88:ASN:C     | 2.56                     | 0.47              |
| 11:AM:16:ARG:CG   | 11:AM:19:VAL:CG2   | 2.92                     | 0.47              |
| 12:AN:99:PRO:HD2  | 12:AN:101:ARG:CZ   | 2.44                     | 0.47              |
| 13:AO:90:ARG:HH22 | 13:AO:117:VAL:HG13 | 1.78                     | 0.47              |
| 13:AO:96:ARG:CZ   | 13:AO:117:VAL:HG23 | 2.44                     | 0.47              |
| 14:AP:6:ALA:O     | 14:AP:7:TYR:C      | 2.55                     | 0.47              |
| 14:AP:58:LEU:HD23 | 14:AP:62:LYS:HG3   | 1.95                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 14:AP:75:GLU:HA   | 14:AP:78:LEU:CB   | 2.38                     | 0.47              |
| 15:AQ:33:LYS:CA   | 15:AQ:46:GLU:O    | 2.35                     | 0.47              |
| 16:AR:83:LEU:H    | 16:AR:83:LEU:CD1  | 2.16                     | 0.47              |
| 17:AS:5:VAL:CG1   | 17:AS:37:VAL:CG2  | 2.90                     | 0.47              |
| 18:AT:13:SER:N    | 18:AT:101:SER:OG  | 2.47                     | 0.47              |
| 19:AU:47:PHE:O    | 19:AU:48:LYS:O    | 2.31                     | 0.47              |
| 20:AV:96:ILE:HB   | 20:AV:102:CYS:O   | 2.13                     | 0.47              |
| 21:AW:39:VAL:HG22 | 21:AW:44:PHE:CZ   | 2.48                     | 0.47              |
| 21:AW:48:PHE:CB   | 21:AW:54:HIS:CE1  | 2.91                     | 0.47              |
| 23:AY:17:GLU:O    | 23:AY:21:ARG:HG2  | 2.14                     | 0.47              |
| 24:AZ:28:LEU:HA   | 24:AZ:33:GLN:OE1  | 2.13                     | 0.47              |
| 26:Ab:19:ARG:C    | 26:Ab:21:SER:H    | 2.21                     | 0.47              |
| 32:AJ:17:ALA:CA   | 32:AJ:38:VAL:O    | 2.56                     | 0.47              |
| 32:AJ:47:ASN:C    | 32:AJ:48:MET:CG   | 2.86                     | 0.47              |
| 34:BA:37:U:P      | 45:BP:123:LYS:HB3 | 2.53                     | 0.47              |
| 34:BA:160:A:O4'   | 34:BA:344:A:N7    | 2.47                     | 0.47              |
| 34:BA:290:C:H2'   | 34:BA:291:C:C5'   | 2.44                     | 0.47              |
| 34:BA:588:G:H1'   | 34:BA:753:A:C6    | 2.49                     | 0.47              |
| 34:BA:673:G:C2    | 34:BA:674:G:N1    | 2.82                     | 0.47              |
| 34:BA:696:A:C2'   | 34:BA:697:U:H5'   | 2.44                     | 0.47              |
| 34:BA:748:C:O2'   | 34:BA:749:C:H5'   | 2.14                     | 0.47              |
| 34:BA:769:G:H22   | 34:BA:811:C:H1'   | 1.77                     | 0.47              |
| 34:BA:813:U:OP1   | 34:BA:904:C:H5'   | 2.14                     | 0.47              |
| 34:BA:832:C:C4    | 34:BA:833:U:O4    | 2.66                     | 0.47              |
| 34:BA:909:A:C2    | 34:BA:910:C:C1'   | 2.97                     | 0.47              |
| 34:BA:932:C:O2    | 34:BA:932:C:H2'   | 2.14                     | 0.47              |
| 34:BA:1057:G:H2'  | 34:BA:1058:G:O5'  | 2.14                     | 0.47              |
| 34:BA:1068:G:N2   | 34:BA:1191:A:N3   | 2.50                     | 0.47              |
| 34:BA:1086:U:H2'  | 34:BA:1087:G:C8   | 2.49                     | 0.47              |
| 34:BA:1092:A:N7   | 34:BA:1183:A:N7   | 2.62                     | 0.47              |
| 34:BA:1124:G:N2   | 34:BA:1126:U:N3   | 2.40                     | 0.47              |
| 34:BA:1179:A:C4'  | 42:BM:103:THR:OG1 | 2.50                     | 0.47              |
| 34:BA:1184:G:N1   | 34:BA:1185:G:C6   | 2.82                     | 0.47              |
| 34:BA:1193:G:O2'  | 34:BA:1194:U:H5'  | 2.13                     | 0.47              |
| 34:BA:1314:C:H42  | 34:BA:1323:G:H1   | 1.61                     | 0.47              |
| 34:BA:1318:A:H2'  | 52:BW:37:ARG:HB2  | 0.80                     | 0.47              |
| 34:BA:1338:G:H2'  | 34:BA:1339:A:H8   | 1.75                     | 0.47              |
| 34:BA:1342:C:H2'  | 34:BA:1343:G:C8   | 2.48                     | 0.47              |
| 34:BA:1372:U:H2'  | 34:BA:1373:G:O4'  | 2.13                     | 0.47              |
| 34:BA:1447:G:N2   | 34:BA:1459:C:C2   | 2.65                     | 0.47              |
| 34:BA:1480:G:H2'  | 34:BA:1481:U:O5'  | 2.14                     | 0.47              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 35:BF:15:VAL:O     | 35:BF:16:HIS:CB   | 2.61                     | 0.47              |
| 35:BF:45:GLN:O     | 35:BF:49:GLU:OE2  | 2.32                     | 0.47              |
| 35:BF:53:ARG:NE    | 35:BF:199:TYR:CE2 | 2.82                     | 0.47              |
| 35:BF:71:VAL:HG22  | 35:BF:93:VAL:N    | 2.28                     | 0.47              |
| 36:BG:55:VAL:HG12  | 36:BG:57:ILE:HG13 | 1.94                     | 0.47              |
| 37:BH:102:ASP:HB2  | 37:BH:136:PRO:CA  | 2.44                     | 0.47              |
| 38:BI:37:ARG:HG2   | 38:BI:111:GLU:O   | 2.14                     | 0.47              |
| 39:BJ:19:LEU:HD11  | 39:BJ:23:LYS:HZ2  | 1.79                     | 0.47              |
| 39:BJ:33:TYR:CZ    | 39:BJ:75:LEU:HA   | 2.49                     | 0.47              |
| 39:BJ:67:MET:SD    | 39:BJ:67:MET:C    | 2.96                     | 0.47              |
| 39:BJ:81:ILE:HG22  | 39:BJ:82:ARG:H    | 1.74                     | 0.47              |
| 39:BJ:95:GLU:N     | 39:BJ:96:PRO:CD   | 2.64                     | 0.47              |
| 41:BL:62:TYR:C     | 41:BL:63:LEU:O    | 2.56                     | 0.47              |
| 41:BL:119:LEU:N    | 41:BL:119:LEU:CD2 | 2.72                     | 0.47              |
| 42:BM:79:LEU:HD22  | 42:BM:101:PHE:CD2 | 2.48                     | 0.47              |
| 43:BN:24:VAL:HG13  | 43:BN:34:VAL:HG11 | 1.95                     | 0.47              |
| 43:BN:60:ARG:H     | 43:BN:60:ARG:CD   | 2.21                     | 0.47              |
| 46:BQ:19:LEU:HD12  | 46:BQ:20:THR:H    | 1.78                     | 0.47              |
| 46:BQ:40:ASN:CG    | 46:BQ:42:ALA:HB3  | 2.37                     | 0.47              |
| 48:BS:71:GLN:O     | 48:BS:72:ARG:C    | 2.57                     | 0.47              |
| 53:BX:98:PRO:O     | 53:BX:99:LEU:O    | 2.32                     | 0.47              |
| 55:BC:76:A:OP2     | 55:BC:76:A:H3'    | 2.14                     | 0.47              |
| 57:BZ:33:ASP:CG    | 57:BZ:34:SER:HA   | 2.39                     | 0.47              |
| 57:BZ:236:GLN:HB2  | 57:BZ:247:ARG:CA  | 2.44                     | 0.47              |
| 57:BZ:240:ILE:C    | 57:BZ:242:SER:H   | 2.22                     | 0.47              |
| 57:BZ:283:ASN:C    | 57:BZ:285:SER:N   | 2.70                     | 0.47              |
| 57:BZ:374:ARG:HE   | 57:BZ:584:SER:H   | 1.59                     | 0.47              |
| 57:BZ:437:VAL:HG13 | 57:BZ:437:VAL:O   | 2.14                     | 0.47              |
| 57:BZ:495:LYS:HA   | 57:BZ:516:ALA:C   | 2.39                     | 0.47              |
| 57:BZ:514:HIS:HA   | 57:BZ:515:GLY:C   | 2.39                     | 0.47              |
| 1:AA:6:A:N1        | 1:AA:2897:U:N1    | 2.58                     | 0.47              |
| 1:AA:60:G:N7       | 1:AA:63:U:C4      | 2.82                     | 0.47              |
| 1:AA:71:A:C3'      | 1:AA:72:U:H5''    | 2.40                     | 0.47              |
| 1:AA:120:U:H2'     | 1:AA:121:G:OP2    | 2.14                     | 0.47              |
| 1:AA:142:G:H2'     | 1:AA:143:C:C5     | 2.49                     | 0.47              |
| 1:AA:221:A:C2'     | 1:AA:222:A:OP2    | 2.63                     | 0.47              |
| 1:AA:265:A:H2'     | 1:AA:266:G:C1'    | 2.44                     | 0.47              |
| 1:AA:270(N):G:C8   | 1:AA:270(O):U:C6  | 3.02                     | 0.47              |
| 1:AA:270(X):G:C4'  | 1:AA:273:G:H5'    | 2.44                     | 0.47              |
| 1:AA:271:G:C5      | 1:AA:404:C:N4     | 2.82                     | 0.47              |
| 1:AA:322:A:C4'     | 1:AA:341:G:H5'    | 2.44                     | 0.47              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:AA:410:G:N2   | 1:AA:2407:G:N7   | 2.62                     | 0.47              |
| 1:AA:448:U:O4   | 1:AA:583:G:C1'   | 2.60                     | 0.47              |
| 1:AA:518:G:C4'  | 18:AT:18:ARG:NH1 | 2.76                     | 0.47              |
| 1:AA:532:A:O2'  | 16:AR:28:ARG:HD3 | 2.14                     | 0.47              |
| 1:AA:572:A:H61  | 1:AA:2029:G:C1'  | 2.26                     | 0.47              |
| 1:AA:601:C:O2   | 1:AA:601:C:C2'   | 2.62                     | 0.47              |
| 1:AA:679:C:O2   | 1:AA:680:G:C8    | 2.67                     | 0.47              |
| 1:AA:685:A:N3   | 1:AA:688:U:N3    | 2.62                     | 0.47              |
| 1:AA:690:G:C6   | 1:AA:691:C:C4    | 3.02                     | 0.47              |
| 1:AA:700:G:H4'  | 1:AA:1633:G:H4'  | 1.95                     | 0.47              |
| 1:AA:740:U:C5   | 1:AA:741:G:N7    | 2.82                     | 0.47              |
| 1:AA:805:G:N7   | 1:AA:2068:U:OP1  | 2.47                     | 0.47              |
| 1:AA:959:A:N6   | 1:AA:960:A:N6    | 2.61                     | 0.47              |
| 1:AA:1011:G:H2' | 1:AA:1013:C:H5'' | 1.95                     | 0.47              |
| 1:AA:1080:C:H2' | 1:AA:1081:U:N1   | 2.29                     | 0.47              |
| 1:AA:1095:A:H5' | 57:BZ:416:MET:CE | 2.39                     | 0.47              |
| 1:AA:1139:G:OP1 | 9:AK:63:THR:HG21 | 2.14                     | 0.47              |
| 1:AA:1152:C:O2' | 1:AA:1153:C:H5'  | 2.13                     | 0.47              |
| 1:AA:1197:G:C6  | 1:AA:1198:U:C5   | 3.01                     | 0.47              |
| 1:AA:1258:C:C2  | 1:AA:1259:G:C8   | 3.02                     | 0.47              |
| 1:AA:1299:G:N3  | 1:AA:1640:C:H5   | 2.12                     | 0.47              |
| 1:AA:1426:G:H3' | 1:AA:1427:A:H5'' | 1.95                     | 0.47              |
| 1:AA:1449:A:OP1 | 1:AA:1543:A:C2   | 2.66                     | 0.47              |
| 1:AA:1477:A:H2  | 1:AA:1516:U:O2   | 1.96                     | 0.47              |
| 1:AA:1582:C:N3  | 1:AA:1583:A:N7   | 2.62                     | 0.47              |
| 1:AA:1612:C:H4' | 28:Ad:5:TRP:CD1  | 2.49                     | 0.47              |
| 1:AA:1689:A:N3  | 1:AA:1690:A:N7   | 2.62                     | 0.47              |
| 1:AA:1775:U:O4' | 4:AD:208:LYS:NZ  | 2.45                     | 0.47              |
| 1:AA:1826:G:N2  | 1:AA:1827:C:H1'  | 2.29                     | 0.47              |
| 1:AA:1844:C:N3  | 1:AA:1845:G:N7   | 2.62                     | 0.47              |
| 1:AA:1941:C:C6  | 1:AA:1965:C:C4   | 3.02                     | 0.47              |
| 1:AA:1992:G:H1' | 1:AA:1993:U:O4   | 2.11                     | 0.47              |
| 1:AA:2040:C:H4' | 9:AK:72:TYR:HE2  | 1.79                     | 0.47              |
| 1:AA:2085:C:O2' | 1:AA:2086:U:H5'  | 2.14                     | 0.47              |
| 1:AA:2110:G:C2' | 1:AA:2120:G:H5'  | 2.45                     | 0.47              |
| 1:AA:2110:G:H8  | 1:AA:2110:G:OP2  | 1.96                     | 0.47              |
| 1:AA:2217:G:O4' | 4:AD:150:LYS:NZ  | 2.42                     | 0.47              |
| 1:AA:2282:G:O2' | 1:AA:2390:U:O4   | 2.21                     | 0.47              |
| 1:AA:2324:C:O2' | 1:AA:2325:G:P    | 2.72                     | 0.47              |
| 1:AA:2435:A:H2' | 1:AA:2436:G:O5'  | 2.14                     | 0.47              |
| 1:AA:2545:G:O2' | 1:AA:2546:U:H5'  | 2.14                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2584:U:H6    | 1:AA:2584:U:C3'    | 2.22                     | 0.47              |
| 1:AA:2674:G:H4'   | 10:AL:26:LYS:CE    | 2.43                     | 0.47              |
| 1:AA:2711:A:N6    | 1:AA:2714:G:C4     | 2.82                     | 0.47              |
| 1:AA:2755:C:O2'   | 1:AA:2756:U:C6     | 2.53                     | 0.47              |
| 1:AA:2795:G:N3    | 1:AA:2795:G:C2'    | 2.73                     | 0.47              |
| 1:AA:2864:G:C2    | 1:AA:2865:U:C2     | 3.02                     | 0.47              |
| 2:AB:13:A:H2      | 2:AB:69:G:N2       | 2.04                     | 0.47              |
| 2:AB:77:U:C2'     | 2:AB:78:A:H8       | 2.25                     | 0.47              |
| 2:AB:78:A:H5'     | 21:AW:78:LYS:HE3   | 1.94                     | 0.47              |
| 3:AC:74:VAL:CG1   | 3:AC:114:VAL:HG22  | 2.43                     | 0.47              |
| 3:AC:137:LEU:HD23 | 3:AC:138:PRO:HD2   | 1.95                     | 0.47              |
| 4:AD:80:ALA:O     | 4:AD:81:ALA:CB     | 2.62                     | 0.47              |
| 5:AE:127:ASP:CG   | 5:AE:135:HIS:N     | 2.72                     | 0.47              |
| 5:AE:131:ALA:C    | 5:AE:133:LYS:H     | 2.22                     | 0.47              |
| 6:AF:38:ARG:O     | 6:AF:42:ALA:HB2    | 2.15                     | 0.47              |
| 6:AF:135:LYS:HD3  | 6:AF:136:THR:N     | 2.29                     | 0.47              |
| 7:AG:163:ALA:O    | 7:AG:164:GLU:C     | 2.57                     | 0.47              |
| 8:AH:94:TYR:CD2   | 8:AH:95:ARG:N      | 2.82                     | 0.47              |
| 8:AH:163:TYR:CB   | 8:AH:166:GLY:HA2   | 2.40                     | 0.47              |
| 9:AK:47:ALA:O     | 9:AK:48:MET:O      | 2.33                     | 0.47              |
| 9:AK:67:LEU:O     | 9:AK:68:GLU:HG3    | 2.14                     | 0.47              |
| 10:AL:8:LEU:HD13  | 10:AL:82:ASN:HA    | 1.95                     | 0.47              |
| 10:AL:39:ILE:CD1  | 10:AL:59:LYS:HE3   | 2.44                     | 0.47              |
| 10:AL:58:VAL:O    | 10:AL:86:ILE:HB    | 2.14                     | 0.47              |
| 11:AM:108:LYS:HD3 | 11:AM:109:GLY:N    | 2.20                     | 0.47              |
| 11:AM:117:GLU:CG  | 11:AM:118:GLY:H    | 2.22                     | 0.47              |
| 12:AN:115:MET:C   | 12:AN:119:ARG:HG3  | 2.39                     | 0.47              |
| 13:AO:5:LYS:CA    | 13:AO:5:LYS:CE     | 2.92                     | 0.47              |
| 13:AO:71:GLN:O    | 13:AO:72:ASP:HB2   | 2.14                     | 0.47              |
| 13:AO:116:LEU:CD2 | 13:AO:116:LEU:H    | 2.25                     | 0.47              |
| 16:AR:57:PHE:HD2  | 16:AR:61:TRP:HE1   | 1.62                     | 0.47              |
| 16:AR:61:TRP:H    | 16:AR:61:TRP:CD1   | 2.31                     | 0.47              |
| 16:AR:72:HIS:CD2  | 16:AR:110:VAL:HG21 | 2.49                     | 0.47              |
| 16:AR:89:GLU:CB   | 17:AS:51:VAL:HB    | 2.44                     | 0.47              |
| 17:AS:20:LEU:HB2  | 17:AS:95:LEU:CD2   | 2.31                     | 0.47              |
| 17:AS:88:ARG:CG   | 17:AS:89:GLN:N     | 2.76                     | 0.47              |
| 18:AT:25:ARG:HA   | 18:AT:71:VAL:CG2   | 2.44                     | 0.47              |
| 20:AV:9:LYS:HD2   | 20:AV:110:GLU:HG3  | 1.96                     | 0.47              |
| 20:AV:15:VAL:HG12 | 20:AV:16:ALA:N     | 2.30                     | 0.47              |
| 21:AW:2:GLU:C     | 21:AW:3:TYR:CG     | 2.91                     | 0.47              |
| 21:AW:23:LYS:HG3  | 21:AW:39:VAL:C     | 2.39                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 21:AW:100:VAL:HG23 | 21:AW:102:LEU:HD23 | 1.96                     | 0.47              |
| 21:AW:127:LYS:CA   | 21:AW:164:ALA:H    | 2.23                     | 0.47              |
| 22:AX:50:ASN:O     | 22:AX:62:LEU:CB    | 2.57                     | 0.47              |
| 23:AY:14:VAL:C     | 23:AY:17:GLU:HB2   | 2.39                     | 0.47              |
| 25:Aa:25:TYR:N     | 25:Aa:25:TYR:CD2   | 2.79                     | 0.47              |
| 25:Aa:69:LYS:O     | 25:Aa:70:GLY:C     | 2.56                     | 0.47              |
| 26:Ab:10:LYS:HE3   | 26:Ab:15:ARG:NH1   | 2.30                     | 0.47              |
| 26:Ab:23:HIS:O     | 26:Ab:24:ALA:HB3   | 2.14                     | 0.47              |
| 28:Ad:8:ASN:HD22   | 28:Ad:9:ARG:N      | 2.12                     | 0.47              |
| 28:Ad:43:THR:CA    | 28:Ad:46:VAL:HB    | 2.44                     | 0.47              |
| 33:Ag:28:UNK:CB    | 33:Ag:127:UNK:CB   | 2.93                     | 0.47              |
| 34:BA:47:C:C5      | 34:BA:365:U:H2'    | 2.49                     | 0.47              |
| 34:BA:69:G:H2'     | 34:BA:69:G:N3      | 2.28                     | 0.47              |
| 34:BA:109:A:N3     | 34:BA:109:A:O4'    | 2.46                     | 0.47              |
| 34:BA:145:G:C2     | 34:BA:178:C:C2     | 3.01                     | 0.47              |
| 34:BA:152:A:N7     | 34:BA:153:C:C5     | 2.83                     | 0.47              |
| 34:BA:184:G:O4'    | 34:BA:224:C:H4'    | 2.14                     | 0.47              |
| 34:BA:276:G:O2'    | 34:BA:277:C:H5'    | 2.14                     | 0.47              |
| 34:BA:290:C:C6     | 34:BA:290:C:H3'    | 2.49                     | 0.47              |
| 34:BA:333:G:C4'    | 53:BX:16:HIS:HD2   | 2.25                     | 0.47              |
| 34:BA:383:A:H2'    | 34:BA:384:G:C4'    | 2.44                     | 0.47              |
| 34:BA:414:A:H62    | 34:BA:430:A:N6     | 2.12                     | 0.47              |
| 34:BA:511:C:O2'    | 34:BA:512:U:O5'    | 2.32                     | 0.47              |
| 34:BA:519:C:O2'    | 34:BA:520:A:H5'    | 2.14                     | 0.47              |
| 34:BA:682:G:C6     | 34:BA:709:G:C6     | 3.02                     | 0.47              |
| 34:BA:706:A:C4'    | 44:BO:29:ILE:HD13  | 2.44                     | 0.47              |
| 34:BA:718:G:N7     | 34:BA:719:C:N4     | 2.62                     | 0.47              |
| 34:BA:721:G:OP2    | 51:BV:63:GLN:HG2   | 2.15                     | 0.47              |
| 34:BA:818:G:N2     | 34:BA:820:U:C2     | 2.82                     | 0.47              |
| 34:BA:859:A:H2'    | 34:BA:860:A:C4'    | 2.44                     | 0.47              |
| 34:BA:1029:G:C4    | 34:BA:1032(A):G:N1 | 2.82                     | 0.47              |
| 34:BA:1065:U:H2'   | 34:BA:1066:C:OP2   | 2.13                     | 0.47              |
| 34:BA:1206:G:H2'   | 34:BA:1207:G:C8    | 2.49                     | 0.47              |
| 34:BA:1224:G:O6    | 34:BA:1322:C:H4'   | 2.14                     | 0.47              |
| 34:BA:1314:C:C4    | 34:BA:1324:A:N1    | 2.82                     | 0.47              |
| 34:BA:1317:C:C2    | 34:BA:1318:A:H1'   | 2.45                     | 0.47              |
| 34:BA:1327:C:H5''  | 54:BY:20:LYS:NZ    | 2.28                     | 0.47              |
| 34:BA:1342:C:C5'   | 42:BM:125:TYR:HB2  | 2.44                     | 0.47              |
| 37:BH:79:PHE:HA    | 37:BH:93:PHE:CD1   | 2.48                     | 0.47              |
| 37:BH:83:SER:N     | 37:BH:89:THR:HG23  | 2.29                     | 0.47              |
| 37:BH:133:VAL:HG11 | 37:BH:135:LEU:HD12 | 1.95                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 37:BH:173:TRP:CD1  | 37:BH:185:PHE:CE2  | 3.02                     | 0.47              |
| 38:BI:121:LYS:CE   | 38:BI:122:GLU:N    | 2.77                     | 0.47              |
| 39:BJ:14:LEU:HD11  | 39:BJ:19:LEU:CA    | 2.43                     | 0.47              |
| 39:BJ:45:LEU:HD23  | 39:BJ:59:TYR:CB    | 2.44                     | 0.47              |
| 39:BJ:94:GLN:C     | 39:BJ:95:GLU:CG    | 2.87                     | 0.47              |
| 39:BJ:94:GLN:C     | 39:BJ:95:GLU:HG3   | 2.39                     | 0.47              |
| 40:BK:22:LEU:HG    | 40:BK:63:LYS:HZ2   | 1.79                     | 0.47              |
| 40:BK:155:ARG:O    | 40:BK:156:TRP:HE3  | 1.97                     | 0.47              |
| 41:BL:67:PRO:C     | 41:BL:68:ARG:O     | 2.56                     | 0.47              |
| 42:BM:50:LEU:HD21  | 42:BM:55:ALA:O     | 2.14                     | 0.47              |
| 43:BN:52:GLY:O     | 43:BN:53:PRO:C     | 2.57                     | 0.47              |
| 43:BN:54:PHE:O     | 43:BN:55:LYS:C     | 2.58                     | 0.47              |
| 44:BO:34:ASP:CG    | 44:BO:36:ASP:H     | 2.22                     | 0.47              |
| 44:BO:81:ASP:HA    | 44:BO:107:SER:O    | 2.14                     | 0.47              |
| 44:BO:114:VAL:HG23 | 44:BO:115:PRO:HD2  | 1.96                     | 0.47              |
| 45:BP:9:GLN:O      | 45:BP:10:LEU:C     | 2.57                     | 0.47              |
| 46:BQ:14:ARG:HG3   | 46:BQ:17:VAL:CG2   | 2.38                     | 0.47              |
| 46:BQ:70:LEU:HD12  | 46:BQ:74:VAL:CG2   | 2.44                     | 0.47              |
| 46:BQ:73:GLU:O     | 46:BQ:77:ASN:HB3   | 2.14                     | 0.47              |
| 46:BQ:88:ARG:CA    | 52:BW:73:GLU:OE1   | 2.62                     | 0.47              |
| 47:BR:9:LYS:HD3    | 47:BR:9:LYS:C      | 2.39                     | 0.47              |
| 47:BR:61:TRP:C     | 47:BR:61:TRP:CD1   | 2.92                     | 0.47              |
| 48:BS:59:MET:O     | 48:BS:63:ARG:HG2   | 2.14                     | 0.47              |
| 48:BS:65:ARG:O     | 48:BS:66:LEU:C     | 2.57                     | 0.47              |
| 50:BU:27:PHE:C     | 50:BU:35:VAL:HG13  | 2.38                     | 0.47              |
| 50:BU:65:ILE:CG2   | 50:BU:69:LYS:HD2   | 2.40                     | 0.47              |
| 51:BV:17:SER:CB    | 51:BV:54:ARG:NH1   | 2.78                     | 0.47              |
| 51:BV:86:VAL:O     | 51:BV:87:ARG:CB    | 2.59                     | 0.47              |
| 52:BW:3:ARG:HH21   | 52:BW:3:ARG:CG     | 2.26                     | 0.47              |
| 53:BX:11:SER:O     | 53:BX:12:ALA:HB2   | 2.13                     | 0.47              |
| 53:BX:30:LYS:O     | 53:BX:31:SER:C     | 2.56                     | 0.47              |
| 53:BX:42:GLN:O     | 53:BX:45:GLN:N     | 2.47                     | 0.47              |
| 53:BX:43:LEU:HB2   | 53:BX:55:ILE:CD1   | 2.44                     | 0.47              |
| 53:BX:49:ALA:O     | 53:BX:53:LEU:HG    | 2.14                     | 0.47              |
| 55:BC:59:U:H2'     | 55:BC:60:U:H5'     | 1.96                     | 0.47              |
| 56:BD:11:C:H2'     | 56:BD:12:U:C6      | 2.49                     | 0.47              |
| 57:BZ:91:MET:CE    | 57:BZ:269:GLU:O    | 2.62                     | 0.47              |
| 57:BZ:119:TYR:CE2  | 57:BZ:121:LEU:HD11 | 2.49                     | 0.47              |
| 57:BZ:125:VAL:HB   | 57:BZ:162:ILE:H    | 1.79                     | 0.47              |
| 57:BZ:234:ASN:HA   | 57:BZ:235:GLN:O    | 2.14                     | 0.47              |
| 57:BZ:274:VAL:O    | 57:BZ:276:ILE:HG13 | 2.13                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:BZ:288:VAL:C   | 57:BZ:289:CYS:SG  | 2.97                     | 0.47              |
| 57:BZ:547:ARG:CD  | 57:BZ:548:ALA:HB2 | 2.37                     | 0.47              |
| 57:BZ:565:LEU:H   | 57:BZ:566:GLU:HG3 | 1.56                     | 0.47              |
| 1:AA:37:C:H5'     | 1:AA:451:C:H5''   | 1.95                     | 0.47              |
| 1:AA:66:C:C2'     | 1:AA:67:U:O5'     | 2.60                     | 0.47              |
| 1:AA:95:G:OP1     | 23:AY:39:LEU:HD13 | 2.14                     | 0.47              |
| 1:AA:137(A):G:O2' | 1:AA:138:G:C8     | 2.68                     | 0.47              |
| 1:AA:236:C:C2'    | 1:AA:237:C:O5'    | 2.62                     | 0.47              |
| 1:AA:301:G:C8     | 1:AA:317:G:N2     | 2.83                     | 0.47              |
| 1:AA:401:A:C4     | 1:AA:402:A:H8     | 2.33                     | 0.47              |
| 1:AA:403:U:C5'    | 1:AA:404:C:OP1    | 2.62                     | 0.47              |
| 1:AA:443:A:C5     | 6:AF:45:ARG:NH2   | 2.82                     | 0.47              |
| 1:AA:531:C:O2     | 16:AR:28:ARG:NE   | 2.48                     | 0.47              |
| 1:AA:577:G:H2'    | 1:AA:578:A:O4'    | 2.14                     | 0.47              |
| 1:AA:586:A:H61    | 1:AA:810:U:H5'    | 1.78                     | 0.47              |
| 1:AA:589:C:O2'    | 1:AA:590:A:H5'    | 2.13                     | 0.47              |
| 1:AA:625:G:C6     | 11:AM:100:LEU:HB3 | 2.49                     | 0.47              |
| 1:AA:673:C:O4'    | 6:AF:82:ILE:HG21  | 2.14                     | 0.47              |
| 1:AA:724:U:H2'    | 1:AA:725:G:O4'    | 2.13                     | 0.47              |
| 1:AA:879:G:O6     | 1:AA:897:C:O2'    | 2.29                     | 0.47              |
| 1:AA:955:C:H5''   | 12:AN:87:LYS:HD2  | 1.95                     | 0.47              |
| 1:AA:962:G:H21    | 1:AA:2250:G:N2    | 2.12                     | 0.47              |
| 1:AA:979:G:N7     | 1:AA:981:A:OP2    | 2.47                     | 0.47              |
| 1:AA:1030:G:C2    | 1:AA:1031:G:C4    | 3.02                     | 0.47              |
| 1:AA:1062:G:C8    | 1:AA:1063:G:C8    | 3.02                     | 0.47              |
| 1:AA:1063:G:OP1   | 32:AJ:76:TYR:OH   | 2.31                     | 0.47              |
| 1:AA:1137:G:H2'   | 1:AA:1138:G:O4'   | 2.15                     | 0.47              |
| 1:AA:1174:A:C2    | 1:AA:1176:G:O5'   | 2.67                     | 0.47              |
| 1:AA:1203:G:N2    | 1:AA:1206:G:N1    | 2.62                     | 0.47              |
| 1:AA:1212:G:H3'   | 1:AA:1212:G:H8    | 1.77                     | 0.47              |
| 1:AA:1216:G:OP1   | 16:AR:11:ARG:HD2  | 2.14                     | 0.47              |
| 1:AA:1241:A:C3'   | 1:AA:1241:A:C4    | 2.98                     | 0.47              |
| 1:AA:1251:C:C5'   | 16:AR:10:ARG:HE   | 2.26                     | 0.47              |
| 1:AA:1265:A:C1'   | 1:AA:1267:U:N3    | 2.77                     | 0.47              |
| 1:AA:1366:A:C5'   | 25:Aa:1:MET:H1    | 2.27                     | 0.47              |
| 1:AA:1402:C:N4    | 1:AA:1403:C:N4    | 2.62                     | 0.47              |
| 1:AA:1448:G:C2'   | 1:AA:1449:A:H8    | 2.27                     | 0.47              |
| 1:AA:1558:A:H1'   | 1:AA:1559:G:O6    | 2.13                     | 0.47              |
| 1:AA:1656:C:O3'   | 5:AE:136:ARG:NH2  | 2.47                     | 0.47              |
| 1:AA:1680:U:O2    | 1:AA:1764:G:O5'   | 2.33                     | 0.47              |
| 1:AA:1689:A:H2'   | 1:AA:1690:A:C8    | 2.49                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1725:G:N1    | 1:AA:1726:G:C8    | 2.82                     | 0.47              |
| 1:AA:1748:G:H2'   | 1:AA:1749:A:H8    | 1.73                     | 0.47              |
| 1:AA:1769:G:H2'   | 1:AA:1770:G:H8    | 1.79                     | 0.47              |
| 1:AA:1799:G:C6    | 1:AA:1819:A:C8    | 3.03                     | 0.47              |
| 1:AA:1882:C:C2    | 1:AA:1883:G:H1'   | 2.49                     | 0.47              |
| 1:AA:1901:A:O3'   | 4:AD:244:ARG:NH2  | 2.47                     | 0.47              |
| 1:AA:1936:A:C4    | 1:AA:1945:G:C6    | 3.02                     | 0.47              |
| 1:AA:1936:A:O4'   | 1:AA:1940:U:O4    | 2.32                     | 0.47              |
| 1:AA:2057:A:N7    | 1:AA:2058:A:N7    | 2.62                     | 0.47              |
| 1:AA:2081:C:C2'   | 1:AA:2082:A:H5'   | 2.44                     | 0.47              |
| 1:AA:2152:G:H4'   | 3:AC:2:LYS:HB2    | 1.94                     | 0.47              |
| 1:AA:2312:U:O4'   | 7:AG:43:LEU:HD22  | 2.15                     | 0.47              |
| 1:AA:2350:C:O2'   | 1:AA:2351:G:OP1   | 2.32                     | 0.47              |
| 1:AA:2371:G:O2'   | 1:AA:2372:G:C1'   | 2.62                     | 0.47              |
| 1:AA:2394:C:H5'   | 29:Ae:12:LYS:NZ   | 2.29                     | 0.47              |
| 1:AA:2414:G:C2    | 1:AA:2415:G:C8    | 3.01                     | 0.47              |
| 1:AA:2450:A:OP1   | 1:AA:2497:A:C8    | 2.67                     | 0.47              |
| 1:AA:2562:U:N3    | 1:AA:2563:U:C6    | 2.82                     | 0.47              |
| 1:AA:2617:C:C6    | 1:AA:2617:C:OP2   | 2.67                     | 0.47              |
| 1:AA:2807:G:N2    | 1:AA:2892:A:C6    | 2.68                     | 0.47              |
| 1:AA:2817:G:C5    | 1:AA:2818:G:N7    | 2.82                     | 0.47              |
| 2:AB:77:U:H3'     | 2:AB:77:U:C6      | 2.47                     | 0.47              |
| 3:AC:127:LEU:HB3  | 3:AC:131:LEU:HD11 | 1.96                     | 0.47              |
| 4:AD:84:TYR:HA    | 4:AD:92:ILE:HG23  | 1.96                     | 0.47              |
| 4:AD:224:ALA:O    | 4:AD:226:MET:N    | 2.47                     | 0.47              |
| 5:AE:104:VAL:HG22 | 5:AE:198:VAL:CB   | 2.44                     | 0.47              |
| 6:AF:9:ILE:CG2    | 6:AF:10:PRO:N     | 2.77                     | 0.47              |
| 6:AF:12:LEU:O     | 6:AF:14:PRO:N     | 2.48                     | 0.47              |
| 7:AG:11:TYR:O     | 7:AG:15:VAL:CG1   | 2.57                     | 0.47              |
| 7:AG:57:ALA:CA    | 7:AG:67:LYS:C     | 2.85                     | 0.47              |
| 7:AG:74:LYS:O     | 7:AG:75:LYS:CB    | 2.63                     | 0.47              |
| 8:AH:8:PRO:HB3    | 8:AH:51:ARG:NH1   | 2.17                     | 0.47              |
| 8:AH:13:LYS:CG    | 8:AH:15:VAL:HB    | 2.44                     | 0.47              |
| 8:AH:105:LEU:CG   | 8:AH:113:VAL:HG11 | 2.44                     | 0.47              |
| 9:AK:126:PRO:C    | 9:AK:127:ASP:OD2  | 2.57                     | 0.47              |
| 10:AL:27:GLY:O    | 10:AL:28:SER:C    | 2.57                     | 0.47              |
| 10:AL:47:ILE:HD12 | 10:AL:52:VAL:HG13 | 1.95                     | 0.47              |
| 10:AL:68:GLU:HB2  | 10:AL:104:ARG:CD  | 2.44                     | 0.47              |
| 11:AM:86:LYS:NZ   | 11:AM:91:PHE:CE2  | 2.82                     | 0.47              |
| 12:AN:8:LYS:HZ1   | 12:AN:72:LYS:C    | 2.22                     | 0.47              |
| 12:AN:16:ARG:HG3  | 12:AN:72:LYS:CB   | 2.41                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 12:AN:79:LEU:O    | 12:AN:80:GLU:CB   | 2.63                     | 0.47              |
| 13:AO:17:ARG:HG3  | 13:AO:18:LEU:HD22 | 1.95                     | 0.47              |
| 13:AO:74:LYS:N    | 13:AO:77:ARG:HH22 | 2.12                     | 0.47              |
| 13:AO:102:GLU:OE2 | 13:AO:102:GLU:HA  | 2.15                     | 0.47              |
| 14:AP:13:ARG:O    | 14:AP:16:ASN:OD1  | 2.32                     | 0.47              |
| 14:AP:24:LEU:HD11 | 14:AP:41:ASP:CB   | 2.43                     | 0.47              |
| 14:AP:30:ARG:HD2  | 14:AP:91:PRO:CB   | 2.43                     | 0.47              |
| 14:AP:62:LYS:O    | 14:AP:63:THR:C    | 2.57                     | 0.47              |
| 14:AP:89:ARG:NE   | 14:AP:90:GLY:O    | 2.44                     | 0.47              |
| 14:AP:103:GLU:CA  | 14:AP:106:ARG:HB3 | 2.44                     | 0.47              |
| 15:AQ:29:ARG:HG2  | 15:AQ:51:ARG:CB   | 2.44                     | 0.47              |
| 15:AQ:64:ARG:HH12 | 15:AQ:78:LEU:H    | 1.60                     | 0.47              |
| 17:AS:15:GLU:C    | 17:AS:100:ARG:CZ  | 2.87                     | 0.47              |
| 18:AT:8:ARG:NH2   | 18:AT:102:HIS:CE1 | 2.83                     | 0.47              |
| 18:AT:24:ILE:HG21 | 18:AT:36:LEU:HB2  | 1.95                     | 0.47              |
| 18:AT:36:LEU:HD21 | 18:AT:48:ALA:N    | 2.28                     | 0.47              |
| 18:AT:49:LYS:O    | 18:AT:50:VAL:C    | 2.56                     | 0.47              |
| 19:AU:49:VAL:HG23 | 19:AU:50:LYS:N    | 2.29                     | 0.47              |
| 20:AV:42:VAL:C    | 20:AV:61:ILE:HD13 | 2.38                     | 0.47              |
| 21:AW:29:TYR:CD2  | 21:AW:89:PHE:CE2  | 3.01                     | 0.47              |
| 21:AW:153:SER:H   | 21:AW:168:GLU:HB2 | 1.79                     | 0.47              |
| 22:AX:9:SER:O     | 22:AX:10:THR:C    | 2.56                     | 0.47              |
| 23:AY:14:VAL:O    | 23:AY:18:LYS:HG2  | 2.12                     | 0.47              |
| 28:Ad:9:ARG:O     | 28:Ad:10:ARG:O    | 2.32                     | 0.47              |
| 28:Ad:17:GLY:O    | 28:Ad:18:PHE:C    | 2.57                     | 0.47              |
| 29:Ae:1:MET:H2    | 29:Ae:2:PRO:HD2   | 1.75                     | 0.47              |
| 29:Ae:26:LYS:CE   | 29:Ae:45:GLY:H    | 2.28                     | 0.47              |
| 29:Ae:27:THR:N    | 29:Ae:44:LYS:HZ1  | 2.11                     | 0.47              |
| 32:AJ:112:MET:CE  | 32:AJ:121:GLU:C   | 2.76                     | 0.47              |
| 34:BA:57:G:C6     | 34:BA:58:C:C4     | 3.02                     | 0.47              |
| 34:BA:62:U:C2     | 34:BA:63:C:C5     | 3.02                     | 0.47              |
| 34:BA:115:G:O2'   | 34:BA:116:A:P     | 2.72                     | 0.47              |
| 34:BA:237:C:OP1   | 50:BU:40:LYS:CE   | 2.62                     | 0.47              |
| 34:BA:258:G:C4    | 34:BA:259:G:N7    | 2.82                     | 0.47              |
| 34:BA:393:A:N6    | 34:BA:394:G:O6    | 2.47                     | 0.47              |
| 34:BA:552:U:C2    | 34:BA:553:A:C8    | 3.02                     | 0.47              |
| 34:BA:579:G:C4    | 34:BA:580:U:C5    | 3.01                     | 0.47              |
| 34:BA:658:G:C6    | 34:BA:749:C:N4    | 2.81                     | 0.47              |
| 34:BA:667:G:H4'   | 48:BS:51:HIS:CG   | 2.49                     | 0.47              |
| 34:BA:691:G:O6    | 44:BO:26:ASN:O    | 2.33                     | 0.47              |
| 34:BA:695:A:C2    | 34:BA:696:A:C4    | 3.02                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:849:C:O2'    | 34:BA:850:U:H5'    | 2.14                     | 0.47              |
| 34:BA:873:A:H2'    | 34:BA:873:A:N3     | 2.28                     | 0.47              |
| 34:BA:978:A:N6     | 34:BA:1318:A:H61   | 2.12                     | 0.47              |
| 34:BA:997:U:C4     | 34:BA:998:G:N7     | 2.83                     | 0.47              |
| 34:BA:1006:C:O2    | 34:BA:1006:C:C2'   | 2.61                     | 0.47              |
| 34:BA:1052:U:OP2   | 34:BA:1200:C:O2    | 2.32                     | 0.47              |
| 34:BA:1085:U:H5''  | 34:BA:1086:U:H5    | 1.78                     | 0.47              |
| 34:BA:1158:C:C5    | 34:BA:1160:G:H1'   | 2.48                     | 0.47              |
| 34:BA:1200:C:C5'   | 34:BA:1202:G:OP1   | 2.62                     | 0.47              |
| 34:BA:1259:C:C2    | 34:BA:1283:G:H1'   | 2.49                     | 0.47              |
| 34:BA:1323:G:C6    | 34:BA:1324:A:N6    | 2.82                     | 0.47              |
| 34:BA:1358:U:H5''  | 34:BA:1359:C:OP2   | 2.13                     | 0.47              |
| 34:BA:1371:G:OP2   | 42:BM:11:LYS:HE3   | 2.13                     | 0.47              |
| 34:BA:1539:C:O5'   | 34:BA:1539:C:H6    | 1.96                     | 0.47              |
| 35:BF:23:ARG:HB2   | 35:BF:23:ARG:CZ    | 2.44                     | 0.47              |
| 35:BF:69:LEU:CD1   | 35:BF:69:LEU:C     | 2.87                     | 0.47              |
| 36:BG:18:TRP:CZ2   | 47:BR:55:GLY:O     | 2.67                     | 0.47              |
| 36:BG:71:ALA:HB2   | 36:BG:106:VAL:HG23 | 1.95                     | 0.47              |
| 36:BG:71:ALA:CA    | 36:BG:105:GLU:HG3  | 2.42                     | 0.47              |
| 36:BG:108:ASN:C    | 36:BG:110:ASN:H    | 2.22                     | 0.47              |
| 37:BH:32:ALA:O     | 37:BH:37:PRO:HA    | 2.14                     | 0.47              |
| 37:BH:96:LEU:O     | 37:BH:97:LEU:C     | 2.58                     | 0.47              |
| 38:BI:37:ARG:O     | 38:BI:38:GLN:HG3   | 2.13                     | 0.47              |
| 39:BJ:34:GLY:HA3   | 39:BJ:68:PRO:CG    | 2.43                     | 0.47              |
| 41:BL:17:THR:CB    | 41:BL:18:ARG:NH2   | 2.77                     | 0.47              |
| 43:BN:3:LYS:N      | 43:BN:3:LYS:CD     | 2.77                     | 0.47              |
| 43:BN:17:ASP:O     | 43:BN:21:GLN:HB3   | 2.14                     | 0.47              |
| 43:BN:30:SER:HB3   | 43:BN:80:LYS:CG    | 2.37                     | 0.47              |
| 43:BN:47:PHE:CE2   | 47:BR:37:PHE:CZ    | 3.02                     | 0.47              |
| 44:BO:110:ASP:HB2  | 51:BV:88:LYS:HB3   | 1.95                     | 0.47              |
| 45:BP:92:ASP:C     | 45:BP:93:LEU:CD2   | 2.83                     | 0.47              |
| 45:BP:111:LYS:O    | 45:BP:112:ASP:C    | 2.57                     | 0.47              |
| 46:BQ:14:ARG:NE    | 46:BQ:42:ALA:HA    | 2.30                     | 0.47              |
| 47:BR:23:ARG:CD    | 47:BR:30:ALA:HB2   | 2.44                     | 0.47              |
| 49:BT:67:THR:HG22  | 49:BT:68:ASP:N     | 2.30                     | 0.47              |
| 50:BU:82:MET:C     | 50:BU:85:VAL:HB    | 2.36                     | 0.47              |
| 53:BX:26:ASN:O     | 53:BX:27:LYS:C     | 2.57                     | 0.47              |
| 57:BZ:158:LEU:N    | 57:BZ:158:LEU:HD12 | 2.29                     | 0.47              |
| 57:BZ:180:ALA:CB   | 57:BZ:181:GLU:CA   | 2.92                     | 0.47              |
| 57:BZ:206:GLN:CD   | 57:BZ:227:LYS:HB2  | 2.28                     | 0.47              |
| 57:BZ:240:ILE:HD11 | 57:BZ:297:LEU:CD1  | 1.95                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 57:BZ:397:GLN:CB | 57:BZ:472:TYR:CB | 2.73                     | 0.47              |
| 57:BZ:406:ASP:CG | 57:BZ:437:VAL:H  | 2.21                     | 0.47              |
| 57:BZ:575:ASP:O  | 57:BZ:589:LYS:HA | 2.14                     | 0.47              |
| 1:AA:3:U:O4      | 1:AA:2900:A:C6   | 2.68                     | 0.47              |
| 1:AA:4:C:N3      | 1:AA:2900:A:C5   | 2.83                     | 0.47              |
| 1:AA:153:C:H2'   | 1:AA:154:G:C8    | 2.50                     | 0.47              |
| 1:AA:162:U:O4    | 1:AA:163:U:N3    | 2.46                     | 0.47              |
| 1:AA:197:A:H5''  | 1:AA:2068:U:O4   | 2.14                     | 0.47              |
| 1:AA:249:C:H5    | 1:AA:2395:C:OP1  | 1.97                     | 0.47              |
| 1:AA:297:C:C3'   | 1:AA:298:G:C8    | 2.98                     | 0.47              |
| 1:AA:312:G:N3    | 1:AA:312:G:C2'   | 2.73                     | 0.47              |
| 1:AA:341:G:C2'   | 1:AA:342:G:O4'   | 2.63                     | 0.47              |
| 1:AA:345:A:H4'   | 1:AA:345:A:OP1   | 2.14                     | 0.47              |
| 1:AA:416:C:C5    | 1:AA:417:C:C4    | 3.03                     | 0.47              |
| 1:AA:466:A:N1    | 1:AA:795:C:O2'   | 2.46                     | 0.47              |
| 1:AA:603:A:N6    | 1:AA:624:C:H41   | 2.06                     | 0.47              |
| 1:AA:643:A:O2'   | 1:AA:644:A:P     | 2.73                     | 0.47              |
| 1:AA:673:C:N3    | 1:AA:808:G:N2    | 2.62                     | 0.47              |
| 1:AA:743:G:H2'   | 1:AA:744:G:H8    | 1.79                     | 0.47              |
| 1:AA:774:A:C1'   | 1:AA:775:G:C8    | 2.95                     | 0.47              |
| 1:AA:781:A:O2'   | 4:AD:222:ARG:CZ  | 2.62                     | 0.47              |
| 1:AA:783:A:C2'   | 1:AA:784:A:C5'   | 2.92                     | 0.47              |
| 1:AA:814:C:C3'   | 1:AA:1224:G:H22  | 2.28                     | 0.47              |
| 1:AA:853:G:O2'   | 1:AA:854:G:O4'   | 2.25                     | 0.47              |
| 1:AA:919:G:H2'   | 1:AA:920:G:O5'   | 2.14                     | 0.47              |
| 1:AA:957:A:N1    | 1:AA:2459:A:C5'  | 2.77                     | 0.47              |
| 1:AA:969:U:N3    | 1:AA:970:C:C6    | 2.82                     | 0.47              |
| 1:AA:1152:C:OP1  | 16:AR:81:HIS:ND1 | 2.47                     | 0.47              |
| 1:AA:1212:G:C8   | 1:AA:1235:G:N1   | 2.83                     | 0.47              |
| 1:AA:1277:G:C2'  | 1:AA:1278:A:H5'  | 2.43                     | 0.47              |
| 1:AA:1324:G:O3'  | 1:AA:1325:G:H4'  | 2.14                     | 0.47              |
| 1:AA:1390:U:O5'  | 1:AA:1390:U:H6   | 1.96                     | 0.47              |
| 1:AA:1467:C:C4'  | 1:AA:1467:C:OP1  | 2.62                     | 0.47              |
| 1:AA:1509:C:OP1  | 1:AA:1510:A:C8   | 2.57                     | 0.47              |
| 1:AA:1613:G:C2'  | 1:AA:1614:A:OP1  | 2.62                     | 0.47              |
| 1:AA:1699:G:C2'  | 1:AA:1700:A:OP1  | 2.62                     | 0.47              |
| 1:AA:1891:G:H3'  | 1:AA:1892:C:H6   | 1.79                     | 0.47              |
| 1:AA:2000:G:OP2  | 13:AO:2:ARG:CD   | 2.63                     | 0.47              |
| 1:AA:2031:A:N6   | 1:AA:2498:C:H1'  | 2.25                     | 0.47              |
| 1:AA:2041:U:O2'  | 1:AA:2042:A:O4'  | 2.21                     | 0.47              |
| 1:AA:2142:C:C2   | 1:AA:2143:C:C5   | 3.02                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2345:G:H21   | 1:AA:2381:C:H3'   | 1.79                     | 0.47              |
| 1:AA:2365:G:OP1   | 22:AX:55:ARG:CG   | 2.62                     | 0.47              |
| 1:AA:2392:A:C2'   | 1:AA:2393:A:C5'   | 2.93                     | 0.47              |
| 1:AA:2487:G:H2'   | 1:AA:2488:A:O5'   | 2.15                     | 0.47              |
| 1:AA:2523:G:O2'   | 1:AA:2765:A:N7    | 2.43                     | 0.47              |
| 1:AA:2549:G:C2'   | 1:AA:2550:G:H5'   | 2.45                     | 0.47              |
| 1:AA:2556:C:H42   | 57:BZ:546:MET:HE1 | 1.79                     | 0.47              |
| 1:AA:2812:G:N2    | 1:AA:2889:C:C2    | 2.83                     | 0.47              |
| 1:AA:2816:C:H1'   | 1:AA:2831:G:N2    | 2.29                     | 0.47              |
| 1:AA:2817:G:N2    | 1:AA:2830:G:H1'   | 2.29                     | 0.47              |
| 1:AA:2823:A:O5'   | 1:AA:2824:C:OP2   | 2.32                     | 0.47              |
| 1:AA:2838:G:C6    | 1:AA:2839:G:N7    | 2.82                     | 0.47              |
| 1:AA:2848:G:C8    | 15:AQ:99:LEU:HD13 | 2.47                     | 0.47              |
| 1:AA:2857:G:N1    | 1:AA:2861:G:C6    | 2.82                     | 0.47              |
| 2:AB:16:G:C5      | 2:AB:17:C:C5      | 3.03                     | 0.47              |
| 2:AB:85:G:C2      | 2:AB:86:G:C8      | 3.02                     | 0.47              |
| 2:AB:116:G:H5'    | 14:AP:53:SER:CB   | 2.44                     | 0.47              |
| 3:AC:160:ARG:HD3  | 3:AC:160:ARG:C    | 2.38                     | 0.47              |
| 3:AC:201:PRO:C    | 3:AC:203:GLY:H    | 2.22                     | 0.47              |
| 4:AD:5:LYS:HA     | 4:AD:29:PRO:HD3   | 1.96                     | 0.47              |
| 4:AD:57:GLY:N     | 4:AD:217:ARG:CD   | 2.73                     | 0.47              |
| 5:AE:81:ILE:CG2   | 5:AE:82:ARG:H     | 2.25                     | 0.47              |
| 5:AE:172:VAL:CA   | 5:AE:184:VAL:HG12 | 2.43                     | 0.47              |
| 5:AE:186:GLY:C    | 5:AE:188:VAL:N    | 2.72                     | 0.47              |
| 6:AF:26:ALA:O     | 6:AF:112:MET:SD   | 2.72                     | 0.47              |
| 6:AF:35:GLU:HA    | 6:AF:38:ARG:CD    | 2.44                     | 0.47              |
| 6:AF:188:ARG:HH21 | 6:AF:188:ARG:CG   | 2.23                     | 0.47              |
| 7:AG:36:LYS:HZ3   | 7:AG:38:VAL:HG22  | 1.78                     | 0.47              |
| 7:AG:115:ARG:HG3  | 7:AG:115:ARG:HH21 | 1.80                     | 0.47              |
| 8:AH:9:ILE:O      | 8:AH:50:VAL:O     | 2.33                     | 0.47              |
| 8:AH:29:PRO:CD    | 8:AH:30:LYS:H     | 2.28                     | 0.47              |
| 9:AK:18:ALA:O     | 9:AK:21:LYS:HB2   | 2.14                     | 0.47              |
| 9:AK:74:ARG:CG    | 9:AK:76:SER:OG    | 2.63                     | 0.47              |
| 10:AL:23:ARG:H    | 10:AL:40:VAL:CG1  | 2.26                     | 0.47              |
| 10:AL:64:ARG:HE   | 10:AL:67:LYS:CA   | 2.27                     | 0.47              |
| 10:AL:97:ARG:CD   | 10:AL:97:ARG:O    | 2.62                     | 0.47              |
| 11:AM:7:ARG:N     | 11:AM:8:PRO:CD    | 2.77                     | 0.47              |
| 11:AM:84:ASN:C    | 11:AM:85:LEU:HD12 | 2.39                     | 0.47              |
| 12:AN:17:LEU:C    | 12:AN:18:LYS:HG2  | 2.37                     | 0.47              |
| 12:AN:78:PRO:C    | 12:AN:79:LEU:HD23 | 2.38                     | 0.47              |
| 12:AN:121:ALA:C   | 12:AN:125:LEU:HG  | 2.37                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 13:AO:90:ARG:HB2  | 13:AO:94:TYR:CE2   | 2.49                     | 0.47              |
| 15:AQ:99:LEU:O    | 15:AQ:102:ILE:HG23 | 2.13                     | 0.47              |
| 17:AS:20:LEU:CD1  | 17:AS:68:LYS:HG3   | 2.44                     | 0.47              |
| 17:AS:92:THR:OG1  | 17:AS:93:GLU:N     | 2.47                     | 0.47              |
| 18:AT:82:LEU:H    | 18:AT:98:LYS:HZ3   | 1.60                     | 0.47              |
| 18:AT:85:VAL:HG23 | 18:AT:85:VAL:O     | 2.13                     | 0.47              |
| 20:AV:49:VAL:N    | 20:AV:56:PRO:HG3   | 2.29                     | 0.47              |
| 20:AV:67:LEU:HD11 | 20:AV:71:LYS:HE2   | 1.95                     | 0.47              |
| 21:AW:104:PHE:CZ  | 21:AW:120:ILE:CG2  | 2.91                     | 0.47              |
| 23:AY:33:GLN:NE2  | 23:AY:33:GLN:H     | 2.11                     | 0.47              |
| 25:Aa:31:ILE:HD13 | 25:Aa:31:ILE:N     | 2.10                     | 0.47              |
| 29:Ae:22:VAL:HG13 | 29:Ae:23:VAL:H     | 1.78                     | 0.47              |
| 29:Ae:30:ARG:CG   | 29:Ae:31:HIS:H     | 2.23                     | 0.47              |
| 29:Ae:39:LYS:HZ3  | 29:Ae:39:LYS:CB    | 2.19                     | 0.47              |
| 34:BA:20:U:O4     | 34:BA:21:G:C6      | 2.68                     | 0.47              |
| 34:BA:68:G:H8     | 34:BA:68:G:O5'     | 1.98                     | 0.47              |
| 34:BA:99:C:O2'    | 34:BA:101:A:OP1    | 2.33                     | 0.47              |
| 34:BA:109:A:N6    | 34:BA:326:G:N1     | 2.63                     | 0.47              |
| 34:BA:285:G:C5    | 34:BA:286:G:N7     | 2.83                     | 0.47              |
| 34:BA:290:C:C6    | 34:BA:290:C:C3'    | 2.98                     | 0.47              |
| 34:BA:292:G:H3'   | 34:BA:293:G:H8     | 1.80                     | 0.47              |
| 34:BA:295:C:O2    | 34:BA:296:U:C1'    | 2.62                     | 0.47              |
| 34:BA:406:G:N2    | 34:BA:437:U:O2     | 2.47                     | 0.47              |
| 34:BA:493:G:HO2'  | 34:BA:494:U:H6     | 1.61                     | 0.47              |
| 34:BA:538:G:O3'   | 45:BP:114:LYS:CD   | 2.52                     | 0.47              |
| 34:BA:584:G:C2'   | 34:BA:585:G:O5'    | 2.62                     | 0.47              |
| 34:BA:721:G:H1'   | 34:BA:722:A:N1     | 2.30                     | 0.47              |
| 34:BA:766:A:C8    | 34:BA:814:A:N6     | 2.82                     | 0.47              |
| 34:BA:769:G:O2'   | 34:BA:770:C:H5'    | 2.14                     | 0.47              |
| 34:BA:784:C:H2'   | 34:BA:785:G:O4'    | 2.13                     | 0.47              |
| 34:BA:832:C:N3    | 34:BA:833:U:C4     | 2.82                     | 0.47              |
| 34:BA:937:A:H1'   | 34:BA:1379:G:H22   | 1.77                     | 0.47              |
| 34:BA:996:A:C2    | 34:BA:997:U:C4     | 3.02                     | 0.47              |
| 34:BA:1015:A:H2'  | 34:BA:1016:A:H8    | 1.76                     | 0.47              |
| 34:BA:1027:C:OP2  | 34:BA:1028:C:OP2   | 2.32                     | 0.47              |
| 34:BA:1144:G:N2   | 34:BA:1146:A:N7    | 2.62                     | 0.47              |
| 34:BA:1148:U:O2   | 34:BA:1149:C:O4'   | 2.31                     | 0.47              |
| 34:BA:1214:C:H4'  | 34:BA:1215:G:OP2   | 2.12                     | 0.47              |
| 34:BA:1368:G:P    | 42:BM:112:LYS:O    | 2.73                     | 0.47              |
| 34:BA:1410:G:C2   | 34:BA:1411:C:C4    | 3.01                     | 0.47              |
| 35:BF:115:LEU:CB  | 35:BF:145:LEU:HG   | 2.44                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 36:BG:8:ILE:CD1    | 36:BG:16:ARG:HD2   | 2.44                     | 0.47              |
| 36:BG:85:ARG:HH21  | 36:BG:89:GLU:CA    | 2.28                     | 0.47              |
| 37:BH:59:ARG:HH22  | 37:BH:66:ARG:NH1   | 2.07                     | 0.47              |
| 37:BH:64:LEU:O     | 37:BH:67:ILE:HG13  | 2.14                     | 0.47              |
| 37:BH:73:ARG:O     | 37:BH:74:GLN:C     | 2.58                     | 0.47              |
| 38:BI:43:LEU:C     | 38:BI:43:LEU:CD2   | 2.86                     | 0.47              |
| 38:BI:107:ARG:HB2  | 38:BI:107:ARG:NH1  | 2.29                     | 0.47              |
| 40:BK:43:PHE:CD2   | 40:BK:44:TYR:CE2   | 2.99                     | 0.47              |
| 40:BK:95:ARG:O     | 40:BK:97:GLN:N     | 2.47                     | 0.47              |
| 40:BK:129:GLU:OE1  | 40:BK:131:LYS:HD3  | 2.14                     | 0.47              |
| 40:BK:153:HIS:CE1  | 44:BO:58:PRO:HD2   | 2.42                     | 0.47              |
| 41:BL:14:ARG:CZ    | 41:BL:15:ASN:ND2   | 2.78                     | 0.47              |
| 41:BL:48:TYR:HB3   | 41:BL:61:VAL:HG22  | 1.94                     | 0.47              |
| 41:BL:109:ILE:HG13 | 41:BL:109:ILE:O    | 2.14                     | 0.47              |
| 42:BM:5:TYR:OH     | 42:BM:16:ARG:HG3   | 2.14                     | 0.47              |
| 43:BN:9:ARG:HB3    | 43:BN:9:ARG:NH1    | 2.30                     | 0.47              |
| 44:BO:59:TYR:O     | 44:BO:62:GLN:CD    | 2.57                     | 0.47              |
| 44:BO:110:ASP:OD2  | 51:BV:88:LYS:HD2   | 2.13                     | 0.47              |
| 45:BP:34:ARG:N     | 45:BP:84:LEU:HD12  | 2.30                     | 0.47              |
| 45:BP:42:THR:HA    | 45:BP:55:VAL:HG23  | 1.95                     | 0.47              |
| 45:BP:64:TYR:C     | 45:BP:65:GLU:CG    | 2.87                     | 0.47              |
| 49:BT:10:GLY:HA3   | 49:BT:14:ASN:O     | 2.14                     | 0.47              |
| 51:BV:18:ARG:HH22  | 51:BV:21:LYS:HD3   | 1.79                     | 0.47              |
| 51:BV:74:ARG:NH1   | 51:BV:81:PHE:CB    | 2.78                     | 0.47              |
| 51:BV:77:GLY:C     | 51:BV:78:LEU:HG    | 2.37                     | 0.47              |
| 52:BW:62:ILE:HD11  | 52:BW:67:VAL:CB    | 2.44                     | 0.47              |
| 53:BX:22:ARG:O     | 53:BX:23:ARG:C     | 2.57                     | 0.47              |
| 53:BX:86:ARG:CG    | 53:BX:87:LYS:N     | 2.77                     | 0.47              |
| 57:BZ:18:LYS:O     | 57:BZ:19:THR:HG22  | 2.14                     | 0.47              |
| 57:BZ:43:MET:C     | 57:BZ:43:MET:SD    | 2.97                     | 0.47              |
| 57:BZ:51:GLU:OE1   | 57:BZ:52:ARG:HB2   | 2.14                     | 0.47              |
| 57:BZ:258:LEU:CD1  | 57:BZ:260:LEU:HD22 | 2.39                     | 0.47              |
| 57:BZ:368:VAL:O    | 57:BZ:372:ASN:ND2  | 2.47                     | 0.47              |
| 57:BZ:390:ARG:CB   | 57:BZ:391:GLU:HA   | 2.45                     | 0.47              |
| 57:BZ:507:ARG:O    | 57:BZ:528:SER:OG   | 2.24                     | 0.47              |
| 1:AA:35:G:O4'      | 1:AA:454:A:C1'     | 2.62                     | 0.47              |
| 1:AA:95:G:C2'      | 23:AY:43:HIS:NE2   | 2.72                     | 0.47              |
| 1:AA:200:U:C4      | 1:AA:201:C:C1'     | 2.96                     | 0.47              |
| 1:AA:230:U:C2'     | 1:AA:231:C:O4'     | 2.62                     | 0.47              |
| 1:AA:270(R):G:C2   | 1:AA:270(S):G:C4   | 3.03                     | 0.47              |
| 1:AA:287:C:C2'     | 1:AA:288:C:H5      | 2.15                     | 0.47              |

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| Atom-1          | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|--------------------|--------------------------|-------------------|
| 1:AA:318:C:C2   | 1:AA:334:C:N3      | 2.82                     | 0.47              |
| 1:AA:383:U:C2   | 1:AA:385:C:C4      | 3.02                     | 0.47              |
| 1:AA:417:C:O2'  | 1:AA:418:G:H5'     | 2.14                     | 0.47              |
| 1:AA:675:A:C4'  | 6:AF:67:GLN:NE2    | 2.64                     | 0.47              |
| 1:AA:799:G:H8   | 1:AA:799:G:OP2     | 1.97                     | 0.47              |
| 1:AA:837:C:H2'  | 1:AA:838:C:O5'     | 2.14                     | 0.47              |
| 1:AA:860:U:H3'  | 1:AA:860:U:O2      | 2.15                     | 0.47              |
| 1:AA:893:C:C4   | 1:AA:894:C:C4      | 3.02                     | 0.47              |
| 1:AA:903:C:H1'  | 21:AW:169:GLU:OE2  | 2.14                     | 0.47              |
| 1:AA:909:A:O2'  | 1:AA:911:A:OP2     | 2.28                     | 0.47              |
| 1:AA:1019:U:H6  | 1:AA:1019:U:C5'    | 2.26                     | 0.47              |
| 1:AA:1181:C:N4  | 1:AA:1182:A:N6     | 2.62                     | 0.47              |
| 1:AA:1188:U:H2' | 1:AA:1189:A:C5'    | 2.43                     | 0.47              |
| 1:AA:1248:G:O2' | 1:AA:1249:U:P      | 2.73                     | 0.47              |
| 1:AA:1259:G:C4  | 1:AA:1260:G:C8     | 3.03                     | 0.47              |
| 1:AA:1284:A:C6  | 1:AA:1285:G:N1     | 2.82                     | 0.47              |
| 1:AA:1287:A:H8  | 13:AO:104:ARG:NH1  | 2.12                     | 0.47              |
| 1:AA:1449:A:H2  | 1:AA:1449(A):G:H1' | 1.79                     | 0.47              |
| 1:AA:1464:C:O2' | 1:AA:1465:G:H5'    | 2.14                     | 0.47              |
| 1:AA:1517:G:H2' | 1:AA:1518:C:O4'    | 2.14                     | 0.47              |
| 1:AA:1613:G:C8  | 1:AA:1617:C:N4     | 2.82                     | 0.47              |
| 1:AA:1631:A:C6  | 1:AA:1632:A:N1     | 2.83                     | 0.47              |
| 1:AA:1639:U:C2' | 1:AA:1640:C:H5''   | 2.42                     | 0.47              |
| 1:AA:1693:U:O4  | 1:AA:1977:A:C5     | 2.67                     | 0.47              |
| 1:AA:1735:C:C2  | 1:AA:1741:C:C5     | 3.00                     | 0.47              |
| 1:AA:1806:C:C2  | 1:AA:1807:G:H8     | 2.31                     | 0.47              |
| 1:AA:1853:A:C1' | 1:AA:2234:G:H5'    | 2.43                     | 0.47              |
| 1:AA:1916:A:C2  | 1:AA:1917:U:C4     | 3.03                     | 0.47              |
| 1:AA:1958:C:O2' | 1:AA:1959:G:C5'    | 2.58                     | 0.47              |
| 1:AA:2013:A:C6  | 1:AA:2014:A:C6     | 3.03                     | 0.47              |
| 1:AA:2040:C:H4' | 9:AK:72:TYR:CE2    | 2.50                     | 0.47              |
| 1:AA:2118:U:H5  | 1:AA:2147:G:N7     | 2.10                     | 0.47              |
| 1:AA:2121:G:O2' | 3:AC:166:ASP:OD2   | 2.22                     | 0.47              |
| 1:AA:2168:G:N3  | 1:AA:2170:A:H8     | 2.11                     | 0.47              |
| 1:AA:2183:C:C2  | 1:AA:2184:G:C8     | 3.02                     | 0.47              |
| 1:AA:2213:U:H3' | 1:AA:2213:U:C2     | 2.47                     | 0.47              |
| 1:AA:2261:C:O5' | 1:AA:2261:C:C6     | 2.67                     | 0.47              |
| 1:AA:2264:C:H2' | 1:AA:2265:U:O5'    | 2.15                     | 0.47              |
| 1:AA:2285:C:H1' | 1:AA:2288:A:C5     | 2.49                     | 0.47              |
| 1:AA:2350:C:C2' | 1:AA:2351:G:O5'    | 2.61                     | 0.47              |
| 1:AA:2420:C:OP2 | 29:Ae:33:ASN:O     | 2.33                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2513:G:H2'   | 1:AA:2514:U:C5    | 2.50                     | 0.47              |
| 1:AA:2645:G:H8    | 1:AA:2645:G:H5''  | 1.78                     | 0.47              |
| 1:AA:2652:C:N4    | 1:AA:2669:G:C2    | 2.83                     | 0.47              |
| 1:AA:2674:G:C2'   | 1:AA:2675:A:H8    | 2.01                     | 0.47              |
| 1:AA:2745:C:C1'   | 8:AH:143:GLN:HG2  | 2.42                     | 0.47              |
| 1:AA:2808:U:N1    | 1:AA:2892:A:N6    | 2.62                     | 0.47              |
| 1:AA:2822:G:C8    | 13:AO:4:LEU:HD21  | 2.49                     | 0.47              |
| 1:AA:2858:C:H5''  | 1:AA:2859:G:N7    | 2.30                     | 0.47              |
| 2:AB:2:C:C2'      | 2:AB:3:C:O5'      | 2.63                     | 0.47              |
| 2:AB:71:C:O2      | 2:AB:72:G:H4'     | 2.13                     | 0.47              |
| 3:AC:74:VAL:CG2   | 3:AC:112:ALA:HB3  | 2.33                     | 0.47              |
| 3:AC:180:PHE:HA   | 3:AC:181:PRO:HA   | 1.91                     | 0.47              |
| 4:AD:5:LYS:CD     | 4:AD:31:LYS:HZ2   | 2.28                     | 0.47              |
| 4:AD:106:ILE:CG1  | 4:AD:108:PRO:HD3  | 2.36                     | 0.47              |
| 4:AD:149:PRO:HD3  | 4:AD:186:HIS:CE1  | 2.49                     | 0.47              |
| 5:AE:50:GLY:CA    | 5:AE:76:ARG:HE    | 2.24                     | 0.47              |
| 5:AE:69:LYS:O     | 5:AE:70:ALA:O     | 2.32                     | 0.47              |
| 5:AE:176:ILE:CD1  | 5:AE:179:GLU:N    | 2.78                     | 0.47              |
| 6:AF:46:ARG:NE    | 6:AF:46:ARG:C     | 2.72                     | 0.47              |
| 7:AG:113:ARG:O    | 7:AG:114:ILE:CB   | 2.63                     | 0.47              |
| 8:AH:11:VAL:HB    | 8:AH:50:VAL:HG22  | 1.97                     | 0.47              |
| 8:AH:97:ARG:HB3   | 8:AH:97:ARG:CZ    | 2.44                     | 0.47              |
| 8:AH:98:LEU:HD22  | 8:AH:100:GLY:C    | 2.39                     | 0.47              |
| 8:AH:150:ALA:O    | 8:AH:151:ILE:C    | 2.55                     | 0.47              |
| 9:AK:4:TYR:HB3    | 16:AR:64:ARG:NH2  | 2.28                     | 0.47              |
| 9:AK:18:ALA:CB    | 9:AK:55:VAL:O     | 2.56                     | 0.47              |
| 9:AK:25:ARG:HH21  | 9:AK:26:LEU:HB2   | 1.80                     | 0.47              |
| 9:AK:30:ILE:HG13  | 9:AK:30:ILE:H     | 1.49                     | 0.47              |
| 9:AK:99:LEU:HD21  | 9:AK:122:VAL:CG2  | 2.40                     | 0.47              |
| 10:AL:34:THR:O    | 10:AL:61:VAL:CG1  | 2.54                     | 0.47              |
| 10:AL:63:VAL:CG2  | 10:AL:81:ASP:CA   | 2.90                     | 0.47              |
| 10:AL:64:ARG:NH2  | 10:AL:65:THR:H    | 2.12                     | 0.47              |
| 10:AL:86:ILE:HG23 | 10:AL:90:GLN:C    | 2.39                     | 0.47              |
| 11:AM:46:LYS:HZ1  | 11:AM:50:ARG:HH11 | 1.63                     | 0.47              |
| 11:AM:80:TYR:CE1  | 11:AM:85:LEU:HD13 | 2.50                     | 0.47              |
| 12:AN:120:ILE:O   | 12:AN:124:LYS:HG2 | 2.14                     | 0.47              |
| 12:AN:134:ARG:NE  | 12:AN:137:TYR:N   | 2.62                     | 0.47              |
| 13:AO:22:ARG:O    | 13:AO:26:LYS:HG3  | 2.15                     | 0.47              |
| 13:AO:67:LEU:HD21 | 13:AO:71:GLN:HA   | 1.97                     | 0.47              |
| 13:AO:118:GLU:HA  | 13:AO:118:GLU:OE2 | 2.14                     | 0.47              |
| 14:AP:59:LYS:H    | 14:AP:59:LYS:CE   | 2.28                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 14:AP:72:ALA:O    | 14:AP:73:LEU:C     | 2.57                     | 0.47              |
| 14:AP:92:TYR:CE1  | 14:AP:93:LYS:HB3   | 2.49                     | 0.47              |
| 15:AQ:31:SER:C    | 15:AQ:32:TYR:CD2   | 2.92                     | 0.47              |
| 16:AR:33:ARG:O    | 16:AR:34:LYS:C     | 2.57                     | 0.47              |
| 19:AU:48:LYS:C    | 19:AU:49:VAL:HG13  | 2.39                     | 0.47              |
| 20:AV:35:TYR:HE2  | 20:AV:67:LEU:HD13  | 1.78                     | 0.47              |
| 21:AW:15:PRO:O    | 21:AW:19:ARG:HD2   | 2.14                     | 0.47              |
| 21:AW:18:LEU:C    | 21:AW:23:LYS:O     | 2.57                     | 0.47              |
| 21:AW:30:ASN:HB2  | 21:AW:90:VAL:CG2   | 2.28                     | 0.47              |
| 21:AW:59:LEU:HD11 | 21:AW:66:SER:OG    | 2.15                     | 0.47              |
| 21:AW:138:GLU:C   | 21:AW:139:VAL:HG23 | 2.39                     | 0.47              |
| 21:AW:145:GLU:HB3 | 21:AW:146:ILE:H    | 1.31                     | 0.47              |
| 22:AX:37:LEU:CD2  | 22:AX:60:PHE:HA    | 2.43                     | 0.47              |
| 22:AX:76:GLY:O    | 22:AX:78:TYR:CD1   | 2.67                     | 0.47              |
| 24:AZ:26:LEU:HG   | 24:AZ:35:ARG:HH12  | 1.73                     | 0.47              |
| 24:AZ:39:ASP:CG   | 24:AZ:44:ARG:HD3   | 2.39                     | 0.47              |
| 25:Aa:64:GLY:O    | 25:Aa:67:TYR:HB2   | 2.14                     | 0.47              |
| 29:Ae:54:GLU:O    | 29:Ae:57:ARG:N     | 2.48                     | 0.47              |
| 30:Af:10:ILE:HD12 | 30:Af:14:CYS:HB3   | 1.97                     | 0.47              |
| 32:AJ:51:ALA:HB1  | 32:AJ:77:LEU:HA    | 1.97                     | 0.47              |
| 32:AJ:72:PRO:CG   | 32:AJ:77:LEU:CB    | 2.54                     | 0.47              |
| 34:BA:67:C:OP1    | 34:BA:199:G:H5''   | 2.14                     | 0.47              |
| 34:BA:73:G:C2     | 34:BA:74:C:C2      | 3.02                     | 0.47              |
| 34:BA:141:A:H2'   | 34:BA:142:G:O4'    | 2.14                     | 0.47              |
| 34:BA:161:A:C6    | 34:BA:162:A:C6     | 3.03                     | 0.47              |
| 34:BA:208:U:O2    | 34:BA:208:U:H2'    | 2.14                     | 0.47              |
| 34:BA:279:A:H4'   | 34:BA:280:C:O5'    | 2.14                     | 0.47              |
| 34:BA:282:A:N3    | 34:BA:282:A:H2'    | 2.29                     | 0.47              |
| 34:BA:332:G:O2'   | 34:BA:333:G:C5'    | 2.63                     | 0.47              |
| 34:BA:414:A:N7    | 34:BA:430:A:N6     | 2.62                     | 0.47              |
| 34:BA:474:G:H8    | 34:BA:474:G:OP2    | 1.97                     | 0.47              |
| 34:BA:517:G:N7    | 34:BA:531:U:C2     | 2.82                     | 0.47              |
| 34:BA:528:C:O4'   | 34:BA:535:A:C6     | 2.68                     | 0.47              |
| 34:BA:556:C:C2'   | 34:BA:557:G:H5'    | 2.43                     | 0.47              |
| 34:BA:558:G:C4'   | 34:BA:559:A:H5''   | 2.42                     | 0.47              |
| 34:BA:625:G:H4'   | 49:BT:16:HIS:CG    | 2.50                     | 0.47              |
| 34:BA:628:G:C2'   | 34:BA:629:G:H8     | 2.21                     | 0.47              |
| 34:BA:666:G:H22   | 34:BA:741:G:H1'    | 1.78                     | 0.47              |
| 34:BA:742:G:C2    | 34:BA:743:U:H1'    | 2.49                     | 0.47              |
| 34:BA:870:U:C5'   | 34:BA:871:U:OP1    | 2.61                     | 0.47              |
| 34:BA:933:G:H8    | 34:BA:933:G:O5'    | 1.98                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 34:BA:945:G:C6    | 34:BA:1337:G:C5   | 3.03                     | 0.47              |
| 34:BA:947:G:H2'   | 34:BA:948:C:H6    | 1.79                     | 0.47              |
| 34:BA:1149:C:OP1  | 42:BM:9:ARG:NH2   | 2.47                     | 0.47              |
| 34:BA:1239:A:N3   | 34:BA:1239:A:C2'  | 2.74                     | 0.47              |
| 34:BA:1288:A:H1'  | 34:BA:1352:C:O2'  | 2.14                     | 0.47              |
| 34:BA:1390:U:C2   | 34:BA:1391:U:C5   | 3.03                     | 0.47              |
| 34:BA:1447:G:C6   | 34:BA:1460:A:C6   | 3.03                     | 0.47              |
| 34:BA:1476:G:C4   | 34:BA:1477:C:C5   | 3.02                     | 0.47              |
| 34:BA:1517:G:C2   | 34:BA:1518:A:C4   | 3.03                     | 0.47              |
| 35:BF:61:LEU:O    | 35:BF:64:ARG:HD2  | 2.15                     | 0.47              |
| 35:BF:114:ARG:HD3 | 35:BF:114:ARG:C   | 2.39                     | 0.47              |
| 35:BF:153:ARG:O   | 35:BF:154:LEU:C   | 2.57                     | 0.47              |
| 36:BG:148:GLY:HA3 | 36:BG:172:ARG:O   | 2.14                     | 0.47              |
| 36:BG:182:ILE:CD1 | 36:BG:203:PHE:CD1 | 2.97                     | 0.47              |
| 37:BH:120:LEU:CG  | 37:BH:121:VAL:N   | 2.77                     | 0.47              |
| 37:BH:177:ASP:C   | 37:BH:179:GLU:H   | 2.22                     | 0.47              |
| 38:BI:31:LEU:O    | 38:BI:31:LEU:HD23 | 2.14                     | 0.47              |
| 39:BJ:41:GLU:N    | 39:BJ:63:TYR:HD1  | 2.11                     | 0.47              |
| 39:BJ:65:VAL:O    | 39:BJ:67:MET:CE   | 2.63                     | 0.47              |
| 39:BJ:76:ALA:CB   | 39:BJ:80:ARG:CZ   | 2.92                     | 0.47              |
| 40:BK:14:PRO:HB3  | 40:BK:19:GLY:C    | 2.40                     | 0.47              |
| 40:BK:15:ASP:OD1  | 40:BK:18:TYR:N    | 2.47                     | 0.47              |
| 40:BK:15:ASP:HB2  | 40:BK:23:VAL:CB   | 2.45                     | 0.47              |
| 40:BK:87:VAL:CG1  | 40:BK:152:ALA:HA  | 2.31                     | 0.47              |
| 41:BL:63:LEU:HB2  | 41:BL:65:TYR:HE1  | 1.79                     | 0.47              |
| 43:BN:10:GLY:HA3  | 43:BN:16:LEU:CD2  | 2.42                     | 0.47              |
| 43:BN:15:THR:HG21 | 43:BN:93:GLY:O    | 2.14                     | 0.47              |
| 43:BN:16:LEU:HB3  | 43:BN:70:ARG:HG3  | 1.96                     | 0.47              |
| 44:BO:18:ARG:HB2  | 44:BO:20:TYR:CE1  | 2.44                     | 0.47              |
| 44:BO:31:THR:OG1  | 44:BO:42:TRP:CB   | 2.63                     | 0.47              |
| 44:BO:46:GLY:HA2  | 44:BO:55:LYS:HD2  | 1.93                     | 0.47              |
| 44:BO:48:ILE:HD12 | 44:BO:63:LEU:CD2  | 2.22                     | 0.47              |
| 46:BQ:22:ILE:HG22 | 46:BQ:23:TYR:H    | 1.80                     | 0.47              |
| 46:BQ:66:LEU:H    | 46:BQ:70:LEU:CB   | 2.26                     | 0.47              |
| 47:BR:29:ARG:HB2  | 47:BR:40:CYS:HB3  | 1.96                     | 0.47              |
| 48:BS:54:ARG:O    | 48:BS:55:GLY:C    | 2.56                     | 0.47              |
| 48:BS:56:LEU:O    | 48:BS:59:MET:HB3  | 2.14                     | 0.47              |
| 50:BU:18:THR:HG22 | 50:BU:43:LEU:CD2  | 2.31                     | 0.47              |
| 51:BV:22:VAL:C    | 51:BV:24:ALA:N    | 2.71                     | 0.47              |
| 52:BW:20:LEU:C    | 52:BW:21:GLU:HG2  | 2.40                     | 0.47              |
| 53:BX:24:LEU:O    | 53:BX:25:ARG:C    | 2.58                     | 0.47              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 53:BX:85:MET:CA    | 53:BX:88:VAL:HG23 | 2.39                     | 0.47              |
| 53:BX:88:VAL:O     | 53:BX:92:LEU:HG   | 2.14                     | 0.47              |
| 56:BD:7:A:C2       | 56:BD:67:C:C2     | 2.90                     | 0.47              |
| 56:BE:2:C:C5       | 56:BE:71:G:C6     | 3.02                     | 0.47              |
| 57:BZ:127:ILE:N    | 57:BZ:164:TYR:HA  | 2.29                     | 0.47              |
| 57:BZ:398:GLU:O    | 57:BZ:472:TYR:HA  | 2.14                     | 0.47              |
| 57:BZ:419:LEU:HD12 | 57:BZ:441:TYR:CB  | 2.44                     | 0.47              |
| 1:AA:55:G:N3       | 1:AA:56:A:C8      | 2.83                     | 0.47              |
| 1:AA:64:A:H4'      | 19:AU:73:ARG:H    | 1.79                     | 0.47              |
| 1:AA:72:U:O4       | 1:AA:112:U:C1'    | 2.59                     | 0.47              |
| 1:AA:149:A:C5      | 1:AA:150:C:C5     | 3.01                     | 0.47              |
| 1:AA:162:U:O5'     | 1:AA:162:U:H6     | 1.98                     | 0.47              |
| 1:AA:180:G:OP1     | 28:Ad:32:LYS:CD   | 2.61                     | 0.47              |
| 1:AA:184:C:N3      | 1:AA:213:A:N6     | 2.62                     | 0.47              |
| 1:AA:228:A:C2'     | 1:AA:229:A:H5'    | 2.36                     | 0.47              |
| 1:AA:245:G:C6      | 1:AA:246:C:C5     | 3.03                     | 0.47              |
| 1:AA:270(W):G:C4   | 1:AA:270(X):G:H8  | 2.32                     | 0.47              |
| 1:AA:298:G:O6      | 1:AA:338:G:O4'    | 2.32                     | 0.47              |
| 1:AA:364:C:C2      | 1:AA:365:C:C5     | 3.03                     | 0.47              |
| 1:AA:427:U:O2'     | 1:AA:428:A:C1'    | 2.62                     | 0.47              |
| 1:AA:483:A:H62     | 1:AA:497:A:H2     | 1.60                     | 0.47              |
| 1:AA:496:G:C6      | 1:AA:497:A:C5     | 3.03                     | 0.47              |
| 1:AA:532:A:O3'     | 16:AR:28:ARG:HD2  | 2.14                     | 0.47              |
| 1:AA:783:A:H2      | 1:AA:1779:U:C4'   | 2.27                     | 0.47              |
| 1:AA:949:C:N3      | 1:AA:950:G:N7     | 2.62                     | 0.47              |
| 1:AA:955:C:H5''    | 12:AN:87:LYS:CD   | 2.44                     | 0.47              |
| 1:AA:983:A:C2'     | 1:AA:984:A:C8     | 2.97                     | 0.47              |
| 1:AA:1050:A:C1'    | 1:AA:2752:C:C4    | 2.89                     | 0.47              |
| 1:AA:1111:A:O3'    | 1:AA:1112:G:O4'   | 2.33                     | 0.47              |
| 1:AA:1181:C:H2'    | 1:AA:1182:A:O4'   | 2.14                     | 0.47              |
| 1:AA:1247:A:O2'    | 1:AA:1248:G:O5'   | 2.30                     | 0.47              |
| 1:AA:1342:A:H8     | 1:AA:1342:A:P     | 2.37                     | 0.47              |
| 1:AA:1364:G:H5''   | 1:AA:1809:A:N3    | 2.29                     | 0.47              |
| 1:AA:1575:C:C4     | 1:AA:1576:U:C4    | 3.02                     | 0.47              |
| 1:AA:1591:G:C6     | 1:AA:1592:C:C4    | 3.03                     | 0.47              |
| 1:AA:1703:G:N2     | 1:AA:1704:G:C1'   | 2.78                     | 0.47              |
| 1:AA:1727:U:H2'    | 1:AA:1728:G:OP1   | 2.15                     | 0.47              |
| 1:AA:1741:C:H2'    | 1:AA:1742:C:C1'   | 2.44                     | 0.47              |
| 1:AA:1757:U:H2'    | 1:AA:1758:G:OP1   | 2.15                     | 0.47              |
| 1:AA:1803:A:H5''   | 4:AD:257:LEU:HB3  | 1.97                     | 0.47              |
| 1:AA:1817:G:P      | 4:AD:88:ARG:NH1   | 2.76                     | 0.47              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:1818:U:C4     | 4:AD:156:ALA:HB2  | 2.49                     | 0.47              |
| 1:AA:1858:G:HO2'   | 1:AA:1859:A:H8    | 1.56                     | 0.47              |
| 1:AA:2011:U:H3'    | 1:AA:2012:G:H8    | 1.79                     | 0.47              |
| 1:AA:2037:G:H2'    | 1:AA:2038:G:H8    | 1.74                     | 0.47              |
| 1:AA:2123:G:C2'    | 3:AC:44:HIS:CE1   | 2.97                     | 0.47              |
| 1:AA:2126:A:C4'    | 1:AA:2127:G:O5'   | 2.62                     | 0.47              |
| 1:AA:2168:G:N2     | 1:AA:2171:A:C8    | 2.82                     | 0.47              |
| 1:AA:2216:G:H21    | 4:AD:150:LYS:HZ3  | 1.60                     | 0.47              |
| 1:AA:2226:C:C2'    | 1:AA:2227:A:H5'   | 2.44                     | 0.47              |
| 1:AA:2246:G:N2     | 1:AA:2247:A:C2    | 2.83                     | 0.47              |
| 1:AA:2288:A:H5'    | 1:AA:2289:G:OP2   | 2.15                     | 0.47              |
| 1:AA:2317:C:H2'    | 1:AA:2318:G:C8    | 2.50                     | 0.47              |
| 1:AA:2638:G:N1     | 1:AA:2776:A:OP2   | 2.37                     | 0.47              |
| 1:AA:2654:A:N1     | 1:AA:2665:A:H5''  | 2.30                     | 0.47              |
| 1:AA:2746:U:OP1    | 8:AH:142:GLY:HA3  | 2.14                     | 0.47              |
| 1:AA:2758:A:P      | 1:AA:2759:G:OP2   | 2.73                     | 0.47              |
| 1:AA:2812:G:C4     | 1:AA:2813:A:N7    | 2.83                     | 0.47              |
| 2:AB:2:C:OP2       | 2:AB:2:C:H6       | 1.97                     | 0.47              |
| 3:AC:48:GLY:N      | 3:AC:210:ARG:HD3  | 2.30                     | 0.47              |
| 3:AC:131:LEU:CD1   | 3:AC:137:LEU:HA   | 2.42                     | 0.47              |
| 4:AD:37:LEU:CD2    | 4:AD:63:ARG:HE    | 2.26                     | 0.47              |
| 4:AD:55:GLY:HA2    | 4:AD:218:ARG:HD3  | 1.96                     | 0.47              |
| 5:AE:49:LEU:CD1    | 5:AE:51:PHE:H     | 2.26                     | 0.47              |
| 5:AE:49:LEU:CD2    | 5:AE:76:ARG:C     | 2.75                     | 0.47              |
| 5:AE:105:THR:OG1   | 5:AE:165:VAL:C    | 2.58                     | 0.47              |
| 5:AE:178:GLU:H     | 5:AE:178:GLU:CD   | 2.17                     | 0.47              |
| 6:AF:65:TRP:CE3    | 6:AF:65:TRP:HA    | 2.49                     | 0.47              |
| 6:AF:125:LEU:HB2   | 6:AF:194:MET:O    | 2.14                     | 0.47              |
| 7:AG:16:ARG:HD2    | 7:AG:20:ILE:CD1   | 2.44                     | 0.47              |
| 7:AG:59:GLU:CB     | 7:AG:152:LEU:HD13 | 2.44                     | 0.47              |
| 8:AH:31:GLY:HA2    | 8:AH:136:ILE:HD11 | 1.96                     | 0.47              |
| 9:AK:89:LYS:HG2    | 9:AK:90:MET:H     | 1.75                     | 0.47              |
| 9:AK:127:ASP:O     | 9:AK:130:HIS:HB2  | 2.14                     | 0.47              |
| 10:AL:62:VAL:C     | 10:AL:63:VAL:HG22 | 2.35                     | 0.47              |
| 10:AL:113:LYS:O    | 10:AL:114:ILE:C   | 2.57                     | 0.47              |
| 11:AM:114:ILE:HD11 | 11:AM:123:LEU:CG  | 2.44                     | 0.47              |
| 11:AM:127:ALA:HB3  | 11:AM:130:PHE:HE2 | 1.80                     | 0.47              |
| 13:AO:85:PRO:C     | 13:AO:87:TYR:N    | 2.72                     | 0.47              |
| 13:AO:99:LYS:HD3   | 26:Ab:43:HIS:CG   | 2.50                     | 0.47              |
| 14:AP:73:LEU:HA    | 14:AP:76:LYS:CD   | 2.42                     | 0.47              |
| 15:AQ:79:HIS:HB2   | 15:AQ:82:LEU:CB   | 2.42                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 15:AQ:107:ASP:HB2  | 15:AQ:108:ARG:HH11 | 1.79                     | 0.47              |
| 16:AR:37:GLU:O     | 16:AR:39:LEU:N     | 2.47                     | 0.47              |
| 17:AS:22:VAL:O     | 17:AS:93:GLU:CB    | 2.62                     | 0.47              |
| 17:AS:69:LYS:CA    | 17:AS:92:THR:HB    | 2.44                     | 0.47              |
| 18:AT:11:ARG:HB3   | 18:AT:11:ARG:CZ    | 2.43                     | 0.47              |
| 20:AV:10:GLY:N     | 20:AV:110:GLU:OE2  | 2.48                     | 0.47              |
| 20:AV:12:THR:CB    | 20:AV:71:LYS:HA    | 2.45                     | 0.47              |
| 21:AW:12:GLY:O     | 21:AW:13:GLU:C     | 2.57                     | 0.47              |
| 21:AW:40:ASP:O     | 21:AW:44:PHE:HD1   | 1.96                     | 0.47              |
| 21:AW:111:VAL:HG21 | 21:AW:117:LEU:HG   | 1.92                     | 0.47              |
| 21:AW:152:ALA:HB3  | 21:AW:168:GLU:H    | 1.80                     | 0.47              |
| 23:AY:28:MET:HA    | 23:AY:31:ARG:CG    | 2.37                     | 0.47              |
| 23:AY:33:GLN:HA    | 23:AY:36:ILE:HG22  | 1.97                     | 0.47              |
| 24:AZ:23:LEU:HA    | 24:AZ:28:LEU:HD11  | 1.95                     | 0.47              |
| 24:AZ:23:LEU:HD12  | 24:AZ:50:VAL:CG2   | 2.44                     | 0.47              |
| 24:AZ:31:LEU:HB3   | 24:AZ:32:GLN:HE22  | 1.74                     | 0.47              |
| 24:AZ:52:HIS:ND1   | 24:AZ:53:LEU:HG    | 2.29                     | 0.47              |
| 25:Aa:50:VAL:O     | 25:Aa:51:ASP:CB    | 2.62                     | 0.47              |
| 27:Ac:14:THR:CB    | 27:Ac:51:GLU:HA    | 2.30                     | 0.47              |
| 29:Ae:6:THR:O      | 29:Ae:6:THR:CG2    | 2.63                     | 0.47              |
| 29:Ae:8:LYS:NZ     | 29:Ae:11:LYS:HZ2   | 2.12                     | 0.47              |
| 29:Ae:26:LYS:C     | 29:Ae:28:GLY:H     | 2.23                     | 0.47              |
| 30:Af:7:VAL:O      | 30:Af:7:VAL:HG12   | 2.13                     | 0.47              |
| 30:Af:19:ARG:O     | 30:Af:19:ARG:HG3   | 2.14                     | 0.47              |
| 32:AJ:36:GLU:C     | 32:AJ:38:VAL:N     | 2.73                     | 0.47              |
| 34:BA:19:C:O2      | 34:BA:572:A:C2     | 2.62                     | 0.47              |
| 34:BA:230:G:H5'    | 49:BT:23:ASP:OD2   | 2.14                     | 0.47              |
| 34:BA:309:G:O2'    | 34:BA:310:G:O4'    | 2.22                     | 0.47              |
| 34:BA:375:U:O3'    | 49:BT:6:LEU:CD2    | 2.52                     | 0.47              |
| 34:BA:485:G:HO2'   | 34:BA:486:U:H6     | 1.59                     | 0.47              |
| 34:BA:494:U:H2'    | 34:BA:495:A:H5'    | 1.96                     | 0.47              |
| 34:BA:536:C:O5'    | 34:BA:536:C:C6     | 2.68                     | 0.47              |
| 34:BA:573:A:C2     | 34:BA:574:A:N1     | 2.82                     | 0.47              |
| 34:BA:587:G:N2     | 34:BA:754:C:OP2    | 2.48                     | 0.47              |
| 34:BA:665:A:C2     | 34:BA:732:C:C4     | 3.02                     | 0.47              |
| 34:BA:760:G:N1     | 50:BU:105:ALA:C    | 2.68                     | 0.47              |
| 34:BA:832:C:N3     | 34:BA:855:G:C6     | 2.83                     | 0.47              |
| 34:BA:896:C:N3     | 34:BA:897:C:C5     | 2.83                     | 0.47              |
| 34:BA:949:A:OP1    | 46:BQ:101:GLN:OE1  | 2.33                     | 0.47              |
| 34:BA:1109:C:C2'   | 34:BA:1110:A:C8    | 2.86                     | 0.47              |
| 34:BA:1142:G:O2'   | 34:BA:1143:G:C5'   | 2.61                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1164:G:C4    | 34:BA:1173:G:C2    | 3.03                     | 0.47              |
| 34:BA:1165:C:HO2'  | 34:BA:1166:G:H5'   | 1.78                     | 0.47              |
| 34:BA:1166:G:H2'   | 34:BA:1169:A:OP2   | 2.15                     | 0.47              |
| 34:BA:1185:G:H2'   | 34:BA:1186:G:C5'   | 2.45                     | 0.47              |
| 34:BA:1220:G:C4    | 52:BW:54:GLY:O     | 2.60                     | 0.47              |
| 34:BA:1240:U:N1    | 40:BK:32:ARG:NH2   | 2.63                     | 0.47              |
| 34:BA:1261:A:H3'   | 34:BA:1262:C:C6    | 2.48                     | 0.47              |
| 34:BA:1302:U:C3'   | 34:BA:1303:C:H5'   | 2.45                     | 0.47              |
| 34:BA:1323:G:H4'   | 34:BA:1362(A):C:N4 | 2.29                     | 0.47              |
| 34:BA:1335:C:H5''  | 34:BA:1336:C:H5'   | 1.95                     | 0.47              |
| 34:BA:1507:A:C2'   | 34:BA:1508:G:C5'   | 2.92                     | 0.47              |
| 35:BF:101:MET:HA   | 35:BF:104:ASN:OD1  | 2.15                     | 0.47              |
| 36:BG:74:GLY:C     | 36:BG:76:VAL:N     | 2.71                     | 0.47              |
| 36:BG:121:ALA:O    | 36:BG:122:GLU:C    | 2.56                     | 0.47              |
| 36:BG:172:ARG:CZ   | 36:BG:172:ARG:CB   | 2.93                     | 0.47              |
| 38:BI:40:ARG:HB2   | 38:BI:68:GLU:OE1   | 2.14                     | 0.47              |
| 40:BK:45:ASP:HB2   | 40:BK:117:ALA:CB   | 2.44                     | 0.47              |
| 40:BK:66:VAL:HG12  | 40:BK:70:LYS:CE    | 2.43                     | 0.47              |
| 40:BK:101:LEU:O    | 40:BK:102:ARG:C    | 2.58                     | 0.47              |
| 40:BK:106:GLN:HE21 | 40:BK:106:GLN:N    | 2.12                     | 0.47              |
| 41:BL:10:LEU:O     | 41:BL:83:ILE:HD13  | 2.14                     | 0.47              |
| 41:BL:24:THR:H     | 41:BL:60:ARG:CD    | 2.26                     | 0.47              |
| 41:BL:114:THR:C    | 41:BL:116:LYS:N    | 2.72                     | 0.47              |
| 41:BL:114:THR:H    | 41:BL:119:LEU:CD2  | 2.26                     | 0.47              |
| 43:BN:24:VAL:HG13  | 43:BN:34:VAL:CG1   | 2.44                     | 0.47              |
| 43:BN:49:VAL:O     | 43:BN:60:ARG:CB    | 2.62                     | 0.47              |
| 45:BP:57:LYS:CG    | 45:BP:67:THR:HG22  | 2.28                     | 0.47              |
| 45:BP:115:LYS:O    | 45:BP:116:SER:O    | 2.33                     | 0.47              |
| 46:BQ:10:PRO:CG    | 46:BQ:45:VAL:HG13  | 2.21                     | 0.47              |
| 49:BT:4:ILE:HG12   | 49:BT:66:PRO:CA    | 2.44                     | 0.47              |
| 49:BT:32:TYR:O     | 49:BT:33:ILE:C     | 2.57                     | 0.47              |
| 49:BT:61:SER:OG    | 49:BT:62:VAL:N     | 2.38                     | 0.47              |
| 51:BV:51:LEU:HA    | 51:BV:52:PRO:HD2   | 1.48                     | 0.47              |
| 52:BW:22:LEU:HA    | 52:BW:25:LYS:HZ1   | 1.80                     | 0.47              |
| 52:BW:36:ARG:HA    | 52:BW:71:LEU:HD13  | 1.97                     | 0.47              |
| 55:BC:21:A:H5'     | 55:BC:21:A:C8      | 2.49                     | 0.47              |
| 55:BC:29:G:H2'     | 55:BC:30:G:H8      | 1.75                     | 0.47              |
| 57:BZ:172:ALA:N    | 57:BZ:179:MET:CG   | 2.75                     | 0.47              |
| 57:BZ:215:ASN:C    | 57:BZ:217:TYR:N    | 2.73                     | 0.47              |
| 57:BZ:234:ASN:OD1  | 57:BZ:236:GLN:HA   | 2.14                     | 0.47              |
| 57:BZ:419:LEU:HD12 | 57:BZ:441:TYR:HB2  | 1.96                     | 0.47              |

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| Atom-1             | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|------------------|--------------------------|-------------------|
| 57:BZ:518:VAL:HG23 | 57:BZ:519:TYR:N  | 2.30                     | 0.47              |
| 1:AA:29:U:O4       | 1:AA:447:A:H5''  | 2.14                     | 0.47              |
| 1:AA:35:G:H21      | 1:AA:450:G:H21   | 1.58                     | 0.47              |
| 1:AA:37:C:O2'      | 6:AF:50:SER:HA   | 2.14                     | 0.47              |
| 1:AA:90:U:H5'      | 1:AA:91:A:OP1    | 2.15                     | 0.47              |
| 1:AA:120:U:H1'     | 1:AA:149:A:C4    | 2.49                     | 0.47              |
| 1:AA:122:G:C2      | 1:AA:130:C:C2    | 3.03                     | 0.47              |
| 1:AA:179:G:C4      | 1:AA:180:G:C8    | 3.03                     | 0.47              |
| 1:AA:183:C:C1'     | 1:AA:433:C:H1'   | 2.29                     | 0.47              |
| 1:AA:188:G:H2'     | 1:AA:189:G:C8    | 2.49                     | 0.47              |
| 1:AA:204:A:C4      | 1:AA:206:U:N3    | 2.83                     | 0.47              |
| 1:AA:233:A:C5      | 1:AA:234:C:C6    | 3.03                     | 0.47              |
| 1:AA:246:C:N4      | 1:AA:252:G:N1    | 2.63                     | 0.47              |
| 1:AA:270(K):C:H5'' | 1:AA:270(L):U:C5 | 2.49                     | 0.47              |
| 1:AA:281:G:N3      | 1:AA:281:G:C2'   | 2.72                     | 0.47              |
| 1:AA:282:A:C6      | 1:AA:283:A:H4'   | 2.49                     | 0.47              |
| 1:AA:295:G:N2      | 1:AA:344:G:C1'   | 2.77                     | 0.47              |
| 1:AA:342:G:H2'     | 1:AA:343:C:O4'   | 2.15                     | 0.47              |
| 1:AA:361:G:H2'     | 1:AA:362:U:H6    | 1.78                     | 0.47              |
| 1:AA:364:C:N3      | 1:AA:365:C:N4    | 2.62                     | 0.47              |
| 1:AA:443:A:H61     | 6:AF:41:LEU:HD12 | 1.76                     | 0.47              |
| 1:AA:455:C:H5'     | 1:AA:456:C:OP1   | 2.14                     | 0.47              |
| 1:AA:493:G:O2'     | 18:AT:7:ALA:HB1  | 2.15                     | 0.47              |
| 1:AA:499:U:C6      | 1:AA:503:A:N6    | 2.83                     | 0.47              |
| 1:AA:500:G:H2'     | 1:AA:501:A:C3'   | 2.43                     | 0.47              |
| 1:AA:511:U:C5      | 1:AA:512:G:C4    | 3.03                     | 0.47              |
| 1:AA:514:A:C2      | 1:AA:515:A:C1'   | 2.94                     | 0.47              |
| 1:AA:519:U:H5''    | 18:AT:75:TYR:HB2 | 1.96                     | 0.47              |
| 1:AA:530:G:N2      | 1:AA:2021:C:C2'  | 2.78                     | 0.47              |
| 1:AA:587:C:C6      | 1:AA:671:C:H1'   | 2.50                     | 0.47              |
| 1:AA:638:G:O6      | 1:AA:639:U:N3    | 2.48                     | 0.47              |
| 1:AA:661:C:H2'     | 1:AA:662:G:O4'   | 2.14                     | 0.47              |
| 1:AA:669:G:C5      | 1:AA:801:G:C6    | 3.03                     | 0.47              |
| 1:AA:675:A:N6      | 1:AA:804:A:C4    | 2.83                     | 0.47              |
| 1:AA:689:A:C4      | 1:AA:690:G:C8    | 3.02                     | 0.47              |
| 1:AA:729:G:H2'     | 1:AA:730:C:C2'   | 2.44                     | 0.47              |
| 1:AA:730:C:H2'     | 1:AA:731:C:H6    | 1.73                     | 0.47              |
| 1:AA:763:G:H2'     | 1:AA:764:A:C5'   | 2.44                     | 0.47              |
| 1:AA:774:A:C5      | 1:AA:775:G:C6    | 3.03                     | 0.47              |
| 1:AA:780:G:H2'     | 1:AA:782:A:C5    | 2.47                     | 0.47              |
| 1:AA:782:A:H4'     | 1:AA:783:A:N7    | 2.30                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:AA:783:A:O2'   | 1:AA:784:A:H5'   | 2.15                     | 0.47              |
| 1:AA:783:A:H8    | 4:AD:227:ASN:ND2 | 2.13                     | 0.47              |
| 1:AA:790:C:H6    | 1:AA:790:C:H3'   | 1.79                     | 0.47              |
| 1:AA:799:G:OP1   | 1:AA:800:A:H3'   | 2.15                     | 0.47              |
| 1:AA:812:C:C2    | 1:AA:813:U:C5    | 3.03                     | 0.47              |
| 1:AA:831:G:H5'   | 11:AM:35:HIS:HB3 | 1.97                     | 0.47              |
| 1:AA:848:G:C8    | 1:AA:848:G:C3'   | 2.98                     | 0.47              |
| 1:AA:961:C:N4    | 1:AA:2031:A:H1'  | 2.29                     | 0.47              |
| 1:AA:1022:G:C3'  | 1:AA:1025:G:O6   | 2.61                     | 0.47              |
| 1:AA:1062:G:C6   | 1:AA:1063:G:C5   | 3.03                     | 0.47              |
| 1:AA:1182:A:O4'  | 1:AA:1182:A:OP2  | 2.32                     | 0.47              |
| 1:AA:1221:C:C2'  | 1:AA:1222:C:O5'  | 2.63                     | 0.47              |
| 1:AA:1225:C:C4   | 1:AA:1226:G:N1   | 2.82                     | 0.47              |
| 1:AA:1228:G:C6   | 1:AA:1229:G:C5   | 3.03                     | 0.47              |
| 1:AA:1229:G:C5   | 1:AA:1230:C:C2   | 3.03                     | 0.47              |
| 1:AA:1250:G:HO2' | 1:AA:1251:C:P    | 2.36                     | 0.47              |
| 1:AA:1295:C:C2   | 1:AA:1296:G:N7   | 2.82                     | 0.47              |
| 1:AA:1339:G:H1'  | 1:AA:1393:A:C2   | 2.50                     | 0.47              |
| 1:AA:1350:C:H2'  | 1:AA:1351:C:O5'  | 2.15                     | 0.47              |
| 1:AA:1372:U:C6   | 1:AA:1372:U:C3'  | 2.97                     | 0.47              |
| 1:AA:1381:G:O6   | 1:AA:1382:G:C6   | 2.67                     | 0.47              |
| 1:AA:1416:G:H2'  | 1:AA:1417:C:C5   | 2.49                     | 0.47              |
| 1:AA:1417:C:H1'  | 1:AA:1587:A:N3   | 2.30                     | 0.47              |
| 1:AA:1425:G:C6   | 1:AA:1426:G:O6   | 2.68                     | 0.47              |
| 1:AA:1427:A:O2'  | 1:AA:1428:C:C6   | 2.61                     | 0.47              |
| 1:AA:1439:A:C8   | 1:AA:1440:G:C8   | 3.02                     | 0.47              |
| 1:AA:1513:C:H5'' | 1:AA:1513:C:H6   | 1.79                     | 0.47              |
| 1:AA:1519:G:H3'  | 1:AA:1520:U:C1'  | 2.45                     | 0.47              |
| 1:AA:1544:C:C2'  | 1:AA:1545:A:O4'  | 2.62                     | 0.47              |
| 1:AA:1619:G:N1   | 1:AA:1620:G:C5   | 2.83                     | 0.47              |
| 1:AA:1655:A:N6   | 1:AA:2005:A:C2'  | 2.78                     | 0.47              |
| 1:AA:1665:A:C2   | 1:AA:1666:G:C4   | 3.03                     | 0.47              |
| 1:AA:1667:G:OP1  | 10:AL:7:TYR:CD1  | 2.67                     | 0.47              |
| 1:AA:1669:A:N3   | 1:AA:1669:A:C2'  | 2.77                     | 0.47              |
| 1:AA:1684:C:H2'  | 1:AA:1685:C:H6   | 1.77                     | 0.47              |
| 1:AA:1684:C:C2   | 1:AA:1685:C:C5   | 3.03                     | 0.47              |
| 1:AA:1688:U:N3   | 1:AA:1700:A:C5'  | 2.77                     | 0.47              |
| 1:AA:1690:A:H2'  | 1:AA:1691:C:C5'  | 2.44                     | 0.47              |
| 1:AA:1755:A:N7   | 15:AQ:98:LYS:NZ  | 2.63                     | 0.47              |
| 1:AA:1826:G:OP1  | 4:AD:233:HIS:CD2 | 2.68                     | 0.47              |
| 1:AA:1831:G:C6   | 1:AA:1975:G:C6   | 3.03                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:AA:1847:A:N6   | 1:AA:1890:A:OP2  | 2.48                     | 0.47              |
| 1:AA:1878:G:C6   | 1:AA:1879:C:C4   | 3.02                     | 0.47              |
| 1:AA:1889:A:O4'  | 1:AA:2087:G:C4'  | 2.62                     | 0.47              |
| 1:AA:1906:G:N1   | 1:AA:1929:G:C6   | 2.81                     | 0.47              |
| 1:AA:1907:G:HO2' | 1:AA:1908:C:H5'  | 1.76                     | 0.47              |
| 1:AA:1954:G:C2'  | 1:AA:1956:U:O4   | 2.62                     | 0.47              |
| 1:AA:1973:G:C4   | 1:AA:1974:C:C5   | 3.03                     | 0.47              |
| 1:AA:2010:G:P    | 18:AT:41:LYS:NZ  | 2.88                     | 0.47              |
| 1:AA:2051:A:N1   | 1:AA:2614:A:C6   | 2.82                     | 0.47              |
| 1:AA:2081:C:N3   | 1:AA:2082:A:C8   | 2.82                     | 0.47              |
| 1:AA:2110:G:H4'  | 1:AA:2111:C:OP1  | 2.07                     | 0.47              |
| 1:AA:2123:G:C5'  | 3:AC:172:HIS:CE1 | 2.98                     | 0.47              |
| 1:AA:2127:G:N2   | 1:AA:2128:C:C2   | 2.83                     | 0.47              |
| 1:AA:2127:G:C5   | 1:AA:2162:G:N1   | 2.82                     | 0.47              |
| 1:AA:2254:C:C2'  | 1:AA:2255:G:C5'  | 2.78                     | 0.47              |
| 1:AA:2325:G:N7   | 1:AA:2326:C:C5   | 2.83                     | 0.47              |
| 1:AA:2364:C:N4   | 1:AA:2365:G:C6   | 2.83                     | 0.47              |
| 1:AA:2380:C:N4   | 1:AA:2381:C:N4   | 2.62                     | 0.47              |
| 1:AA:2383:G:C2   | 1:AA:2384:G:C4   | 3.03                     | 0.47              |
| 1:AA:2402:C:C5'  | 1:AA:2403:C:OP1  | 2.57                     | 0.47              |
| 1:AA:2420:C:H5'' | 29:Ae:35:GLN:NE2 | 2.25                     | 0.47              |
| 1:AA:2435:A:C2   | 1:AA:2436:G:N9   | 2.82                     | 0.47              |
| 1:AA:2459:A:H3'  | 1:AA:2460:U:C6   | 2.50                     | 0.47              |
| 1:AA:2484:G:C1'  | 12:AN:124:LYS:NZ | 2.73                     | 0.47              |
| 1:AA:2530:A:H2'  | 1:AA:2531:A:H5'' | 1.96                     | 0.47              |
| 1:AA:2558:C:H2'  | 1:AA:2559:C:O5'  | 2.15                     | 0.47              |
| 1:AA:2562:U:H2'  | 1:AA:2563:U:C5'  | 2.45                     | 0.47              |
| 1:AA:2599:G:HO2' | 1:AA:2600:A:H5'  | 1.79                     | 0.47              |
| 1:AA:2606:C:N3   | 1:AA:2607:G:N7   | 2.62                     | 0.47              |
| 1:AA:2607:G:N1   | 1:AA:2608:G:N3   | 2.62                     | 0.47              |
| 1:AA:2630:G:C4   | 1:AA:2790:A:C2   | 3.02                     | 0.47              |
| 1:AA:2640:G:H4'  | 9:AK:75:TYR:CZ   | 2.50                     | 0.47              |
| 1:AA:2675:A:H4'  | 10:AL:29:ASN:CG  | 2.38                     | 0.47              |
| 1:AA:2740:A:C6   | 1:AA:2741:A:C6   | 3.03                     | 0.47              |
| 1:AA:2748:A:C4   | 8:AH:67:LEU:HD21 | 2.41                     | 0.47              |
| 1:AA:2750:A:C8   | 1:AA:2753:A:N6   | 2.83                     | 0.47              |
| 1:AA:2811:G:H2'  | 1:AA:2812:G:O4'  | 2.15                     | 0.47              |
| 1:AA:2824:C:C4   | 1:AA:2825:C:C2   | 3.03                     | 0.47              |
| 1:AA:2826:A:H2'  | 1:AA:2827:C:O5'  | 2.15                     | 0.47              |
| 1:AA:2826:A:C5   | 1:AA:2827:C:C5   | 3.03                     | 0.47              |
| 1:AA:2827:C:C2'  | 1:AA:2828:C:H5'  | 2.44                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2838:G:C5    | 1:AA:2839:G:C8    | 3.02                     | 0.47              |
| 1:AA:2876:G:H5'   | 15:AQ:1:MET:N     | 2.29                     | 0.47              |
| 1:AA:2884:U:O2'   | 1:AA:2885:C:H5'   | 2.15                     | 0.47              |
| 2:AB:5:C:H2'      | 2:AB:6:C:C5       | 2.50                     | 0.47              |
| 2:AB:7:G:C6       | 2:AB:8:U:N3       | 2.83                     | 0.47              |
| 2:AB:40:U:H3'     | 2:AB:41:U:H5'     | 1.96                     | 0.47              |
| 2:AB:49:C:H2'     | 2:AB:50:G:O4'     | 2.15                     | 0.47              |
| 2:AB:110:G:C6     | 2:AB:111:U:C2     | 3.03                     | 0.47              |
| 2:AB:110:G:C2'    | 2:AB:111:U:O5'    | 2.58                     | 0.47              |
| 2:AB:118:G:H2'    | 2:AB:119:A:H8     | 1.80                     | 0.47              |
| 3:AC:49:ILE:CD1   | 3:AC:51:PRO:HD3   | 2.45                     | 0.47              |
| 3:AC:68:LEU:HG    | 3:AC:69:GLY:H     | 1.79                     | 0.47              |
| 3:AC:97:GLU:HB3   | 3:AC:126:LYS:HZ3  | 1.78                     | 0.47              |
| 3:AC:160:ARG:O    | 3:AC:161:ILE:HG13 | 2.14                     | 0.47              |
| 4:AD:34:VAL:O     | 4:AD:36:PRO:CD    | 2.62                     | 0.47              |
| 4:AD:91:ARG:NH1   | 4:AD:198:ASN:ND2  | 2.63                     | 0.47              |
| 4:AD:143:HIS:CA   | 4:AD:145:VAL:HG23 | 2.44                     | 0.47              |
| 5:AE:7:VAL:O      | 5:AE:193:GLY:N    | 2.47                     | 0.47              |
| 5:AE:11:MET:C     | 5:AE:21:VAL:HG23  | 2.40                     | 0.47              |
| 5:AE:40:GLU:C     | 5:AE:41:LYS:CE    | 2.87                     | 0.47              |
| 5:AE:53:PRO:HG2   | 5:AE:75:VAL:HG13  | 1.97                     | 0.47              |
| 5:AE:82:ARG:NE    | 5:AE:82:ARG:HA    | 2.30                     | 0.47              |
| 6:AF:9:ILE:HG22   | 6:AF:10:PRO:N     | 2.28                     | 0.47              |
| 6:AF:31:HIS:ND1   | 11:AM:14:LYS:CE   | 2.75                     | 0.47              |
| 6:AF:154:VAL:HG23 | 6:AF:156:LEU:CD2  | 2.45                     | 0.47              |
| 6:AF:157:VAL:O    | 6:AF:157:VAL:CG2  | 2.62                     | 0.47              |
| 7:AG:26:GLN:CD    | 7:AG:29:TRP:CE3   | 2.91                     | 0.47              |
| 7:AG:29:TRP:HB2   | 7:AG:31:VAL:HG23  | 1.97                     | 0.47              |
| 7:AG:107:LEU:HD12 | 7:AG:111:LEU:CD1  | 2.39                     | 0.47              |
| 7:AG:125:PHE:CB   | 7:AG:131:TYR:O    | 2.60                     | 0.47              |
| 8:AH:17:VAL:O     | 8:AH:17:VAL:HG13  | 2.14                     | 0.47              |
| 8:AH:23:ARG:NH2   | 8:AH:35:VAL:C     | 2.73                     | 0.47              |
| 8:AH:23:ARG:HH21  | 8:AH:35:VAL:C     | 2.22                     | 0.47              |
| 8:AH:74:ASN:HB2   | 8:AH:138:LYS:HZ1  | 1.78                     | 0.47              |
| 8:AH:85:LYS:O     | 8:AH:133:VAL:O    | 2.33                     | 0.47              |
| 8:AH:101:ARG:HA   | 8:AH:101:ARG:NE   | 2.29                     | 0.47              |
| 8:AH:135:GLY:C    | 8:AH:136:ILE:HG22 | 2.39                     | 0.47              |
| 9:AK:13:TRP:CD2   | 9:AK:51:PHE:HB2   | 2.50                     | 0.47              |
| 9:AK:87:LEU:CD2   | 9:AK:88:GLU:CD    | 2.88                     | 0.47              |
| 9:AK:104:LYS:O    | 9:AK:106:MET:N    | 2.47                     | 0.47              |
| 9:AK:113:GLY:O    | 9:AK:116:LEU:N    | 2.48                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 9:AK:127:ASP:H    | 9:AK:129:PRO:CD    | 2.19                     | 0.47              |
| 9:AK:139:GLU:O    | 9:AK:140:VAL:HG22  | 2.13                     | 0.47              |
| 10:AL:9:GLU:O     | 10:AL:82:ASN:CA    | 2.62                     | 0.47              |
| 10:AL:99:PHE:HA   | 10:AL:122:LEU:O    | 2.14                     | 0.47              |
| 10:AL:112:MET:HE3 | 34:BA:345:C:N3     | 2.29                     | 0.47              |
| 10:AL:122:LEU:CA  | 15:AQ:71:GLY:HA3   | 2.43                     | 0.47              |
| 11:AM:47:ASP:CB   | 11:AM:48:PRO:HD3   | 2.44                     | 0.47              |
| 11:AM:78:PRO:HD2  | 11:AM:115:LEU:O    | 2.14                     | 0.47              |
| 11:AM:96:THR:CB   | 11:AM:102:ARG:HD3  | 2.44                     | 0.47              |
| 11:AM:114:ILE:O   | 11:AM:116:GLY:N    | 2.41                     | 0.47              |
| 11:AM:137:LYS:CE  | 11:AM:137:LYS:CA   | 2.92                     | 0.47              |
| 12:AN:42:ILE:CD1  | 12:AN:46:GLN:NE2   | 2.78                     | 0.47              |
| 12:AN:51:ARG:HD3  | 12:AN:52:VAL:HG23  | 1.97                     | 0.47              |
| 12:AN:54:MET:O    | 12:AN:55:VAL:C     | 2.57                     | 0.47              |
| 12:AN:77:LYS:O    | 12:AN:78:PRO:C     | 2.58                     | 0.47              |
| 13:AO:96:ARG:HH21 | 13:AO:117:VAL:HG23 | 1.80                     | 0.47              |
| 13:AO:97:VAL:C    | 13:AO:98:LEU:CG    | 2.85                     | 0.47              |
| 14:AP:59:LYS:H    | 14:AP:59:LYS:CD    | 2.28                     | 0.47              |
| 14:AP:68:GLN:C    | 14:AP:70:GLY:N     | 2.71                     | 0.47              |
| 15:AQ:2:ASN:OD1   | 15:AQ:3:ARG:N      | 2.36                     | 0.47              |
| 15:AQ:26:ASP:OD2  | 15:AQ:100:TYR:CE2  | 2.68                     | 0.47              |
| 15:AQ:92:GLY:HA2  | 15:AQ:93:ARG:NH2   | 2.29                     | 0.47              |
| 15:AQ:102:ILE:O   | 15:AQ:103:ARG:C    | 2.56                     | 0.47              |
| 16:AR:30:LYS:N    | 16:AR:30:LYS:CD    | 2.75                     | 0.47              |
| 16:AR:33:ARG:O    | 16:AR:35:ALA:N     | 2.48                     | 0.47              |
| 16:AR:37:GLU:C    | 16:AR:39:LEU:N     | 2.70                     | 0.47              |
| 16:AR:84:LYS:NZ   | 16:AR:90:VAL:HG11  | 2.29                     | 0.47              |
| 17:AS:5:VAL:HG11  | 17:AS:37:VAL:CG2   | 2.45                     | 0.47              |
| 17:AS:67:GLY:CA   | 17:AS:94:LEU:HA    | 2.44                     | 0.47              |
| 18:AT:5:ALA:CB    | 18:AT:105:VAL:O    | 2.55                     | 0.47              |
| 18:AT:15:ARG:C    | 18:AT:16:LYS:HZ2   | 2.18                     | 0.47              |
| 18:AT:25:ARG:NH2  | 18:AT:74:ALA:O     | 2.48                     | 0.47              |
| 18:AT:32:ALA:HA   | 18:AT:35:ILE:HG22  | 1.96                     | 0.47              |
| 18:AT:41:LYS:HB3  | 18:AT:41:LYS:HZ2   | 1.78                     | 0.47              |
| 18:AT:86:LEU:HB3  | 18:AT:87:PRO:CD    | 2.44                     | 0.47              |
| 19:AU:47:PHE:CZ   | 19:AU:92:LEU:HD11  | 2.45                     | 0.47              |
| 19:AU:83:VAL:HG21 | 19:AU:86:GLY:HA2   | 1.97                     | 0.47              |
| 19:AU:84:ALA:N    | 19:AU:85:PRO:CD    | 2.78                     | 0.47              |
| 21:AW:45:ASP:HA   | 21:AW:48:PHE:HD1   | 1.79                     | 0.47              |
| 21:AW:48:PHE:CA   | 21:AW:54:HIS:CE1   | 2.98                     | 0.47              |
| 21:AW:49:ARG:C    | 21:AW:51:ALA:H     | 2.21                     | 0.47              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 21:AW:74:VAL:HG22  | 21:AW:87:ASP:H    | 1.79                     | 0.47              |
| 21:AW:118:GLN:HE22 | 21:AW:119:GLU:C   | 2.23                     | 0.47              |
| 21:AW:119:GLU:HG3  | 21:AW:119:GLU:O   | 2.15                     | 0.47              |
| 21:AW:151:HIS:HB3  | 21:AW:170:THR:CA  | 2.44                     | 0.47              |
| 21:AW:151:HIS:CD2  | 21:AW:170:THR:N   | 2.83                     | 0.47              |
| 22:AX:21:LEU:HD13  | 22:AX:41:ARG:CG   | 2.39                     | 0.47              |
| 22:AX:26:TYR:CD1   | 22:AX:29:GLN:CD   | 2.92                     | 0.47              |
| 22:AX:32:ARG:O     | 22:AX:35:ASN:CB   | 2.58                     | 0.47              |
| 22:AX:51:VAL:CG1   | 22:AX:59:LEU:HD22 | 2.45                     | 0.47              |
| 23:AY:46:ARG:HE    | 23:AY:50:ARG:HH22 | 1.63                     | 0.47              |
| 24:AZ:8:LEU:CB     | 24:AZ:33:GLN:HB3  | 2.44                     | 0.47              |
| 25:Aa:14:ILE:HG13  | 25:Aa:38:LYS:O    | 2.14                     | 0.47              |
| 27:Ac:16:CYS:O     | 27:Ac:17:LYS:C    | 2.56                     | 0.47              |
| 27:Ac:17:LYS:HG2   | 27:Ac:19:ARG:HE   | 1.80                     | 0.47              |
| 27:Ac:19:ARG:CD    | 27:Ac:19:ARG:N    | 2.75                     | 0.47              |
| 28:Ad:24:THR:HG23  | 28:Ad:27:GLY:CA   | 2.40                     | 0.47              |
| 28:Ad:46:VAL:O     | 28:Ad:47:ARG:C    | 2.56                     | 0.47              |
| 31:AI:135:ARG:C    | 31:AI:137:GLU:N   | 2.73                     | 0.47              |
| 32:AJ:4:VAL:CG2    | 33:Ag:333:UNK:CB  | 2.93                     | 0.47              |
| 32:AJ:52:ILE:HD12  | 32:AJ:73:PRO:HB2  | 1.96                     | 0.47              |
| 32:AJ:109:LYS:HE2  | 32:AJ:109:LYS:HB3 | 1.63                     | 0.47              |
| 32:AJ:117:THR:C    | 32:AJ:118:THR:HG1 | 2.07                     | 0.47              |
| 33:Ag:323:UNK:C    | 33:Ag:325:UNK:N   | 2.75                     | 0.47              |
| 34:BA:19:C:C2      | 34:BA:20:U:C5     | 3.03                     | 0.47              |
| 34:BA:25:C:H4'     | 34:BA:524:G:N2    | 2.30                     | 0.47              |
| 34:BA:43:C:O5'     | 49:BT:12:LYS:HG2  | 2.15                     | 0.47              |
| 34:BA:59:A:H1'     | 34:BA:354:G:C2    | 2.49                     | 0.47              |
| 34:BA:89:U:C2      | 34:BA:90:C:C5     | 3.03                     | 0.47              |
| 34:BA:108:G:C5     | 53:BX:15:ARG:NE   | 2.82                     | 0.47              |
| 34:BA:115:G:O2'    | 34:BA:116:A:N7    | 2.47                     | 0.47              |
| 34:BA:142:G:N1     | 34:BA:143:A:C5    | 2.82                     | 0.47              |
| 34:BA:152:A:C8     | 34:BA:153:C:C6    | 3.02                     | 0.47              |
| 34:BA:160:A:H1'    | 34:BA:344:A:N7    | 2.29                     | 0.47              |
| 34:BA:186(B):C:C2  | 34:BA:186(C):G:C8 | 3.03                     | 0.47              |
| 34:BA:193:C:O2'    | 34:BA:194:C:H5'   | 2.14                     | 0.47              |
| 34:BA:261:U:H5''   | 34:BA:262:A:OP2   | 2.15                     | 0.47              |
| 34:BA:293:G:H5'    | 34:BA:609:A:N1    | 2.30                     | 0.47              |
| 34:BA:294:U:H2'    | 34:BA:295:C:C5    | 2.49                     | 0.47              |
| 34:BA:443:C:C6     | 34:BA:492:G:N2    | 2.83                     | 0.47              |
| 34:BA:533:A:H3'    | 34:BA:534:U:H5''  | 1.96                     | 0.47              |
| 34:BA:551:U:C5'    | 45:BP:119:LYS:NZ  | 2.61                     | 0.47              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 34:BA:601:C:O2'   | 34:BA:602:A:H5'  | 2.14                     | 0.47              |
| 34:BA:611:A:C5    | 34:BA:612:C:C5   | 3.03                     | 0.47              |
| 34:BA:695:A:C4    | 34:BA:696:A:C8   | 3.02                     | 0.47              |
| 34:BA:715:A:H4'   | 34:BA:777:A:H61  | 1.79                     | 0.47              |
| 34:BA:715:A:H2'   | 34:BA:716:A:O4'  | 2.14                     | 0.47              |
| 34:BA:717:C:O2'   | 34:BA:718:G:OP2  | 2.33                     | 0.47              |
| 34:BA:728:A:N6    | 34:BA:729:A:C6   | 2.83                     | 0.47              |
| 34:BA:729:A:N6    | 48:BS:51:HIS:CD2 | 2.82                     | 0.47              |
| 34:BA:745:C:N4    | 34:BA:746:A:H62  | 2.13                     | 0.47              |
| 34:BA:767:A:C6    | 34:BA:768:A:C5   | 3.03                     | 0.47              |
| 34:BA:779:C:H2'   | 34:BA:780:A:O4'  | 2.15                     | 0.47              |
| 34:BA:817:C:C5    | 34:BA:819:A:O4'  | 2.68                     | 0.47              |
| 34:BA:843:U:H3'   | 34:BA:848:C:C4'  | 2.44                     | 0.47              |
| 34:BA:862:C:C2    | 34:BA:863:U:C5   | 3.02                     | 0.47              |
| 34:BA:880:C:P     | 45:BP:9:GLN:HE21 | 2.38                     | 0.47              |
| 34:BA:889:A:H4'   | 34:BA:890:G:C5'  | 2.44                     | 0.47              |
| 34:BA:901:A:H2'   | 34:BA:902:G:O5'  | 2.15                     | 0.47              |
| 34:BA:915:A:C2'   | 34:BA:916:G:C5'  | 2.84                     | 0.47              |
| 34:BA:922:G:C2    | 34:BA:923:A:C4   | 3.02                     | 0.47              |
| 34:BA:933:G:OP2   | 40:BK:3:ARG:HG2  | 2.15                     | 0.47              |
| 34:BA:954:G:H21   | 34:BA:1227:A:H62 | 1.62                     | 0.47              |
| 34:BA:993:G:N1    | 34:BA:1046:A:C6  | 2.83                     | 0.47              |
| 34:BA:995:C:O2    | 47:BR:4:LYS:NZ   | 2.47                     | 0.47              |
| 34:BA:1067:A:H2   | 34:BA:1068:G:C4  | 2.32                     | 0.47              |
| 34:BA:1074:G:O2'  | 34:BA:1075:C:H5' | 2.14                     | 0.47              |
| 34:BA:1079:G:N2   | 34:BA:1080:A:N1  | 2.62                     | 0.47              |
| 34:BA:1105:A:C2   | 34:BA:1106:G:C8  | 3.03                     | 0.47              |
| 34:BA:1145:C:O2'  | 34:BA:1146:A:O5' | 2.32                     | 0.47              |
| 34:BA:1147:C:C2   | 34:BA:1148:U:C5  | 3.02                     | 0.47              |
| 34:BA:1157:A:N6   | 34:BA:1180:A:C6  | 2.83                     | 0.47              |
| 34:BA:1163:C:N4   | 34:BA:1174:G:C6  | 2.83                     | 0.47              |
| 34:BA:1224:G:O6   | 34:BA:1322:C:C4' | 2.63                     | 0.47              |
| 34:BA:1267:C:O2   | 34:BA:1267:C:C2' | 2.55                     | 0.47              |
| 34:BA:1268:A:C2   | 34:BA:1327:C:H1' | 2.50                     | 0.47              |
| 34:BA:1301:U:O4   | 34:BA:1303:C:C2  | 2.68                     | 0.47              |
| 34:BA:1309:G:N7   | 34:BA:1330:U:N3  | 2.62                     | 0.47              |
| 34:BA:1317:C:C5   | 34:BA:1317:C:OP1 | 2.68                     | 0.47              |
| 34:BA:1357:A:C5   | 34:BA:1358:U:O4  | 2.67                     | 0.47              |
| 34:BA:1358:U:OP1  | 47:BR:34:TYR:CA  | 2.63                     | 0.47              |
| 34:BA:1371:G:OP2  | 42:BM:11:LYS:CE  | 2.62                     | 0.47              |
| 34:BA:1371:G:H5'' | 42:BM:68:GLY:O   | 2.15                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1428:A:N6    | 34:BA:1473:A:N6    | 2.62                     | 0.47              |
| 34:BA:1475:G:C2'   | 34:BA:1476:G:O5'   | 2.63                     | 0.47              |
| 34:BA:1485:U:O2'   | 34:BA:1486:G:H8    | 1.97                     | 0.47              |
| 34:BA:1489:G:C2    | 34:BA:1490:C:C2    | 3.03                     | 0.47              |
| 34:BA:1513:A:C2    | 34:BA:1523:G:C6    | 3.03                     | 0.47              |
| 35:BF:32:ILE:O     | 35:BF:32:ILE:HG22  | 2.14                     | 0.47              |
| 35:BF:118:LEU:O    | 35:BF:119:GLU:C    | 2.57                     | 0.47              |
| 35:BF:218:ALA:C    | 35:BF:220:ASP:N    | 2.71                     | 0.47              |
| 35:BF:219:VAL:HA   | 35:BF:222:ILE:CG1  | 2.45                     | 0.47              |
| 35:BF:230:VAL:HG12 | 35:BF:231:GLU:N    | 2.29                     | 0.47              |
| 36:BG:11:ARG:HE    | 36:BG:11:ARG:N     | 2.13                     | 0.47              |
| 36:BG:22:TRP:CZ2   | 47:BR:54:PRO:HG2   | 2.50                     | 0.47              |
| 36:BG:33:LEU:CD2   | 36:BG:36:ASP:OD1   | 2.63                     | 0.47              |
| 36:BG:122:GLU:O    | 36:BG:125:GLU:N    | 2.48                     | 0.47              |
| 37:BH:27:TYR:CD2   | 37:BH:27:TYR:O     | 2.68                     | 0.47              |
| 37:BH:30:LYS:N     | 37:BH:34:GLU:CB    | 2.72                     | 0.47              |
| 37:BH:72:GLU:O     | 37:BH:75:PHE:HB3   | 2.14                     | 0.47              |
| 37:BH:155:LEU:CB   | 37:BH:158:ILE:HG12 | 2.33                     | 0.47              |
| 37:BH:195:ALA:O    | 37:BH:196:LEU:O    | 2.33                     | 0.47              |
| 37:BH:205:GLU:OE1  | 38:BI:100:VAL:HB   | 2.14                     | 0.47              |
| 38:BI:49:PRO:O     | 38:BI:50:GLU:HG2   | 2.14                     | 0.47              |
| 38:BI:50:GLU:O     | 38:BI:51:VAL:C     | 2.57                     | 0.47              |
| 38:BI:94:ALA:HB3   | 38:BI:117:ASP:O    | 2.15                     | 0.47              |
| 38:BI:102:ALA:O    | 38:BI:107:ARG:NH2  | 2.48                     | 0.47              |
| 38:BI:109:ILE:HG12 | 38:BI:139:LEU:HD11 | 1.97                     | 0.47              |
| 40:BK:15:ASP:HB3   | 40:BK:19:GLY:N     | 2.30                     | 0.47              |
| 41:BL:5:PRO:O      | 41:BL:6:ILE:O      | 2.32                     | 0.47              |
| 41:BL:6:ILE:CD1    | 41:BL:85:ARG:CZ    | 2.93                     | 0.47              |
| 41:BL:15:ASN:HD22  | 41:BL:15:ASN:H     | 1.61                     | 0.47              |
| 41:BL:21:LYS:O     | 41:BL:63:LEU:HD13  | 2.13                     | 0.47              |
| 41:BL:40:ALA:HB2   | 41:BL:45:ILE:HG23  | 1.95                     | 0.47              |
| 41:BL:67:PRO:N     | 41:BL:76:PRO:HB3   | 2.29                     | 0.47              |
| 41:BL:111:ILE:CD1  | 41:BL:136:GLU:HA   | 2.44                     | 0.47              |
| 41:BL:126:LYS:NZ   | 41:BL:127:LEU:CD2  | 2.73                     | 0.47              |
| 42:BM:101:PHE:C    | 42:BM:102:LEU:CD2  | 2.81                     | 0.47              |
| 44:BO:21:ILE:HG12  | 44:BO:83:ILE:O     | 2.15                     | 0.47              |
| 44:BO:28:THR:CG2   | 44:BO:29:ILE:H     | 2.28                     | 0.47              |
| 44:BO:121:PRO:HB2  | 44:BO:125:PHE:CD1  | 2.49                     | 0.47              |
| 45:BP:36:VAL:O     | 45:BP:36:VAL:HG13  | 2.14                     | 0.47              |
| 45:BP:85:ILE:HD12  | 45:BP:99:HIS:O     | 2.15                     | 0.47              |
| 49:BT:58:TYR:O     | 49:BT:59:TRP:C     | 2.57                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 50:BU:31:LEU:O    | 50:BU:31:LEU:CG    | 2.59                     | 0.47              |
| 50:BU:92:ARG:O    | 50:BU:93:GLN:C     | 2.57                     | 0.47              |
| 51:BV:22:VAL:O    | 51:BV:24:ALA:N     | 2.48                     | 0.47              |
| 51:BV:60:ALA:C    | 51:BV:64:ARG:NH1   | 2.73                     | 0.47              |
| 51:BV:71:LYS:O    | 51:BV:73:ALA:N     | 2.46                     | 0.47              |
| 52:BW:30:LEU:HA   | 52:BW:48:THR:O     | 2.14                     | 0.47              |
| 52:BW:68:GLY:O    | 52:BW:69:HIS:CG    | 2.67                     | 0.47              |
| 53:BX:30:LYS:HB2  | 53:BX:30:LYS:NZ    | 2.29                     | 0.47              |
| 55:BC:34:G:H3'    | 55:BC:35:A:H5'     | 1.96                     | 0.47              |
| 55:BC:63:G:H2'    | 55:BC:64:A:C8      | 2.49                     | 0.47              |
| 56:BD:51:U:H3'    | 56:BD:52:G:H8      | 1.79                     | 0.47              |
| 56:BD:55:U:C5     | 56:BD:57:G:C5'     | 2.97                     | 0.47              |
| 56:BE:73:A:N3     | 56:BE:73:A:C5'     | 2.73                     | 0.47              |
| 57:BZ:10:ILE:HA   | 57:BZ:96:LEU:HB2   | 1.97                     | 0.47              |
| 57:BZ:18:LYS:HZ2  | 57:BZ:50:LYS:HA    | 1.80                     | 0.47              |
| 57:BZ:137:PRO:CB  | 57:BZ:164:TYR:HE2  | 2.28                     | 0.47              |
| 57:BZ:165:ALA:HB1 | 57:BZ:171:ILE:HG21 | 1.79                     | 0.47              |
| 57:BZ:217:TYR:C   | 57:BZ:219:GLY:N    | 2.73                     | 0.47              |
| 57:BZ:495:LYS:HA  | 57:BZ:516:ALA:O    | 2.15                     | 0.47              |
| 57:BZ:551:ALA:CB  | 57:BZ:552:ASP:CB   | 2.86                     | 0.47              |
| 1:AA:196:A:N3     | 1:AA:2068:U:H5     | 2.12                     | 0.47              |
| 1:AA:244:A:O2'    | 11:AM:66:GLY:CA    | 2.58                     | 0.47              |
| 1:AA:265:A:H2     | 1:AA:281:G:O5'     | 1.97                     | 0.47              |
| 1:AA:419:C:H2'    | 1:AA:420:C:C6      | 2.50                     | 0.47              |
| 1:AA:473:G:N1     | 1:AA:474:G:C6      | 2.83                     | 0.47              |
| 1:AA:548:A:H61    | 1:AA:549:G:H21     | 1.62                     | 0.47              |
| 1:AA:573:G:H2'    | 1:AA:574:C:H3'     | 1.97                     | 0.47              |
| 1:AA:594:U:OP1    | 29:Ae:61:LEU:HB3   | 2.14                     | 0.47              |
| 1:AA:656:G:C8     | 1:AA:656:G:OP2     | 2.67                     | 0.47              |
| 1:AA:703:U:C3'    | 1:AA:704:G:O4'     | 2.63                     | 0.47              |
| 1:AA:730:C:C5'    | 1:AA:761:A:OP1     | 2.63                     | 0.47              |
| 1:AA:815:C:O2'    | 1:AA:816:C:C5'     | 2.62                     | 0.47              |
| 1:AA:822:U:OP2    | 1:AA:945:A:C3'     | 2.63                     | 0.47              |
| 1:AA:831:G:N3     | 1:AA:831:G:H2'     | 2.29                     | 0.47              |
| 1:AA:994:C:O2     | 1:AA:996:A:C8      | 2.68                     | 0.47              |
| 1:AA:1024:G:N1    | 1:AA:1025:G:N7     | 2.63                     | 0.47              |
| 1:AA:1213:A:OP2   | 1:AA:1235:G:N2     | 2.48                     | 0.47              |
| 1:AA:1312:U:H2'   | 1:AA:1313:U:C4'    | 2.41                     | 0.47              |
| 1:AA:1338:G:C2'   | 1:AA:1339:G:H5'    | 2.45                     | 0.47              |
| 1:AA:1382:G:C4    | 1:AA:1383:C:C5     | 3.03                     | 0.47              |
| 1:AA:1429:G:H2'   | 1:AA:1430:C:O4'    | 2.14                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:AA:1479:G:C2'  | 1:AA:1480:G:H8   | 2.19                     | 0.47              |
| 1:AA:1484:G:C6   | 1:AA:1485:G:C5   | 3.03                     | 0.47              |
| 1:AA:1685:C:O2'  | 1:AA:1686:C:C5'  | 2.60                     | 0.47              |
| 1:AA:1685:C:C2'  | 1:AA:1686:C:O5'  | 2.63                     | 0.47              |
| 1:AA:1727:U:C4   | 1:AA:1730:U:C4   | 3.03                     | 0.47              |
| 1:AA:1729:A:C8   | 1:AA:1730:U:O4'  | 2.67                     | 0.47              |
| 1:AA:1753:G:N2   | 1:AA:1756:G:N3   | 2.63                     | 0.47              |
| 1:AA:1829:A:C2   | 1:AA:1830:C:O4'  | 2.68                     | 0.47              |
| 1:AA:1857:G:H2'  | 1:AA:1858:G:C8   | 2.49                     | 0.47              |
| 1:AA:1966:A:C2'  | 1:AA:1967:C:OP2  | 2.63                     | 0.47              |
| 1:AA:1993:U:H6   | 1:AA:1993:U:C3'  | 2.24                     | 0.47              |
| 1:AA:2161:C:C2   | 1:AA:2162:G:C8   | 3.02                     | 0.47              |
| 1:AA:2208:U:H4'  | 4:AD:151:LYS:HZ2 | 1.74                     | 0.47              |
| 1:AA:2278:A:C2   | 1:AA:2279:G:C4   | 3.03                     | 0.47              |
| 1:AA:2482:G:H2'  | 1:AA:2483:C:O4'  | 2.14                     | 0.47              |
| 1:AA:2496:C:OP1  | 12:AN:82:ARG:CG  | 2.39                     | 0.47              |
| 1:AA:2546:U:O4'  | 1:AA:2565:A:C2   | 2.68                     | 0.47              |
| 1:AA:2606:C:H6   | 1:AA:2606:C:C5'  | 2.20                     | 0.47              |
| 1:AA:2629:A:N7   | 1:AA:2896:C:O5'  | 2.47                     | 0.47              |
| 1:AA:2637:U:O5'  | 5:AE:81:ILE:HD11 | 2.15                     | 0.47              |
| 1:AA:2642:G:C6   | 1:AA:2643:G:C5   | 3.03                     | 0.47              |
| 1:AA:2659:G:H1'  | 1:AA:2663:G:C2   | 2.49                     | 0.47              |
| 1:AA:2857:G:O5'  | 1:AA:2857:G:H8   | 1.97                     | 0.47              |
| 1:AA:2892:A:O2'  | 1:AA:2894:G:OP2  | 2.32                     | 0.47              |
| 3:AC:44:HIS:CA   | 3:AC:213:TYR:CB  | 2.85                     | 0.47              |
| 3:AC:56:GLN:HG2  | 3:AC:201:PRO:HG3 | 1.97                     | 0.47              |
| 3:AC:75:LEU:HD21 | 3:AC:99:ILE:CG2  | 2.45                     | 0.47              |
| 3:AC:124:GLY:O   | 3:AC:128:GLY:HA3 | 2.15                     | 0.47              |
| 3:AC:200:LYS:HZ2 | 3:AC:204:ALA:HB3 | 1.79                     | 0.47              |
| 4:AD:62:TYR:N    | 4:AD:63:ARG:HH22 | 2.13                     | 0.47              |
| 4:AD:75:ILE:HD13 | 4:AD:99:ASP:OD1  | 2.15                     | 0.47              |
| 4:AD:208:LYS:CE  | 4:AD:211:ARG:NE  | 2.78                     | 0.47              |
| 5:AE:2:LYS:CE    | 5:AE:83:ASP:HB2  | 2.45                     | 0.47              |
| 5:AE:21:VAL:O    | 5:AE:185:LYS:HB2 | 2.14                     | 0.47              |
| 5:AE:109:LYS:CG  | 5:AE:191:PRO:HG3 | 2.25                     | 0.47              |
| 5:AE:113:PHE:HB3 | 5:AE:158:GLY:HA2 | 1.97                     | 0.47              |
| 6:AF:88:VAL:O    | 6:AF:89:VAL:O    | 2.32                     | 0.47              |
| 6:AF:98:SER:O    | 6:AF:99:TYR:CB   | 2.58                     | 0.47              |
| 6:AF:194:MET:SD  | 6:AF:197:ASP:HB3 | 2.54                     | 0.47              |
| 7:AG:14:GLU:O    | 7:AG:17:PRO:HG2  | 2.15                     | 0.47              |
| 7:AG:49:ASP:H    | 7:AG:53:LEU:HD13 | 1.80                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:AG:103:LEU:CD2  | 7:AG:176:LEU:HD11 | 2.42                     | 0.47              |
| 8:AH:24:VAL:HG21  | 8:AH:72:ILE:HD13  | 1.97                     | 0.47              |
| 9:AK:22:THR:CG2   | 9:AK:61:ARG:NH1   | 2.77                     | 0.47              |
| 9:AK:103:VAL:HG23 | 9:AK:117:PHE:HE2  | 1.80                     | 0.47              |
| 9:AK:112:LEU:O    | 9:AK:115:ARG:N    | 2.48                     | 0.47              |
| 9:AK:134:ARG:N    | 9:AK:135:PRO:CD   | 2.78                     | 0.47              |
| 10:AL:1:MET:SD    | 10:AL:2:ILE:HG12  | 2.55                     | 0.47              |
| 10:AL:9:GLU:CA    | 10:AL:17:ARG:O    | 2.57                     | 0.47              |
| 10:AL:11:ALA:C    | 10:AL:97:ARG:HH22 | 2.22                     | 0.47              |
| 10:AL:23:ARG:HH11 | 10:AL:23:ARG:CG   | 2.28                     | 0.47              |
| 11:AM:33:ARG:O    | 11:AM:35:HIS:N    | 2.48                     | 0.47              |
| 11:AM:46:LYS:CB   | 11:AM:49:ARG:NH1  | 2.78                     | 0.47              |
| 11:AM:56:SER:OG   | 29:Ae:13:ARG:NE   | 2.47                     | 0.47              |
| 11:AM:122:PRO:CA  | 11:AM:134:ALA:HA  | 2.45                     | 0.47              |
| 12:AN:12:GLN:HE22 | 12:AN:13:GLN:CD   | 2.18                     | 0.47              |
| 12:AN:119:ARG:O   | 12:AN:123:HIS:HB3 | 2.15                     | 0.47              |
| 12:AN:130:LYS:HE3 | 12:AN:131:ILE:O   | 2.15                     | 0.47              |
| 12:AN:130:LYS:CE  | 12:AN:131:ILE:N   | 2.74                     | 0.47              |
| 12:AN:137:TYR:HE2 | 21:AW:124:ILE:CD1 | 2.22                     | 0.47              |
| 13:AO:50:HIS:O    | 13:AO:53:HIS:CB   | 2.59                     | 0.47              |
| 13:AO:87:TYR:HD1  | 13:AO:94:TYR:CG   | 2.32                     | 0.47              |
| 15:AQ:30:VAL:CG2  | 15:AQ:89:VAL:O    | 2.54                     | 0.47              |
| 15:AQ:109:GLU:O   | 15:AQ:110:ILE:CB  | 2.59                     | 0.47              |
| 16:AR:55:ARG:HA   | 16:AR:58:ARG:NE   | 2.30                     | 0.47              |
| 16:AR:108:GLU:C   | 16:AR:111:GLU:HG2 | 2.39                     | 0.47              |
| 18:AT:16:LYS:H    | 18:AT:16:LYS:CE   | 2.28                     | 0.47              |
| 18:AT:16:LYS:H    | 18:AT:16:LYS:NZ   | 2.07                     | 0.47              |
| 21:AW:19:ARG:HH21 | 21:AW:84:GLU:HA   | 1.80                     | 0.47              |
| 21:AW:36:LYS:HB3  | 21:AW:38:TYR:CE2  | 2.50                     | 0.47              |
| 21:AW:111:VAL:HA  | 21:AW:116:VAL:O   | 2.15                     | 0.47              |
| 22:AX:25:ARG:HD2  | 22:AX:29:GLN:HE22 | 1.79                     | 0.47              |
| 22:AX:72:ARG:HD2  | 22:AX:75:LEU:HD22 | 1.95                     | 0.47              |
| 25:Aa:43:TYR:O    | 25:Aa:44:THR:OG1  | 2.21                     | 0.47              |
| 25:Aa:57:GLU:N    | 25:Aa:61:ARG:CZ   | 2.78                     | 0.47              |
| 26:Ab:29:THR:C    | 26:Ab:30:LEU:CG   | 2.85                     | 0.47              |
| 26:Ab:35:GLU:HB3  | 26:Ab:49:CYS:HB2  | 1.96                     | 0.47              |
| 26:Ab:51:TYR:CD1  | 26:Ab:55:ARG:CD   | 2.96                     | 0.47              |
| 29:Ae:5:LYS:HG2   | 29:Ae:7:HIS:HA    | 1.97                     | 0.47              |
| 29:Ae:22:VAL:HB   | 29:Ae:48:PHE:CZ   | 2.49                     | 0.47              |
| 29:Ae:49:VAL:O    | 29:Ae:53:PRO:HD3  | 2.14                     | 0.47              |
| 31:AI:54:ALA:C    | 31:AI:56:ASN:N    | 2.73                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:52:G:C4      | 34:BA:53:A:C8      | 3.02                     | 0.47              |
| 34:BA:148:G:C2     | 34:BA:175:C:C4     | 3.03                     | 0.47              |
| 34:BA:258:G:C5     | 34:BA:259:G:N7     | 2.83                     | 0.47              |
| 34:BA:376:G:H4'    | 49:BT:28:ARG:CB    | 2.44                     | 0.47              |
| 34:BA:379:C:C2'    | 34:BA:380:G:H5'    | 2.42                     | 0.47              |
| 34:BA:410:G:N3     | 34:BA:432:A:C6     | 2.83                     | 0.47              |
| 34:BA:432:A:C8     | 34:BA:432:A:C3'    | 2.97                     | 0.47              |
| 34:BA:560:U:C2'    | 34:BA:561:U:OP2    | 2.63                     | 0.47              |
| 34:BA:587:G:N2     | 34:BA:755:G:C4     | 2.82                     | 0.47              |
| 34:BA:654:G:H1     | 34:BA:754:C:N4     | 2.12                     | 0.47              |
| 34:BA:657:G:N2     | 34:BA:750:G:C8     | 2.83                     | 0.47              |
| 34:BA:728:A:C6     | 34:BA:729:A:C5     | 3.03                     | 0.47              |
| 34:BA:767:A:N6     | 34:BA:813:U:C2     | 2.83                     | 0.47              |
| 34:BA:792:A:C2     | 34:BA:794:A:N1     | 2.83                     | 0.47              |
| 34:BA:1115:C:N1    | 34:BA:1186:G:N1    | 2.61                     | 0.47              |
| 34:BA:1124:G:N2    | 34:BA:1127:G:C4    | 2.83                     | 0.47              |
| 34:BA:1124:G:H2'   | 34:BA:1126:U:O4    | 2.15                     | 0.47              |
| 34:BA:1178:G:N2    | 34:BA:1180:A:O5'   | 2.47                     | 0.47              |
| 34:BA:1239:A:H4'   | 34:BA:1240:U:O5'   | 2.15                     | 0.47              |
| 34:BA:1240:U:C2    | 40:BK:32:ARG:NE    | 2.83                     | 0.47              |
| 34:BA:1275:A:O2'   | 34:BA:1276:G:H5'   | 2.14                     | 0.47              |
| 34:BA:1298:C:O2    | 34:BA:1298:C:C2'   | 2.59                     | 0.47              |
| 34:BA:1305:G:N2    | 34:BA:1331:G:N3    | 2.63                     | 0.47              |
| 34:BA:1396:A:H4'   | 34:BA:1398:A:O4'   | 2.15                     | 0.47              |
| 34:BA:1416:G:C6    | 34:BA:1485:U:O2    | 2.68                     | 0.47              |
| 34:BA:1433:A:N1    | 34:BA:1434:A:C2    | 2.82                     | 0.47              |
| 34:BA:1476:G:H2'   | 34:BA:1477:C:C5    | 2.50                     | 0.47              |
| 34:BA:1483:A:H3'   | 34:BA:1484:C:C6    | 2.49                     | 0.47              |
| 35:BF:57:PHE:CD1   | 35:BF:199:TYR:HE1  | 2.32                     | 0.47              |
| 35:BF:76:GLN:O     | 35:BF:77:ALA:CB    | 2.62                     | 0.47              |
| 35:BF:114:ARG:NH1  | 35:BF:141:GLU:HG3  | 2.29                     | 0.47              |
| 36:BG:6:HIS:CB     | 47:BR:49:HIS:ND1   | 2.77                     | 0.47              |
| 36:BG:64:VAL:O     | 36:BG:99:VAL:CG1   | 2.62                     | 0.47              |
| 37:BH:3:ARG:HG3    | 37:BH:118:ARG:NE   | 2.30                     | 0.47              |
| 37:BH:133:VAL:HG21 | 37:BH:138:TYR:CE1  | 2.50                     | 0.47              |
| 38:BI:9:LYS:HD2    | 38:BI:112:LEU:HD23 | 1.96                     | 0.47              |
| 38:BI:47:LYS:O     | 38:BI:57:LYS:HE2   | 2.15                     | 0.47              |
| 39:BJ:59:TYR:C     | 39:BJ:60:PHE:CD1   | 2.93                     | 0.47              |
| 39:BJ:70:ASP:O     | 39:BJ:73:ASN:ND2   | 2.48                     | 0.47              |
| 40:BK:106:GLN:NE2  | 40:BK:109:ASN:ND2  | 2.62                     | 0.47              |
| 41:BL:6:ILE:HG23   | 41:BL:85:ARG:NH1   | 2.30                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 41:BL:63:LEU:CG    | 41:BL:65:TYR:HE1   | 2.27                     | 0.47              |
| 41:BL:122:ARG:O    | 41:BL:125:ARG:HB3  | 2.14                     | 0.47              |
| 42:BM:22:GLY:O     | 42:BM:58:HIS:O     | 2.33                     | 0.47              |
| 42:BM:46:ALA:HB1   | 42:BM:77:ILE:HG22  | 1.97                     | 0.47              |
| 43:BN:9:ARG:CB     | 43:BN:9:ARG:NH1    | 2.78                     | 0.47              |
| 43:BN:24:VAL:CG2   | 43:BN:34:VAL:HG11  | 2.42                     | 0.47              |
| 44:BO:33:THR:HB    | 44:BO:38:ASN:O     | 2.14                     | 0.47              |
| 45:BP:23:LYS:HA    | 45:BP:23:LYS:CE    | 2.21                     | 0.47              |
| 45:BP:119:LYS:O    | 45:BP:120:TYR:HB2  | 2.15                     | 0.47              |
| 46:BQ:13:LYS:CG    | 46:BQ:17:VAL:HG11  | 2.44                     | 0.47              |
| 46:BQ:27:LYS:O     | 46:BQ:28:ALA:HB3   | 2.14                     | 0.47              |
| 46:BQ:34:LEU:HD23  | 46:BQ:39:ILE:CD1   | 2.42                     | 0.47              |
| 46:BQ:46:LYS:O     | 46:BQ:46:LYS:HG3   | 2.15                     | 0.47              |
| 47:BR:27:CYS:SG    | 47:BR:42:ILE:HG13  | 2.54                     | 0.47              |
| 48:BS:18:PHE:C     | 48:BS:20:GLY:H     | 2.23                     | 0.47              |
| 49:BT:19:ILE:HB    | 49:BT:36:ILE:O     | 2.15                     | 0.47              |
| 49:BT:19:ILE:O     | 49:BT:36:ILE:HG13  | 2.15                     | 0.47              |
| 50:BU:34:LYS:HD2   | 50:BU:35:VAL:N     | 2.30                     | 0.47              |
| 50:BU:38:ARG:HE    | 50:BU:38:ARG:HA    | 1.80                     | 0.47              |
| 50:BU:40:LYS:NZ    | 50:BU:42:TYR:HE1   | 2.12                     | 0.47              |
| 50:BU:75:ARG:NH1   | 50:BU:76:LEU:O     | 2.48                     | 0.47              |
| 51:BV:74:ARG:H     | 51:BV:74:ARG:CD    | 2.27                     | 0.47              |
| 53:BX:17:ARG:O     | 53:BX:20:LEU:CB    | 2.60                     | 0.47              |
| 53:BX:37:SER:OG    | 53:BX:38:LYS:N     | 2.47                     | 0.47              |
| 53:BX:51:GLU:CA    | 53:BX:54:LYS:CE    | 2.92                     | 0.47              |
| 53:BX:76:ALA:O     | 53:BX:77:ALA:C     | 2.56                     | 0.47              |
| 55:BC:18:G:O2'     | 55:BC:57:G:O6      | 2.30                     | 0.47              |
| 56:BD:42:C:C3'     | 56:BD:43:C:H5''    | 2.45                     | 0.47              |
| 57:BZ:40:GLU:OE1   | 57:BZ:41:ARG:HG3   | 2.15                     | 0.47              |
| 57:BZ:205:PHE:CE1  | 57:BZ:226:ILE:CD1  | 2.79                     | 0.47              |
| 57:BZ:233:PRO:HB3  | 57:BZ:234:ASN:HB2  | 1.95                     | 0.47              |
| 57:BZ:251:VAL:HG11 | 57:BZ:273:ILE:HB   | 1.52                     | 0.47              |
| 57:BZ:310:PHE:N    | 57:BZ:385:PRO:HG3  | 2.29                     | 0.47              |
| 57:BZ:344:ALA:HB1  | 57:BZ:361:ARG:HG3  | 1.97                     | 0.47              |
| 57:BZ:402:ASN:O    | 57:BZ:403:VAL:HG22 | 2.15                     | 0.47              |
| 57:BZ:452:ARG:H    | 57:BZ:452:ARG:CD   | 2.28                     | 0.47              |
| 1:AA:195:A:H8      | 1:AA:195:A:O5'     | 1.97                     | 0.47              |
| 1:AA:242:G:H5''    | 29:Ae:4:MET:SD     | 2.55                     | 0.47              |
| 1:AA:251:A:HO2'    | 1:AA:252:G:P       | 2.37                     | 0.47              |
| 1:AA:291:C:C5      | 1:AA:292:C:C5      | 3.03                     | 0.47              |
| 1:AA:295:G:H1'     | 1:AA:345:A:C2      | 2.50                     | 0.47              |

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| Atom-1          | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-------------------|--------------------------|-------------------|
| 1:AA:359:A:O3'  | 1:AA:360:G:C8     | 2.68                     | 0.47              |
| 1:AA:428:A:N3   | 1:AA:428:A:C2'    | 2.78                     | 0.47              |
| 1:AA:468:G:H2'  | 1:AA:469:G:C5'    | 2.45                     | 0.47              |
| 1:AA:483:A:H1'  | 20:AV:45:VAL:O    | 2.15                     | 0.47              |
| 1:AA:581:C:H5'' | 16:AR:32:PHE:CD2  | 2.50                     | 0.47              |
| 1:AA:645:C:H4'  | 1:AA:646:A:C8     | 2.49                     | 0.47              |
| 1:AA:718:A:H3'  | 1:AA:719:C:O4'    | 2.14                     | 0.47              |
| 1:AA:744:G:H2'  | 1:AA:745:G:H8     | 1.78                     | 0.47              |
| 1:AA:906:G:N3   | 1:AA:906:G:C2'    | 2.77                     | 0.47              |
| 1:AA:919:G:H21  | 1:AA:2268:A:H5''  | 1.77                     | 0.47              |
| 1:AA:1158:C:H5' | 24:AZ:31:LEU:HB2  | 1.94                     | 0.47              |
| 1:AA:1167:U:C2  | 1:AA:1183:G:N2    | 2.83                     | 0.47              |
| 1:AA:1168:G:C6  | 1:AA:1169:G:C5    | 3.03                     | 0.47              |
| 1:AA:1227:A:C8  | 1:AA:1227:A:C3'   | 2.97                     | 0.47              |
| 1:AA:1256:G:C2' | 1:AA:1257:C:O5'   | 2.62                     | 0.47              |
| 1:AA:1289:C:N3  | 1:AA:1290:C:C5    | 2.83                     | 0.47              |
| 1:AA:1296:G:C2  | 1:AA:1297:C:C5    | 3.02                     | 0.47              |
| 1:AA:1422:G:C4  | 1:AA:1423:G:C8    | 3.03                     | 0.47              |
| 1:AA:1434:A:N1  | 1:AA:1435:G:C4    | 2.83                     | 0.47              |
| 1:AA:1540:G:C4' | 1:AA:1540:G:OP1   | 2.62                     | 0.47              |
| 1:AA:1570:A:C6  | 1:AA:1571:A:N7    | 2.83                     | 0.47              |
| 1:AA:1638:C:C4' | 1:AA:2710:C:H1'   | 2.45                     | 0.47              |
| 1:AA:1698:A:O2' | 1:AA:1699:G:O3'   | 2.27                     | 0.47              |
| 1:AA:1727:U:C5  | 1:AA:1730:U:O4    | 2.68                     | 0.47              |
| 1:AA:1741:C:O3' | 1:AA:1742:C:O4'   | 2.33                     | 0.47              |
| 1:AA:1799:G:O2' | 1:AA:1800:C:C4'   | 2.63                     | 0.47              |
| 1:AA:1811:G:H2' | 1:AA:1812:A:C8    | 2.50                     | 0.47              |
| 1:AA:1816:G:O3' | 1:AA:1817:G:C8    | 2.68                     | 0.47              |
| 1:AA:1853:A:H2  | 1:AA:2087:G:N3    | 2.12                     | 0.47              |
| 1:AA:1899:G:N2  | 1:AA:1902:C:N4    | 2.61                     | 0.47              |
| 1:AA:1924:C:N1  | 1:AA:1925:C:C5    | 2.83                     | 0.47              |
| 1:AA:2014:A:O5' | 1:AA:2014:A:C8    | 2.61                     | 0.47              |
| 1:AA:2095:C:C2' | 1:AA:2096:U:H5'   | 2.45                     | 0.47              |
| 1:AA:2191:G:N2  | 1:AA:2192:G:C4    | 2.83                     | 0.47              |
| 1:AA:2194:G:C2' | 1:AA:2195:C:H5    | 2.28                     | 0.47              |
| 1:AA:2287:A:H2  | 27:Ac:37:ARG:HH22 | 1.62                     | 0.47              |
| 1:AA:2305:A:C2' | 7:AG:154:GLY:CA   | 2.89                     | 0.47              |
| 1:AA:2325:G:N7  | 1:AA:2326:C:H5    | 2.13                     | 0.47              |
| 1:AA:2400:G:C6  | 1:AA:2401:U:C2    | 3.03                     | 0.47              |
| 1:AA:2484:G:H4' | 12:AN:46:GLN:HA   | 1.96                     | 0.47              |
| 1:AA:2485:G:O2' | 1:AA:2486:G:C5'   | 2.62                     | 0.47              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2528:U:OP1    | 30:Af:30:PRO:HG2  | 2.15                     | 0.47              |
| 1:AA:2553:G:C5'    | 1:AA:2554:U:OP2   | 2.63                     | 0.47              |
| 1:AA:2554:U:C5     | 1:AA:2556:C:C4    | 3.03                     | 0.47              |
| 1:AA:2559:C:H2'    | 1:AA:2560:C:H6    | 1.79                     | 0.47              |
| 1:AA:2685:G:H8     | 1:AA:2685:G:OP2   | 1.98                     | 0.47              |
| 1:AA:2687:U:O2     | 1:AA:2688:U:C6    | 2.59                     | 0.47              |
| 1:AA:2688:U:O4     | 1:AA:2719:G:H3'   | 2.15                     | 0.47              |
| 1:AA:2780:G:N2     | 9:AK:97:ARG:CZ    | 2.77                     | 0.47              |
| 1:AA:2892:A:H2'    | 1:AA:2893:G:C1'   | 2.45                     | 0.47              |
| 59:AA:3003:8AN:C5' | 56:BE:75:C:C3'    | 2.90                     | 0.47              |
| 2:AB:55:U:O2'      | 2:AB:56:G:C5'     | 2.57                     | 0.47              |
| 2:AB:56:G:O2'      | 2:AB:57:A:H5'     | 2.15                     | 0.47              |
| 2:AB:68:C:H2'      | 2:AB:69:G:C8      | 2.50                     | 0.47              |
| 2:AB:88:C:O5'      | 2:AB:88:C:H6      | 1.97                     | 0.47              |
| 2:AB:103:U:O2'     | 21:AW:72:ARG:HB2  | 2.15                     | 0.47              |
| 3:AC:42:GLU:O      | 3:AC:214:VAL:O    | 2.26                     | 0.47              |
| 3:AC:66:HIS:N      | 3:AC:67:GLY:N     | 2.55                     | 0.47              |
| 3:AC:190:ARG:HG3   | 3:AC:190:ARG:NH1  | 2.29                     | 0.47              |
| 4:AD:21:PHE:O      | 4:AD:205:VAL:HG13 | 2.14                     | 0.47              |
| 4:AD:23:GLU:O      | 4:AD:204:ILE:HD11 | 2.15                     | 0.47              |
| 4:AD:181:GLU:OE2   | 4:AD:272:ALA:HA   | 2.15                     | 0.47              |
| 5:AE:8:LYS:HG3     | 5:AE:24:THR:HG21  | 1.97                     | 0.47              |
| 5:AE:54:GLN:OE1    | 5:AE:56:PRO:HD2   | 2.15                     | 0.47              |
| 6:AF:12:LEU:HD22   | 6:AF:142:TRP:CZ3  | 2.50                     | 0.47              |
| 6:AF:18:ARG:CG     | 6:AF:19:GLU:N     | 2.78                     | 0.47              |
| 7:AG:37:VAL:CB     | 7:AG:99:MET:SD    | 3.03                     | 0.47              |
| 8:AH:98:LEU:HD22   | 8:AH:100:GLY:H    | 1.80                     | 0.47              |
| 9:AK:12:ARG:HD3    | 9:AK:50:ASP:OD1   | 2.15                     | 0.47              |
| 10:AL:1:MET:SD     | 10:AL:2:ILE:CG1   | 3.02                     | 0.47              |
| 12:AN:22:LYS:HA    | 12:AN:99:PRO:HD3  | 1.96                     | 0.47              |
| 12:AN:42:ILE:C     | 12:AN:94:VAL:CG2  | 2.87                     | 0.47              |
| 12:AN:130:LYS:HB3  | 12:AN:130:LYS:HE2 | 1.66                     | 0.47              |
| 13:AO:55:ALA:HB1   | 13:AO:79:LEU:HD21 | 1.94                     | 0.47              |
| 13:AO:105:ARG:O    | 13:AO:107:ASP:N   | 2.43                     | 0.47              |
| 15:AQ:87:ASP:O     | 15:AQ:88:ILE:HG13 | 2.15                     | 0.47              |
| 16:AR:61:TRP:HB3   | 16:AR:65:ILE:HD11 | 1.97                     | 0.47              |
| 17:AS:78:LYS:HB2   | 17:AS:83:ARG:O    | 2.14                     | 0.47              |
| 18:AT:23:LEU:CD1   | 26:Ab:26:THR:O    | 2.45                     | 0.47              |
| 19:AU:35:THR:HG22  | 19:AU:36:LYS:N    | 2.29                     | 0.47              |
| 20:AV:42:VAL:HB    | 20:AV:43:ASN:H    | 1.57                     | 0.47              |
| 21:AW:138:GLU:C    | 21:AW:139:VAL:CG2 | 2.87                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:AX:29:GLN:OE1   | 22:AX:67:VAL:HG21  | 2.15                     | 0.47              |
| 24:AZ:48:GLU:CG    | 24:AZ:49:LYS:N     | 2.78                     | 0.47              |
| 25:Aa:7:PRO:O      | 25:Aa:8:LYS:CB     | 2.63                     | 0.47              |
| 25:Aa:65:ASP:O     | 25:Aa:69:LYS:CG    | 2.46                     | 0.47              |
| 26:Ab:10:LYS:HD2   | 26:Ab:15:ARG:CZ    | 2.44                     | 0.47              |
| 26:Ab:58:LEU:CD2   | 26:Ab:59:GLU:N     | 2.67                     | 0.47              |
| 29:Ae:30:ARG:O     | 29:Ae:31:HIS:C     | 2.56                     | 0.47              |
| 31:AI:49:ALA:O     | 31:AI:90:ALA:CB    | 2.63                     | 0.47              |
| 31:AI:59:ILE:C     | 31:AI:61:LEU:N     | 2.73                     | 0.47              |
| 31:AI:152:VAL:O    | 31:AI:155:GLY:CA   | 2.62                     | 0.47              |
| 32:AJ:100:THR:HG1  | 32:AJ:103:GLN:HB3  | 1.68                     | 0.47              |
| 34:BA:47:C:C5      | 34:BA:365:U:C2     | 3.03                     | 0.47              |
| 34:BA:135:C:O2     | 49:BT:1:MET:HG2    | 2.14                     | 0.47              |
| 34:BA:141:A:C4'    | 34:BA:182:U:H1'    | 2.44                     | 0.47              |
| 34:BA:175:C:H2'    | 34:BA:176:C:H6     | 1.80                     | 0.47              |
| 34:BA:236:G:C3'    | 34:BA:237:C:C6     | 2.91                     | 0.47              |
| 34:BA:395:C:C2     | 34:BA:396:G:N7     | 2.83                     | 0.47              |
| 34:BA:408:A:N6     | 34:BA:409:G:O6     | 2.48                     | 0.47              |
| 34:BA:433:C:N4     | 34:BA:434:U:O4     | 2.48                     | 0.47              |
| 34:BA:498:A:C4'    | 34:BA:500:G:OP1    | 2.61                     | 0.47              |
| 34:BA:517:G:C4     | 34:BA:531:U:O4'    | 2.68                     | 0.47              |
| 34:BA:706:A:H4'    | 44:BO:22:HIS:ND1   | 2.30                     | 0.47              |
| 34:BA:774:G:C4     | 34:BA:775:G:C8     | 3.02                     | 0.47              |
| 34:BA:830:G:C6     | 34:BA:857:C:C4     | 3.03                     | 0.47              |
| 34:BA:873:A:C5'    | 34:BA:874:G:OP2    | 2.60                     | 0.47              |
| 34:BA:888:G:C2     | 34:BA:909:A:N6     | 2.80                     | 0.47              |
| 34:BA:902:G:C2'    | 34:BA:903:G:H5'    | 2.43                     | 0.47              |
| 34:BA:1061:G:N2    | 34:BA:1197:G:C4    | 2.83                     | 0.47              |
| 34:BA:1132:C:C2    | 34:BA:1133:G:C8    | 3.03                     | 0.47              |
| 34:BA:1133:G:C6    | 34:BA:1142:G:C6    | 3.03                     | 0.47              |
| 34:BA:1192:C:C5    | 34:BA:1193:G:N7    | 2.83                     | 0.47              |
| 34:BA:1273:G:C3'   | 34:BA:1274:G:H8    | 2.26                     | 0.47              |
| 34:BA:1336:C:H4'   | 34:BA:1337:G:N1    | 2.28                     | 0.47              |
| 34:BA:1479:C:H2'   | 34:BA:1480:G:C8    | 2.50                     | 0.47              |
| 35:BF:73:THR:HA    | 35:BF:94:ASN:HA    | 1.96                     | 0.47              |
| 35:BF:167:PRO:C    | 35:BF:169:LYS:N    | 2.72                     | 0.47              |
| 36:BG:18:TRP:HZ2   | 47:BR:57:ARG:HB2   | 1.80                     | 0.47              |
| 36:BG:194:GLY:O    | 36:BG:196:LEU:HD23 | 2.15                     | 0.47              |
| 37:BH:43:HIS:ND1   | 37:BH:46:LYS:HE3   | 2.29                     | 0.47              |
| 37:BH:98:GLU:HG2   | 37:BH:173:TRP:HE1  | 1.80                     | 0.47              |
| 37:BH:128:VAL:HG23 | 37:BH:133:VAL:H    | 1.78                     | 0.47              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 37:BH:152:SER:C    | 37:BH:154:ASN:ND2 | 2.72                     | 0.47              |
| 38:BI:51:VAL:O     | 38:BI:52:PRO:C    | 2.55                     | 0.47              |
| 38:BI:59:GLY:CA    | 38:BI:63:ARG:HH21 | 2.27                     | 0.47              |
| 39:BJ:65:VAL:HG23  | 39:BJ:66:GLU:C    | 2.40                     | 0.47              |
| 40:BK:111:ARG:HH12 | 40:BK:112:PRO:HD2 | 1.74                     | 0.47              |
| 40:BK:129:GLU:HB3  | 40:BK:131:LYS:HE2 | 1.97                     | 0.47              |
| 41:BL:84:ARG:C     | 41:BL:135:CYS:SG  | 2.98                     | 0.47              |
| 42:BM:4:TYR:CG     | 42:BM:88:TYR:HB2  | 2.50                     | 0.47              |
| 43:BN:54:PHE:H     | 47:BR:41:ARG:HH21 | 1.63                     | 0.47              |
| 43:BN:79:ARG:O     | 43:BN:81:THR:N    | 2.47                     | 0.47              |
| 45:BP:24:VAL:HG13  | 45:BP:98:TYR:CZ   | 2.50                     | 0.47              |
| 46:BQ:80:ARG:HB2   | 52:BW:65:ASN:HD22 | 1.75                     | 0.47              |
| 46:BQ:84:ILE:HG13  | 46:BQ:86:CYS:H    | 1.80                     | 0.47              |
| 48:BS:77:ARG:HH12  | 48:BS:81:LEU:CA   | 2.28                     | 0.47              |
| 50:BU:5:VAL:O      | 50:BU:6:LEU:HB3   | 2.15                     | 0.47              |
| 50:BU:57:VAL:CG2   | 50:BU:58:GLU:N    | 2.78                     | 0.47              |
| 50:BU:91:ARG:HG2   | 50:BU:92:ARG:N    | 2.29                     | 0.47              |
| 50:BU:104:LYS:O    | 50:BU:105:ALA:C   | 2.57                     | 0.47              |
| 55:BC:5:G:O6       | 55:BC:69:G:O6     | 2.33                     | 0.47              |
| 56:BE:18:G:N7      | 56:BE:58:A:N1     | 2.63                     | 0.47              |
| 56:BE:28:G:O2'     | 56:BE:29:G:H5'    | 2.14                     | 0.47              |
| 57:BZ:40:GLU:H     | 57:BZ:41:ARG:CB   | 2.27                     | 0.47              |
| 57:BZ:50:LYS:HZ1   | 57:BZ:368:VAL:CG2 | 2.27                     | 0.47              |
| 57:BZ:51:GLU:OE1   | 57:BZ:52:ARG:N    | 2.47                     | 0.47              |
| 57:BZ:62:ALA:CA    | 57:BZ:187:TYR:CE2 | 2.81                     | 0.47              |
| 57:BZ:144:VAL:O    | 57:BZ:148:PHE:HE1 | 1.97                     | 0.47              |
| 57:BZ:249:ALA:N    | 57:BZ:276:ILE:CG1 | 2.77                     | 0.47              |
| 57:BZ:468:THR:CG2  | 57:BZ:469:PHE:H   | 2.14                     | 0.47              |
| 57:BZ:551:ALA:CA   | 57:BZ:552:ASP:HB2 | 2.44                     | 0.47              |
| 1:AA:4:C:C2        | 1:AA:2899:G:N1    | 2.43                     | 0.47              |
| 1:AA:28:A:C2       | 1:AA:29:U:H4'     | 2.50                     | 0.47              |
| 1:AA:108:U:C2      | 1:AA:109:G:C8     | 3.03                     | 0.47              |
| 1:AA:142:G:C4'     | 19:AU:35:THR:HG21 | 2.21                     | 0.47              |
| 1:AA:221:A:N3      | 1:AA:233:A:H1'    | 2.30                     | 0.47              |
| 1:AA:243:U:OP2     | 29:Ae:7:HIS:NE2   | 2.48                     | 0.47              |
| 1:AA:270(H):C:C2   | 1:AA:270(I):G:C8  | 3.03                     | 0.47              |
| 1:AA:270(X):G:H5'' | 1:AA:273:G:OP1    | 2.14                     | 0.47              |
| 1:AA:280:C:H3'     | 1:AA:282:A:P      | 2.55                     | 0.47              |
| 1:AA:301:G:C8      | 1:AA:334:C:C2     | 3.02                     | 0.47              |
| 1:AA:467:G:O2'     | 1:AA:468:G:H5'    | 2.14                     | 0.47              |
| 1:AA:477:A:O2'     | 1:AA:478:A:H5'    | 2.15                     | 0.47              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:AA:485:C:C4   | 1:AA:486:C:C5    | 3.03                     | 0.47              |
| 1:AA:818:G:H21  | 1:AA:1189:A:H62  | 1.63                     | 0.47              |
| 1:AA:819:A:N3   | 1:AA:943:U:O2    | 2.48                     | 0.47              |
| 1:AA:851:U:OP1  | 24:AZ:49:LYS:NZ  | 2.41                     | 0.47              |
| 1:AA:857:C:O2'  | 22:AX:23:VAL:CB  | 2.63                     | 0.47              |
| 1:AA:895:U:H6   | 1:AA:895:U:H3'   | 1.80                     | 0.47              |
| 1:AA:906:G:N2   | 1:AA:907:U:C2    | 2.83                     | 0.47              |
| 1:AA:933:A:N3   | 1:AA:934:G:C8    | 2.83                     | 0.47              |
| 1:AA:988:A:H2   | 1:AA:989:G:N2    | 2.12                     | 0.47              |
| 1:AA:1102:C:O2  | 1:AA:1102:C:C2'  | 2.63                     | 0.47              |
| 1:AA:1202:C:C2' | 1:AA:1203:G:H4'  | 2.36                     | 0.47              |
| 1:AA:1264:G:C6  | 1:AA:1265:A:C6   | 3.03                     | 0.47              |
| 1:AA:1267:U:C6  | 1:AA:1267:U:C3'  | 2.97                     | 0.47              |
| 1:AA:1270:C:O5' | 1:AA:1270:C:C6   | 2.67                     | 0.47              |
| 1:AA:1359:A:N6  | 1:AA:1360:A:C5   | 2.83                     | 0.47              |
| 1:AA:1360:A:H61 | 1:AA:1371:G:H1'  | 1.79                     | 0.47              |
| 1:AA:1420:U:O2' | 1:AA:1421:G:P    | 2.73                     | 0.47              |
| 1:AA:1424:G:OP2 | 1:AA:1424:G:O4'  | 2.32                     | 0.47              |
| 1:AA:1449:A:H1' | 1:AA:1529:A:C5   | 2.50                     | 0.47              |
| 1:AA:1449:A:C1' | 1:AA:1529:A:C6   | 2.98                     | 0.47              |
| 1:AA:1542:G:C1' | 1:AA:1543:A:C5   | 2.98                     | 0.47              |
| 1:AA:1568:G:N3  | 1:AA:1568:G:O4'  | 2.46                     | 0.47              |
| 1:AA:1583:A:H4' | 1:AA:1583:A:OP1  | 2.15                     | 0.47              |
| 1:AA:1650:G:O2' | 1:AA:1651:G:C5'  | 2.63                     | 0.47              |
| 1:AA:1667:G:O3' | 10:AL:7:TYR:CZ   | 2.68                     | 0.47              |
| 1:AA:1731:G:N3  | 1:AA:1731:G:H2'  | 2.29                     | 0.47              |
| 1:AA:1796:U:H2' | 1:AA:1797:C:H6   | 1.80                     | 0.47              |
| 1:AA:1936:A:H1' | 1:AA:1940:U:C2   | 2.49                     | 0.47              |
| 1:AA:1936:A:N9  | 1:AA:1940:U:N3   | 2.63                     | 0.47              |
| 1:AA:2087:G:C8  | 1:AA:2087:G:H5'' | 2.50                     | 0.47              |
| 1:AA:2128:C:C4  | 1:AA:2129:C:C5   | 3.03                     | 0.47              |
| 1:AA:2199:A:C2  | 1:AA:2225:A:C2   | 3.03                     | 0.47              |
| 1:AA:2207:C:H3' | 1:AA:2208:U:C5'  | 2.38                     | 0.47              |
| 1:AA:2230:G:C2  | 1:AA:2231:C:C2   | 3.03                     | 0.47              |
| 1:AA:2246:G:H2' | 1:AA:2247:A:N7   | 2.29                     | 0.47              |
| 1:AA:2249:U:C2' | 1:AA:2250:G:OP1  | 2.63                     | 0.47              |
| 1:AA:2253:G:C2' | 1:AA:2254:C:O5'  | 2.64                     | 0.47              |
| 1:AA:2260:C:H2' | 1:AA:2261:C:H6   | 1.80                     | 0.47              |
| 1:AA:2286:A:N6  | 27:Ac:32:ASN:CA  | 2.78                     | 0.47              |
| 1:AA:2306:C:N4  | 7:AG:45:GLU:HG2  | 2.30                     | 0.47              |
| 1:AA:2346:A:OP2 | 1:AA:2381:C:O2'  | 2.32                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2353:G:O2'   | 22:AX:33:ALA:O     | 2.32                     | 0.47              |
| 1:AA:2371:G:O2'   | 1:AA:2372:G:H1'    | 2.14                     | 0.47              |
| 1:AA:2437:U:H2'   | 1:AA:2438:U:C5     | 2.49                     | 0.47              |
| 1:AA:2473:U:OP1   | 1:AA:2474:C:N4     | 2.41                     | 0.47              |
| 1:AA:2505:G:H3'   | 1:AA:2505:G:C8     | 2.50                     | 0.47              |
| 1:AA:2690:C:O2'   | 1:AA:2691:C:C5'    | 2.63                     | 0.47              |
| 1:AA:2720:U:C4    | 1:AA:2873:A:N6     | 2.73                     | 0.47              |
| 1:AA:2745:C:H2'   | 1:AA:2746:U:H6     | 1.80                     | 0.47              |
| 1:AA:2839:G:C5    | 1:AA:2840:C:C5     | 3.02                     | 0.47              |
| 1:AA:2877:G:H3'   | 1:AA:2878:U:H6     | 1.72                     | 0.47              |
| 1:AA:2899:G:C6    | 1:AA:2900:A:N7     | 2.83                     | 0.47              |
| 2:AB:42:C:C4      | 7:AG:93:THR:HB     | 2.50                     | 0.47              |
| 2:AB:52:A:OP1     | 2:AB:52:A:H4'      | 2.15                     | 0.47              |
| 2:AB:104:A:C3'    | 2:AB:105:G:O4'     | 2.63                     | 0.47              |
| 3:AC:68:LEU:CG    | 3:AC:69:GLY:N      | 2.78                     | 0.47              |
| 3:AC:116:THR:C    | 3:AC:118:ASP:H     | 2.23                     | 0.47              |
| 3:AC:200:LYS:O    | 3:AC:200:LYS:CG    | 2.63                     | 0.47              |
| 4:AD:7:LYS:HB2    | 4:AD:27:THR:HA     | 1.97                     | 0.47              |
| 4:AD:117:VAL:HG13 | 4:AD:129:ASN:CA    | 2.45                     | 0.47              |
| 5:AE:100:GLU:C    | 5:AE:172:VAL:HG13  | 2.39                     | 0.47              |
| 6:AF:37:VAL:HG12  | 6:AF:41:LEU:CD2    | 2.40                     | 0.47              |
| 7:AG:75:LYS:HB3   | 7:AG:84:LYS:HB2    | 1.96                     | 0.47              |
| 8:AH:7:LEU:CD1    | 8:AH:65:HIS:NE2    | 2.73                     | 0.47              |
| 8:AH:11:VAL:HG13  | 8:AH:15:VAL:HG11   | 1.95                     | 0.47              |
| 8:AH:13:LYS:HD2   | 8:AH:15:VAL:HA     | 1.96                     | 0.47              |
| 8:AH:93:GLY:O     | 8:AH:107:VAL:CG2   | 2.63                     | 0.47              |
| 8:AH:101:ARG:HA   | 8:AH:101:ARG:HE    | 1.80                     | 0.47              |
| 10:AL:14:THR:OG1  | 10:AL:16:ALA:C     | 2.58                     | 0.47              |
| 10:AL:22:ILE:CD1  | 10:AL:40:VAL:HG21  | 2.45                     | 0.47              |
| 10:AL:59:LYS:N    | 10:AL:59:LYS:CD    | 2.77                     | 0.47              |
| 10:AL:112:MET:HA  | 10:AL:115:VAL:HG23 | 1.97                     | 0.47              |
| 11:AM:13:ASN:O    | 11:AM:14:LYS:C     | 2.57                     | 0.47              |
| 11:AM:23:PRO:HB2  | 11:AM:29:LYS:N     | 2.28                     | 0.47              |
| 11:AM:70:GLN:C    | 11:AM:71:VAL:HG23  | 2.40                     | 0.47              |
| 11:AM:96:THR:HG21 | 11:AM:112:LEU:CD1  | 2.34                     | 0.47              |
| 12:AN:43:THR:OG1  | 12:AN:46:GLN:N     | 2.48                     | 0.47              |
| 12:AN:63:LYS:O    | 12:AN:107:ALA:HA   | 2.15                     | 0.47              |
| 12:AN:87:LYS:O    | 12:AN:88:GLY:O     | 2.33                     | 0.47              |
| 14:AP:95:HIS:C    | 14:AP:99:LYS:HB2   | 2.40                     | 0.47              |
| 15:AQ:54:ARG:CD   | 15:AQ:55:ASN:ND2   | 2.73                     | 0.47              |
| 15:AQ:64:ARG:CZ   | 15:AQ:77:PRO:CA    | 2.92                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 15:AQ:70:VAL:HB   | 15:AQ:74:ARG:CD    | 2.44                     | 0.47              |
| 16:AR:36:ARG:O    | 16:AR:40:PHE:HD1   | 1.98                     | 0.47              |
| 16:AR:54:LYS:CA   | 16:AR:54:LYS:CE    | 2.92                     | 0.47              |
| 16:AR:88:ILE:CB   | 17:AS:52:VAL:HG22  | 2.45                     | 0.47              |
| 16:AR:110:VAL:O   | 16:AR:113:ALA:N    | 2.47                     | 0.47              |
| 18:AT:34:ASN:CA   | 18:AT:37:ARG:HE    | 2.16                     | 0.47              |
| 19:AU:36:LYS:HE3  | 19:AU:56:THR:OG1   | 2.14                     | 0.47              |
| 20:AV:37:VAL:O    | 20:AV:37:VAL:HG22  | 2.15                     | 0.47              |
| 20:AV:37:VAL:HG22 | 20:AV:39:VAL:HG21  | 1.97                     | 0.47              |
| 20:AV:84:ARG:HB2  | 20:AV:92:ASN:O     | 2.15                     | 0.47              |
| 21:AW:118:GLN:CD  | 21:AW:172:ALA:HB1  | 2.39                     | 0.47              |
| 23:AY:6:GLU:O     | 23:AY:10:LYS:HE2   | 2.15                     | 0.47              |
| 23:AY:6:GLU:O     | 23:AY:9:ARG:N      | 2.48                     | 0.47              |
| 24:AZ:29:ARG:C    | 24:AZ:30:ARG:HD2   | 2.40                     | 0.47              |
| 24:AZ:52:HIS:CG   | 24:AZ:53:LEU:N     | 2.83                     | 0.47              |
| 25:Aa:7:PRO:HD3   | 25:Aa:56:VAL:HG12  | 1.92                     | 0.47              |
| 25:Aa:40:HIS:HB3  | 25:Aa:41:PRO:HD2   | 1.95                     | 0.47              |
| 25:Aa:58:ARG:C    | 25:Aa:62:ARG:CZ    | 2.88                     | 0.47              |
| 29:Ae:58:ILE:HD12 | 29:Ae:59:LYS:H     | 1.79                     | 0.47              |
| 32:AJ:23:VAL:CG1  | 32:AJ:41:PHE:CZ    | 2.97                     | 0.47              |
| 34:BA:45:U:O2     | 34:BA:398:C:N3     | 2.47                     | 0.47              |
| 34:BA:51:A:N1     | 34:BA:116:A:C4     | 2.83                     | 0.47              |
| 34:BA:68:G:H5'    | 34:BA:171:A:C1'    | 2.45                     | 0.47              |
| 34:BA:73:G:C4     | 34:BA:74:C:C5      | 3.03                     | 0.47              |
| 34:BA:119:A:N6    | 34:BA:287:U:C2     | 2.78                     | 0.47              |
| 34:BA:227:G:C6    | 34:BA:228:A:C6     | 3.03                     | 0.47              |
| 34:BA:523:A:O2'   | 34:BA:525:C:H5     | 1.98                     | 0.47              |
| 34:BA:524:G:H2'   | 34:BA:525:C:O4'    | 2.15                     | 0.47              |
| 34:BA:597:G:C8    | 34:BA:644:G:N2     | 2.83                     | 0.47              |
| 34:BA:672:U:O2    | 34:BA:672:U:C2'    | 2.63                     | 0.47              |
| 34:BA:709:G:C4    | 34:BA:710:G:C8     | 3.03                     | 0.47              |
| 34:BA:742:G:C2'   | 34:BA:743:U:H5'    | 2.45                     | 0.47              |
| 34:BA:837:G:N1    | 34:BA:838:G:C5     | 2.83                     | 0.47              |
| 34:BA:841:U:OP2   | 34:BA:842:C:N4     | 2.48                     | 0.47              |
| 34:BA:874:G:H2'   | 34:BA:875:C:O5'    | 2.15                     | 0.47              |
| 34:BA:981:U:C6    | 34:BA:982:U:C5     | 3.03                     | 0.47              |
| 34:BA:1005:A:C5   | 34:BA:1026:G:N2    | 2.82                     | 0.47              |
| 34:BA:1029:G:C4   | 34:BA:1032(A):G:C6 | 3.03                     | 0.47              |
| 34:BA:1164:G:H2'  | 34:BA:1165:C:C6    | 2.50                     | 0.47              |
| 34:BA:1327:C:O2'  | 34:BA:1328:C:H5'   | 2.15                     | 0.47              |
| 34:BA:1341:U:O2'  | 42:BM:126:SER:O    | 2.29                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1392:G:O2'   | 34:BA:1393:U:H5'   | 2.15                     | 0.47              |
| 34:BA:1477:C:C4    | 34:BA:1478:C:C5    | 3.03                     | 0.47              |
| 34:BA:1532:U:O5'   | 34:BA:1532:U:H6    | 1.98                     | 0.47              |
| 35:BF:24:TRP:CZ2   | 35:BF:26:PRO:HA    | 2.49                     | 0.47              |
| 35:BF:55:PHE:O     | 35:BF:58:ILE:CB    | 2.63                     | 0.47              |
| 35:BF:120:ALA:O    | 35:BF:121:LEU:C    | 2.56                     | 0.47              |
| 35:BF:149:LEU:C    | 35:BF:151:GLY:H    | 2.22                     | 0.47              |
| 36:BG:116:VAL:HG21 | 36:BG:141:VAL:HG22 | 1.97                     | 0.47              |
| 36:BG:186:PHE:CD1  | 36:BG:186:PHE:C    | 2.90                     | 0.47              |
| 37:BH:4:TYR:HE2    | 37:BH:8:VAL:HG22   | 1.80                     | 0.47              |
| 37:BH:17:VAL:O     | 37:BH:19:LEU:CD2   | 2.63                     | 0.47              |
| 37:BH:61:LYS:HG2   | 37:BH:203:VAL:HG13 | 1.97                     | 0.47              |
| 37:BH:120:LEU:O    | 37:BH:121:VAL:C    | 2.57                     | 0.47              |
| 38:BI:19:MET:SD    | 38:BI:24:ARG:HG2   | 2.54                     | 0.47              |
| 38:BI:96:PRO:O     | 38:BI:97:GLY:C     | 2.55                     | 0.47              |
| 38:BI:98:THR:HB    | 38:BI:117:ASP:HA   | 1.97                     | 0.47              |
| 40:BK:136:LYS:HB3  | 40:BK:136:LYS:HE3  | 1.55                     | 0.47              |
| 41:BL:41:ARG:HH11  | 41:BL:41:ARG:CB    | 2.27                     | 0.47              |
| 41:BL:103:VAL:CG1  | 41:BL:108:GLY:HA3  | 2.44                     | 0.47              |
| 42:BM:37:PHE:HB3   | 42:BM:40:LEU:HB2   | 1.96                     | 0.47              |
| 43:BN:60:ARG:O     | 43:BN:61:GLU:HB2   | 2.15                     | 0.47              |
| 44:BO:21:ILE:HD11  | 44:BO:82:VAL:CG1   | 2.45                     | 0.47              |
| 44:BO:85:ARG:HD3   | 44:BO:112:THR:H    | 1.80                     | 0.47              |
| 44:BO:103:LEU:O    | 44:BO:104:GLN:CB   | 2.63                     | 0.47              |
| 45:BP:24:VAL:HG13  | 45:BP:98:TYR:OH    | 2.15                     | 0.47              |
| 45:BP:46:LYS:HE3   | 45:BP:47:LYS:HZ1   | 1.78                     | 0.47              |
| 46:BQ:64:TRP:CZ2   | 46:BQ:66:LEU:CD1   | 2.98                     | 0.47              |
| 49:BT:8:ARG:HH12   | 49:BT:11:SER:CA    | 2.28                     | 0.47              |
| 49:BT:53:VAL:HA    | 49:BT:79:VAL:CG2   | 2.45                     | 0.47              |
| 49:BT:74:LEU:CD2   | 49:BT:79:VAL:HG21  | 2.43                     | 0.47              |
| 50:BU:29:HIS:ND1   | 50:BU:30:PRO:N     | 2.63                     | 0.47              |
| 51:BV:69:THR:C     | 51:BV:71:LYS:N     | 2.71                     | 0.47              |
| 51:BV:81:PHE:O     | 51:BV:82:THR:HB    | 2.14                     | 0.47              |
| 53:BX:14:LYS:O     | 53:BX:18:GLN:HG3   | 2.15                     | 0.47              |
| 53:BX:38:LYS:O     | 53:BX:41:ILE:N     | 2.48                     | 0.47              |
| 54:BY:24:ARG:O     | 54:BY:25:LYS:CB    | 2.60                     | 0.47              |
| 55:BC:14:A:H1'     | 55:BC:22:G:N2      | 2.29                     | 0.47              |
| 56:BE:2:C:C6       | 56:BE:70:G:O6      | 2.65                     | 0.47              |
| 57:BZ:59:LYS:HB2   | 57:BZ:66:TRP:CH2   | 2.49                     | 0.47              |
| 57:BZ:67:ASP:N     | 57:BZ:68:TYR:CA    | 2.73                     | 0.47              |
| 57:BZ:233:PRO:HA   | 57:BZ:235:GLN:CB   | 2.40                     | 0.47              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 57:BZ:305:PRO:CG   | 57:BZ:306:THR:H   | 2.28                     | 0.47              |
| 57:BZ:381:ALA:HB3  | 57:BZ:577:LEU:HB3 | 1.88                     | 0.47              |
| 57:BZ:586:ARG:HH21 | 57:BZ:586:ARG:CG  | 2.27                     | 0.47              |
| 1:AA:107:C:H2'     | 1:AA:108:U:H6     | 1.81                     | 0.46              |
| 1:AA:179:G:C5'     | 28:Ad:32:LYS:NZ   | 2.69                     | 0.46              |
| 1:AA:182:A:C2      | 1:AA:183:C:N3     | 2.83                     | 0.46              |
| 1:AA:199:A:C6      | 1:AA:2433:A:N3    | 2.83                     | 0.46              |
| 1:AA:199:A:N1      | 1:AA:2433:A:N3    | 2.63                     | 0.46              |
| 1:AA:219:G:H2'     | 1:AA:220:G:O4'    | 2.14                     | 0.46              |
| 1:AA:270(K):C:N4   | 1:AA:270(M):U:C6  | 2.83                     | 0.46              |
| 1:AA:395:U:OP2     | 1:AA:395:U:H6     | 1.99                     | 0.46              |
| 1:AA:466:A:C2      | 1:AA:796:C:O4'    | 2.68                     | 0.46              |
| 1:AA:539:G:C2      | 1:AA:540:G:C5     | 3.03                     | 0.46              |
| 1:AA:580:C:N4      | 1:AA:581:C:N4     | 2.63                     | 0.46              |
| 1:AA:598:G:O2'     | 11:AM:14:LYS:HE3  | 2.15                     | 0.46              |
| 1:AA:653:A:C3'     | 1:AA:654:A:H4'    | 2.45                     | 0.46              |
| 1:AA:704:G:N3      | 1:AA:704:G:C2'    | 2.78                     | 0.46              |
| 1:AA:730:C:O2      | 1:AA:731:C:C5     | 2.68                     | 0.46              |
| 1:AA:746:A:N7      | 1:AA:2612:C:O5'   | 2.48                     | 0.46              |
| 1:AA:801:G:O2'     | 1:AA:802:A:P      | 2.73                     | 0.46              |
| 1:AA:861:A:H2'     | 1:AA:862:G:C5'    | 2.41                     | 0.46              |
| 1:AA:1001:A:N6     | 1:AA:1002:G:C2    | 2.82                     | 0.46              |
| 1:AA:1009:A:H4'    | 16:AR:62:ILE:CG2  | 2.42                     | 0.46              |
| 1:AA:1050:A:N6     | 1:AA:2751:G:N9    | 2.64                     | 0.46              |
| 1:AA:1130:U:O2'    | 1:AA:1131:G:P     | 2.73                     | 0.46              |
| 1:AA:1213:A:C2     | 1:AA:1237:A:H1'   | 2.50                     | 0.46              |
| 1:AA:1522:G:H3'    | 1:AA:1522:G:H8    | 1.80                     | 0.46              |
| 1:AA:1589:C:O2'    | 1:AA:1590:U:H5'   | 2.15                     | 0.46              |
| 1:AA:1593:G:C4     | 1:AA:1594:G:C8    | 3.02                     | 0.46              |
| 1:AA:1621:U:H3'    | 1:AA:1621:U:H6    | 1.79                     | 0.46              |
| 1:AA:1656:C:C5'    | 5:AE:136:ARG:NH1  | 2.77                     | 0.46              |
| 1:AA:1683:C:O5'    | 1:AA:1683:C:C6    | 2.68                     | 0.46              |
| 1:AA:1813:G:H4'    | 4:AD:46:GLN:CG    | 2.42                     | 0.46              |
| 1:AA:1870:C:O2     | 1:AA:1870:C:C2'   | 2.62                     | 0.46              |
| 1:AA:1901:A:C4'    | 4:AD:244:ARG:HH12 | 2.21                     | 0.46              |
| 1:AA:1949:G:N7     | 1:AA:1950:G:N7    | 2.63                     | 0.46              |
| 1:AA:1952:A:C8     | 1:AA:1953:A:C4    | 3.03                     | 0.46              |
| 1:AA:1953:A:N6     | 1:AA:2550:G:C4'   | 2.77                     | 0.46              |
| 1:AA:2004:G:H2'    | 1:AA:2005:A:H8    | 1.80                     | 0.46              |
| 1:AA:2070:G:O2'    | 1:AA:2071:A:H5'   | 2.14                     | 0.46              |
| 1:AA:2077:A:H1'    | 1:AA:2435:A:O4'   | 2.15                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2110:G:H2'   | 1:AA:2120:G:H5'   | 1.96                     | 0.46              |
| 1:AA:2124:G:O6    | 3:AC:218:MET:CA   | 2.53                     | 0.46              |
| 1:AA:2404:C:C4    | 1:AA:2414:G:C2    | 3.03                     | 0.46              |
| 1:AA:2491:U:H6    | 1:AA:2492:U:P     | 2.33                     | 0.46              |
| 1:AA:2588:G:O6    | 1:AA:2589:A:C6    | 2.68                     | 0.46              |
| 1:AA:2616:C:C2'   | 1:AA:2617:C:C6    | 2.97                     | 0.46              |
| 1:AA:2633:G:N1    | 1:AA:2634:G:C5    | 2.83                     | 0.46              |
| 1:AA:2659:G:H1'   | 1:AA:2663:G:N1    | 2.29                     | 0.46              |
| 1:AA:2709:G:C2'   | 1:AA:2710:C:C5'   | 2.87                     | 0.46              |
| 1:AA:2839:G:C5    | 1:AA:2840:C:C4    | 3.03                     | 0.46              |
| 2:AB:50:G:H5''    | 14:AP:61:ASN:HA   | 1.97                     | 0.46              |
| 3:AC:87:GLU:HG3   | 3:AC:94:VAL:HG11  | 1.97                     | 0.46              |
| 4:AD:34:VAL:N     | 4:AD:104:TYR:HH   | 2.12                     | 0.46              |
| 4:AD:75:ILE:HD13  | 4:AD:99:ASP:CG    | 2.40                     | 0.46              |
| 4:AD:159:ALA:HA   | 4:AD:196:VAL:CG1  | 2.44                     | 0.46              |
| 4:AD:270:ILE:C    | 4:AD:271:ILE:O    | 2.57                     | 0.46              |
| 5:AE:36:ARG:CD    | 5:AE:41:LYS:HZ2   | 2.26                     | 0.46              |
| 5:AE:198:VAL:HG12 | 5:AE:199:ARG:N    | 2.28                     | 0.46              |
| 6:AF:44:ARG:O     | 6:AF:45:ARG:O     | 2.32                     | 0.46              |
| 6:AF:135:LYS:HB3  | 6:AF:138:GLU:OE2  | 2.15                     | 0.46              |
| 7:AG:12:TYR:O     | 7:AG:13:GLU:C     | 2.56                     | 0.46              |
| 7:AG:77:ILE:C     | 7:AG:83:ARG:NE    | 2.73                     | 0.46              |
| 7:AG:135:LEU:HD13 | 7:AG:137:GLU:H    | 1.77                     | 0.46              |
| 7:AG:151:ALA:HB1  | 7:AG:152:LEU:HG   | 1.98                     | 0.46              |
| 8:AH:27:LYS:HZ2   | 8:AH:32:GLU:HB2   | 1.79                     | 0.46              |
| 9:AK:6:PRO:CB     | 9:AK:41:ASP:HB3   | 2.45                     | 0.46              |
| 10:AL:78:ARG:CZ   | 10:AL:78:ARG:N    | 2.78                     | 0.46              |
| 10:AL:98:VAL:O    | 10:AL:99:PHE:HB2  | 2.14                     | 0.46              |
| 11:AM:59:LEU:HD23 | 29:Ae:25:MET:HE2  | 1.97                     | 0.46              |
| 11:AM:78:PRO:HG3  | 11:AM:116:GLY:HA2 | 1.97                     | 0.46              |
| 12:AN:16:ARG:O    | 12:AN:17:LEU:CD1  | 2.64                     | 0.46              |
| 14:AP:78:LEU:C    | 14:AP:78:LEU:CD2  | 2.76                     | 0.46              |
| 15:AQ:17:THR:HG21 | 15:AQ:22:PHE:CZ   | 2.50                     | 0.46              |
| 15:AQ:31:SER:HA   | 15:AQ:32:TYR:CE1  | 2.49                     | 0.46              |
| 16:AR:34:LYS:O    | 16:AR:38:THR:OG1  | 2.32                     | 0.46              |
| 16:AR:40:PHE:HB3  | 17:AS:78:LYS:CE   | 2.44                     | 0.46              |
| 16:AR:102:GLU:HA  | 16:AR:103:PRO:HD2 | 1.56                     | 0.46              |
| 18:AT:6:ILE:HD11  | 18:AT:104:THR:HA  | 1.97                     | 0.46              |
| 18:AT:33:ARG:HH12 | 18:AT:48:ALA:CB   | 2.22                     | 0.46              |
| 18:AT:34:ASN:HA   | 18:AT:37:ARG:CG   | 2.45                     | 0.46              |
| 19:AU:85:PRO:HG3  | 19:AU:87:GLN:HG2  | 1.91                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 21:AW:1:MET:SD    | 21:AW:2:GLU:N     | 2.88                     | 0.46              |
| 21:AW:6:LYS:HA    | 21:AW:37:VAL:HG13 | 1.97                     | 0.46              |
| 21:AW:10:ARG:NH2  | 21:AW:35:ARG:HG3  | 2.30                     | 0.46              |
| 21:AW:20:ARG:HH11 | 21:AW:20:ARG:CG   | 2.27                     | 0.46              |
| 21:AW:77:ASP:HB3  | 21:AW:81:ARG:O    | 2.15                     | 0.46              |
| 21:AW:95:PRO:HD2  | 21:AW:130:PRO:CA  | 2.44                     | 0.46              |
| 21:AW:102:LEU:HA  | 21:AW:137:ILE:O   | 2.15                     | 0.46              |
| 21:AW:111:VAL:C   | 21:AW:113:ALA:N   | 2.72                     | 0.46              |
| 22:AX:74:ARG:HD2  | 22:AX:75:LEU:HD12 | 1.97                     | 0.46              |
| 23:AY:54:ARG:CG   | 23:AY:54:ARG:NH2  | 2.78                     | 0.46              |
| 26:Ab:56:LYS:CG   | 26:Ab:57:VAL:HG13 | 2.44                     | 0.46              |
| 29:Ae:22:VAL:O    | 29:Ae:23:VAL:HG23 | 2.15                     | 0.46              |
| 29:Ae:23:VAL:HA   | 29:Ae:47:LYS:O    | 2.15                     | 0.46              |
| 29:Ae:38:GLY:C    | 29:Ae:40:GLU:N    | 2.72                     | 0.46              |
| 34:BA:318:G:O2'   | 34:BA:1468:A:O2'  | 2.12                     | 0.46              |
| 34:BA:495:A:H4'   | 34:BA:496:A:OP1   | 2.15                     | 0.46              |
| 34:BA:547:A:H4'   | 34:BA:548:G:O5'   | 2.10                     | 0.46              |
| 34:BA:625:G:H2'   | 34:BA:626:U:H6    | 1.80                     | 0.46              |
| 34:BA:763:G:N3    | 34:BA:764:C:C6    | 2.83                     | 0.46              |
| 34:BA:791:G:C8    | 34:BA:792:A:C8    | 3.03                     | 0.46              |
| 34:BA:815:A:C6    | 34:BA:1529:G:C2   | 3.03                     | 0.46              |
| 34:BA:817:C:C6    | 34:BA:819:A:C4'   | 2.98                     | 0.46              |
| 34:BA:900:A:H62   | 34:BA:901:A:N6    | 2.13                     | 0.46              |
| 34:BA:913:A:O2'   | 34:BA:914:A:O5'   | 2.32                     | 0.46              |
| 34:BA:914:A:H2'   | 34:BA:915:A:N7    | 2.30                     | 0.46              |
| 34:BA:938:A:O2'   | 34:BA:1376:U:H4'  | 2.15                     | 0.46              |
| 34:BA:938:A:C6    | 34:BA:939:G:C5    | 3.03                     | 0.46              |
| 34:BA:949:A:H2'   | 34:BA:950:U:C5    | 2.48                     | 0.46              |
| 34:BA:964:A:C2    | 34:BA:965:A:N7    | 2.83                     | 0.46              |
| 34:BA:978:A:C8    | 34:BA:978:A:C3'   | 2.98                     | 0.46              |
| 34:BA:1046:A:H2'  | 34:BA:1046:A:N3   | 2.29                     | 0.46              |
| 34:BA:1057:G:H5'  | 36:BG:196:LEU:HA  | 1.97                     | 0.46              |
| 34:BA:1189:C:H6   | 34:BA:1189:C:O5'  | 1.99                     | 0.46              |
| 34:BA:1189:C:OP2  | 34:BA:1189:C:C6   | 2.68                     | 0.46              |
| 34:BA:1206:G:C2   | 34:BA:1207:G:C4   | 3.03                     | 0.46              |
| 34:BA:1229:A:H4'  | 56:BE:30:G:P      | 2.55                     | 0.46              |
| 34:BA:1319:A:N1   | 34:BA:1361:G:N2   | 2.63                     | 0.46              |
| 34:BA:1332:A:H3'  | 34:BA:1333:A:C8   | 2.51                     | 0.46              |
| 34:BA:1361:G:C8   | 34:BA:1361:G:O5'  | 2.68                     | 0.46              |
| 34:BA:1381:U:H2'  | 34:BA:1381:U:O2   | 2.14                     | 0.46              |
| 34:BA:1382:C:H2'  | 34:BA:1383:C:C5   | 2.49                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 34:BA:1402:C:C5   | 34:BA:1403:C:C5   | 3.03                     | 0.46              |
| 34:BA:1405:G:H1'  | 34:BA:1518:A:O2'  | 2.16                     | 0.46              |
| 34:BA:1405:G:O2'  | 34:BA:1518:A:O2'  | 2.25                     | 0.46              |
| 34:BA:1468:A:C8   | 34:BA:1469:G:H8   | 2.33                     | 0.46              |
| 35:BF:46:LYS:O    | 35:BF:47:THR:C    | 2.58                     | 0.46              |
| 35:BF:92:TYR:HE2  | 35:BF:151:GLY:C   | 2.22                     | 0.46              |
| 35:BF:164:VAL:CG2 | 35:BF:165:VAL:N   | 2.77                     | 0.46              |
| 35:BF:189:ASP:HB2 | 35:BF:205:ASP:CG  | 2.40                     | 0.46              |
| 36:BG:5:ILE:HD13  | 36:BG:10:PHE:CE2  | 2.50                     | 0.46              |
| 36:BG:29:TYR:CD1  | 47:BR:36:PHE:CE1  | 3.03                     | 0.46              |
| 36:BG:29:TYR:CG   | 47:BR:36:PHE:HE1  | 2.32                     | 0.46              |
| 36:BG:35:GLU:CD   | 36:BG:95:THR:HG21 | 2.40                     | 0.46              |
| 37:BH:30:LYS:HA   | 37:BH:35:ARG:HG2  | 1.98                     | 0.46              |
| 37:BH:69:GLY:C    | 37:BH:70:ILE:HG12 | 2.40                     | 0.46              |
| 37:BH:165:MET:SD  | 37:BH:168:ARG:NH1 | 2.89                     | 0.46              |
| 37:BH:170:VAL:H   | 37:BH:176:LEU:CD2 | 2.16                     | 0.46              |
| 38:BI:48:ALA:HB3  | 38:BI:54:ALA:N    | 2.30                     | 0.46              |
| 39:BJ:3:ARG:O     | 39:BJ:93:SER:OG   | 2.32                     | 0.46              |
| 39:BJ:21:LEU:O    | 39:BJ:25:ILE:HG13 | 2.15                     | 0.46              |
| 39:BJ:41:GLU:N    | 39:BJ:63:TYR:CD1  | 2.81                     | 0.46              |
| 40:BK:38:LEU:CA   | 40:BK:41:ARG:HB2  | 2.45                     | 0.46              |
| 40:BK:69:VAL:HG13 | 40:BK:135:VAL:N   | 2.30                     | 0.46              |
| 40:BK:113:GLU:OE1 | 40:BK:119:ARG:N   | 2.47                     | 0.46              |
| 40:BK:143:ARG:HD2 | 40:BK:144:MET:N   | 2.18                     | 0.46              |
| 41:BL:39:LEU:HB3  | 41:BL:45:ILE:CG2  | 2.38                     | 0.46              |
| 44:BO:42:TRP:CE3  | 44:BO:42:TRP:C    | 2.93                     | 0.46              |
| 45:BP:69:TYR:HB3  | 45:BP:99:HIS:HB3  | 1.96                     | 0.46              |
| 46:BQ:27:LYS:HA   | 46:BQ:27:LYS:HD3  | 1.57                     | 0.46              |
| 48:BS:18:PHE:O    | 48:BS:20:GLY:N    | 2.48                     | 0.46              |
| 48:BS:42:HIS:CD2  | 48:BS:43:LEU:N    | 2.81                     | 0.46              |
| 49:BT:19:ILE:HD11 | 49:BT:39:TYR:HB3  | 1.97                     | 0.46              |
| 49:BT:26:ARG:CD   | 49:BT:31:LYS:HZ3  | 2.28                     | 0.46              |
| 50:BU:4:LYS:CG    | 50:BU:5:VAL:N     | 2.77                     | 0.46              |
| 50:BU:59:ILE:HG13 | 50:BU:60:ILE:N    | 2.29                     | 0.46              |
| 50:BU:97:SER:C    | 50:BU:98:LEU:HD22 | 2.39                     | 0.46              |
| 51:BV:43:PHE:CD2  | 51:BV:56:THR:HG22 | 2.50                     | 0.46              |
| 51:BV:53:ARG:C    | 51:BV:55:ARG:H    | 2.23                     | 0.46              |
| 51:BV:69:THR:HA   | 51:BV:72:ARG:CG   | 2.42                     | 0.46              |
| 52:BW:19:VAL:HG21 | 52:BW:44:MET:HE2  | 1.96                     | 0.46              |
| 53:BX:23:ARG:CD   | 53:BX:24:LEU:N    | 2.78                     | 0.46              |
| 54:BY:15:ARG:HB3  | 54:BY:17:THR:HG23 | 1.97                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:BZ:18:LYS:CA   | 60:BZ:701:GCP:PB   | 3.04                     | 0.46              |
| 57:BZ:96:LEU:HD22 | 57:BZ:126:VAL:HG21 | 1.97                     | 0.46              |
| 57:BZ:295:GLU:CG  | 57:BZ:296:ALA:HA   | 2.45                     | 0.46              |
| 57:BZ:325:PHE:HD2 | 57:BZ:330:GLN:CG   | 2.27                     | 0.46              |
| 57:BZ:488:LEU:CD1 | 57:BZ:526:ILE:N    | 2.77                     | 0.46              |
| 1:AA:196:A:H3'    | 1:AA:197:A:C5'     | 2.43                     | 0.46              |
| 1:AA:197:A:H62    | 1:AA:248:G:N2      | 2.00                     | 0.46              |
| 1:AA:224:G:N7     | 1:AA:420:C:H4'     | 2.30                     | 0.46              |
| 1:AA:227:A:N6     | 1:AA:2407:G:H8     | 2.13                     | 0.46              |
| 1:AA:273:G:C4     | 1:AA:273(A):G:N7   | 2.83                     | 0.46              |
| 1:AA:307:G:H2'    | 1:AA:309:G:H8      | 1.79                     | 0.46              |
| 1:AA:403:U:C4'    | 1:AA:404:C:OP1     | 2.62                     | 0.46              |
| 1:AA:417:C:O5'    | 1:AA:417:C:H6      | 1.98                     | 0.46              |
| 1:AA:427:U:O2'    | 1:AA:428:A:H1'     | 2.16                     | 0.46              |
| 1:AA:459:U:OP2    | 28:Ad:40:TRP:N     | 2.48                     | 0.46              |
| 1:AA:464:U:C4     | 1:AA:465:G:O6      | 2.68                     | 0.46              |
| 1:AA:470:A:O2'    | 1:AA:471:A:P       | 2.72                     | 0.46              |
| 1:AA:489:G:N2     | 1:AA:491:G:H1'     | 2.30                     | 0.46              |
| 1:AA:629:G:C5'    | 1:AA:649:G:N3      | 2.77                     | 0.46              |
| 1:AA:666:G:H3'    | 1:AA:666:G:P       | 2.55                     | 0.46              |
| 1:AA:702:G:C2     | 1:AA:731:C:C2      | 3.02                     | 0.46              |
| 1:AA:714:U:H6     | 1:AA:714:U:P       | 2.38                     | 0.46              |
| 1:AA:729:G:C6     | 1:AA:730:C:C2      | 3.03                     | 0.46              |
| 1:AA:918:A:H2     | 1:AA:919:G:C8      | 2.33                     | 0.46              |
| 1:AA:945:A:N3     | 1:AA:945:A:C2'     | 2.77                     | 0.46              |
| 1:AA:963:U:H2'    | 1:AA:964:C:O5'     | 2.15                     | 0.46              |
| 1:AA:988:A:C2     | 1:AA:989:G:C2      | 3.02                     | 0.46              |
| 1:AA:997:G:C2     | 1:AA:998:C:C5      | 3.03                     | 0.46              |
| 1:AA:1004:C:H1'   | 1:AA:1010:A:H2'    | 1.96                     | 0.46              |
| 1:AA:1022:G:C6    | 1:AA:1139:G:N1     | 2.82                     | 0.46              |
| 1:AA:1061:U:H6    | 1:AA:1061:U:P      | 2.38                     | 0.46              |
| 1:AA:1106:G:C2'   | 1:AA:1107:G:C8     | 2.86                     | 0.46              |
| 1:AA:1182:A:H2'   | 1:AA:1182:A:N3     | 2.30                     | 0.46              |
| 1:AA:1192:G:OP1   | 11:AM:18:ARG:NH1   | 2.48                     | 0.46              |
| 1:AA:1229:G:C2'   | 1:AA:1230:C:H5'    | 2.44                     | 0.46              |
| 1:AA:1238:G:N2    | 1:AA:1239:G:C4     | 2.83                     | 0.46              |
| 1:AA:1265:A:H1'   | 1:AA:1267:U:N3     | 2.29                     | 0.46              |
| 1:AA:1275:A:N3    | 13:AO:16:HIS:ND1   | 2.63                     | 0.46              |
| 1:AA:1338:G:N2    | 1:AA:1339:G:H1'    | 2.30                     | 0.46              |
| 1:AA:1475:G:C8    | 1:AA:1517:G:N2     | 2.83                     | 0.46              |
| 1:AA:1488:G:H3'   | 1:AA:1489:U:H5'    | 1.94                     | 0.46              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:1530:G:H2'  | 1:AA:1531:C:C5    | 2.48                     | 0.46              |
| 1:AA:1613:G:H1'  | 28:Ad:3:ARG:NE    | 2.30                     | 0.46              |
| 1:AA:1626:G:H5'  | 1:AA:1627:G:OP1   | 2.15                     | 0.46              |
| 1:AA:1666:G:H5'' | 1:AA:1667:G:OP2   | 2.15                     | 0.46              |
| 1:AA:1691:C:H2'  | 1:AA:1692:U:H5'   | 1.97                     | 0.46              |
| 1:AA:1847:A:N1   | 1:AA:1851:U:O4    | 2.47                     | 0.46              |
| 1:AA:1891:G:C5   | 1:AA:1892:C:C5    | 3.03                     | 0.46              |
| 1:AA:1905:C:N4   | 1:AA:1930:G:C2    | 2.82                     | 0.46              |
| 1:AA:1947:C:C2'  | 1:AA:1948:G:H5'   | 2.44                     | 0.46              |
| 1:AA:1969:A:C4'  | 1:AA:1970:A:H5'   | 2.37                     | 0.46              |
| 1:AA:2046:G:H2'  | 1:AA:2047:U:C6    | 2.51                     | 0.46              |
| 1:AA:2062:A:C2'  | 1:AA:2063:C:OP1   | 2.63                     | 0.46              |
| 1:AA:2092:U:OP1  | 1:AA:2199:A:O2'   | 2.30                     | 0.46              |
| 1:AA:2101:G:O2'  | 1:AA:2102:U:H5'   | 2.16                     | 0.46              |
| 1:AA:2152:G:C5'  | 3:AC:2:LYS:O      | 2.53                     | 0.46              |
| 1:AA:2208:U:HO2' | 1:AA:2217:G:N2    | 2.13                     | 0.46              |
| 1:AA:2244:U:O2'  | 1:AA:2245:U:O5'   | 2.33                     | 0.46              |
| 1:AA:2285:C:C4'  | 1:AA:2288:A:C6    | 2.98                     | 0.46              |
| 1:AA:2324:C:O2'  | 1:AA:2325:G:OP1   | 2.30                     | 0.46              |
| 1:AA:2345:G:N2   | 1:AA:2381:C:H2'   | 2.30                     | 0.46              |
| 1:AA:2367:G:O6   | 1:AA:2382:G:O6    | 2.33                     | 0.46              |
| 1:AA:2393:A:C5'  | 11:AM:56:SER:H    | 2.28                     | 0.46              |
| 1:AA:2401:U:H2'  | 1:AA:2402:C:O4'   | 2.15                     | 0.46              |
| 1:AA:2404:C:N3   | 1:AA:2414:G:C2    | 2.83                     | 0.46              |
| 1:AA:2462:U:O4   | 1:AA:2463:C:N4    | 2.48                     | 0.46              |
| 1:AA:2507:C:O4'  | 56:BD:75:C:O2     | 2.11                     | 0.46              |
| 1:AA:2535:G:H5'  | 1:AA:2536:G:OP2   | 2.15                     | 0.46              |
| 1:AA:2583:G:H5'' | 1:AA:2584:U:OP2   | 2.15                     | 0.46              |
| 1:AA:2585:U:O4   | 59:AA:3002:8AN:N7 | 2.49                     | 0.46              |
| 1:AA:2638:G:H2'  | 1:AA:2639:A:N7    | 2.31                     | 0.46              |
| 1:AA:2638:G:O2'  | 1:AA:2639:A:C8    | 2.65                     | 0.46              |
| 1:AA:2734:A:N6   | 1:AA:2735:G:C2    | 2.83                     | 0.46              |
| 1:AA:2745:C:N3   | 1:AA:2746:U:C5    | 2.83                     | 0.46              |
| 1:AA:2751:G:C1'  | 8:AH:6:ARG:HH22   | 2.28                     | 0.46              |
| 1:AA:2768:C:C2'  | 1:AA:2769:C:H5'   | 2.45                     | 0.46              |
| 1:AA:2901:C:C2   | 1:AA:2902:C:C5    | 3.00                     | 0.46              |
| 4:AD:54:ARG:HB2  | 4:AD:218:ARG:HD2  | 1.96                     | 0.46              |
| 4:AD:60:ARG:CA   | 4:AD:62:TYR:CZ    | 2.94                     | 0.46              |
| 4:AD:252:TRP:HE3 | 4:AD:252:TRP:HA   | 1.80                     | 0.46              |
| 5:AE:8:LYS:NZ    | 15:AQ:3:ARG:CG    | 2.77                     | 0.46              |
| 5:AE:66:HIS:CE1  | 5:AE:70:ALA:HA    | 2.50                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:AF:34:TRP:HB3   | 6:AF:38:ARG:NE    | 2.27                     | 0.46              |
| 6:AF:197:ASP:CA   | 6:AF:200:GLU:CG   | 2.71                     | 0.46              |
| 6:AF:200:GLU:O    | 6:AF:204:ASN:OD1  | 2.33                     | 0.46              |
| 7:AG:116:ASP:CB   | 7:AG:118:ARG:NH2  | 2.76                     | 0.46              |
| 7:AG:157:ILE:CG1  | 7:AG:158:ALA:H    | 2.28                     | 0.46              |
| 8:AH:137:ASP:HB3  | 8:AH:140:LYS:CE   | 2.46                     | 0.46              |
| 8:AH:155:SER:HG   | 8:AH:163:TYR:HH   | 1.58                     | 0.46              |
| 9:AK:35:ARG:NH1   | 9:AK:48:MET:CE    | 2.78                     | 0.46              |
| 9:AK:38:HIS:C     | 9:AK:48:MET:HE2   | 2.38                     | 0.46              |
| 10:AL:18:LYS:CE   | 10:AL:44:LYS:CD   | 2.82                     | 0.46              |
| 10:AL:106:LEU:CG  | 10:AL:107:ARG:N   | 2.78                     | 0.46              |
| 12:AN:99:PRO:CD   | 12:AN:101:ARG:NE  | 2.78                     | 0.46              |
| 13:AO:28:LEU:C    | 13:AO:28:LEU:CD1  | 2.88                     | 0.46              |
| 13:AO:51:LEU:HD21 | 13:AO:70:LEU:CD2  | 2.39                     | 0.46              |
| 15:AQ:59:THR:C    | 15:AQ:61:PHE:CE1  | 2.93                     | 0.46              |
| 16:AR:8:VAL:N     | 16:AR:11:ARG:NH2  | 2.62                     | 0.46              |
| 16:AR:61:TRP:O    | 16:AR:65:ILE:CG1  | 2.62                     | 0.46              |
| 16:AR:96:ALA:O    | 16:AR:99:ALA:N    | 2.48                     | 0.46              |
| 16:AR:98:LEU:HD13 | 16:AR:101:ARG:HD2 | 1.97                     | 0.46              |
| 17:AS:6:LYS:HZ3   | 17:AS:10:LYS:CB   | 2.20                     | 0.46              |
| 18:AT:18:ARG:HH21 | 18:AT:18:ARG:CG   | 2.28                     | 0.46              |
| 18:AT:58:ALA:CB   | 18:AT:69:LEU:HD21 | 2.45                     | 0.46              |
| 20:AV:21:LYS:HD2  | 20:AV:23:ARG:NH2  | 2.30                     | 0.46              |
| 20:AV:27:VAL:O    | 20:AV:35:TYR:HA   | 2.15                     | 0.46              |
| 20:AV:32:PRO:CB   | 20:AV:34:LYS:HE3  | 2.44                     | 0.46              |
| 21:AW:50:GLN:C    | 21:AW:52:SER:N    | 2.73                     | 0.46              |
| 21:AW:161:VAL:O   | 21:AW:162:GLU:CB  | 2.56                     | 0.46              |
| 22:AX:40:GLN:O    | 22:AX:57:PHE:CB   | 2.62                     | 0.46              |
| 23:AY:29:GLU:O    | 23:AY:33:GLN:OE1  | 2.33                     | 0.46              |
| 23:AY:45:ILE:CD1  | 23:AY:46:ARG:N    | 2.78                     | 0.46              |
| 23:AY:45:ILE:HD12 | 23:AY:46:ARG:N    | 2.30                     | 0.46              |
| 24:AZ:11:SER:N    | 24:AZ:12:PRO:CD   | 2.76                     | 0.46              |
| 25:Aa:58:ARG:H    | 25:Aa:61:ARG:HH12 | 1.63                     | 0.46              |
| 25:Aa:62:ARG:O    | 25:Aa:63:TYR:C    | 2.54                     | 0.46              |
| 27:Ac:7:ILE:CG2   | 27:Ac:8:LYS:H     | 2.28                     | 0.46              |
| 27:Ac:38:LYS:HB3  | 27:Ac:39:TYR:H    | 1.40                     | 0.46              |
| 27:Ac:51:GLU:O    | 27:Ac:52:VAL:C    | 2.59                     | 0.46              |
| 29:Ae:9:GLY:C     | 29:Ae:14:VAL:HG11 | 2.40                     | 0.46              |
| 30:Af:19:ARG:HG3  | 30:Af:22:ARG:HB2  | 1.96                     | 0.46              |
| 34:BA:14:U:O2     | 34:BA:17:U:H5     | 1.98                     | 0.46              |
| 34:BA:47:C:O2'    | 34:BA:48:C:O5'    | 2.33                     | 0.46              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BA:55:A:HO2'    | 34:BA:56:U:H5'    | 1.79                     | 0.46              |
| 34:BA:88:C:O2'     | 34:BA:89:U:P      | 2.74                     | 0.46              |
| 34:BA:101:A:C5     | 34:BA:102:G:N7    | 2.84                     | 0.46              |
| 34:BA:185:A:C6     | 34:BA:186:C:N4    | 2.84                     | 0.46              |
| 34:BA:186(C):G:C6  | 34:BA:191(E):G:C6 | 3.03                     | 0.46              |
| 34:BA:198:G:C2     | 34:BA:199:G:C8    | 3.03                     | 0.46              |
| 34:BA:303:A:O2'    | 34:BA:304:U:H5'   | 2.15                     | 0.46              |
| 34:BA:355:C:H2'    | 34:BA:356:A:C8    | 2.50                     | 0.46              |
| 34:BA:377:G:OP1    | 49:BT:3:LYS:HD2   | 2.15                     | 0.46              |
| 34:BA:450:G:H5'    | 49:BT:43:LYS:NZ   | 2.30                     | 0.46              |
| 34:BA:501:C:O2'    | 34:BA:549:C:O2    | 2.26                     | 0.46              |
| 34:BA:518:C:C5     | 34:BA:530:G:N7    | 2.83                     | 0.46              |
| 34:BA:545:C:O2'    | 34:BA:546:G:C5'   | 2.55                     | 0.46              |
| 34:BA:578:C:C2'    | 34:BA:728:A:N3    | 2.78                     | 0.46              |
| 34:BA:606:G:H22    | 34:BA:631:G:H2'   | 1.79                     | 0.46              |
| 34:BA:622:A:N3     | 34:BA:623:C:O4'   | 2.48                     | 0.46              |
| 34:BA:625:G:H2'    | 34:BA:626:U:C6    | 2.50                     | 0.46              |
| 34:BA:629:G:N3     | 34:BA:630:G:C8    | 2.84                     | 0.46              |
| 34:BA:737:A:H2'    | 34:BA:738:C:H6    | 1.80                     | 0.46              |
| 34:BA:873:A:O4'    | 34:BA:873:A:P     | 2.73                     | 0.46              |
| 34:BA:885:G:C2     | 34:BA:913:A:C2    | 3.02                     | 0.46              |
| 34:BA:931:C:N4     | 34:BA:1387:G:O6   | 2.48                     | 0.46              |
| 34:BA:942:G:N2     | 42:BM:124:GLN:CD  | 2.74                     | 0.46              |
| 34:BA:993:G:O6     | 34:BA:1046:A:N6   | 2.48                     | 0.46              |
| 34:BA:1115:C:N1    | 34:BA:1186:G:N2   | 2.61                     | 0.46              |
| 34:BA:1116:C:N3    | 34:BA:1117:G:N7   | 2.63                     | 0.46              |
| 34:BA:1182:G:H4'   | 34:BA:1183:A:C5'  | 2.45                     | 0.46              |
| 34:BA:1267:C:N4    | 34:BA:1268:A:N1   | 2.62                     | 0.46              |
| 34:BA:1276:G:H1'   | 34:BA:1282:C:O2'  | 2.15                     | 0.46              |
| 34:BA:1284:C:N3    | 34:BA:1285:A:C6   | 2.83                     | 0.46              |
| 34:BA:1319:A:H61   | 34:BA:1361:G:H1'  | 1.80                     | 0.46              |
| 34:BA:1351:U:C2    | 34:BA:1352:C:C5   | 3.03                     | 0.46              |
| 35:BF:186:ALA:O    | 35:BF:201:ILE:CD1 | 2.64                     | 0.46              |
| 36:BG:29:TYR:O     | 36:BG:29:TYR:CD2  | 2.60                     | 0.46              |
| 36:BG:31:HIS:HA    | 36:BG:34:LEU:HB3  | 1.96                     | 0.46              |
| 37:BH:38:TYR:CZ    | 37:BH:45:GLN:NE2  | 2.83                     | 0.46              |
| 37:BH:79:PHE:CD2   | 37:BH:80:GLU:N    | 2.83                     | 0.46              |
| 37:BH:101:LEU:O    | 37:BH:104:VAL:CG2 | 2.40                     | 0.46              |
| 37:BH:110:PHE:HZ   | 37:BH:147:ALA:HB1 | 1.80                     | 0.46              |
| 37:BH:121:VAL:HG11 | 37:BH:136:PRO:CA  | 2.45                     | 0.46              |
| 37:BH:123:HIS:N    | 37:BH:123:HIS:CD2 | 2.81                     | 0.46              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 38:BI:9:LYS:HB3    | 38:BI:108:ALA:HB1  | 1.97                     | 0.46              |
| 38:BI:41:VAL:O     | 38:BI:67:VAL:O     | 2.33                     | 0.46              |
| 38:BI:61:TYR:CA    | 38:BI:64:ARG:HG2   | 2.45                     | 0.46              |
| 39:BJ:7:ASN:HD21   | 39:BJ:62:TRP:CD1   | 2.31                     | 0.46              |
| 39:BJ:46:ARG:HG2   | 39:BJ:47:ARG:N     | 2.29                     | 0.46              |
| 40:BK:76:ARG:HH11  | 40:BK:89:MET:CG    | 2.28                     | 0.46              |
| 41:BL:54:ASP:O     | 41:BL:56:LYS:CD    | 2.62                     | 0.46              |
| 41:BL:104:ARG:CD   | 41:BL:107:LEU:HD11 | 2.45                     | 0.46              |
| 42:BM:49:PRO:HB2   | 42:BM:82:ALA:CA    | 2.46                     | 0.46              |
| 42:BM:97:LYS:HD2   | 42:BM:102:LEU:HD22 | 1.98                     | 0.46              |
| 42:BM:121:ARG:HH11 | 42:BM:121:ARG:CG   | 2.26                     | 0.46              |
| 43:BN:51:ARG:HB2   | 43:BN:59:SER:C     | 2.39                     | 0.46              |
| 44:BO:73:MET:C     | 44:BO:75:TYR:N     | 2.73                     | 0.46              |
| 44:BO:101:SER:O    | 44:BO:102:GLY:C    | 2.57                     | 0.46              |
| 45:BP:47:LYS:H     | 45:BP:48:PRO:HD3   | 1.77                     | 0.46              |
| 46:BQ:22:ILE:HG22  | 46:BQ:23:TYR:N     | 2.30                     | 0.46              |
| 46:BQ:25:ILE:HA    | 46:BQ:29:ARG:CG    | 2.45                     | 0.46              |
| 47:BR:45:ARG:HG3   | 47:BR:46:GLU:N     | 2.31                     | 0.46              |
| 48:BS:36:ILE:CG1   | 48:BS:59:MET:HE1   | 2.42                     | 0.46              |
| 48:BS:75:PRO:HA    | 48:BS:78:TYR:CD1   | 2.49                     | 0.46              |
| 48:BS:79:ARG:O     | 48:BS:80:ALA:C     | 2.57                     | 0.46              |
| 50:BU:35:VAL:C     | 50:BU:36:ILE:HD13  | 2.40                     | 0.46              |
| 50:BU:43:LEU:HD11  | 50:BU:69:LYS:CB    | 2.45                     | 0.46              |
| 51:BV:23:LYS:HD2   | 51:BV:57:GLY:O     | 2.15                     | 0.46              |
| 51:BV:33:ASP:O     | 51:BV:69:THR:HG23  | 2.15                     | 0.46              |
| 51:BV:41:LYS:C     | 51:BV:43:PHE:H     | 2.22                     | 0.46              |
| 51:BV:66:LEU:CD1   | 51:BV:67:ALA:H     | 2.22                     | 0.46              |
| 53:BX:25:ARG:HH11  | 53:BX:25:ARG:CG    | 2.26                     | 0.46              |
| 53:BX:51:GLU:HB3   | 53:BX:54:LYS:HZ1   | 1.76                     | 0.46              |
| 56:BE:12:U:H2'     | 56:BE:13:C:O4'     | 2.15                     | 0.46              |
| 56:BE:37:A:H3'     | 56:BE:38:A:H8      | 1.80                     | 0.46              |
| 57:BZ:67:ASP:HA    | 57:BZ:191:VAL:HG13 | 1.92                     | 0.46              |
| 57:BZ:258:LEU:HB3  | 57:BZ:259:GLY:HA3  | 1.96                     | 0.46              |
| 57:BZ:310:PHE:C    | 57:BZ:384:ARG:N    | 2.69                     | 0.46              |
| 57:BZ:373:MET:HE1  | 57:BZ:380:LEU:CD2  | 2.42                     | 0.46              |
| 57:BZ:502:PHE:HE2  | 57:BZ:555:VAL:C    | 2.11                     | 0.46              |
| 57:BZ:509:LYS:HE2  | 57:BZ:561:ILE:HD13 | 1.90                     | 0.46              |
| 1:AA:37:C:HO2'     | 6:AF:50:SER:CB     | 2.27                     | 0.46              |
| 1:AA:87:C:H5''     | 1:AA:88:G:O5'      | 2.15                     | 0.46              |
| 1:AA:191:A:C2      | 1:AA:799:G:N2      | 2.83                     | 0.46              |
| 1:AA:218:A:N6      | 1:AA:219:G:N2      | 2.64                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:270(P):C:O5' | 1:AA:270(P):C:H6  | 1.99                     | 0.46              |
| 1:AA:273:G:C5     | 1:AA:273(A):G:N7  | 2.83                     | 0.46              |
| 1:AA:273(E):U:N1  | 1:AA:363(B):G:N2  | 2.63                     | 0.46              |
| 1:AA:380:U:H4'    | 25:Aa:16:CYS:HB3  | 1.97                     | 0.46              |
| 1:AA:416:C:C4     | 1:AA:417:C:C4     | 3.03                     | 0.46              |
| 1:AA:449:A:H4'    | 6:AF:52:LYS:HZ2   | 1.80                     | 0.46              |
| 1:AA:487:C:H3'    | 1:AA:487:C:H6     | 1.80                     | 0.46              |
| 1:AA:511:U:OP2    | 1:AA:512:G:C5     | 2.68                     | 0.46              |
| 1:AA:543:C:H2'    | 1:AA:544:C:C6     | 2.49                     | 0.46              |
| 1:AA:587:C:HO2'   | 1:AA:588:U:P      | 2.39                     | 0.46              |
| 1:AA:600:G:H22    | 1:AA:604:G:H4'    | 1.76                     | 0.46              |
| 1:AA:658:C:H2'    | 1:AA:659:C:C6     | 2.51                     | 0.46              |
| 1:AA:705:A:H2     | 1:AA:706:A:C1'    | 2.27                     | 0.46              |
| 1:AA:775:G:C1'    | 1:AA:777:A:C2     | 2.98                     | 0.46              |
| 1:AA:814:C:C2'    | 1:AA:1224:G:H22   | 2.29                     | 0.46              |
| 1:AA:836:G:C5     | 1:AA:837:C:C4     | 3.03                     | 0.46              |
| 1:AA:885:C:H42    | 1:AA:890:A:C5'    | 2.25                     | 0.46              |
| 1:AA:930:U:H6     | 1:AA:930:U:H3'    | 1.80                     | 0.46              |
| 1:AA:1186:G:H2'   | 1:AA:1187:G:O4'   | 2.14                     | 0.46              |
| 1:AA:1203:G:C2    | 1:AA:1206:G:N1    | 2.84                     | 0.46              |
| 1:AA:1308:A:N6    | 1:AA:1606:G:H1'   | 2.30                     | 0.46              |
| 1:AA:1343:G:O6    | 1:AA:1404:C:C4    | 2.68                     | 0.46              |
| 1:AA:1432:C:N3    | 1:AA:1433:U:O2    | 2.48                     | 0.46              |
| 1:AA:1433:U:C6    | 1:AA:1433:U:C3'   | 2.98                     | 0.46              |
| 1:AA:1438:U:H6    | 1:AA:1438:U:OP2   | 1.98                     | 0.46              |
| 1:AA:1469:A:H3'   | 1:AA:1469:A:C8    | 2.49                     | 0.46              |
| 1:AA:1511:A:C3'   | 1:AA:1511:A:C8    | 2.98                     | 0.46              |
| 1:AA:1559:G:C2    | 1:AA:1560:G:O5'   | 2.69                     | 0.46              |
| 1:AA:1567:A:N1    | 4:AD:85:ASP:HA    | 2.30                     | 0.46              |
| 1:AA:1596:A:C6    | 1:AA:1597:A:C6    | 3.03                     | 0.46              |
| 1:AA:1743:G:C5    | 1:AA:1746:G:C8    | 3.04                     | 0.46              |
| 1:AA:1778:U:H2'   | 1:AA:1779:U:C5    | 2.48                     | 0.46              |
| 1:AA:1935:G:H4'   | 1:AA:1937:A:C2    | 2.51                     | 0.46              |
| 1:AA:2040:C:N3    | 1:AA:2041:U:C4    | 2.83                     | 0.46              |
| 1:AA:2128:C:N4    | 1:AA:2129:C:C4    | 2.83                     | 0.46              |
| 1:AA:2169:A:N3    | 55:BC:56:C:C6     | 2.83                     | 0.46              |
| 1:AA:2225:A:C5'   | 1:AA:2226:C:O4'   | 2.52                     | 0.46              |
| 1:AA:2304:G:P     | 7:AG:132:ASN:HD21 | 2.38                     | 0.46              |
| 1:AA:2327:A:C4    | 1:AA:2328:A:C8    | 3.03                     | 0.46              |
| 1:AA:2366:A:H3'   | 1:AA:2367:G:H8    | 1.80                     | 0.46              |
| 1:AA:2377:A:C4    | 1:AA:2378:A:N7    | 2.83                     | 0.46              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:2443:C:C2   | 1:AA:2444:G:N7    | 2.83                     | 0.46              |
| 1:AA:2516:G:C6   | 1:AA:2517:C:N4    | 2.84                     | 0.46              |
| 1:AA:2519:U:C2   | 1:AA:2542:A:N1    | 2.83                     | 0.46              |
| 1:AA:2538:C:C2   | 1:AA:2539:C:H5    | 2.33                     | 0.46              |
| 1:AA:2543:G:C2   | 1:AA:2765:A:N1    | 2.83                     | 0.46              |
| 1:AA:2552:U:H3'  | 1:AA:2554:U:OP2   | 2.16                     | 0.46              |
| 1:AA:2572:A:H3'  | 5:AE:144:ARG:HH21 | 1.80                     | 0.46              |
| 1:AA:2589:A:OP1  | 4:AD:226:MET:HG3  | 2.16                     | 0.46              |
| 1:AA:2619:C:H5'' | 5:AE:152:LYS:CA   | 2.45                     | 0.46              |
| 1:AA:2673:G:N3   | 1:AA:2674:G:N7    | 2.63                     | 0.46              |
| 1:AA:2754:U:H2'  | 1:AA:2755:C:C5'   | 2.35                     | 0.46              |
| 1:AA:2868:A:H2'  | 1:AA:2869:G:O4'   | 2.14                     | 0.46              |
| 2:AB:7:G:C5'     | 14:AP:29:PHE:CE2  | 2.99                     | 0.46              |
| 2:AB:55:U:C2'    | 2:AB:56:G:C5'     | 2.94                     | 0.46              |
| 2:AB:113:C:H2'   | 2:AB:114:G:C8     | 2.50                     | 0.46              |
| 3:AC:44:HIS:CB   | 3:AC:213:TYR:HB2  | 2.46                     | 0.46              |
| 3:AC:49:ILE:CG1  | 3:AC:51:PRO:HD3   | 2.45                     | 0.46              |
| 3:AC:54:SER:CB   | 3:AC:57:ASN:HD22  | 2.28                     | 0.46              |
| 3:AC:61:THR:HA   | 3:AC:163:PHE:CE2  | 2.50                     | 0.46              |
| 3:AC:161:ILE:O   | 3:AC:161:ILE:CG1  | 2.61                     | 0.46              |
| 4:AD:118:VAL:O   | 4:AD:129:ASN:CB   | 2.63                     | 0.46              |
| 4:AD:246:PRO:CG  | 4:AD:252:TRP:CE3  | 2.86                     | 0.46              |
| 4:AD:256:GLY:O   | 4:AD:257:LEU:CG   | 2.64                     | 0.46              |
| 4:AD:268:ARG:HG2 | 4:AD:269:PHE:N    | 2.31                     | 0.46              |
| 5:AE:4:ILE:O     | 5:AE:27:LEU:HD13  | 2.14                     | 0.46              |
| 5:AE:36:ARG:CD   | 5:AE:41:LYS:NZ    | 2.69                     | 0.46              |
| 5:AE:97:LYS:HG3  | 5:AE:100:GLU:CG   | 2.45                     | 0.46              |
| 5:AE:120:TRP:CD1 | 5:AE:121:ASN:O    | 2.68                     | 0.46              |
| 6:AF:97:TYR:N    | 6:AF:97:TYR:CD2   | 2.78                     | 0.46              |
| 6:AF:124:LEU:CD2 | 6:AF:197:ASP:OD2  | 2.63                     | 0.46              |
| 6:AF:145:GLU:C   | 6:AF:147:GLY:N    | 2.73                     | 0.46              |
| 6:AF:146:ALA:CB  | 6:AF:148:LEU:HD23 | 2.45                     | 0.46              |
| 7:AG:77:ILE:C    | 7:AG:83:ARG:HE    | 2.23                     | 0.46              |
| 8:AH:151:ILE:O   | 8:AH:152:ARG:O    | 2.34                     | 0.46              |
| 9:AK:42:TRP:HE1  | 16:AR:64:ARG:CG   | 2.27                     | 0.46              |
| 9:AK:53:VAL:HG13 | 9:AK:121:LYS:O    | 2.15                     | 0.46              |
| 10:AL:21:CYS:CA  | 10:AL:40:VAL:O    | 2.62                     | 0.46              |
| 10:AL:31:LYS:O   | 10:AL:32:TYR:CG   | 2.68                     | 0.46              |
| 11:AM:70:GLN:O   | 11:AM:71:VAL:CG2  | 2.63                     | 0.46              |
| 12:AN:68:ILE:CD1 | 12:AN:97:VAL:HG13 | 2.45                     | 0.46              |
| 13:AO:87:TYR:O   | 13:AO:89:ASP:OD1  | 2.33                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:AQ:28:VAL:HG23 | 15:AQ:94:ALA:N    | 2.31                     | 0.46              |
| 15:AQ:30:VAL:HG11 | 15:AQ:52:ILE:HD11 | 1.97                     | 0.46              |
| 15:AQ:76:PHE:CE2  | 15:AQ:78:LEU:HD12 | 2.49                     | 0.46              |
| 16:AR:54:LYS:HA   | 16:AR:54:LYS:CE   | 2.45                     | 0.46              |
| 16:AR:66:ASN:HA   | 16:AR:76:TYR:CE1  | 2.51                     | 0.46              |
| 20:AV:29:GLU:CD   | 20:AV:32:PRO:HG2  | 2.37                     | 0.46              |
| 21:AW:158:PRO:CB  | 21:AW:159:PRO:CD  | 2.89                     | 0.46              |
| 23:AY:29:GLU:C    | 23:AY:33:GLN:OE1  | 2.58                     | 0.46              |
| 24:AZ:23:LEU:CA   | 24:AZ:28:LEU:CD1  | 2.90                     | 0.46              |
| 27:Ac:12:GLU:C    | 27:Ac:13:CYS:SG   | 2.97                     | 0.46              |
| 28:Ad:1:MET:O     | 28:Ad:2:LYS:C     | 2.58                     | 0.46              |
| 28:Ad:22:MET:O    | 28:Ad:28:ARG:CG   | 2.60                     | 0.46              |
| 28:Ad:31:LEU:C    | 28:Ad:35:ARG:CD   | 2.87                     | 0.46              |
| 28:Ad:48:LYS:CG   | 28:Ad:49:ARG:N    | 2.45                     | 0.46              |
| 31:AI:49:ALA:C    | 31:AI:51:LEU:N    | 2.73                     | 0.46              |
| 32:AJ:51:ALA:CA   | 32:AJ:76:TYR:CD2  | 2.76                     | 0.46              |
| 32:AJ:95:LYS:CE   | 32:AJ:95:LYS:CA   | 2.86                     | 0.46              |
| 34:BA:20:U:C6     | 34:BA:916:G:N2    | 2.83                     | 0.46              |
| 34:BA:59:A:H61    | 34:BA:331:G:H1'   | 1.80                     | 0.46              |
| 34:BA:101:A:C2'   | 34:BA:102:G:H8    | 2.16                     | 0.46              |
| 34:BA:102:G:C5    | 34:BA:103:C:C5    | 3.02                     | 0.46              |
| 34:BA:104:G:N1    | 34:BA:105:G:C5    | 2.83                     | 0.46              |
| 34:BA:196:A:H1'   | 34:BA:222:U:O4'   | 2.15                     | 0.46              |
| 34:BA:209:U:H5''  | 34:BA:210:U:OP1   | 2.15                     | 0.46              |
| 34:BA:438:G:C5'   | 37:BH:123:HIS:HB3 | 2.45                     | 0.46              |
| 34:BA:541:G:OP2   | 34:BA:541:G:H8    | 1.97                     | 0.46              |
| 34:BA:624:C:H4'   | 49:BT:10:GLY:C    | 2.41                     | 0.46              |
| 34:BA:648:A:C2    | 34:BA:649:G:C8    | 3.03                     | 0.46              |
| 34:BA:656:C:H2'   | 34:BA:657:G:C5'   | 2.44                     | 0.46              |
| 34:BA:711:G:O2'   | 34:BA:712:A:C5'   | 2.60                     | 0.46              |
| 34:BA:812:C:C2'   | 34:BA:813:U:OP2   | 2.62                     | 0.46              |
| 34:BA:817:C:H1'   | 34:BA:819:A:C5'   | 2.46                     | 0.46              |
| 34:BA:867:G:N3    | 34:BA:868:C:C5    | 2.83                     | 0.46              |
| 34:BA:877:C:H2'   | 34:BA:878:G:C8    | 2.50                     | 0.46              |
| 34:BA:888:G:H3'   | 34:BA:889:A:C8    | 2.50                     | 0.46              |
| 34:BA:941:G:H2'   | 34:BA:942:G:O5'   | 2.15                     | 0.46              |
| 34:BA:954:G:H2'   | 34:BA:955:U:H6    | 1.80                     | 0.46              |
| 34:BA:1015:A:N7   | 34:BA:1016:A:N6   | 2.63                     | 0.46              |
| 34:BA:1053:G:H2'  | 34:BA:1199:U:H5   | 1.80                     | 0.46              |
| 34:BA:1055:A:H2'  | 34:BA:1056:U:O5'  | 2.16                     | 0.46              |
| 34:BA:1062:U:N3   | 34:BA:1063:C:N4   | 2.63                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1095:U:P    | 34:BA:1108:G:H22   | 2.38                     | 0.46              |
| 34:BA:1095:U:N3   | 34:BA:1096:C:C5    | 2.83                     | 0.46              |
| 34:BA:1120:G:N1   | 34:BA:1154:G:C2    | 2.83                     | 0.46              |
| 34:BA:1254:C:OP1  | 43:BN:45:ARG:HD2   | 2.15                     | 0.46              |
| 34:BA:1312:G:N2   | 34:BA:1326:C:C6    | 2.82                     | 0.46              |
| 34:BA:1354:C:O5'  | 34:BA:1354:C:H6    | 1.98                     | 0.46              |
| 34:BA:1411:C:H2'  | 34:BA:1412:C:C6    | 2.50                     | 0.46              |
| 34:BA:1426:C:O2'  | 34:BA:1427:U:H5'   | 2.15                     | 0.46              |
| 34:BA:1448:C:H2'  | 34:BA:1449:C:O5'   | 2.16                     | 0.46              |
| 35:BF:28:PHE:HE1  | 35:BF:31:TYR:O     | 1.99                     | 0.46              |
| 35:BF:157:ARG:HG2 | 35:BF:158:LEU:HD21 | 1.98                     | 0.46              |
| 36:BG:190:ARG:CA  | 36:BG:190:ARG:NE   | 2.73                     | 0.46              |
| 37:BH:3:ARG:NH1   | 37:BH:118:ARG:CZ   | 2.78                     | 0.46              |
| 37:BH:29:PRO:O    | 37:BH:30:LYS:CB    | 2.64                     | 0.46              |
| 37:BH:146:ILE:CD1 | 37:BH:146:ILE:C    | 2.88                     | 0.46              |
| 37:BH:191:ARG:HB3 | 37:BH:192:GLU:OE1  | 2.16                     | 0.46              |
| 38:BI:33:VAL:C    | 38:BI:34:VAL:CG2   | 2.87                     | 0.46              |
| 39:BJ:1:MET:CA    | 39:BJ:67:MET:O     | 2.64                     | 0.46              |
| 40:BK:50:ILE:HD13 | 40:BK:58:PRO:CA    | 2.45                     | 0.46              |
| 40:BK:139:GLU:CD  | 40:BK:139:GLU:N    | 2.72                     | 0.46              |
| 41:BL:39:LEU:C    | 41:BL:39:LEU:CD1   | 2.88                     | 0.46              |
| 41:BL:87:SER:HB2  | 41:BL:91:ARG:O     | 2.14                     | 0.46              |
| 41:BL:114:THR:HA  | 41:BL:130:GLY:O    | 2.15                     | 0.46              |
| 41:BL:126:LYS:NZ  | 41:BL:127:LEU:CB   | 2.78                     | 0.46              |
| 42:BM:7:THR:HG21  | 42:BM:9:ARG:NH1    | 2.30                     | 0.46              |
| 42:BM:108:VAL:O   | 42:BM:108:VAL:HG23 | 2.15                     | 0.46              |
| 42:BM:127:LYS:CG  | 56:BE:31:A:P       | 3.03                     | 0.46              |
| 43:BN:80:LYS:HD3  | 43:BN:80:LYS:O     | 2.15                     | 0.46              |
| 45:BP:7:ILE:O     | 45:BP:8:ASN:C      | 2.58                     | 0.46              |
| 46:BQ:13:LYS:HD3  | 46:BQ:21:TYR:OH    | 2.16                     | 0.46              |
| 46:BQ:19:LEU:C    | 46:BQ:21:TYR:N     | 2.73                     | 0.46              |
| 46:BQ:65:LYS:HG3  | 46:BQ:69:GLU:CB    | 2.46                     | 0.46              |
| 49:BT:53:VAL:HG23 | 49:BT:54:GLU:H     | 1.78                     | 0.46              |
| 51:BV:25:THR:HG22 | 51:BV:42:ARG:NH2   | 2.31                     | 0.46              |
| 52:BW:9:VAL:CG1   | 52:BW:41:VAL:CB    | 2.93                     | 0.46              |
| 52:BW:25:LYS:C    | 52:BW:25:LYS:CD    | 2.82                     | 0.46              |
| 52:BW:30:LEU:HD12 | 52:BW:59:PRO:CA    | 2.45                     | 0.46              |
| 53:BX:43:LEU:HD23 | 53:BX:43:LEU:HA    | 1.73                     | 0.46              |
| 54:BY:3:LYS:O     | 54:BY:14:TRP:HE3   | 1.98                     | 0.46              |
| 55:BC:8:U:O5'     | 55:BC:8:U:H6       | 1.98                     | 0.46              |
| 55:BC:52:G:H2'    | 55:BC:53:G:C8      | 2.49                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 56:BD:5:G:N3      | 56:BD:69:G:N9      | 2.62                     | 0.46              |
| 56:BD:52:G:H2'    | 56:BD:52:G:N3      | 2.30                     | 0.46              |
| 57:BZ:40:GLU:N    | 57:BZ:41:ARG:HB2   | 2.29                     | 0.46              |
| 57:BZ:57:LEU:HD23 | 57:BZ:71:ASN:ND2   | 2.29                     | 0.46              |
| 57:BZ:220:VAL:C   | 57:BZ:221:ILE:HD12 | 2.40                     | 0.46              |
| 57:BZ:250:LYS:C   | 57:BZ:274:VAL:HG23 | 2.41                     | 0.46              |
| 1:AA:52:A:C4      | 1:AA:53:A:N7       | 2.83                     | 0.46              |
| 1:AA:200:U:C3'    | 1:AA:201:C:H5'     | 2.46                     | 0.46              |
| 1:AA:204:A:O2'    | 1:AA:205:G:O5'     | 2.29                     | 0.46              |
| 1:AA:233:A:C5     | 1:AA:234:C:C5      | 3.03                     | 0.46              |
| 1:AA:270(M):U:C3' | 1:AA:270(N):G:H4'  | 2.44                     | 0.46              |
| 1:AA:297:C:H5''   | 20:AV:83:THR:CG2   | 2.46                     | 0.46              |
| 1:AA:442:G:O4'    | 6:AF:46:ARG:HD2    | 2.16                     | 0.46              |
| 1:AA:582:G:C6     | 1:AA:583:G:O6      | 2.69                     | 0.46              |
| 1:AA:586:A:C2     | 1:AA:810:U:O4'     | 2.69                     | 0.46              |
| 1:AA:624:C:C5'    | 1:AA:624:C:H6      | 2.29                     | 0.46              |
| 1:AA:727:A:O2'    | 1:AA:728:G:OP1     | 2.24                     | 0.46              |
| 1:AA:848:G:C8     | 1:AA:848:G:H5''    | 2.50                     | 0.46              |
| 1:AA:858:U:O3'    | 1:AA:859:G:O4'     | 2.34                     | 0.46              |
| 1:AA:873:G:O2'    | 12:AN:65:PHE:CZ    | 2.59                     | 0.46              |
| 1:AA:1178:C:N3    | 1:AA:1179:C:N4     | 2.63                     | 0.46              |
| 1:AA:1232:G:C2    | 1:AA:1233:C:C6     | 3.04                     | 0.46              |
| 1:AA:1339:G:O4'   | 1:AA:1393:A:C2     | 2.68                     | 0.46              |
| 1:AA:1343:G:C2    | 1:AA:1405:U:C2     | 3.03                     | 0.46              |
| 1:AA:1373:A:N7    | 1:AA:1374:G:C5     | 2.84                     | 0.46              |
| 1:AA:1381:G:C6    | 1:AA:1382:G:C6     | 3.04                     | 0.46              |
| 1:AA:1405:U:C2'   | 1:AA:1406:U:C5     | 2.87                     | 0.46              |
| 1:AA:1405:U:C2    | 1:AA:1406:U:C5     | 3.04                     | 0.46              |
| 1:AA:1496:A:C4    | 1:AA:1577:C:O2'    | 2.69                     | 0.46              |
| 1:AA:1518:C:N3    | 1:AA:1519:G:H1'    | 2.30                     | 0.46              |
| 1:AA:1527:G:C2'   | 1:AA:1528:A:O4'    | 2.60                     | 0.46              |
| 1:AA:1657:C:C2'   | 1:AA:1658:C:O4'    | 2.62                     | 0.46              |
| 1:AA:1672:C:C2'   | 1:AA:1673:U:OP1    | 2.64                     | 0.46              |
| 1:AA:1892:C:N4    | 1:AA:1893:C:H41    | 2.13                     | 0.46              |
| 1:AA:1949:G:C8    | 1:AA:1950:G:C8     | 3.03                     | 0.46              |
| 1:AA:1990:C:C4    | 1:AA:1991:U:C4     | 3.03                     | 0.46              |
| 1:AA:1995:U:O2'   | 10:AL:31:LYS:HE2   | 2.15                     | 0.46              |
| 1:AA:2067:G:C2    | 1:AA:2069:G:N9     | 2.83                     | 0.46              |
| 1:AA:2088:G:N1    | 1:AA:2089:U:C2     | 2.83                     | 0.46              |
| 1:AA:2097:C:H2'   | 1:AA:2098:U:C4'    | 2.44                     | 0.46              |
| 1:AA:2134:A:C2    | 1:AA:2134:A:OP1    | 2.68                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2136:C:N3    | 1:AA:2137:C:C5    | 2.84                     | 0.46              |
| 1:AA:2152:G:P     | 3:AC:2:LYS:O      | 2.73                     | 0.46              |
| 1:AA:2157:G:OP2   | 1:AA:2157:G:C2    | 2.69                     | 0.46              |
| 1:AA:2176:A:H8    | 3:AC:221:SER:N    | 1.81                     | 0.46              |
| 1:AA:2199:A:C5    | 1:AA:2205:C:C5    | 3.03                     | 0.46              |
| 1:AA:2247:A:H8    | 1:AA:2247:A:O5'   | 1.97                     | 0.46              |
| 1:AA:2285:C:O4'   | 1:AA:2288:A:C6    | 2.69                     | 0.46              |
| 1:AA:2289:G:H2'   | 1:AA:2289:G:N3    | 2.30                     | 0.46              |
| 1:AA:2407:G:N3    | 1:AA:2407:G:H2'   | 2.31                     | 0.46              |
| 1:AA:2459:A:C6    | 1:AA:2493:U:C4    | 3.04                     | 0.46              |
| 1:AA:2464:C:N3    | 1:AA:2465:C:C5    | 2.84                     | 0.46              |
| 1:AA:2586:C:H3'   | 1:AA:2586:C:C6    | 2.51                     | 0.46              |
| 1:AA:2596:U:C2'   | 4:AD:242:ARG:NE   | 2.75                     | 0.46              |
| 1:AA:2646:C:N3    | 1:AA:2647:U:N3    | 2.63                     | 0.46              |
| 1:AA:2759:G:C2    | 1:AA:2760:C:C6    | 3.04                     | 0.46              |
| 1:AA:2813:A:N1    | 1:AA:2888:C:N3    | 2.63                     | 0.46              |
| 1:AA:2850:A:OP2   | 1:AA:2866:U:C5    | 2.68                     | 0.46              |
| 1:AA:2893:G:O4'   | 1:AA:2893:G:P     | 2.73                     | 0.46              |
| 2:AB:20:C:H2'     | 2:AB:21:G:O4'     | 2.15                     | 0.46              |
| 2:AB:81:G:O6      | 2:AB:96:G:O6      | 2.33                     | 0.46              |
| 4:AD:6:PHE:O      | 4:AD:27:THR:CA    | 2.44                     | 0.46              |
| 4:AD:10:THR:O     | 4:AD:12:SER:OG    | 2.26                     | 0.46              |
| 4:AD:18:VAL:HG12  | 4:AD:18:VAL:O     | 2.15                     | 0.46              |
| 4:AD:101:GLU:OE1  | 4:AD:102:LYS:O    | 2.33                     | 0.46              |
| 4:AD:148:GLU:OE1  | 4:AD:154:LYS:NZ   | 2.48                     | 0.46              |
| 4:AD:183:ARG:NH2  | 4:AD:268:ARG:HH11 | 2.13                     | 0.46              |
| 4:AD:252:TRP:HB3  | 4:AD:253:GLN:H    | 1.41                     | 0.46              |
| 4:AD:257:LEU:HD23 | 4:AD:257:LEU:HA   | 1.61                     | 0.46              |
| 5:AE:12:THR:HG21  | 5:AE:19:ARG:CZ    | 2.46                     | 0.46              |
| 5:AE:15:PHE:O     | 5:AE:16:ARG:O     | 2.33                     | 0.46              |
| 5:AE:32:PRO:HG3   | 5:AE:88:GLY:HA2   | 1.97                     | 0.46              |
| 5:AE:102:VAL:CG2  | 5:AE:200:GLU:OE1  | 2.61                     | 0.46              |
| 5:AE:199:ARG:O    | 5:AE:200:GLU:OE1  | 2.32                     | 0.46              |
| 6:AF:123:LEU:CG   | 6:AF:191:ARG:HD3  | 2.45                     | 0.46              |
| 6:AF:142:TRP:O    | 6:AF:143:ALA:C    | 2.58                     | 0.46              |
| 6:AF:169:ASN:HD22 | 6:AF:173:VAL:HG12 | 1.80                     | 0.46              |
| 7:AG:47:LYS:CB    | 7:AG:53:LEU:HD11  | 2.35                     | 0.46              |
| 7:AG:77:ILE:O     | 7:AG:78:SER:O     | 2.33                     | 0.46              |
| 7:AG:91:ARG:NH2   | 7:AG:91:ARG:CG    | 2.78                     | 0.46              |
| 7:AG:113:ARG:O    | 7:AG:114:ILE:CG2  | 2.62                     | 0.46              |
| 8:AH:31:GLY:C     | 8:AH:33:LEU:N     | 2.73                     | 0.46              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AL:85:VAL:CB    | 10:AL:93:PRO:HG3   | 2.46                     | 0.46              |
| 11:AM:18:ARG:C     | 11:AM:20:GLY:N     | 2.74                     | 0.46              |
| 11:AM:54:GLY:O     | 29:Ae:12:LYS:CE    | 2.64                     | 0.46              |
| 11:AM:72:PRO:HB3   | 11:AM:110:TYR:O    | 2.13                     | 0.46              |
| 11:AM:138:LEU:HD11 | 11:AM:145:PRO:HG3  | 1.97                     | 0.46              |
| 12:AN:27:VAL:HG13  | 12:AN:102:VAL:HG21 | 1.98                     | 0.46              |
| 12:AN:56:ARG:NH1   | 12:AN:57:HIS:HA    | 2.31                     | 0.46              |
| 12:AN:77:LYS:HG3   | 12:AN:88:GLY:O     | 2.15                     | 0.46              |
| 14:AP:99:LYS:O     | 14:AP:103:GLU:CD   | 2.59                     | 0.46              |
| 15:AQ:34:VAL:CG2   | 15:AQ:36:GLU:HB2   | 2.45                     | 0.46              |
| 15:AQ:48:ILE:CG2   | 15:AQ:50:ILE:HD11  | 2.46                     | 0.46              |
| 16:AR:48:ALA:C     | 16:AR:52:ARG:NE    | 2.73                     | 0.46              |
| 17:AS:3:ALA:HA     | 17:AS:44:LYS:HZ2   | 1.78                     | 0.46              |
| 17:AS:78:LYS:HE2   | 17:AS:84:LYS:CG    | 2.45                     | 0.46              |
| 17:AS:99:ILE:O     | 17:AS:100:ARG:O    | 2.33                     | 0.46              |
| 18:AT:10:VAL:CB    | 18:AT:12:ILE:HD11  | 2.45                     | 0.46              |
| 18:AT:13:SER:OG    | 18:AT:16:LYS:HE3   | 2.14                     | 0.46              |
| 19:AU:15:GLU:HB3   | 19:AU:16:LYS:HZ1   | 1.78                     | 0.46              |
| 19:AU:29:TRP:CH2   | 19:AU:78:LYS:HE3   | 2.50                     | 0.46              |
| 20:AV:31:LEU:CB    | 20:AV:32:PRO:CD    | 2.88                     | 0.46              |
| 20:AV:42:VAL:N     | 20:AV:61:ILE:CB    | 2.68                     | 0.46              |
| 20:AV:74:PRO:CD    | 20:AV:76:CYS:O     | 2.63                     | 0.46              |
| 21:AW:18:LEU:HD22  | 21:AW:23:LYS:HG2   | 1.97                     | 0.46              |
| 21:AW:45:ASP:O     | 21:AW:47:VAL:N     | 2.49                     | 0.46              |
| 21:AW:128:VAL:O    | 21:AW:129:SER:HB2  | 2.14                     | 0.46              |
| 22:AX:21:LEU:HD11  | 22:AX:40:GLN:C     | 2.41                     | 0.46              |
| 22:AX:37:LEU:HG    | 22:AX:38:VAL:H     | 1.81                     | 0.46              |
| 22:AX:49:LYS:HB2   | 22:AX:80:HIS:ND1   | 2.30                     | 0.46              |
| 24:AZ:23:LEU:HD12  | 24:AZ:50:VAL:HG21  | 1.97                     | 0.46              |
| 25:Aa:54:GLY:O     | 25:Aa:55:ARG:HB3   | 2.16                     | 0.46              |
| 30:Af:10:ILE:CD1   | 30:Af:34:GLN:NE2   | 2.74                     | 0.46              |
| 31:AI:19:ARG:C     | 31:AI:21:GLN:N     | 2.73                     | 0.46              |
| 32:AJ:12:LEU:CD1   | 32:AJ:23:VAL:HG22  | 2.46                     | 0.46              |
| 32:AJ:53:VAL:CG2   | 32:AJ:71:THR:O     | 2.64                     | 0.46              |
| 32:AJ:76:TYR:CE2   | 32:AJ:80:LYS:CE    | 2.99                     | 0.46              |
| 34:BA:25:C:H4'     | 34:BA:524:G:H21    | 1.79                     | 0.46              |
| 34:BA:27:G:H8      | 34:BA:27:G:OP2     | 1.98                     | 0.46              |
| 34:BA:93:U:H2'     | 34:BA:95:G:N7      | 2.31                     | 0.46              |
| 34:BA:142:G:O2'    | 34:BA:196:A:C2     | 2.64                     | 0.46              |
| 34:BA:322:C:C2'    | 34:BA:323:U:H5'    | 2.46                     | 0.46              |
| 34:BA:424:G:C2     | 34:BA:425:G:C8     | 3.04                     | 0.46              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:446:G:H2'    | 34:BA:447:G:H8     | 1.79                     | 0.46              |
| 34:BA:526:C:N4     | 34:BA:535:A:H2     | 2.07                     | 0.46              |
| 34:BA:544:G:C4     | 34:BA:545:C:C5     | 3.03                     | 0.46              |
| 34:BA:593:G:C6     | 34:BA:647:C:N3     | 2.83                     | 0.46              |
| 34:BA:622:A:C2     | 34:BA:623:C:C1'    | 2.98                     | 0.46              |
| 34:BA:689:C:OP2    | 44:BO:55:LYS:NZ    | 2.49                     | 0.46              |
| 34:BA:692:U:O2     | 34:BA:694:A:H8     | 1.99                     | 0.46              |
| 34:BA:711:G:C2'    | 34:BA:712:A:O5'    | 2.63                     | 0.46              |
| 34:BA:734:G:H8     | 34:BA:734:G:OP1    | 1.99                     | 0.46              |
| 34:BA:928:G:H4'    | 34:BA:1532:U:H5''  | 1.98                     | 0.46              |
| 34:BA:958:A:H2'    | 34:BA:959:A:O4'    | 2.16                     | 0.46              |
| 34:BA:981:U:H6     | 34:BA:981:U:C3'    | 2.26                     | 0.46              |
| 34:BA:1060:C:C4'   | 43:BN:52:GLY:HA2   | 2.45                     | 0.46              |
| 34:BA:1121:U:O5'   | 34:BA:1121:U:C6    | 2.68                     | 0.46              |
| 34:BA:1128:C:O4'   | 34:BA:1148:U:O4    | 2.33                     | 0.46              |
| 34:BA:1183:A:H2'   | 34:BA:1184:G:OP1   | 2.15                     | 0.46              |
| 34:BA:1274:G:H2'   | 34:BA:1275:A:H8    | 1.78                     | 0.46              |
| 34:BA:1305:G:C5'   | 54:BY:4:GLY:C      | 2.88                     | 0.46              |
| 34:BA:1312:G:N7    | 34:BA:1326:C:N3    | 2.61                     | 0.46              |
| 34:BA:1353:G:OP2   | 54:BY:3:LYS:NZ     | 2.47                     | 0.46              |
| 34:BA:1508:G:O2'   | 34:BA:1509:C:C5'   | 2.63                     | 0.46              |
| 34:BA:1533:C:H2'   | 34:BA:1534:A:O5'   | 2.15                     | 0.46              |
| 35:BF:97:TRP:CH2   | 35:BF:176:GLU:CD   | 2.77                     | 0.46              |
| 35:BF:168:THR:O    | 35:BF:169:LYS:HB2  | 2.15                     | 0.46              |
| 36:BG:84:ILE:HG13  | 36:BG:101:LEU:CG   | 2.46                     | 0.46              |
| 36:BG:88:ARG:N     | 36:BG:101:LEU:HD12 | 2.30                     | 0.46              |
| 37:BH:98:GLU:O     | 37:BH:103:ASN:CB   | 2.63                     | 0.46              |
| 37:BH:194:LEU:N    | 37:BH:194:LEU:CD2  | 2.67                     | 0.46              |
| 38:BI:39:GLY:C     | 38:BI:68:GLU:OE2   | 2.59                     | 0.46              |
| 39:BJ:11:ASN:HB2   | 39:BJ:84:ASN:HB3   | 1.97                     | 0.46              |
| 39:BJ:16:GLN:CG    | 39:BJ:17:SER:H     | 2.25                     | 0.46              |
| 40:BK:38:LEU:O     | 40:BK:42:ILE:HG13  | 2.15                     | 0.46              |
| 40:BK:68:ASN:ND2   | 40:BK:128:ALA:CA   | 2.78                     | 0.46              |
| 40:BK:113:GLU:HB3  | 40:BK:118:VAL:HG11 | 1.98                     | 0.46              |
| 41:BL:15:ASN:N     | 41:BL:15:ASN:HD22  | 2.13                     | 0.46              |
| 41:BL:20:TYR:CE2   | 41:BL:75:ARG:HD2   | 2.50                     | 0.46              |
| 41:BL:40:ALA:HB2   | 41:BL:45:ILE:HD13  | 1.97                     | 0.46              |
| 41:BL:51:VAL:HG21  | 41:BL:60:ARG:HE    | 1.81                     | 0.46              |
| 41:BL:101:PRO:O    | 41:BL:102:ARG:HG3  | 2.14                     | 0.46              |
| 41:BL:109:ILE:HG12 | 41:BL:137:VAL:C    | 2.40                     | 0.46              |
| 41:BL:114:THR:H    | 41:BL:119:LEU:HD23 | 1.81                     | 0.46              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 44:BO:22:HIS:CD2   | 44:BO:23:ALA:N     | 2.83                     | 0.46              |
| 44:BO:42:TRP:HE3   | 44:BO:42:TRP:C     | 2.24                     | 0.46              |
| 44:BO:79:SER:HA    | 44:BO:104:GLN:NE2  | 2.31                     | 0.46              |
| 44:BO:84:VAL:HG11  | 51:BV:88:LYS:HE2   | 1.98                     | 0.46              |
| 45:BP:46:LYS:CE    | 45:BP:47:LYS:NZ    | 2.75                     | 0.46              |
| 45:BP:86:ARG:HH22  | 45:BP:119:LYS:HD3  | 1.80                     | 0.46              |
| 46:BQ:78:ILE:C     | 46:BQ:81:LEU:CD1   | 2.89                     | 0.46              |
| 46:BQ:96:LEU:HD13  | 46:BQ:103:THR:CG2  | 2.45                     | 0.46              |
| 50:BU:5:VAL:CG1    | 50:BU:6:LEU:H      | 2.27                     | 0.46              |
| 50:BU:75:ARG:NH1   | 50:BU:75:ARG:HG2   | 2.30                     | 0.46              |
| 51:BV:22:VAL:HG22  | 51:BV:55:ARG:HH12  | 1.80                     | 0.46              |
| 52:BW:80:TYR:CE1   | 52:BW:81:ARG:HG3   | 2.49                     | 0.46              |
| 57:BZ:10:ILE:O     | 57:BZ:11:ILE:O     | 2.34                     | 0.46              |
| 57:BZ:22:VAL:HB    | 57:BZ:56:ILE:HG13  | 1.98                     | 0.46              |
| 57:BZ:58:ALA:HB3   | 57:BZ:60:ASN:HD21  | 1.80                     | 0.46              |
| 57:BZ:83:GLY:C     | 57:BZ:85:VAL:N     | 2.73                     | 0.46              |
| 57:BZ:132:ARG:CB   | 57:BZ:133:PRO:CD   | 2.93                     | 0.46              |
| 57:BZ:180:ALA:N    | 57:BZ:181:GLU:C    | 2.72                     | 0.46              |
| 57:BZ:564:THR:HG22 | 57:BZ:566:GLU:OE1  | 2.15                     | 0.46              |
| 57:BZ:569:LEU:HA   | 57:BZ:578:VAL:HG21 | 1.96                     | 0.46              |
| 57:BZ:574:ASP:OD2  | 57:BZ:575:ASP:N    | 2.43                     | 0.46              |
| 1:AA:28:A:C2       | 1:AA:29:U:O2'      | 2.61                     | 0.46              |
| 1:AA:122:G:N2      | 1:AA:130:C:H1'     | 2.30                     | 0.46              |
| 1:AA:243:U:H5'     | 29:Ae:5:LYS:HZ1    | 1.81                     | 0.46              |
| 1:AA:270(C):C:P    | 1:AA:365:C:HO2'    | 2.38                     | 0.46              |
| 1:AA:273(E):U:C2   | 1:AA:363(B):G:C2   | 3.03                     | 0.46              |
| 1:AA:278:A:O2'     | 1:AA:279:C:C1'     | 2.63                     | 0.46              |
| 1:AA:284:U:H3'     | 1:AA:284:U:P       | 2.56                     | 0.46              |
| 1:AA:297:C:C5'     | 20:AV:83:THR:CG2   | 2.93                     | 0.46              |
| 1:AA:333:G:C2      | 1:AA:334:C:C6      | 3.03                     | 0.46              |
| 1:AA:349:G:C6      | 1:AA:350:U:O4      | 2.68                     | 0.46              |
| 1:AA:416:C:C2      | 1:AA:2407:G:O6     | 2.69                     | 0.46              |
| 1:AA:467:G:P       | 28:Ad:33:ARG:NH1   | 2.89                     | 0.46              |
| 1:AA:473:G:N2      | 1:AA:474:G:C4      | 2.83                     | 0.46              |
| 1:AA:637:A:OP2     | 11:AM:131:SER:HB3  | 2.16                     | 0.46              |
| 1:AA:661:C:C5'     | 11:AM:15:ARG:HH11  | 2.26                     | 0.46              |
| 1:AA:669:G:C6      | 1:AA:801:G:C6      | 3.03                     | 0.46              |
| 1:AA:813:U:H2'     | 1:AA:814:C:C6      | 2.51                     | 0.46              |
| 1:AA:880:G:C5      | 1:AA:897:C:O2      | 2.67                     | 0.46              |
| 1:AA:959:A:C6      | 1:AA:960:A:C6      | 3.03                     | 0.46              |
| 1:AA:961:C:N4      | 1:AA:2031:A:C4     | 2.81                     | 0.46              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:975:G:C2    | 1:AA:976:C:C6     | 2.99                     | 0.46              |
| 1:AA:986:C:H3'   | 1:AA:986:C:C6     | 2.51                     | 0.46              |
| 1:AA:1140:C:H2'  | 1:AA:1141:U:OP2   | 2.15                     | 0.46              |
| 1:AA:1141:U:H5'  | 1:AA:1142(A):A:N6 | 2.30                     | 0.46              |
| 1:AA:1221:C:N4   | 1:AA:1229:G:O6    | 2.49                     | 0.46              |
| 1:AA:1322:A:H2'  | 1:AA:1323:U:C5'   | 2.45                     | 0.46              |
| 1:AA:1397:U:O2   | 1:AA:1397:U:H2'   | 2.15                     | 0.46              |
| 1:AA:1410:G:C2   | 1:AA:1593:G:C2    | 3.04                     | 0.46              |
| 1:AA:1437:C:O2'  | 1:AA:1516:U:O2'   | 2.01                     | 0.46              |
| 1:AA:1534:G:N3   | 1:AA:1536:A:N7    | 2.63                     | 0.46              |
| 1:AA:1556:C:O2'  | 1:AA:1557:C:H5'   | 2.16                     | 0.46              |
| 1:AA:1683:C:C2'  | 1:AA:1684:C:O5'   | 2.64                     | 0.46              |
| 1:AA:1700:A:HO2' | 1:AA:1701:A:P     | 2.35                     | 0.46              |
| 1:AA:1767:C:O2'  | 1:AA:1768:U:H5'   | 2.16                     | 0.46              |
| 1:AA:1819:A:H5'' | 4:AD:178:PRO:HB3  | 1.95                     | 0.46              |
| 1:AA:1827:C:H5'  | 1:AA:1971:A:H4'   | 1.97                     | 0.46              |
| 1:AA:1878:G:C5   | 1:AA:1879:C:C5    | 3.03                     | 0.46              |
| 1:AA:1992:G:C2'  | 1:AA:1993:U:H5    | 2.27                     | 0.46              |
| 1:AA:2016:U:C1'  | 26:Ab:6:VAL:CG1   | 2.94                     | 0.46              |
| 1:AA:2032:G:O2'  | 5:AE:145:LYS:HD2  | 2.16                     | 0.46              |
| 1:AA:2107:C:C5'  | 1:AA:2108:C:O5'   | 2.63                     | 0.46              |
| 1:AA:2112:G:O6   | 55:BC:19:G:N2     | 2.48                     | 0.46              |
| 1:AA:2125:G:O5'  | 3:AC:217:THR:OG1  | 2.34                     | 0.46              |
| 1:AA:2133:G:O6   | 1:AA:2157:G:C8    | 2.68                     | 0.46              |
| 1:AA:2186:G:N2   | 1:AA:2187:G:C5    | 2.84                     | 0.46              |
| 1:AA:2323:G:C4   | 1:AA:2324:C:C5    | 3.03                     | 0.46              |
| 1:AA:2343:C:H4'  | 1:AA:2373:G:O3'   | 2.14                     | 0.46              |
| 1:AA:2352:A:C8   | 1:AA:2366:A:C6    | 3.04                     | 0.46              |
| 1:AA:2371:G:H2'  | 1:AA:2372:G:C8    | 2.49                     | 0.46              |
| 1:AA:2425:A:OP1  | 1:AA:2427:C:O4'   | 2.34                     | 0.46              |
| 1:AA:2439:A:C4'  | 1:AA:2440:C:O5'   | 2.63                     | 0.46              |
| 1:AA:2497:A:C8   | 1:AA:2497:A:C3'   | 2.96                     | 0.46              |
| 1:AA:2553:G:N3   | 1:AA:2553:G:H2'   | 2.31                     | 0.46              |
| 1:AA:2599:G:C2'  | 1:AA:2600:A:H5'   | 2.46                     | 0.46              |
| 1:AA:2670:A:C2'  | 1:AA:2671:A:H8    | 2.25                     | 0.46              |
| 1:AA:2696:U:O2'  | 1:AA:2697:G:C5'   | 2.63                     | 0.46              |
| 1:AA:2825:C:N3   | 1:AA:2826:A:C5    | 2.84                     | 0.46              |
| 1:AA:2834:G:C8   | 1:AA:2834:G:C3'   | 2.99                     | 0.46              |
| 2:AB:15:A:N3     | 2:AB:109:G:H1'    | 2.30                     | 0.46              |
| 2:AB:75:G:N3     | 21:AW:85:HIS:CE1  | 2.84                     | 0.46              |
| 2:AB:83:G:H21    | 2:AB:84:C:C1'     | 2.29                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 3:AC:4:GLY:C      | 3:AC:5:LYS:HD2     | 2.39                     | 0.46              |
| 3:AC:61:THR:HG21  | 3:AC:160:ARG:CZ    | 2.46                     | 0.46              |
| 3:AC:87:GLU:HG3   | 3:AC:94:VAL:CB     | 2.46                     | 0.46              |
| 3:AC:113:VAL:O    | 3:AC:144:THR:HG22  | 2.15                     | 0.46              |
| 4:AD:61:LEU:O     | 4:AD:62:TYR:HB2    | 2.16                     | 0.46              |
| 4:AD:120:GLY:H    | 4:AD:131:LEU:CD1   | 2.29                     | 0.46              |
| 4:AD:262:ARG:O    | 4:AD:263:ARG:C     | 2.58                     | 0.46              |
| 5:AE:4:ILE:CD1    | 5:AE:76:ARG:CZ     | 2.81                     | 0.46              |
| 5:AE:38:THR:HG22  | 5:AE:39:PRO:CD     | 2.46                     | 0.46              |
| 5:AE:187:ALA:O    | 5:AE:189:PRO:N     | 2.49                     | 0.46              |
| 6:AF:12:LEU:HD22  | 6:AF:128:ALA:HA    | 1.98                     | 0.46              |
| 6:AF:157:VAL:O    | 6:AF:158:THR:CB    | 2.63                     | 0.46              |
| 6:AF:205:ARG:O    | 6:AF:206:ILE:C     | 2.59                     | 0.46              |
| 7:AG:176:LEU:HD13 | 7:AG:176:LEU:C     | 2.40                     | 0.46              |
| 8:AH:11:VAL:HG11  | 8:AH:45:VAL:HG11   | 1.98                     | 0.46              |
| 8:AH:25:LYS:HE3   | 8:AH:34:GLU:OE2    | 2.16                     | 0.46              |
| 9:AK:27:ALA:C     | 9:AK:29:LYS:N      | 2.74                     | 0.46              |
| 9:AK:77:GLY:C     | 9:AK:78:TYR:O      | 2.55                     | 0.46              |
| 9:AK:109:LYS:CE   | 9:AK:111:PRO:HD2   | 2.45                     | 0.46              |
| 11:AM:52:GLU:N    | 11:AM:55:ARG:HG3   | 2.31                     | 0.46              |
| 11:AM:119:GLU:C   | 11:AM:120:ALA:O    | 2.57                     | 0.46              |
| 12:AN:46:GLN:HG2  | 12:AN:125:LEU:HD22 | 1.97                     | 0.46              |
| 12:AN:49:ALA:O    | 12:AN:52:VAL:HB    | 2.16                     | 0.46              |
| 12:AN:97:VAL:CA   | 12:AN:98:LYS:HE2   | 2.45                     | 0.46              |
| 13:AO:103:ARG:HB2 | 13:AO:108:GLY:HA2  | 1.97                     | 0.46              |
| 16:AR:67:ALA:C    | 16:AR:71:GLN:CD    | 2.83                     | 0.46              |
| 17:AS:4:ILE:HD12  | 17:AS:4:ILE:H      | 1.77                     | 0.46              |
| 18:AT:20:VAL:CG2  | 18:AT:47:VAL:HG11  | 2.46                     | 0.46              |
| 18:AT:21:VAL:CG1  | 18:AT:75:TYR:CD2   | 2.99                     | 0.46              |
| 20:AV:2:ARG:HE    | 20:AV:4:LYS:H      | 1.64                     | 0.46              |
| 20:AV:12:THR:CG2  | 20:AV:13:VAL:H     | 2.05                     | 0.46              |
| 20:AV:74:PRO:HD2  | 20:AV:76:CYS:O     | 2.15                     | 0.46              |
| 20:AV:83:THR:HG21 | 20:AV:84:ARG:NH1   | 2.30                     | 0.46              |
| 21:AW:1:MET:HE3   | 21:AW:2:GLU:O      | 2.15                     | 0.46              |
| 21:AW:102:LEU:CD2 | 21:AW:137:ILE:HB   | 2.40                     | 0.46              |
| 21:AW:130:PRO:O   | 21:AW:132:ASN:N    | 2.49                     | 0.46              |
| 22:AX:50:ASN:CB   | 22:AX:63:VAL:HG22  | 2.46                     | 0.46              |
| 23:AY:23:LYS:HB3  | 23:AY:23:LYS:HZ2   | 1.80                     | 0.46              |
| 24:AZ:51:ALA:O    | 24:AZ:52:HIS:C     | 2.58                     | 0.46              |
| 26:Ab:19:ARG:O    | 26:Ab:20:ARG:C     | 2.58                     | 0.46              |
| 29:Ae:29:LYS:HZ1  | 29:Ae:36:LYS:NZ    | 2.13                     | 0.46              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 29:Ae:31:HIS:O     | 29:Ae:32:LEU:HG    | 2.16                     | 0.46              |
| 30:Af:10:ILE:CD1   | 30:Af:14:CYS:SG    | 3.03                     | 0.46              |
| 31:AI:4:LYS:HA     | 31:AI:5:ARG:HA     | 1.70                     | 0.46              |
| 32:AJ:55:VAL:H     | 32:AJ:56:GLU:CB    | 2.28                     | 0.46              |
| 32:AJ:55:VAL:H     | 32:AJ:56:GLU:HA    | 1.79                     | 0.46              |
| 34:BA:122:G:H8     | 34:BA:122:G:O5'    | 1.97                     | 0.46              |
| 34:BA:209:U:OP2    | 34:BA:209:U:C6     | 2.68                     | 0.46              |
| 34:BA:265:G:N9     | 34:BA:267:C:C5     | 2.83                     | 0.46              |
| 34:BA:265:G:H5'    | 50:BU:64:PRO:C     | 2.40                     | 0.46              |
| 34:BA:444:C:O2'    | 34:BA:445:G:H5'    | 2.14                     | 0.46              |
| 34:BA:539:A:C6     | 34:BA:540:G:C6     | 3.04                     | 0.46              |
| 34:BA:577:G:O2'    | 34:BA:578:C:O5'    | 2.22                     | 0.46              |
| 34:BA:586:C:H1'    | 34:BA:878:G:O2'    | 2.16                     | 0.46              |
| 34:BA:614:A:H2'    | 34:BA:615:C:C6     | 2.51                     | 0.46              |
| 34:BA:666:G:N2     | 34:BA:741:G:H1'    | 2.30                     | 0.46              |
| 34:BA:670:G:C6     | 34:BA:671:G:C8     | 3.03                     | 0.46              |
| 34:BA:802:A:H2'    | 34:BA:803:G:O4'    | 2.15                     | 0.46              |
| 34:BA:866:C:H6     | 34:BA:867:G:C1'    | 2.27                     | 0.46              |
| 34:BA:965:A:O2'    | 34:BA:966:G:P      | 2.74                     | 0.46              |
| 34:BA:976:G:C4     | 34:BA:1363:A:N6    | 2.84                     | 0.46              |
| 34:BA:1058:G:H21   | 43:BN:53:PRO:HG3   | 1.81                     | 0.46              |
| 34:BA:1114:C:N3    | 34:BA:1115:C:C5    | 2.84                     | 0.46              |
| 34:BA:1188:A:C2    | 34:BA:1189:C:C2    | 3.03                     | 0.46              |
| 34:BA:1405:G:N3    | 34:BA:1406:U:C5    | 2.84                     | 0.46              |
| 34:BA:1510:U:C2'   | 34:BA:1511:G:H8    | 2.22                     | 0.46              |
| 35:BF:33:TYR:CB    | 35:BF:43:ASP:HB2   | 2.45                     | 0.46              |
| 35:BF:80:ILE:CG1   | 35:BF:212:GLN:HG2  | 2.45                     | 0.46              |
| 35:BF:104:ASN:O    | 35:BF:107:THR:HB   | 2.15                     | 0.46              |
| 35:BF:118:LEU:HD12 | 35:BF:145:LEU:HD23 | 1.97                     | 0.46              |
| 35:BF:216:SER:O    | 35:BF:220:ASP:OD1  | 2.33                     | 0.46              |
| 35:BF:234:PRO:HB2  | 35:BF:238:LEU:CD2  | 2.45                     | 0.46              |
| 36:BG:23:TYR:CE1   | 43:BN:10:GLY:C     | 2.94                     | 0.46              |
| 36:BG:63:ASN:O     | 36:BG:64:VAL:HB    | 2.15                     | 0.46              |
| 37:BH:88:VAL:HG12  | 37:BH:91:SER:H     | 1.80                     | 0.46              |
| 37:BH:112:VAL:N    | 37:BH:116:GLN:OE1  | 2.42                     | 0.46              |
| 37:BH:126:ILE:C    | 37:BH:149:ALA:HB2  | 2.39                     | 0.46              |
| 37:BH:149:ALA:O    | 37:BH:150:GLU:O    | 2.34                     | 0.46              |
| 38:BI:112:LEU:HD22 | 38:BI:112:LEU:HA   | 1.78                     | 0.46              |
| 40:BK:17:VAL:HG21  | 40:BK:44:TYR:CZ    | 2.50                     | 0.46              |
| 40:BK:78:ARG:NE    | 40:BK:80:VAL:HG23  | 2.26                     | 0.46              |
| 40:BK:147:ALA:C    | 40:BK:149:ARG:N    | 2.74                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 41:BL:118:VAL:C   | 41:BL:119:LEU:HD22 | 2.40                     | 0.46              |
| 42:BM:46:ALA:HB1  | 42:BM:77:ILE:CG2   | 2.45                     | 0.46              |
| 45:BP:11:VAL:HG22 | 50:BU:32:TYR:CD1   | 2.47                     | 0.46              |
| 45:BP:34:ARG:HD3  | 45:BP:105:TYR:CZ   | 2.50                     | 0.46              |
| 45:BP:92:ASP:CA   | 45:BP:93:LEU:HD23  | 2.45                     | 0.46              |
| 46:BQ:108:ARG:NH2 | 46:BQ:111:LYS:HD3  | 2.30                     | 0.46              |
| 47:BR:36:PHE:CE2  | 47:BR:37:PHE:CE1   | 3.03                     | 0.46              |
| 47:BR:40:CYS:C    | 47:BR:42:ILE:N     | 2.74                     | 0.46              |
| 47:BR:49:HIS:O    | 47:BR:50:LYS:C     | 2.58                     | 0.46              |
| 48:BS:66:LEU:H    | 48:BS:66:LEU:CD2   | 2.29                     | 0.46              |
| 49:BT:30:GLY:O    | 49:BT:31:LYS:C     | 2.58                     | 0.46              |
| 49:BT:71:ARG:NH1  | 49:BT:71:ARG:CB    | 2.78                     | 0.46              |
| 50:BU:60:ILE:HD13 | 50:BU:62:SER:CB    | 2.45                     | 0.46              |
| 51:BV:21:LYS:HE2  | 51:BV:23:LYS:HB3   | 1.97                     | 0.46              |
| 53:BX:60:GLU:OE1  | 53:BX:81:LYS:HD3   | 2.15                     | 0.46              |
| 53:BX:81:LYS:O    | 53:BX:84:LEU:N     | 2.49                     | 0.46              |
| 54:BY:3:LYS:NZ    | 54:BY:13:ILE:HG21  | 2.31                     | 0.46              |
| 57:BZ:6:ARG:N     | 57:BZ:69:ARG:HB3   | 2.27                     | 0.46              |
| 57:BZ:84:GLU:CG   | 57:BZ:85:VAL:N     | 2.73                     | 0.46              |
| 57:BZ:205:PHE:CE2 | 57:BZ:207:MET:CB   | 2.97                     | 0.46              |
| 57:BZ:234:ASN:HB2 | 57:BZ:248:ASN:C    | 2.39                     | 0.46              |
| 57:BZ:569:LEU:HG  | 57:BZ:578:VAL:HG21 | 1.96                     | 0.46              |
| 1:AA:76:C:H4'     | 23:AY:54:ARG:NH2   | 2.27                     | 0.46              |
| 1:AA:144:C:H2'    | 1:AA:145:G:C5'     | 2.45                     | 0.46              |
| 1:AA:236:C:C2     | 1:AA:237:C:C5      | 3.03                     | 0.46              |
| 1:AA:237:C:N3     | 1:AA:238:C:C5      | 2.83                     | 0.46              |
| 1:AA:304:G:O2'    | 1:AA:305:U:H5'     | 2.15                     | 0.46              |
| 1:AA:323:G:C6     | 1:AA:333:G:C8      | 3.03                     | 0.46              |
| 1:AA:323:G:C8     | 6:AF:170:LEU:HB2   | 2.51                     | 0.46              |
| 1:AA:380:U:O2'    | 1:AA:381:G:H5'     | 2.16                     | 0.46              |
| 1:AA:470:A:N3     | 1:AA:471:A:C1'     | 2.76                     | 0.46              |
| 1:AA:496:G:O6     | 1:AA:497:A:C6      | 2.69                     | 0.46              |
| 1:AA:607:U:H5     | 1:AA:620:G:H21     | 1.64                     | 0.46              |
| 1:AA:748:G:P      | 18:AT:88:ARG:NE    | 2.88                     | 0.46              |
| 1:AA:800:A:C5     | 1:AA:802:A:O4'     | 2.69                     | 0.46              |
| 1:AA:837:C:H6     | 1:AA:837:C:O5'     | 1.99                     | 0.46              |
| 1:AA:856:C:O4'    | 22:AX:69:PHE:HD1   | 1.99                     | 0.46              |
| 1:AA:903:C:C2'    | 21:AW:169:GLU:OE2  | 2.63                     | 0.46              |
| 1:AA:972:G:OP1    | 1:AA:974(A):C:C3'  | 2.61                     | 0.46              |
| 1:AA:976:C:C4'    | 1:AA:1156:A:N7     | 2.78                     | 0.46              |
| 1:AA:986:C:O5'    | 1:AA:986:C:C6      | 2.67                     | 0.46              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:997:G:C2    | 1:AA:998:C:C4     | 3.04                     | 0.46              |
| 1:AA:1023:U:O4   | 1:AA:1024:G:H1'   | 2.14                     | 0.46              |
| 1:AA:1031:G:C2   | 1:AA:1032:A:C5    | 3.03                     | 0.46              |
| 1:AA:1203:G:C5   | 1:AA:1240:U:C4    | 3.04                     | 0.46              |
| 1:AA:1212:G:C8   | 1:AA:1212:G:C3'   | 2.99                     | 0.46              |
| 1:AA:1228:G:N1   | 1:AA:1229:G:C5    | 2.84                     | 0.46              |
| 1:AA:1256:G:H2'  | 1:AA:1257:C:O5'   | 2.15                     | 0.46              |
| 1:AA:1483:G:C4   | 1:AA:1507:A:C2    | 3.04                     | 0.46              |
| 1:AA:1493:C:N4   | 1:AA:1499:C:C2    | 2.82                     | 0.46              |
| 1:AA:1515:C:C6   | 1:AA:1515:C:P     | 3.08                     | 0.46              |
| 1:AA:1521:G:C3'  | 1:AA:1522:G:C5'   | 2.94                     | 0.46              |
| 1:AA:1537:C:C2'  | 1:AA:1538:G:H5'   | 2.41                     | 0.46              |
| 1:AA:1650:G:C2   | 1:AA:1651:G:C1'   | 2.98                     | 0.46              |
| 1:AA:1651:G:O2'  | 1:AA:1652:A:C1'   | 2.64                     | 0.46              |
| 1:AA:1691:C:H2'  | 1:AA:1691:C:O2    | 2.15                     | 0.46              |
| 1:AA:1702:G:C2'  | 1:AA:1703:G:C5'   | 2.79                     | 0.46              |
| 1:AA:1704:G:C2'  | 1:AA:1705:G:O5'   | 2.63                     | 0.46              |
| 1:AA:1707:G:N3   | 1:AA:1708:C:C6    | 2.84                     | 0.46              |
| 1:AA:1883:G:H5'' | 1:AA:1884:A:OP1   | 2.15                     | 0.46              |
| 1:AA:1907:G:C6   | 58:AA:3001:NMY:C8 | 2.93                     | 0.46              |
| 1:AA:1949:G:C2'  | 1:AA:1950:G:O4'   | 2.61                     | 0.46              |
| 1:AA:2010:G:C5   | 1:AA:2011:U:C6    | 3.04                     | 0.46              |
| 1:AA:2060:A:OP2  | 6:AF:72:ARG:HA    | 2.16                     | 0.46              |
| 1:AA:2071:A:C2   | 1:AA:2441:C:C4    | 3.03                     | 0.46              |
| 1:AA:2077:A:O2'  | 1:AA:2434:A:H4'   | 2.15                     | 0.46              |
| 1:AA:2092:U:H2'  | 1:AA:2092:U:O2    | 2.15                     | 0.46              |
| 1:AA:2230:G:H1'  | 25:Aa:58:ARG:HH22 | 1.79                     | 0.46              |
| 1:AA:2306:C:N4   | 1:AA:2311:A:C2    | 2.83                     | 0.46              |
| 1:AA:2478:A:C5   | 1:AA:2479:G:C8    | 3.04                     | 0.46              |
| 1:AA:2503:A:O2'  | 1:AA:2504:U:P     | 2.73                     | 0.46              |
| 1:AA:2519:U:O2   | 1:AA:2519:U:C2'   | 2.63                     | 0.46              |
| 1:AA:2548:G:C6   | 1:AA:2549:G:C5    | 3.03                     | 0.46              |
| 1:AA:2591:C:C2   | 1:AA:2592:G:C8    | 3.04                     | 0.46              |
| 1:AA:2720:U:O4   | 1:AA:2872:G:C5    | 2.67                     | 0.46              |
| 1:AA:2732:G:OP2  | 1:AA:2732:G:C8    | 2.68                     | 0.46              |
| 1:AA:2781:A:H2'  | 1:AA:2782:G:C4'   | 2.46                     | 0.46              |
| 1:AA:2805:G:C3'  | 1:AA:2807:G:C4'   | 2.93                     | 0.46              |
| 1:AA:2805:G:H5'  | 1:AA:2807:G:OP2   | 2.16                     | 0.46              |
| 1:AA:2851:A:H2'  | 1:AA:2852:G:O5'   | 2.15                     | 0.46              |
| 1:AA:2866:U:O2   | 1:AA:2868:A:H1'   | 2.16                     | 0.46              |
| 1:AA:2876:G:N3   | 1:AA:2877:G:C8    | 2.84                     | 0.46              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2877:G:C3'    | 1:AA:2878:U:C6    | 2.94                     | 0.46              |
| 2:AB:9:G:C2        | 2:AB:10:C:C5      | 3.04                     | 0.46              |
| 2:AB:24:G:C5'      | 2:AB:25:A:H5'     | 2.45                     | 0.46              |
| 2:AB:48:A:OP1      | 14:AP:92:TYR:CB   | 2.63                     | 0.46              |
| 2:AB:73:A:N3       | 2:AB:74:U:C6      | 2.83                     | 0.46              |
| 3:AC:8:ARG:NH1     | 3:AC:11:LEU:CD2   | 2.78                     | 0.46              |
| 4:AD:177:LEU:CD2   | 4:AD:181:GLU:C    | 2.88                     | 0.46              |
| 4:AD:199:ALA:O     | 4:AD:202:LYS:CB   | 2.60                     | 0.46              |
| 4:AD:246:PRO:CG    | 4:AD:252:TRP:HA   | 2.44                     | 0.46              |
| 5:AE:2:LYS:CD      | 5:AE:83:ASP:CB    | 2.94                     | 0.46              |
| 5:AE:59:VAL:HB     | 5:AE:62:PRO:HG2   | 1.97                     | 0.46              |
| 5:AE:172:VAL:HA    | 5:AE:184:VAL:CG1  | 2.43                     | 0.46              |
| 6:AF:133:ASN:CG    | 6:AF:162:LEU:CD1  | 2.89                     | 0.46              |
| 6:AF:133:ASN:HD22  | 6:AF:133:ASN:HA   | 1.45                     | 0.46              |
| 7:AG:82:LEU:CD2    | 56:BE:52:G:OP1    | 2.64                     | 0.46              |
| 7:AG:107:LEU:HG    | 7:AG:177:GLY:O    | 2.16                     | 0.46              |
| 7:AG:165:THR:HB    | 7:AG:168:GLU:OE2  | 2.15                     | 0.46              |
| 9:AK:15:LEU:HD11   | 9:AK:137:LYS:O    | 2.14                     | 0.46              |
| 9:AK:31:ALA:O      | 9:AK:34:LEU:N     | 2.48                     | 0.46              |
| 9:AK:69:GLN:NE2    | 9:AK:69:GLN:H     | 2.14                     | 0.46              |
| 10:AL:32:TYR:O     | 10:AL:34:THR:OG1  | 2.30                     | 0.46              |
| 10:AL:122:LEU:HA   | 15:AQ:71:GLY:HA3  | 1.97                     | 0.46              |
| 11:AM:114:ILE:CG1  | 11:AM:123:LEU:HB2 | 2.46                     | 0.46              |
| 11:AM:125:VAL:O    | 11:AM:130:PHE:HZ  | 1.98                     | 0.46              |
| 12:AN:12:GLN:O     | 12:AN:12:GLN:CD   | 2.59                     | 0.46              |
| 13:AO:61:HIS:CE1   | 13:AO:64:ARG:HE   | 2.33                     | 0.46              |
| 13:AO:87:TYR:N     | 13:AO:87:TYR:CD2  | 2.83                     | 0.46              |
| 14:AP:39:ILE:HD11  | 14:AP:76:LYS:CE   | 2.46                     | 0.46              |
| 14:AP:82:ILE:HG13  | 14:AP:84:GLN:HE22 | 1.80                     | 0.46              |
| 15:AQ:112:ARG:HH22 | 34:BA:1465:C:P    | 2.38                     | 0.46              |
| 16:AR:91:ASP:OD2   | 17:AS:10:LYS:HD3  | 2.14                     | 0.46              |
| 18:AT:25:ARG:O     | 18:AT:71:VAL:CG1  | 2.64                     | 0.46              |
| 19:AU:53:LYS:O     | 19:AU:81:VAL:HA   | 2.16                     | 0.46              |
| 20:AV:41:GLY:C     | 20:AV:42:VAL:HG22 | 2.40                     | 0.46              |
| 21:AW:39:VAL:HA    | 21:AW:44:PHE:CE1  | 2.50                     | 0.46              |
| 21:AW:127:LYS:HD2  | 21:AW:163:LEU:C   | 2.40                     | 0.46              |
| 23:AY:23:LYS:HB3   | 23:AY:23:LYS:NZ   | 2.30                     | 0.46              |
| 24:AZ:10:LYS:NZ    | 24:AZ:12:PRO:CD   | 2.79                     | 0.46              |
| 24:AZ:32:GLN:CD    | 24:AZ:32:GLN:N    | 2.72                     | 0.46              |
| 25:Aa:70:GLY:O     | 25:Aa:71:ARG:CB   | 2.63                     | 0.46              |
| 28:Ad:24:THR:C     | 28:Ad:28:ARG:HE   | 2.24                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 30:Af:12:ASP:C    | 30:Af:13:LYS:HG3  | 2.40                     | 0.46              |
| 32:Aj:64:SER:C    | 32:Aj:65:PHE:CD1  | 2.92                     | 0.46              |
| 32:Aj:86:LYS:C    | 32:Aj:88:ALA:H    | 2.24                     | 0.46              |
| 32:Aj:108:ALA:HB2 | 32:Aj:111:LYS:HB2 | 1.95                     | 0.46              |
| 34:BA:87:A:C8     | 34:BA:88:C:N1     | 2.84                     | 0.46              |
| 34:BA:89:U:O5'    | 34:BA:89:U:H6     | 1.99                     | 0.46              |
| 34:BA:92:G:C2     | 34:BA:93:U:C2     | 3.03                     | 0.46              |
| 34:BA:133:U:C4'   | 34:BA:134:A:OP1   | 2.64                     | 0.46              |
| 34:BA:184:G:H4'   | 34:BA:224:C:O3'   | 2.16                     | 0.46              |
| 34:BA:251:G:N3    | 34:BA:266:G:C6    | 2.83                     | 0.46              |
| 34:BA:258:G:N1    | 34:BA:259:G:C5    | 2.84                     | 0.46              |
| 34:BA:323:U:O2    | 34:BA:329:A:N6    | 2.49                     | 0.46              |
| 34:BA:370:C:C2'   | 34:BA:371:G:H5'   | 2.46                     | 0.46              |
| 34:BA:390:C:C2'   | 34:BA:391:G:O5'   | 2.64                     | 0.46              |
| 34:BA:538:G:OP1   | 45:BP:114:LYS:HB2 | 2.16                     | 0.46              |
| 34:BA:573:A:N1    | 34:BA:574:A:C6    | 2.83                     | 0.46              |
| 34:BA:575:G:C6    | 34:BA:821:G:N7    | 2.83                     | 0.46              |
| 34:BA:579:G:HO2'  | 34:BA:580:U:H5'   | 1.81                     | 0.46              |
| 34:BA:623:C:H2'   | 34:BA:624:C:H6    | 1.79                     | 0.46              |
| 34:BA:1058:G:N2   | 43:BN:53:PRO:HG3  | 2.31                     | 0.46              |
| 34:BA:1099:G:HO2' | 34:BA:1542:U:H4'  | 1.72                     | 0.46              |
| 34:BA:1116:C:O2   | 34:BA:1185:G:C6   | 2.69                     | 0.46              |
| 34:BA:1170:A:N7   | 34:BA:1171:G:C5   | 2.84                     | 0.46              |
| 34:BA:1277:C:H2'  | 34:BA:1279:A:H8   | 1.80                     | 0.46              |
| 34:BA:1328:C:OP1  | 46:BQ:28:ALA:HB1  | 2.16                     | 0.46              |
| 34:BA:1346:A:O2'  | 34:BA:1347:G:OP2  | 2.22                     | 0.46              |
| 34:BA:1390:U:C4   | 34:BA:1391:U:O4   | 2.68                     | 0.46              |
| 34:BA:1400:C:H1'  | 56:BE:34:G:O6     | 2.15                     | 0.46              |
| 34:BA:1459:C:C2'  | 34:BA:1460:A:H5'  | 2.46                     | 0.46              |
| 34:BA:1494:G:H22  | 34:BA:1496:C:H41  | 1.61                     | 0.46              |
| 34:BA:1520:G:O2'  | 34:BA:1521:G:H8   | 1.92                     | 0.46              |
| 35:BF:32:ILE:HD12 | 35:BF:190:THR:CG2 | 2.46                     | 0.46              |
| 36:BG:30:ARG:NH1  | 36:BG:31:HIS:HB2  | 2.31                     | 0.46              |
| 36:BG:150:LYS:HD3 | 36:BG:150:LYS:C   | 2.40                     | 0.46              |
| 36:BG:160:ALA:C   | 36:BG:162:GLN:N   | 2.69                     | 0.46              |
| 37:BH:33:MET:HE3  | 37:BH:33:MET:H    | 1.80                     | 0.46              |
| 37:BH:64:LEU:CD1  | 37:BH:65:ARG:N    | 2.76                     | 0.46              |
| 37:BH:144:ASP:HA  | 37:BH:184:LYS:HZ3 | 1.80                     | 0.46              |
| 38:BI:79:GLU:CG   | 38:BI:93:PRO:CD   | 2.89                     | 0.46              |
| 41:BL:6:ILE:CG2   | 41:BL:85:ARG:NH1  | 2.78                     | 0.46              |
| 41:BL:10:LEU:CD2  | 41:BL:135:CYS:SG  | 3.04                     | 0.46              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 41:BL:33:GLU:CD    | 41:BL:59:LEU:HD21 | 2.40                     | 0.46              |
| 41:BL:82:HIS:CD2   | 41:BL:138:TRP:NE1 | 2.83                     | 0.46              |
| 41:BL:102:ARG:HE   | 41:BL:105:ARG:HD2 | 1.81                     | 0.46              |
| 41:BL:104:ARG:HE   | 41:BL:138:TRP:HZ3 | 1.62                     | 0.46              |
| 42:BM:31:GLN:HB3   | 42:BM:35:GLU:OE2  | 2.15                     | 0.46              |
| 43:BN:47:PHE:HZ    | 43:BN:65:LEU:HB2  | 1.80                     | 0.46              |
| 44:BO:32:ILE:O     | 44:BO:39:PRO:HB2  | 2.16                     | 0.46              |
| 44:BO:32:ILE:HD13  | 44:BO:72:ALA:HA   | 1.97                     | 0.46              |
| 45:BP:26:ALA:HA    | 45:BP:98:TYR:CE2  | 2.51                     | 0.46              |
| 45:BP:83:VAL:C     | 45:BP:104:VAL:CG1 | 2.88                     | 0.46              |
| 45:BP:117:ARG:NH1  | 45:BP:117:ARG:CG  | 2.74                     | 0.46              |
| 46:BQ:47:ASP:O     | 46:BQ:49:THR:N    | 2.49                     | 0.46              |
| 49:BT:71:ARG:HB2   | 49:BT:71:ARG:CZ   | 2.46                     | 0.46              |
| 50:BU:17:LYS:HE3   | 50:BU:48:GLU:CA   | 2.44                     | 0.46              |
| 52:BW:4:SER:CA     | 52:BW:5:LEU:CB    | 2.86                     | 0.46              |
| 52:BW:30:LEU:N     | 52:BW:48:THR:O    | 2.48                     | 0.46              |
| 56:BE:21:A:C2      | 56:BE:46:G:N1     | 2.83                     | 0.46              |
| 57:BZ:2:ILE:CD1    | 57:BZ:266:ASP:OD2 | 2.62                     | 0.46              |
| 57:BZ:266:ASP:CG   | 57:BZ:267:LEU:N   | 2.73                     | 0.46              |
| 57:BZ:305:PRO:HB3  | 57:BZ:361:ARG:CD  | 2.44                     | 0.46              |
| 57:BZ:539:THR:C    | 57:BZ:541:LYS:H   | 2.24                     | 0.46              |
| 57:BZ:557:LEU:HD12 | 57:BZ:557:LEU:O   | 2.15                     | 0.46              |
| 1:AA:269:U:C2      | 1:AA:424:G:N1     | 2.84                     | 0.46              |
| 1:AA:270(M):U:O3'  | 1:AA:270(N):G:H4' | 2.16                     | 0.46              |
| 1:AA:270(N):G:H3'  | 1:AA:270(O):U:C5  | 2.50                     | 0.46              |
| 1:AA:273(E):U:N3   | 1:AA:273(F):C:H1' | 2.30                     | 0.46              |
| 1:AA:294:A:N6      | 1:AA:345:A:C6     | 2.83                     | 0.46              |
| 1:AA:298:G:H8      | 1:AA:298:G:P      | 2.38                     | 0.46              |
| 1:AA:304:G:N2      | 1:AA:305:U:H1'    | 2.30                     | 0.46              |
| 1:AA:375:C:O2      | 1:AA:375:C:C2'    | 2.62                     | 0.46              |
| 1:AA:389:G:C8      | 1:AA:389:G:OP1    | 2.69                     | 0.46              |
| 1:AA:400:G:O6      | 25:Aa:63:TYR:CE2  | 2.68                     | 0.46              |
| 1:AA:446:G:C8      | 16:AR:3:ARG:NH2   | 2.83                     | 0.46              |
| 1:AA:465:G:C6      | 1:AA:466:A:C6     | 3.04                     | 0.46              |
| 1:AA:566:U:H6      | 1:AA:567:A:C8     | 2.32                     | 0.46              |
| 1:AA:588:U:H1'     | 6:AF:90:PHE:CG    | 2.51                     | 0.46              |
| 1:AA:611:C:O2      | 1:AA:612:G:H1'    | 2.16                     | 0.46              |
| 1:AA:629:G:H5'     | 1:AA:649:G:N2     | 2.30                     | 0.46              |
| 1:AA:641:C:O2'     | 1:AA:2350:C:OP1   | 2.24                     | 0.46              |
| 1:AA:657:U:C2      | 1:AA:658:C:C5     | 3.04                     | 0.46              |
| 1:AA:695:G:C5      | 1:AA:768:G:C6     | 3.03                     | 0.46              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:AA:749:C:OP2   | 18:AT:88:ARG:NH1 | 2.48                     | 0.46              |
| 1:AA:820:A:H2    | 1:AA:944:G:OP1   | 1.98                     | 0.46              |
| 1:AA:878:A:C2    | 1:AA:879:G:H3'   | 2.49                     | 0.46              |
| 1:AA:905:U:C4    | 1:AA:906:G:C8    | 3.04                     | 0.46              |
| 1:AA:930:U:C2'   | 1:AA:931:G:OP2   | 2.64                     | 0.46              |
| 1:AA:993:G:C1'   | 17:AS:91:TYR:CE2 | 2.87                     | 0.46              |
| 1:AA:1021:A:O2'  | 1:AA:1123:C:H5'' | 2.16                     | 0.46              |
| 1:AA:1094:U:O2   | 1:AA:1097:U:H5   | 1.99                     | 0.46              |
| 1:AA:1105:U:C6   | 1:AA:1107:G:C6   | 3.03                     | 0.46              |
| 1:AA:1128:A:O2'  | 1:AA:1129:A:C5'  | 2.64                     | 0.46              |
| 1:AA:1183:G:C1'  | 1:AA:1184:G:C8   | 2.93                     | 0.46              |
| 1:AA:1197:G:C4   | 1:AA:1198:U:C6   | 3.03                     | 0.46              |
| 1:AA:1210:A:H4'  | 1:AA:1211:U:O5'  | 2.14                     | 0.46              |
| 1:AA:1213:A:H3'  | 1:AA:1214:A:H8   | 1.81                     | 0.46              |
| 1:AA:1364:G:OP1  | 25:Aa:2:LYS:O    | 2.34                     | 0.46              |
| 1:AA:1754:C:OP1  | 15:AQ:98:LYS:HD2 | 2.15                     | 0.46              |
| 1:AA:1831:G:C6   | 1:AA:1832:C:C4   | 3.04                     | 0.46              |
| 1:AA:1932:A:H3'  | 1:AA:1933:G:H8   | 1.81                     | 0.46              |
| 1:AA:1953:A:N6   | 1:AA:2550:G:C5'  | 2.78                     | 0.46              |
| 1:AA:1964:G:C5   | 1:AA:1967:C:H5   | 2.34                     | 0.46              |
| 1:AA:2025:C:C2   | 1:AA:2026:C:C5   | 3.04                     | 0.46              |
| 1:AA:2033:A:H8   | 1:AA:2033:A:O5'  | 1.99                     | 0.46              |
| 1:AA:2174:C:N3   | 3:AC:219:GLY:CA  | 2.75                     | 0.46              |
| 1:AA:2182:G:H2'  | 1:AA:2183:C:H6   | 1.80                     | 0.46              |
| 1:AA:2259:G:C4'  | 1:AA:2427:C:H2'  | 2.46                     | 0.46              |
| 1:AA:2377:A:H2'  | 1:AA:2378:A:N7   | 2.31                     | 0.46              |
| 1:AA:2459:A:N7   | 1:AA:2493:U:O4   | 2.49                     | 0.46              |
| 1:AA:2636:U:O2'  | 5:AE:79:ARG:NH2  | 2.48                     | 0.46              |
| 1:AA:2685:G:P    | 10:AL:67:LYS:HD2 | 2.55                     | 0.46              |
| 1:AA:2745:C:N4   | 1:AA:2746:U:O4   | 2.49                     | 0.46              |
| 1:AA:2756:U:O2'  | 1:AA:2757:A:H5'' | 2.16                     | 0.46              |
| 1:AA:2811:G:N1   | 1:AA:2891:G:N3   | 2.64                     | 0.46              |
| 1:AA:2863:C:O2   | 1:AA:2864:G:C8   | 2.69                     | 0.46              |
| 2:AB:32:C:O2     | 2:AB:33:G:C8     | 2.69                     | 0.46              |
| 4:AD:33:LEU:HD11 | 4:AD:61:LEU:HD11 | 1.98                     | 0.46              |
| 4:AD:181:GLU:CB  | 4:AD:268:ARG:NE  | 2.75                     | 0.46              |
| 4:AD:252:TRP:CE3 | 4:AD:252:TRP:CA  | 2.98                     | 0.46              |
| 5:AE:4:ILE:CD1   | 5:AE:4:ILE:C     | 2.88                     | 0.46              |
| 5:AE:44:TYR:C    | 5:AE:44:TYR:CD2  | 2.94                     | 0.46              |
| 5:AE:108:SER:HG  | 5:AE:164:ARG:CA  | 2.29                     | 0.46              |
| 5:AE:119:ARG:CD  | 5:AE:156:MET:H   | 2.25                     | 0.46              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 6:AF:39:TRP:HB2    | 6:AF:101:LEU:HG   | 1.95                     | 0.46              |
| 6:AF:160:ASN:O     | 6:AF:163:VAL:CB   | 2.49                     | 0.46              |
| 6:AF:201:VAL:HA    | 6:AF:204:ASN:HD21 | 1.80                     | 0.46              |
| 7:AG:42:GLY:O      | 7:AG:43:LEU:O     | 2.34                     | 0.46              |
| 7:AG:92:VAL:HG12   | 7:AG:92:VAL:O     | 2.15                     | 0.46              |
| 8:AH:43:VAL:CG1    | 8:AH:51:ARG:O     | 2.52                     | 0.46              |
| 8:AH:163:TYR:CD1   | 8:AH:163:TYR:N    | 2.83                     | 0.46              |
| 9:AK:13:TRP:O      | 9:AK:138:LEU:CD1  | 2.62                     | 0.46              |
| 9:AK:58:ASP:CG     | 9:AK:59:LYS:H     | 2.24                     | 0.46              |
| 9:AK:58:ASP:OD1    | 9:AK:59:LYS:HE3   | 2.15                     | 0.46              |
| 9:AK:107:LEU:HD13  | 9:AK:117:PHE:CD1  | 2.50                     | 0.46              |
| 9:AK:115:ARG:HA    | 9:AK:118:LYS:HE3  | 1.96                     | 0.46              |
| 10:AL:34:THR:O     | 10:AL:37:ASP:HB2  | 2.16                     | 0.46              |
| 12:AN:37:LEU:HD12  | 12:AN:129:THR:C   | 2.41                     | 0.46              |
| 12:AN:44:ALA:C     | 12:AN:47:ILE:HB   | 2.31                     | 0.46              |
| 12:AN:75:THR:HG23  | 12:AN:89:ASN:O    | 2.16                     | 0.46              |
| 12:AN:125:LEU:HD23 | 12:AN:125:LEU:N   | 2.28                     | 0.46              |
| 13:AO:116:LEU:HD12 | 13:AO:118:GLU:HG2 | 1.97                     | 0.46              |
| 14:AP:9:ARG:CA     | 14:AP:12:PHE:CD2  | 2.98                     | 0.46              |
| 14:AP:75:GLU:O     | 14:AP:78:LEU:HD12 | 2.15                     | 0.46              |
| 14:AP:94:TYR:C     | 14:AP:99:LYS:CB   | 2.88                     | 0.46              |
| 15:AQ:104:ASN:HA   | 15:AQ:108:ARG:NH1 | 2.29                     | 0.46              |
| 16:AR:61:TRP:CZ3   | 16:AR:93:LYS:HA   | 2.51                     | 0.46              |
| 16:AR:80:ILE:HA    | 16:AR:83:LEU:CD1  | 2.45                     | 0.46              |
| 17:AS:38:LEU:O     | 17:AS:39:LEU:O    | 2.33                     | 0.46              |
| 17:AS:56:SER:O     | 17:AS:57:VAL:HG23 | 2.16                     | 0.46              |
| 18:AT:14:PRO:O     | 18:AT:16:LYS:NZ   | 2.49                     | 0.46              |
| 20:AV:85:VAL:O     | 20:AV:85:VAL:HG12 | 2.16                     | 0.46              |
| 21:AW:17:ALA:HA    | 21:AW:20:ARG:HH21 | 1.80                     | 0.46              |
| 23:AY:19:LEU:HD22  | 23:AY:23:LYS:HG3  | 1.98                     | 0.46              |
| 23:AY:64:ARG:HD3   | 23:AY:64:ARG:HA   | 1.67                     | 0.46              |
| 25:Aa:5:ILE:HD12   | 25:Aa:8:LYS:O     | 2.16                     | 0.46              |
| 25:Aa:35:VAL:CG1   | 25:Aa:36:CYS:N    | 2.79                     | 0.46              |
| 25:Aa:42:PHE:O     | 25:Aa:61:ARG:NH2  | 2.48                     | 0.46              |
| 25:Aa:56:VAL:O     | 25:Aa:57:GLU:HG2  | 2.16                     | 0.46              |
| 31:AI:143:GLN:C    | 31:AI:147:ALA:HB3 | 2.40                     | 0.46              |
| 34:BA:9:G:C8       | 38:BI:126:ARG:NH1 | 2.84                     | 0.46              |
| 34:BA:46:G:H2'     | 34:BA:366:C:N4    | 2.30                     | 0.46              |
| 34:BA:113:G:H2'    | 34:BA:114:U:H6    | 1.76                     | 0.46              |
| 34:BA:120:A:C8     | 34:BA:122:G:C5    | 3.04                     | 0.46              |
| 34:BA:150:C:O2     | 34:BA:151:A:C8    | 2.68                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:151:A:O2'   | 34:BA:152:A:H5'    | 2.16                     | 0.46              |
| 34:BA:155:C:H2'   | 34:BA:156:G:O4'    | 2.15                     | 0.46              |
| 34:BA:217:C:N4    | 34:BA:218:C:N4     | 2.64                     | 0.46              |
| 34:BA:246:A:C2    | 34:BA:282:A:C5     | 3.04                     | 0.46              |
| 34:BA:355:C:H42   | 34:BA:356:A:N6     | 2.12                     | 0.46              |
| 34:BA:452:A:C6    | 34:BA:453:A:C6     | 3.03                     | 0.46              |
| 34:BA:557:G:O3'   | 34:BA:558:G:O4'    | 2.32                     | 0.46              |
| 34:BA:667:G:H5'   | 48:BS:51:HIS:CD2   | 2.51                     | 0.46              |
| 34:BA:872:A:C6    | 34:BA:874:G:C5     | 3.03                     | 0.46              |
| 34:BA:908:A:C2    | 34:BA:909:A:C8     | 3.03                     | 0.46              |
| 34:BA:929:G:C6    | 34:BA:930:C:C4     | 3.03                     | 0.46              |
| 34:BA:1054:C:P    | 34:BA:1197:G:P     | 3.13                     | 0.46              |
| 34:BA:1173:G:C2'  | 34:BA:1174:G:H5''  | 2.45                     | 0.46              |
| 34:BA:1253:G:C2   | 34:BA:1285:A:N6    | 2.75                     | 0.46              |
| 34:BA:1343:G:H5'  | 42:BM:124:GLN:HA   | 1.97                     | 0.46              |
| 34:BA:1363:A:H5'' | 34:BA:1364:U:C6    | 2.51                     | 0.46              |
| 34:BA:1415:G:C2   | 34:BA:1486:G:C4    | 3.03                     | 0.46              |
| 35:BF:42:ILE:HD12 | 35:BF:202:PRO:HB2  | 1.90                     | 0.46              |
| 35:BF:44:LEU:HD23 | 35:BF:44:LEU:H     | 1.79                     | 0.46              |
| 35:BF:160:ASP:O   | 35:BF:161:ALA:HB2  | 2.15                     | 0.46              |
| 35:BF:234:PRO:CA  | 35:BF:238:LEU:HD13 | 2.38                     | 0.46              |
| 36:BG:30:ARG:HG2  | 36:BG:30:ARG:HH11  | 1.81                     | 0.46              |
| 36:BG:50:ALA:HB1  | 36:BG:72:LYS:HB2   | 1.96                     | 0.46              |
| 36:BG:59:ARG:CZ   | 36:BG:64:VAL:HA    | 2.42                     | 0.46              |
| 36:BG:150:LYS:NZ  | 36:BG:152:ILE:HG21 | 2.30                     | 0.46              |
| 37:BH:78:LEU:HB3  | 37:BH:93:PHE:CE2   | 2.50                     | 0.46              |
| 37:BH:94:LEU:CA   | 37:BH:97:LEU:HD12  | 2.42                     | 0.46              |
| 37:BH:187:ARG:CG  | 37:BH:188:LEU:N    | 2.79                     | 0.46              |
| 38:BI:121:LYS:HB3 | 38:BI:121:LYS:HE3  | 1.74                     | 0.46              |
| 38:BI:141:GLN:C   | 38:BI:142:LEU:CG   | 2.87                     | 0.46              |
| 39:BJ:4:TYR:CD1   | 39:BJ:90:VAL:HG22  | 2.51                     | 0.46              |
| 40:BK:73:MET:HE3  | 40:BK:146:GLU:CB   | 2.26                     | 0.46              |
| 41:BL:49:GLU:OE1  | 41:BL:49:GLU:C     | 2.59                     | 0.46              |
| 41:BL:92:ARG:CG   | 41:BL:92:ARG:NH1   | 2.78                     | 0.46              |
| 41:BL:114:THR:HB  | 41:BL:129:VAL:HG13 | 1.96                     | 0.46              |
| 42:BM:101:PHE:O   | 42:BM:102:LEU:HD23 | 2.16                     | 0.46              |
| 42:BM:113:LYS:C   | 42:BM:115:GLY:H    | 2.21                     | 0.46              |
| 43:BN:26:ALA:O    | 43:BN:84:GLN:CD    | 2.59                     | 0.46              |
| 44:BO:23:ALA:HB1  | 44:BO:88:GLY:CA    | 2.44                     | 0.46              |
| 45:BP:28:LYS:CE   | 45:BP:33:ARG:HH12  | 2.19                     | 0.46              |
| 45:BP:121:GLY:O   | 45:BP:122:THR:OG1  | 2.29                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 46:BQ:38:GLY:O    | 46:BQ:39:ILE:HG23 | 2.14                     | 0.46              |
| 48:BS:18:PHE:O    | 48:BS:18:PHE:CD1  | 2.68                     | 0.46              |
| 48:BS:36:ILE:CG1  | 48:BS:60:VAL:HG22 | 2.46                     | 0.46              |
| 48:BS:67:LEU:O    | 48:BS:70:LEU:CB   | 2.60                     | 0.46              |
| 50:BU:59:ILE:HD11 | 50:BU:71:PHE:CA   | 2.45                     | 0.46              |
| 50:BU:88:TYR:CD2  | 50:BU:92:ARG:HD2  | 2.51                     | 0.46              |
| 57:BZ:64:ILE:HD13 | 57:BZ:188:GLN:N   | 2.30                     | 0.46              |
| 57:BZ:69:ARG:HA   | 57:BZ:70:ILE:CB   | 2.20                     | 0.46              |
| 57:BZ:166:SER:H   | 57:BZ:171:ILE:CG2 | 2.29                     | 0.46              |
| 57:BZ:209:ILE:HA  | 57:BZ:224:GLY:HA3 | 1.97                     | 0.46              |
| 57:BZ:210:SER:C   | 57:BZ:284:ILE:CG2 | 2.79                     | 0.46              |
| 57:BZ:374:ARG:C   | 57:BZ:376:GLU:N   | 2.74                     | 0.46              |
| 1:AA:215:G:O2'    | 1:AA:216:A:H5''   | 2.15                     | 0.46              |
| 1:AA:215:G:C1'    | 1:AA:216:A:H4'    | 2.46                     | 0.46              |
| 1:AA:297:C:H3'    | 1:AA:298:G:N7     | 2.31                     | 0.46              |
| 1:AA:342:G:H8     | 1:AA:342:G:OP2    | 1.98                     | 0.46              |
| 1:AA:350:U:N3     | 1:AA:351:G:O6     | 2.49                     | 0.46              |
| 1:AA:443:A:O4'    | 1:AA:1201:C:H4'   | 2.15                     | 0.46              |
| 1:AA:458:G:O2'    | 1:AA:469:G:N1     | 2.48                     | 0.46              |
| 1:AA:459:U:OP2    | 28:Ad:40:TRP:CG   | 2.68                     | 0.46              |
| 1:AA:495:G:H2'    | 1:AA:496:G:O5'    | 2.15                     | 0.46              |
| 1:AA:531:C:H3'    | 1:AA:532:A:C1'    | 2.45                     | 0.46              |
| 1:AA:566:U:H3'    | 17:AS:82:ARG:HH12 | 1.81                     | 0.46              |
| 1:AA:569:U:OP1    | 1:AA:945:A:C6     | 2.68                     | 0.46              |
| 1:AA:612:G:H2'    | 1:AA:615:G:C4     | 2.51                     | 0.46              |
| 1:AA:618(A):C:OP2 | 6:AF:107:LYS:NZ   | 2.49                     | 0.46              |
| 1:AA:648:G:C2     | 1:AA:649:G:C8     | 3.04                     | 0.46              |
| 1:AA:668:G:C6     | 1:AA:670:A:C5     | 3.04                     | 0.46              |
| 1:AA:784:A:C6     | 1:AA:792:G:N3     | 2.84                     | 0.46              |
| 1:AA:822:U:HO2'   | 1:AA:823:G:P      | 2.34                     | 0.46              |
| 1:AA:987:G:OP1    | 24:AZ:13:ILE:CG2  | 2.57                     | 0.46              |
| 1:AA:995:C:O2'    | 1:AA:996:A:OP2    | 2.31                     | 0.46              |
| 1:AA:1005:C:O4'   | 1:AA:1012:U:O2    | 2.34                     | 0.46              |
| 1:AA:1047:G:H5''  | 31:AI:60:ARG:CB   | 2.46                     | 0.46              |
| 1:AA:1051:G:C1'   | 1:AA:2752:C:OP1   | 2.60                     | 0.46              |
| 1:AA:1081:U:H6    | 1:AA:1081:U:O5'   | 1.99                     | 0.46              |
| 1:AA:1101:U:H2'   | 1:AA:1101:U:O2    | 2.16                     | 0.46              |
| 1:AA:1196:C:H1'   | 1:AA:1226:G:H1'   | 1.98                     | 0.46              |
| 1:AA:1216:G:N2    | 1:AA:1234:U:H1'   | 2.31                     | 0.46              |
| 1:AA:1265:A:C1'   | 1:AA:1267:U:C4    | 2.91                     | 0.46              |
| 1:AA:1268:A:N6    | 1:AA:2013:A:N7    | 2.63                     | 0.46              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1360:A:H2'    | 1:AA:1361:G:O4'    | 2.16                     | 0.46              |
| 1:AA:1364:G:P      | 1:AA:1809:A:N6     | 2.89                     | 0.46              |
| 1:AA:1378:A:C2     | 1:AA:1380:G:H1'    | 2.51                     | 0.46              |
| 1:AA:1444(A):A:H5' | 1:AA:1445:C:C6     | 2.51                     | 0.46              |
| 1:AA:1631:A:C2'    | 1:AA:1632:A:O5'    | 2.64                     | 0.46              |
| 1:AA:1641:A:N7     | 1:AA:1642:G:C5     | 2.84                     | 0.46              |
| 1:AA:1709:U:H5'    | 1:AA:1709:U:C6     | 2.46                     | 0.46              |
| 1:AA:1712:C:H3'    | 1:AA:1716:U:C5     | 2.50                     | 0.46              |
| 1:AA:1743:G:C4     | 1:AA:1746:G:C8     | 3.04                     | 0.46              |
| 1:AA:1754:C:N3     | 1:AA:1755:A:C4     | 2.83                     | 0.46              |
| 1:AA:1906:G:C5     | 1:AA:1929:G:C4     | 2.86                     | 0.46              |
| 1:AA:1992:G:C1'    | 1:AA:1993:U:H5     | 2.19                     | 0.46              |
| 1:AA:2016:U:H1'    | 26:Ab:6:VAL:HG13   | 1.98                     | 0.46              |
| 1:AA:2033:A:C6     | 1:AA:2036:C:N4     | 2.83                     | 0.46              |
| 1:AA:2072:G:C5     | 1:AA:2073:C:C5     | 3.04                     | 0.46              |
| 1:AA:2171:A:O2'    | 1:AA:2172:U:O4'    | 2.34                     | 0.46              |
| 1:AA:2195:C:O2     | 1:AA:2196:C:H1'    | 2.15                     | 0.46              |
| 1:AA:2257:U:OP1    | 22:AX:11:ARG:CZ    | 2.63                     | 0.46              |
| 1:AA:2325:G:C5     | 1:AA:2326:C:C5     | 3.03                     | 0.46              |
| 1:AA:2345:G:N2     | 1:AA:2381:C:H3'    | 2.31                     | 0.46              |
| 1:AA:2346:A:H5'    | 1:AA:2383:G:C4'    | 2.46                     | 0.46              |
| 1:AA:2482:G:N7     | 1:AA:2483:C:C5     | 2.84                     | 0.46              |
| 1:AA:2514:U:O5'    | 1:AA:2514:U:H6     | 1.99                     | 0.46              |
| 1:AA:2593:U:OP2    | 1:AA:2593:U:C6     | 2.63                     | 0.46              |
| 1:AA:2599:G:H2'    | 1:AA:2600:A:O4'    | 2.16                     | 0.46              |
| 1:AA:2629:A:C5'    | 1:AA:2895:U:C1'    | 2.86                     | 0.46              |
| 1:AA:2635:C:H5''   | 5:AE:78:LEU:HD13   | 1.97                     | 0.46              |
| 1:AA:2660:A:C5     | 57:BZ:457:THR:HG23 | 2.51                     | 0.46              |
| 1:AA:2705:A:H8     | 1:AA:2705:A:O5'    | 1.98                     | 0.46              |
| 1:AA:2776:A:N7     | 1:AA:2781:A:C6     | 2.84                     | 0.46              |
| 1:AA:2826:A:H2'    | 1:AA:2827:C:C5'    | 2.46                     | 0.46              |
| 1:AA:2880:C:H2'    | 1:AA:2881:C:H6     | 1.81                     | 0.46              |
| 2:AB:33:G:H2'      | 2:AB:33:G:N3       | 2.31                     | 0.46              |
| 2:AB:81:G:O6       | 2:AB:96:G:C6       | 2.68                     | 0.46              |
| 3:AC:123:VAL:CG1   | 3:AC:138:PRO:HG2   | 2.41                     | 0.46              |
| 3:AC:200:LYS:NZ    | 3:AC:204:ALA:CB    | 2.77                     | 0.46              |
| 4:AD:143:HIS:NE2   | 4:AD:192:THR:HG22  | 2.30                     | 0.46              |
| 4:AD:168:ARG:HA    | 4:AD:174:ILE:HD12  | 1.97                     | 0.46              |
| 5:AE:5:LEU:HG      | 5:AE:25:VAL:CG1    | 2.44                     | 0.46              |
| 5:AE:51:PHE:CD1    | 5:AE:76:ARG:CG     | 2.98                     | 0.46              |
| 5:AE:53:PRO:HD2    | 5:AE:74:PRO:HA     | 1.97                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 5:AE:53:PRO:O     | 5:AE:53:PRO:HG2    | 2.15                     | 0.46              |
| 6:AF:75:HIS:NE2   | 6:AF:77:ASP:O      | 2.48                     | 0.46              |
| 7:AG:103:LEU:HD11 | 7:AG:107:LEU:HD23  | 1.98                     | 0.46              |
| 8:AH:7:LEU:HA     | 8:AH:52:VAL:CG1    | 2.46                     | 0.46              |
| 8:AH:26:VAL:HG21  | 8:AH:35:VAL:HG21   | 1.97                     | 0.46              |
| 8:AH:85:LYS:N     | 8:AH:133:VAL:O     | 2.49                     | 0.46              |
| 8:AH:149:ARG:HH12 | 8:AH:164:TYR:HB3   | 1.81                     | 0.46              |
| 9:AK:34:LEU:CD2   | 9:AK:116:LEU:CD2   | 2.94                     | 0.46              |
| 9:AK:36:GLY:HA2   | 9:AK:47:ALA:C      | 2.41                     | 0.46              |
| 9:AK:54:VAL:HG12  | 9:AK:122:VAL:HG11  | 1.97                     | 0.46              |
| 10:AL:37:ASP:H    | 10:AL:61:VAL:CG2   | 2.29                     | 0.46              |
| 11:AM:72:PRO:O    | 11:AM:111:ARG:CZ   | 2.64                     | 0.46              |
| 11:AM:131:SER:O   | 11:AM:135:LEU:CD1  | 2.64                     | 0.46              |
| 12:AN:72:LYS:HE2  | 12:AN:96:VAL:CG2   | 2.46                     | 0.46              |
| 12:AN:85:LYS:HD2  | 22:AX:10:THR:OG1   | 2.16                     | 0.46              |
| 13:AO:65:LEU:HD23 | 13:AO:65:LEU:O     | 2.16                     | 0.46              |
| 13:AO:75:LEU:HD23 | 13:AO:78:LYS:CG    | 2.46                     | 0.46              |
| 14:AP:3:ARG:HG2   | 14:AP:4:LEU:CG     | 2.22                     | 0.46              |
| 15:AQ:43:GLN:H    | 15:AQ:43:GLN:CD    | 2.05                     | 0.46              |
| 15:AQ:50:ILE:HG22 | 15:AQ:67:SER:C     | 2.41                     | 0.46              |
| 15:AQ:54:ARG:O    | 15:AQ:55:ASN:OD1   | 2.34                     | 0.46              |
| 15:AQ:64:ARG:C    | 15:AQ:65:LYS:O     | 2.56                     | 0.46              |
| 15:AQ:72:VAL:HG12 | 15:AQ:73:GLU:N     | 2.31                     | 0.46              |
| 15:AQ:108:ARG:H   | 15:AQ:108:ARG:NH1  | 2.11                     | 0.46              |
| 16:AR:31:SER:OG   | 16:AR:35:ALA:CA    | 2.64                     | 0.46              |
| 16:AR:33:ARG:O    | 16:AR:36:ARG:HG3   | 2.16                     | 0.46              |
| 16:AR:65:ILE:C    | 16:AR:67:ALA:N     | 2.71                     | 0.46              |
| 16:AR:89:GLU:O    | 16:AR:90:VAL:HG22  | 2.16                     | 0.46              |
| 16:AR:89:GLU:HB2  | 17:AS:51:VAL:HB    | 1.98                     | 0.46              |
| 17:AS:8:GLY:HA3   | 17:AS:24:LYS:NZ    | 2.30                     | 0.46              |
| 20:AV:54:LYS:HA   | 20:AV:54:LYS:HD2   | 1.64                     | 0.46              |
| 21:AW:47:VAL:O    | 21:AW:50:GLN:HB2   | 2.15                     | 0.46              |
| 21:AW:63:ASP:CG   | 21:AW:64:GLY:H     | 2.24                     | 0.46              |
| 21:AW:138:GLU:O   | 21:AW:139:VAL:HG22 | 2.16                     | 0.46              |
| 23:AY:24:LYS:HG2  | 23:AY:52:ILE:HD13  | 1.98                     | 0.46              |
| 25:Aa:38:LYS:HG2  | 25:Aa:40:HIS:CE1   | 2.51                     | 0.46              |
| 25:Aa:42:PHE:C    | 25:Aa:61:ARG:HH12  | 2.20                     | 0.46              |
| 26:Ab:51:TYR:HD1  | 26:Ab:55:ARG:H     | 1.62                     | 0.46              |
| 29:Ae:3:LYS:HZ3   | 29:Ae:59:LYS:HE3   | 1.81                     | 0.46              |
| 30:Af:1:MET:N     | 30:Af:33:LYS:CB    | 2.79                     | 0.46              |
| 31:AI:129:PRO:C   | 31:AI:131:MET:N    | 2.73                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 32:AJ:10:LEU:CA   | 32:AJ:56:GLU:HG2   | 2.42                     | 0.46              |
| 34:BA:50:A:O2'    | 34:BA:52:G:C8      | 2.57                     | 0.46              |
| 34:BA:112:G:C2    | 34:BA:113:G:C8     | 3.03                     | 0.46              |
| 34:BA:270:A:C8    | 34:BA:270:A:OP2    | 2.69                     | 0.46              |
| 34:BA:298:A:H3'   | 34:BA:299:G:H8     | 1.80                     | 0.46              |
| 34:BA:299:G:C5    | 34:BA:300:A:N6     | 2.84                     | 0.46              |
| 34:BA:404:U:H5'   | 37:BH:122:ARG:CD   | 2.45                     | 0.46              |
| 34:BA:483:C:O5'   | 34:BA:483:C:C6     | 2.69                     | 0.46              |
| 34:BA:501:C:OP2   | 45:BP:124:LYS:HD2  | 2.16                     | 0.46              |
| 34:BA:564:C:C4    | 34:BA:565:U:C4     | 3.04                     | 0.46              |
| 34:BA:575:G:O2'   | 34:BA:576:G:H5'    | 2.15                     | 0.46              |
| 34:BA:581:G:C6    | 34:BA:758:G:N7     | 2.83                     | 0.46              |
| 34:BA:706:A:C2    | 34:BA:707:C:N1     | 2.84                     | 0.46              |
| 34:BA:706:A:C2'   | 34:BA:707:C:O5'    | 2.64                     | 0.46              |
| 34:BA:748:C:H1'   | 34:BA:749:C:C5     | 2.50                     | 0.46              |
| 34:BA:766:A:C2    | 34:BA:767:A:C4     | 3.03                     | 0.46              |
| 34:BA:864:A:H8    | 34:BA:864:A:O5'    | 1.99                     | 0.46              |
| 34:BA:901:A:N3    | 34:BA:902:G:O4'    | 2.48                     | 0.46              |
| 34:BA:931:C:H2'   | 34:BA:932:C:C6     | 2.51                     | 0.46              |
| 34:BA:946:A:C3'   | 34:BA:947:G:H8     | 2.29                     | 0.46              |
| 34:BA:961:U:C2'   | 34:BA:962:C:C5'    | 2.94                     | 0.46              |
| 34:BA:968:A:O4'   | 34:BA:968:A:OP1    | 2.33                     | 0.46              |
| 34:BA:977:A:N6    | 34:BA:1224:G:P     | 2.88                     | 0.46              |
| 34:BA:998:G:C6    | 34:BA:1044:A:C6    | 3.03                     | 0.46              |
| 34:BA:1108:G:C2'  | 34:BA:1109:C:H5'   | 2.45                     | 0.46              |
| 34:BA:1115:C:C4   | 34:BA:1186:G:O6    | 2.69                     | 0.46              |
| 34:BA:1117:G:C6   | 34:BA:1184:G:C4    | 2.89                     | 0.46              |
| 34:BA:1158:C:C1'  | 35:BF:133:LYS:CE   | 2.94                     | 0.46              |
| 34:BA:1188:A:H2'  | 34:BA:1188:A:N3    | 2.30                     | 0.46              |
| 34:BA:1188:A:H3'  | 34:BA:1189:C:H5    | 1.80                     | 0.46              |
| 34:BA:1193:G:C8   | 34:BA:1193:G:C3'   | 2.97                     | 0.46              |
| 34:BA:1241:G:C8   | 34:BA:1241:G:OP2   | 2.69                     | 0.46              |
| 34:BA:1361:G:C8   | 34:BA:1361:G:C3'   | 2.99                     | 0.46              |
| 34:BA:1440:C:N3   | 34:BA:1462:G:N1    | 2.64                     | 0.46              |
| 34:BA:1453:G:O2'  | 34:BA:1454:G:H5'   | 2.16                     | 0.46              |
| 34:BA:1459:C:HO2' | 34:BA:1460:A:H5'   | 1.77                     | 0.46              |
| 35:BF:72:GLY:HA2  | 35:BF:165:VAL:HG21 | 1.96                     | 0.46              |
| 35:BF:73:THR:HG22 | 35:BF:95:GLN:N     | 2.31                     | 0.46              |
| 35:BF:80:ILE:CG2  | 35:BF:81:VAL:N     | 2.78                     | 0.46              |
| 35:BF:88:ALA:HA   | 35:BF:222:ILE:CD1  | 2.46                     | 0.46              |
| 35:BF:110:GLN:O   | 35:BF:113:HIS:HB3  | 2.15                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BF:115:LEU:HB2 | 35:BF:145:LEU:HD21 | 1.97                     | 0.46              |
| 39:BJ:26:ILE:HG22 | 39:BJ:30:LEU:CD1   | 2.42                     | 0.46              |
| 39:BJ:47:ARG:HA   | 39:BJ:57:GLN:HA    | 1.97                     | 0.46              |
| 40:BK:6:ARG:CZ    | 40:BK:6:ARG:H      | 2.29                     | 0.46              |
| 40:BK:69:VAL:HG13 | 40:BK:135:VAL:HA   | 1.98                     | 0.46              |
| 41:BL:37:ARG:O    | 41:BL:38:ILE:C     | 2.57                     | 0.46              |
| 41:BL:70:GLN:HE21 | 41:BL:71:GLY:H     | 1.47                     | 0.46              |
| 41:BL:103:VAL:O   | 41:BL:104:ARG:C    | 2.59                     | 0.46              |
| 42:BM:49:PRO:CB   | 42:BM:82:ALA:HB2   | 2.42                     | 0.46              |
| 42:BM:96:LEU:O    | 42:BM:100:GLY:CA   | 2.62                     | 0.46              |
| 44:BO:90:GLY:O    | 44:BO:91:ARG:C     | 2.58                     | 0.46              |
| 45:BP:41:ARG:C    | 45:BP:42:THR:HG22  | 2.41                     | 0.46              |
| 45:BP:55:VAL:O    | 45:BP:70:ILE:HD11  | 2.16                     | 0.46              |
| 45:BP:102:ARG:CZ  | 45:BP:110:VAL:N    | 2.78                     | 0.46              |
| 45:BP:103:GLY:CA  | 45:BP:107:ALA:O    | 2.64                     | 0.46              |
| 47:BR:4:LYS:HA    | 47:BR:7:ILE:HD11   | 1.98                     | 0.46              |
| 48:BS:36:ILE:CD1  | 48:BS:63:ARG:CD    | 2.84                     | 0.46              |
| 49:BT:34:GLU:OE1  | 49:BT:35:LYS:O     | 2.33                     | 0.46              |
| 50:BU:87:LYS:C    | 50:BU:91:ARG:HE    | 2.24                     | 0.46              |
| 51:BV:37:VAL:HG12 | 51:BV:41:LYS:HZ2   | 1.77                     | 0.46              |
| 51:BV:58:LEU:HB3  | 51:BV:62:GLU:CG    | 2.43                     | 0.46              |
| 53:BX:57:ARG:HH11 | 53:BX:57:ARG:HG2   | 1.80                     | 0.46              |
| 55:BC:34:G:H3'    | 55:BC:35:A:C5'     | 2.46                     | 0.46              |
| 57:BZ:136:ARG:NH1 | 57:BZ:139:TRP:CE2  | 2.84                     | 0.46              |
| 57:BZ:249:ALA:HB1 | 57:BZ:250:LYS:CE   | 2.41                     | 0.46              |
| 57:BZ:406:ASP:CA  | 57:BZ:407:VAL:CG1  | 2.85                     | 0.46              |
| 1:AA:58:G:H2'     | 1:AA:73:A:C2       | 2.44                     | 0.46              |
| 1:AA:194:G:H2'    | 1:AA:195:A:H8      | 1.76                     | 0.46              |
| 1:AA:218:A:H2'    | 1:AA:219:G:O4'     | 2.16                     | 0.46              |
| 1:AA:242:G:C3'    | 29:Ae:4:MET:SD     | 3.02                     | 0.46              |
| 1:AA:285:C:C4     | 1:AA:286:C:N4      | 2.84                     | 0.46              |
| 1:AA:307:G:N1     | 1:AA:309:G:H5''    | 2.30                     | 0.46              |
| 1:AA:311:A:H2     | 1:AA:331:A:H5''    | 1.80                     | 0.46              |
| 1:AA:332:A:C4     | 1:AA:335:C:C5      | 3.04                     | 0.46              |
| 1:AA:378:C:H2'    | 1:AA:379:G:H8      | 1.81                     | 0.46              |
| 1:AA:416:C:N4     | 1:AA:417:C:N4      | 2.64                     | 0.46              |
| 1:AA:436:C:H2'    | 1:AA:436:C:O2      | 2.15                     | 0.46              |
| 1:AA:469:G:N1     | 28:Ad:40:TRP:CZ2   | 2.83                     | 0.46              |
| 1:AA:588:U:H2'    | 1:AA:589:C:H6      | 1.80                     | 0.46              |
| 1:AA:658:C:C2     | 1:AA:659:C:C5      | 3.04                     | 0.46              |
| 1:AA:675:A:N7     | 1:AA:804:A:N1      | 2.64                     | 0.46              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:757:U:C2'   | 1:AA:758:C:O5'    | 2.64                     | 0.46              |
| 1:AA:822:U:H2'   | 1:AA:823:G:H8     | 1.79                     | 0.46              |
| 1:AA:950:G:C5    | 1:AA:951:C:C5     | 3.04                     | 0.46              |
| 1:AA:1026:U:H2'  | 1:AA:1027:A:O5'   | 2.16                     | 0.46              |
| 1:AA:1081:U:C2'  | 1:AA:1082:U:H5'   | 2.46                     | 0.46              |
| 1:AA:1361:G:C4   | 1:AA:1362:C:C5    | 3.04                     | 0.46              |
| 1:AA:1464:C:O2'  | 1:AA:1465:G:C5'   | 2.64                     | 0.46              |
| 1:AA:1483:G:N3   | 1:AA:1483:G:C2'   | 2.78                     | 0.46              |
| 1:AA:1620:G:O2'  | 1:AA:1621:U:C5'   | 2.63                     | 0.46              |
| 1:AA:1637:A:O2'  | 1:AA:2711:A:C1'   | 2.54                     | 0.46              |
| 1:AA:1637:A:C6   | 1:AA:1638:C:C4    | 3.03                     | 0.46              |
| 1:AA:1654:A:N1   | 1:AA:1655:A:C8    | 2.84                     | 0.46              |
| 1:AA:1661:G:C2   | 1:AA:2000:G:C4    | 3.04                     | 0.46              |
| 1:AA:1789:A:H2'  | 1:AA:1789:A:N3    | 2.30                     | 0.46              |
| 1:AA:1809:A:C5'  | 1:AA:1810:A:C2    | 2.88                     | 0.46              |
| 1:AA:1889:A:C2   | 1:AA:1890:A:C5    | 3.03                     | 0.46              |
| 1:AA:2031:A:N6   | 1:AA:2498:C:C1'   | 2.77                     | 0.46              |
| 1:AA:2114:A:H2'  | 1:AA:2115:G:C4'   | 2.46                     | 0.46              |
| 1:AA:2117:A:N6   | 1:AA:2171:A:C6    | 2.84                     | 0.46              |
| 1:AA:2168:G:N2   | 1:AA:2170:A:C3'   | 2.79                     | 0.46              |
| 1:AA:2176:A:N9   | 3:AC:44:HIS:HD2   | 2.14                     | 0.46              |
| 1:AA:2178:C:H5'' | 3:AC:46:LYS:NZ    | 2.29                     | 0.46              |
| 1:AA:2253:G:C6   | 59:AA:3003:8AN:C5 | 2.95                     | 0.46              |
| 1:AA:2275:C:O2'  | 12:AN:84:GLY:O    | 2.33                     | 0.46              |
| 1:AA:2346:A:N6   | 27:Ac:37:ARG:NH1  | 2.47                     | 0.46              |
| 1:AA:2378:A:N3   | 1:AA:2378:A:C2'   | 2.77                     | 0.46              |
| 1:AA:2386:C:O2   | 1:AA:2386:C:H2'   | 2.16                     | 0.46              |
| 1:AA:2450:A:C2   | 1:AA:2451:A:C1'   | 2.98                     | 0.46              |
| 1:AA:2457:U:H2'  | 1:AA:2458:G:C4'   | 2.46                     | 0.46              |
| 1:AA:2521:C:C2   | 1:AA:2545:G:N2    | 2.84                     | 0.46              |
| 1:AA:2527:C:OP1  | 30:Af:30:PRO:HB3  | 2.16                     | 0.46              |
| 1:AA:2547:U:H6   | 1:AA:2547:U:H5''  | 1.81                     | 0.46              |
| 1:AA:2573:C:C6   | 1:AA:2573:C:C3'   | 2.99                     | 0.46              |
| 1:AA:2633:G:C6   | 1:AA:2634:G:N7    | 2.84                     | 0.46              |
| 1:AA:2633:G:H8   | 1:AA:2633:G:O5'   | 1.98                     | 0.46              |
| 1:AA:2691:C:C4'  | 1:AA:2872:G:N7    | 2.78                     | 0.46              |
| 1:AA:2693:A:O2'  | 1:AA:2848:G:H5''  | 2.16                     | 0.46              |
| 1:AA:2801:A:OP2  | 1:AA:2801:A:H3'   | 2.16                     | 0.46              |
| 2:AB:6:C:O2'     | 2:AB:7:G:O5'      | 2.26                     | 0.46              |
| 2:AB:29:A:OP1    | 14:AP:34:HIS:CE1  | 2.69                     | 0.46              |
| 2:AB:66:A:H2     | 2:AB:108:C:C6     | 2.33                     | 0.46              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 2:AB:71:C:O2       | 2:AB:72:G:C4'     | 2.64                     | 0.46              |
| 3:AC:7:TYR:HE1     | 3:AC:10:LEU:HG    | 1.79                     | 0.46              |
| 3:AC:40:THR:C      | 3:AC:216:THR:HG22 | 2.15                     | 0.46              |
| 3:AC:78:ALA:HA     | 3:AC:119:VAL:HG22 | 1.98                     | 0.46              |
| 3:AC:99:ILE:HG12   | 3:AC:107:TRP:CZ3  | 2.51                     | 0.46              |
| 3:AC:102:LYS:HE3   | 3:AC:107:TRP:CB   | 2.46                     | 0.46              |
| 3:AC:120:MET:CA    | 3:AC:120:MET:HE3  | 2.46                     | 0.46              |
| 3:AC:148:ASN:HB2   | 3:AC:151:GLU:CD   | 2.41                     | 0.46              |
| 3:AC:167:LYS:CG    | 3:AC:168:THR:N    | 2.75                     | 0.46              |
| 4:AD:23:GLU:HB3    | 4:AD:204:ILE:CG1  | 2.43                     | 0.46              |
| 4:AD:168:ARG:HG2   | 4:AD:173:VAL:CG1  | 2.21                     | 0.46              |
| 4:AD:171:ASP:O     | 4:AD:186:HIS:CB   | 2.63                     | 0.46              |
| 6:AF:34:TRP:CD1    | 11:AM:8:PRO:O     | 2.69                     | 0.46              |
| 6:AF:37:VAL:C      | 6:AF:184:TYR:HH   | 2.24                     | 0.46              |
| 6:AF:200:GLU:O     | 6:AF:203:GLN:N    | 2.48                     | 0.46              |
| 7:AG:30:GLU:HG2    | 7:AG:33:ARG:CG    | 2.46                     | 0.46              |
| 11:AM:79:ARG:HE    | 11:AM:83:VAL:CG1  | 2.29                     | 0.46              |
| 12:AN:90:VAL:CA    | 12:AN:91:GLU:OE2  | 2.64                     | 0.46              |
| 13:AO:27:SER:O     | 13:AO:30:THR:HB   | 2.15                     | 0.46              |
| 13:AO:28:LEU:HD22  | 13:AO:34:ILE:HG12 | 1.97                     | 0.46              |
| 13:AO:33:ARG:CA    | 13:AO:115:GLU:HB3 | 2.42                     | 0.46              |
| 13:AO:96:ARG:HG3   | 13:AO:98:LEU:HD11 | 1.96                     | 0.46              |
| 17:AS:69:LYS:HE2   | 17:AS:70:ILE:HG13 | 1.98                     | 0.46              |
| 18:AT:75:TYR:O     | 18:AT:104:THR:C   | 2.58                     | 0.46              |
| 20:AV:21:LYS:HD2   | 20:AV:23:ARG:HH22 | 1.80                     | 0.46              |
| 20:AV:47:LYS:HB3   | 20:AV:49:VAL:HG13 | 1.97                     | 0.46              |
| 21:AW:80:ARG:HD2   | 21:AW:80:ARG:N    | 2.31                     | 0.46              |
| 21:AW:127:LYS:CD   | 21:AW:163:LEU:HA  | 2.29                     | 0.46              |
| 21:AW:163:LEU:HD12 | 21:AW:163:LEU:N   | 2.30                     | 0.46              |
| 22:AX:84:LEU:HB3   | 22:AX:85:ALA:H    | 1.57                     | 0.46              |
| 24:AZ:6:VAL:CB     | 24:AZ:35:ARG:HH21 | 2.29                     | 0.46              |
| 24:AZ:40:THR:O     | 24:AZ:44:ARG:CG   | 2.64                     | 0.46              |
| 30:Af:2:LYS:HB3    | 30:Af:35:ARG:O    | 2.15                     | 0.46              |
| 32:AJ:55:VAL:HB    | 32:AJ:56:GLU:CA   | 2.39                     | 0.46              |
| 34:BA:80:G:C3'     | 34:BA:81:G:H8     | 2.29                     | 0.46              |
| 34:BA:134:A:H2'    | 34:BA:135:C:O5'   | 2.16                     | 0.46              |
| 34:BA:164:U:C2'    | 34:BA:165:C:C6    | 2.99                     | 0.46              |
| 34:BA:255:G:C1'    | 50:BU:16:GLN:HB2  | 2.46                     | 0.46              |
| 34:BA:292:G:C4     | 34:BA:309:G:N2    | 2.84                     | 0.46              |
| 34:BA:295:C:C2     | 34:BA:296:U:C6    | 3.03                     | 0.46              |
| 34:BA:322:C:N3     | 34:BA:323:U:O2    | 2.49                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 34:BA:450:G:OP1   | 34:BA:452:A:P     | 2.74                     | 0.46              |
| 34:BA:590:C:OP1   | 41:BL:29:SER:CB   | 2.62                     | 0.46              |
| 34:BA:644:G:C5    | 34:BA:645:C:C5    | 3.04                     | 0.46              |
| 34:BA:682:G:C2    | 34:BA:683:G:C8    | 3.04                     | 0.46              |
| 34:BA:718:G:C4    | 44:BO:116:HIS:NE2 | 2.84                     | 0.46              |
| 34:BA:922:G:H4'   | 38:BI:20:GLN:CA   | 2.27                     | 0.46              |
| 34:BA:927:G:C5'   | 34:BA:1503:A:N6   | 2.56                     | 0.46              |
| 34:BA:977:A:H2'   | 34:BA:977:A:N3    | 2.30                     | 0.46              |
| 34:BA:1002:G:H2'  | 34:BA:1002:G:N3   | 2.31                     | 0.46              |
| 34:BA:1049:U:H1'  | 34:BA:1201:A:H8   | 1.76                     | 0.46              |
| 34:BA:1061:G:H2'  | 34:BA:1062:U:O4'  | 2.15                     | 0.46              |
| 34:BA:1065:U:O2   | 34:BA:1065:U:C2'  | 2.57                     | 0.46              |
| 34:BA:1205:U:O2'  | 36:BG:194:GLY:CA  | 2.64                     | 0.46              |
| 34:BA:1210:C:H2'  | 34:BA:1211:U:C6   | 2.51                     | 0.46              |
| 34:BA:1220:G:O2'  | 34:BA:1221:G:H5'  | 2.16                     | 0.46              |
| 34:BA:1258:G:O2'  | 34:BA:1259:C:O4'  | 2.33                     | 0.46              |
| 34:BA:1270:C:O2'  | 34:BA:1314:C:P    | 2.74                     | 0.46              |
| 34:BA:1289:A:C2   | 34:BA:1372:U:H4'  | 2.51                     | 0.46              |
| 34:BA:1309:G:C2   | 34:BA:1328:C:N4   | 2.72                     | 0.46              |
| 34:BA:1340:A:H2'  | 34:BA:1341:U:H6   | 1.80                     | 0.46              |
| 34:BA:1363:A:N3   | 34:BA:1365:G:N1   | 2.63                     | 0.46              |
| 34:BA:1472:U:HO2' | 34:BA:1473:A:H5'  | 1.78                     | 0.46              |
| 34:BA:1498:U:H2'  | 34:BA:1499:A:OP2  | 2.16                     | 0.46              |
| 35:BF:18:GLY:HA2  | 35:BF:41:ILE:HG23 | 1.96                     | 0.46              |
| 35:BF:46:LYS:NZ   | 35:BF:49:GLU:HG2  | 2.31                     | 0.46              |
| 35:BF:102:LEU:CD2 | 35:BF:176:GLU:CB  | 2.82                     | 0.46              |
| 35:BF:136:VAL:C   | 35:BF:139:LYS:HG2 | 2.40                     | 0.46              |
| 35:BF:146:GLN:NE2 | 35:BF:150:SER:CB  | 2.72                     | 0.46              |
| 35:BF:173:ALA:C   | 35:BF:176:GLU:HB2 | 2.41                     | 0.46              |
| 37:BH:20:TYR:HA   | 37:BH:31:CYS:SG   | 2.55                     | 0.46              |
| 37:BH:26:CYS:SG   | 37:BH:26:CYS:O    | 2.73                     | 0.46              |
| 37:BH:77:ASN:O    | 37:BH:78:LEU:C    | 2.57                     | 0.46              |
| 37:BH:149:ALA:O   | 37:BH:150:GLU:C   | 2.58                     | 0.46              |
| 37:BH:179:GLU:C   | 37:BH:181:MET:H   | 2.21                     | 0.46              |
| 39:BJ:2:ARG:O     | 39:BJ:67:MET:CE   | 2.64                     | 0.46              |
| 40:BK:111:ARG:HD3 | 40:BK:122:HIS:CB  | 2.46                     | 0.46              |
| 41:BL:54:ASP:C    | 41:BL:56:LYS:N    | 2.74                     | 0.46              |
| 42:BM:113:LYS:HD2 | 42:BM:113:LYS:H   | 1.81                     | 0.46              |
| 42:BM:119:ALA:O   | 42:BM:120:ARG:CB  | 2.64                     | 0.46              |
| 43:BN:16:LEU:HD13 | 43:BN:94:VAL:HG21 | 1.98                     | 0.46              |
| 43:BN:22:LYS:CE   | 43:BN:90:LEU:HD12 | 2.45                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 45:BP:110:VAL:HB  | 45:BP:113:ARG:HG3 | 1.98                     | 0.46              |
| 46:BQ:16:ASP:C    | 46:BQ:30:ALA:CB   | 2.69                     | 0.46              |
| 46:BQ:91:ARG:HD3  | 46:BQ:98:VAL:HA   | 1.98                     | 0.46              |
| 46:BQ:102:ARG:C   | 46:BQ:103:THR:HG1 | 2.15                     | 0.46              |
| 48:BS:41:GLU:O    | 48:BS:44:LYS:HB2  | 2.15                     | 0.46              |
| 49:BT:4:ILE:HA    | 49:BT:20:VAL:O    | 2.16                     | 0.46              |
| 49:BT:56:ALA:HB1  | 49:BT:74:LEU:CD1  | 2.45                     | 0.46              |
| 50:BU:43:LEU:HD22 | 50:BU:43:LEU:C    | 2.37                     | 0.46              |
| 51:BV:52:PRO:CG   | 51:BV:54:ARG:HB3  | 2.45                     | 0.46              |
| 51:BV:78:LEU:O    | 51:BV:79:LEU:CB   | 2.64                     | 0.46              |
| 52:BW:7:LYS:HZ1   | 52:BW:7:LYS:C     | 2.23                     | 0.46              |
| 52:BW:7:LYS:C     | 52:BW:7:LYS:NZ    | 2.73                     | 0.46              |
| 55:BC:2:C:H2'     | 55:BC:3:C:H5'     | 1.98                     | 0.46              |
| 57:BZ:63:ALA:CB   | 57:BZ:65:LYS:HG2  | 2.30                     | 0.46              |
| 57:BZ:560:PRO:HB3 | 57:BZ:561:ILE:C   | 2.27                     | 0.46              |
| 1:AA:20:C:HO2'    | 1:AA:21:A:H5'     | 1.76                     | 0.46              |
| 1:AA:28:A:O2'     | 1:AA:583:G:H5'    | 2.16                     | 0.46              |
| 1:AA:35:G:C5      | 1:AA:454:A:H2     | 2.34                     | 0.46              |
| 1:AA:71:A:O2'     | 19:AU:5:TYR:CE2   | 2.67                     | 0.46              |
| 1:AA:87:C:H1'     | 23:AY:46:ARG:HH22 | 1.81                     | 0.46              |
| 1:AA:117:G:C5     | 1:AA:119:A:N6     | 2.84                     | 0.46              |
| 1:AA:193:U:C4'    | 1:AA:803:U:H5'    | 2.46                     | 0.46              |
| 1:AA:242:G:C2'    | 1:AA:254:G:N1     | 2.78                     | 0.46              |
| 1:AA:323:G:OP2    | 1:AA:340:A:N1     | 2.49                     | 0.46              |
| 1:AA:324:A:H2     | 1:AA:325:G:C1'    | 2.28                     | 0.46              |
| 1:AA:389:G:P      | 25:Aa:24:THR:HG23 | 2.56                     | 0.46              |
| 1:AA:447:A:C8     | 1:AA:454:A:N6     | 2.84                     | 0.46              |
| 1:AA:459:U:C2'    | 1:AA:460:A:O5'    | 2.64                     | 0.46              |
| 1:AA:531:C:C4'    | 1:AA:532:A:N3     | 2.79                     | 0.46              |
| 1:AA:553:U:H2'    | 1:AA:554:U:C1'    | 2.46                     | 0.46              |
| 1:AA:621:A:C8     | 1:AA:622:G:C5'    | 2.99                     | 0.46              |
| 1:AA:637:A:OP1    | 11:AM:133:SER:HB3 | 2.16                     | 0.46              |
| 1:AA:827:U:C4     | 1:AA:2430:A:C6    | 3.03                     | 0.46              |
| 1:AA:952:G:C6     | 1:AA:966:G:N1     | 2.83                     | 0.46              |
| 1:AA:974:G:C3'    | 1:AA:974(A):C:C5' | 2.85                     | 0.46              |
| 1:AA:1144:G:C2'   | 1:AA:1145:C:H6    | 2.20                     | 0.46              |
| 1:AA:1263:U:C3'   | 26:Ab:10:LYS:HD3  | 2.46                     | 0.46              |
| 1:AA:1268:A:OP2   | 1:AA:2006:C:OP2   | 2.33                     | 0.46              |
| 1:AA:1301:A:C2'   | 1:AA:1302:A:O5'   | 2.64                     | 0.46              |
| 1:AA:1321:A:N6    | 1:AA:1322:A:C2    | 2.82                     | 0.46              |
| 1:AA:1342:A:C8    | 1:AA:1342:A:O5'   | 2.69                     | 0.46              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:1350:C:O2'  | 1:AA:1351:C:C5'   | 2.62                     | 0.46              |
| 1:AA:1350:C:C2'  | 1:AA:1351:C:O5'   | 2.63                     | 0.46              |
| 1:AA:1417:C:C2'  | 1:AA:1418:G:O5'   | 2.64                     | 0.46              |
| 1:AA:1522:G:H2'  | 1:AA:1523:U:C6    | 2.51                     | 0.46              |
| 1:AA:1608:A:C2   | 1:AA:1611:C:C5    | 3.04                     | 0.46              |
| 1:AA:1655:A:H2'  | 1:AA:1656:C:H6    | 1.70                     | 0.46              |
| 1:AA:1731:G:N3   | 1:AA:1732:A:OP2   | 2.49                     | 0.46              |
| 1:AA:1842:G:C4   | 1:AA:1843:C:C6    | 3.04                     | 0.46              |
| 1:AA:1850:G:C5   | 1:AA:1851:U:C5    | 3.04                     | 0.46              |
| 1:AA:1853:A:C2   | 1:AA:2087:G:N3    | 2.84                     | 0.46              |
| 1:AA:1916:A:N1   | 34:BA:1409:C:C5'  | 2.78                     | 0.46              |
| 1:AA:1939:U:O2'  | 1:AA:2592:G:H1'   | 2.16                     | 0.46              |
| 1:AA:2016:U:O4'  | 26:Ab:6:VAL:CG1   | 2.61                     | 0.46              |
| 1:AA:2032:G:H22  | 1:AA:2499:C:N4    | 2.14                     | 0.46              |
| 1:AA:2046:G:H2'  | 1:AA:2047:U:H5    | 1.78                     | 0.46              |
| 1:AA:2168:G:C2'  | 1:AA:2170:A:OP2   | 2.61                     | 0.46              |
| 1:AA:2176:A:N9   | 3:AC:215:THR:HB   | 2.30                     | 0.46              |
| 1:AA:2182:G:N2   | 1:AA:2183:C:C2    | 2.84                     | 0.46              |
| 1:AA:2199:A:OP2  | 1:AA:2205:C:C5    | 2.67                     | 0.46              |
| 1:AA:2224:G:H4'  | 4:AD:262:ARG:HH21 | 1.81                     | 0.46              |
| 1:AA:2331:G:H4'  | 22:AX:42:GLY:C    | 2.41                     | 0.46              |
| 1:AA:2356:C:C2'  | 1:AA:2357:U:O5'   | 2.64                     | 0.46              |
| 1:AA:2407:G:H3'  | 1:AA:2408:U:C5    | 2.51                     | 0.46              |
| 1:AA:2431:U:C2   | 1:AA:2433:A:OP2   | 2.68                     | 0.46              |
| 1:AA:2532:G:H2'  | 1:AA:2533:A:C8    | 2.51                     | 0.46              |
| 1:AA:2692:C:C2'  | 1:AA:2847:U:O2'   | 2.64                     | 0.46              |
| 1:AA:2703:C:C5   | 1:AA:2704:C:N4    | 2.84                     | 0.46              |
| 1:AA:2748:A:C2   | 8:AH:67:LEU:HD11  | 2.50                     | 0.46              |
| 1:AA:2773:C:C5'  | 5:AE:165:VAL:HG13 | 2.46                     | 0.46              |
| 1:AA:2817:G:C4   | 1:AA:2818:G:C8    | 3.04                     | 0.46              |
| 1:AA:2887:U:C2   | 1:AA:2888:C:C6    | 3.04                     | 0.46              |
| 3:AC:43:VAL:HG13 | 3:AC:213:TYR:HA   | 1.97                     | 0.46              |
| 3:AC:75:LEU:HD23 | 3:AC:77:ILE:CD1   | 2.34                     | 0.46              |
| 4:AD:21:PHE:C    | 4:AD:205:VAL:HG13 | 2.41                     | 0.46              |
| 4:AD:91:ARG:HH22 | 4:AD:198:ASN:CG   | 2.24                     | 0.46              |
| 4:AD:129:ASN:O   | 4:AD:193:VAL:HG23 | 2.15                     | 0.46              |
| 5:AE:8:LYS:C     | 5:AE:8:LYS:CE     | 2.88                     | 0.46              |
| 5:AE:52:LEU:HA   | 5:AE:74:PRO:CB    | 2.46                     | 0.46              |
| 5:AE:91:VAL:HG23 | 5:AE:180:ASN:ND2  | 2.31                     | 0.46              |
| 5:AE:103:ASP:HA  | 5:AE:170:LEU:HD21 | 1.98                     | 0.46              |
| 6:AF:63:LYS:C    | 6:AF:64:ILE:CG2   | 2.88                     | 0.46              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 6:AF:135:LYS:HE3   | 6:AF:136:THR:OG1   | 2.16                     | 0.46              |
| 6:AF:142:TRP:O     | 6:AF:145:GLU:N     | 2.49                     | 0.46              |
| 6:AF:194:MET:HE1   | 6:AF:197:ASP:N     | 2.31                     | 0.46              |
| 7:AG:13:GLU:O      | 7:AG:17:PRO:CD     | 2.63                     | 0.46              |
| 7:AG:90:LEU:HD13   | 7:AG:90:LEU:C      | 2.41                     | 0.46              |
| 7:AG:93:THR:O      | 7:AG:94:LEU:C      | 2.58                     | 0.46              |
| 7:AG:94:LEU:HD13   | 7:AG:94:LEU:H      | 1.80                     | 0.46              |
| 7:AG:144:ILE:HG23  | 7:AG:145:THR:O     | 2.16                     | 0.46              |
| 8:AH:6:ARG:O       | 8:AH:65:HIS:CD2    | 2.68                     | 0.46              |
| 8:AH:132:ARG:HD3   | 8:AH:132:ARG:H     | 1.78                     | 0.46              |
| 9:AK:4:TYR:HE2     | 16:AR:100:VAL:HB   | 1.80                     | 0.46              |
| 10:AL:52:VAL:O     | 10:AL:53:LYS:CB    | 2.64                     | 0.46              |
| 11:AM:52:GLU:O     | 11:AM:53:GLY:C     | 2.57                     | 0.46              |
| 11:AM:95:VAL:O     | 11:AM:95:VAL:HG12  | 2.15                     | 0.46              |
| 12:AN:109:VAL:HG12 | 12:AN:110:THR:N    | 2.29                     | 0.46              |
| 12:AN:126:PRO:HD2  | 12:AN:127:ILE:HD11 | 1.98                     | 0.46              |
| 13:AO:52:ILE:O     | 13:AO:56:LYS:CG    | 2.63                     | 0.46              |
| 13:AO:84:ALA:HB3   | 13:AO:85:PRO:HD3   | 1.98                     | 0.46              |
| 14:AP:66:ALA:C     | 14:AP:68:GLN:N     | 2.72                     | 0.46              |
| 14:AP:97:ARG:CG    | 14:AP:97:ARG:NH2   | 2.79                     | 0.46              |
| 15:AQ:53:ARG:NH2   | 15:AQ:102:ILE:N    | 2.57                     | 0.46              |
| 15:AQ:96:ARG:NE    | 15:AQ:117:ASP:HB3  | 2.31                     | 0.46              |
| 17:AS:3:ALA:CA     | 17:AS:44:LYS:NZ    | 2.78                     | 0.46              |
| 17:AS:37:VAL:HG13  | 17:AS:37:VAL:O     | 2.15                     | 0.46              |
| 17:AS:83:ARG:HD3   | 17:AS:84:LYS:CA    | 2.46                     | 0.46              |
| 17:AS:93:GLU:O     | 17:AS:95:LEU:HD23  | 2.16                     | 0.46              |
| 18:AT:16:LYS:O     | 18:AT:19:LEU:HB2   | 2.15                     | 0.46              |
| 18:AT:28:SER:C     | 18:AT:31:GLU:OE1   | 2.59                     | 0.46              |
| 18:AT:98:LYS:CE    | 18:AT:98:LYS:C     | 2.89                     | 0.46              |
| 19:AU:4:ALA:C      | 23:AY:21:ARG:NH2   | 2.74                     | 0.46              |
| 19:AU:84:ALA:H     | 19:AU:85:PRO:CD    | 2.29                     | 0.46              |
| 20:AV:54:LYS:O     | 20:AV:56:PRO:HD3   | 2.16                     | 0.46              |
| 21:AW:42:VAL:HG12  | 21:AW:46:LYS:HZ1   | 1.77                     | 0.46              |
| 21:AW:107:THR:OG1  | 21:AW:141:VAL:O    | 2.29                     | 0.46              |
| 21:AW:149:SER:O    | 21:AW:150:LEU:HD23 | 2.16                     | 0.46              |
| 21:AW:156:LYS:HA   | 21:AW:156:LYS:HD2  | 1.76                     | 0.46              |
| 23:AY:28:MET:O     | 23:AY:32:PHE:CD1   | 2.69                     | 0.46              |
| 25:Aa:65:ASP:OD2   | 25:Aa:69:LYS:CE    | 2.64                     | 0.46              |
| 26:Ab:6:VAL:HA     | 26:Ab:7:PRO:HD2    | 1.53                     | 0.46              |
| 29:Ae:17:THR:C     | 29:Ae:19:SER:N     | 2.73                     | 0.46              |
| 31:AI:143:GLN:O    | 31:AI:147:ALA:CB   | 2.61                     | 0.46              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 31:AI:148:GLU:HA | 33:Ag:10:UNK:CB    | 2.45                     | 0.46              |
| 32:AJ:17:ALA:HB1 | 32:AJ:41:PHE:HB2   | 1.97                     | 0.46              |
| 32:AJ:55:VAL:N   | 32:AJ:56:GLU:HA    | 2.31                     | 0.46              |
| 32:AJ:72:PRO:HG2 | 32:AJ:77:LEU:CA    | 2.38                     | 0.46              |
| 34:BA:131:C:C4   | 34:BA:232:G:N2     | 2.84                     | 0.46              |
| 34:BA:191:G:N3   | 53:BX:105:SER:HB3  | 2.31                     | 0.46              |
| 34:BA:337:C:H2'  | 34:BA:338:A:H8     | 1.75                     | 0.46              |
| 34:BA:352:C:H4'  | 34:BA:354:G:OP1    | 2.15                     | 0.46              |
| 34:BA:553:A:H2'  | 34:BA:554:C:C1'    | 2.46                     | 0.46              |
| 34:BA:592:G:O2'  | 34:BA:593:G:H5'    | 2.15                     | 0.46              |
| 34:BA:600:C:N3   | 34:BA:601:C:C5     | 2.83                     | 0.46              |
| 34:BA:706:A:H4'  | 44:BO:29:ILE:HD11  | 1.97                     | 0.46              |
| 34:BA:729:A:O2'  | 34:BA:730:G:H5'    | 2.15                     | 0.46              |
| 34:BA:735:C:HO2' | 51:BV:75:ILE:HD13  | 1.80                     | 0.46              |
| 34:BA:800:G:H8   | 34:BA:800:G:P      | 2.39                     | 0.46              |
| 34:BA:812:C:C4'  | 34:BA:813:U:H6     | 2.28                     | 0.46              |
| 34:BA:818:G:HO2' | 34:BA:819:A:P      | 2.36                     | 0.46              |
| 34:BA:830:G:C6   | 34:BA:831:U:C5     | 3.04                     | 0.46              |
| 34:BA:834:C:N4   | 34:BA:853:G:O6     | 2.49                     | 0.46              |
| 34:BA:966:G:O2'  | 34:BA:967:C:O5'    | 2.34                     | 0.46              |
| 34:BA:985:C:O2'  | 52:BW:55:LYS:CE    | 2.61                     | 0.46              |
| 34:BA:1001:G:C5  | 34:BA:1002:G:H1'   | 2.51                     | 0.46              |
| 34:BA:1018:C:H2' | 34:BA:1019:C:O4'   | 2.16                     | 0.46              |
| 34:BA:1056:U:O2  | 36:BG:195:VAL:CG2  | 2.62                     | 0.46              |
| 34:BA:1072:G:C6  | 34:BA:1104:G:N1    | 2.84                     | 0.46              |
| 34:BA:1076:C:C2  | 34:BA:1077:G:C8    | 3.04                     | 0.46              |
| 34:BA:1109:C:C5  | 34:BA:1110:A:N7    | 2.84                     | 0.46              |
| 34:BA:1176:A:C6  | 34:BA:1177:G:C6    | 3.04                     | 0.46              |
| 34:BA:1188:A:C5' | 43:BN:61:GLU:OE2   | 2.54                     | 0.46              |
| 34:BA:1231:G:H2' | 34:BA:1232:U:C6    | 2.50                     | 0.46              |
| 34:BA:1305:G:C2  | 34:BA:1331:G:C2    | 3.03                     | 0.46              |
| 34:BA:1312:G:C2  | 34:BA:1326:C:C2    | 3.04                     | 0.46              |
| 34:BA:1483:A:H3' | 34:BA:1484:C:H6    | 1.80                     | 0.46              |
| 35:BF:20:GLU:CG  | 35:BF:189:ASP:OD2  | 2.64                     | 0.46              |
| 35:BF:48:MET:HE3 | 35:BF:51:LEU:CD1   | 2.45                     | 0.46              |
| 35:BF:125:PRO:C  | 35:BF:127:ILE:HG13 | 2.41                     | 0.46              |
| 36:BG:15:THR:CB  | 36:BG:181:ASN:HA   | 2.45                     | 0.46              |
| 36:BG:19:GLU:CD  | 36:BG:19:GLU:N     | 2.74                     | 0.46              |
| 36:BG:132:ARG:O  | 36:BG:135:LYS:HB2  | 2.16                     | 0.46              |
| 38:BI:79:GLU:HA  | 38:BI:91:LEU:HD23  | 1.98                     | 0.46              |
| 39:BJ:24:GLU:O   | 39:BJ:27:GLN:N     | 2.49                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 39:BJ:50:TYR:CE1  | 51:BV:81:PHE:CZ    | 3.04                     | 0.46              |
| 39:BJ:69:GLU:O    | 39:BJ:72:VAL:HG22  | 2.16                     | 0.46              |
| 40:BK:42:ILE:HD13 | 40:BK:116:ALA:HB1  | 1.98                     | 0.46              |
| 40:BK:69:VAL:C    | 40:BK:100:ALA:HB1  | 2.41                     | 0.46              |
| 40:BK:94:ARG:NH1  | 40:BK:98:SER:OG    | 2.49                     | 0.46              |
| 41:BL:5:PRO:HA    | 41:BL:8:ASP:CB     | 2.42                     | 0.46              |
| 41:BL:6:ILE:HD12  | 41:BL:85:ARG:NH1   | 2.31                     | 0.46              |
| 41:BL:19:VAL:CG1  | 41:BL:21:LYS:HE3   | 2.46                     | 0.46              |
| 41:BL:68:ARG:O    | 41:BL:69:ARG:HB3   | 2.16                     | 0.46              |
| 42:BM:89:ASN:C    | 42:BM:91:ASP:H     | 2.23                     | 0.46              |
| 43:BN:60:ARG:NH1  | 43:BN:60:ARG:CB    | 2.79                     | 0.46              |
| 44:BO:42:TRP:HZ3  | 44:BO:47:VAL:CG2   | 2.29                     | 0.46              |
| 44:BO:66:LEU:HB2  | 44:BO:70:LYS:HZ2   | 1.79                     | 0.46              |
| 44:BO:66:LEU:CB   | 44:BO:70:LYS:NZ    | 2.79                     | 0.46              |
| 45:BP:102:ARG:HG3 | 45:BP:120:TYR:HA   | 1.97                     | 0.46              |
| 46:BQ:40:ASN:C    | 46:BQ:42:ALA:N     | 2.73                     | 0.46              |
| 48:BS:75:PRO:HA   | 48:BS:78:TYR:CG    | 2.50                     | 0.46              |
| 50:BU:10:VAL:HG12 | 50:BU:54:GLY:N     | 2.26                     | 0.46              |
| 52:BW:22:LEU:CA   | 52:BW:25:LYS:HZ1   | 2.29                     | 0.46              |
| 53:BX:23:ARG:NH2  | 53:BX:24:LEU:HD23  | 2.31                     | 0.46              |
| 56:BE:15:G:C4     | 56:BE:16:U:H5      | 2.33                     | 0.46              |
| 57:BZ:73:VAL:CG2  | 57:BZ:88:VAL:HG13  | 2.25                     | 0.46              |
| 57:BZ:98:VAL:HA   | 57:BZ:126:VAL:HB   | 1.98                     | 0.46              |
| 57:BZ:111:PHE:HE1 | 57:BZ:115:LYS:HE2  | 1.81                     | 0.46              |
| 57:BZ:319:CYS:C   | 57:BZ:321:LYS:HG2  | 2.41                     | 0.46              |
| 57:BZ:505:GLN:NE2 | 57:BZ:506:ASP:CG   | 2.74                     | 0.46              |
| 1:AA:25:U:C2      | 1:AA:26:G:N7       | 2.85                     | 0.45              |
| 1:AA:48:G:C2      | 1:AA:178:G:C6      | 3.05                     | 0.45              |
| 1:AA:131:G:C2     | 1:AA:132:G:N7      | 2.84                     | 0.45              |
| 1:AA:223:A:H2     | 1:AA:407:G:N3      | 2.14                     | 0.45              |
| 1:AA:242:G:C8     | 29:Ae:4:MET:HG2    | 2.46                     | 0.45              |
| 1:AA:308:G:N1     | 1:AA:309:G:C4      | 2.85                     | 0.45              |
| 1:AA:319:C:C4     | 1:AA:320:A:C6      | 3.04                     | 0.45              |
| 1:AA:585:G:H22    | 1:AA:1253:A:P      | 2.39                     | 0.45              |
| 1:AA:614:U:C5'    | 1:AA:615:G:OP2     | 2.64                     | 0.45              |
| 1:AA:624:C:OP2    | 11:AM:105:LEU:HD22 | 2.16                     | 0.45              |
| 1:AA:656:G:O2'    | 1:AA:657:U:C5'     | 2.63                     | 0.45              |
| 1:AA:662:G:H2'    | 1:AA:663:G:C8      | 2.51                     | 0.45              |
| 1:AA:802:A:C6     | 1:AA:803:U:C2      | 3.04                     | 0.45              |
| 1:AA:848:G:H5''   | 1:AA:848:G:H8      | 1.80                     | 0.45              |
| 1:AA:858:U:H2'    | 1:AA:2268:A:N7     | 2.30                     | 0.45              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:872:A:O2'   | 12:AN:66:ILE:CB   | 2.64                     | 0.45              |
| 1:AA:972:G:C8    | 1:AA:973:A:C8     | 3.04                     | 0.45              |
| 1:AA:1024:G:C4'  | 1:AA:1025:G:H5''  | 2.43                     | 0.45              |
| 1:AA:1072:C:H42  | 1:AA:1100:C:H41   | 1.63                     | 0.45              |
| 1:AA:1122:G:N2   | 1:AA:1123:C:C6    | 2.84                     | 0.45              |
| 1:AA:1128:A:N3   | 1:AA:1128:A:C2'   | 2.78                     | 0.45              |
| 1:AA:1303:G:N7   | 1:AA:1304:C:N4    | 2.64                     | 0.45              |
| 1:AA:1339:G:C1'  | 1:AA:1393:A:C2    | 2.99                     | 0.45              |
| 1:AA:1342:A:C8   | 1:AA:1601:G:O6    | 2.69                     | 0.45              |
| 1:AA:1385:G:C6   | 1:AA:1386:C:C4    | 3.03                     | 0.45              |
| 1:AA:1473:G:O6   | 1:AA:1519:G:C4    | 2.69                     | 0.45              |
| 1:AA:1658:C:H2'  | 1:AA:1658:C:O2    | 2.15                     | 0.45              |
| 1:AA:1686:C:H2'  | 1:AA:1686:C:O2    | 2.15                     | 0.45              |
| 1:AA:1790:C:O3'  | 4:AD:209:ALA:HB1  | 2.16                     | 0.45              |
| 1:AA:1791:A:H2'  | 1:AA:1792:G:O4'   | 2.16                     | 0.45              |
| 1:AA:1793:C:N4   | 1:AA:1794:U:O4    | 2.49                     | 0.45              |
| 1:AA:1794:U:O4'  | 1:AA:1900:A:C5    | 2.69                     | 0.45              |
| 1:AA:1801:G:O6   | 1:AA:2207:C:H1'   | 2.16                     | 0.45              |
| 1:AA:1819:A:HO2' | 1:AA:1820:U:C5'   | 2.28                     | 0.45              |
| 1:AA:1826:G:C6   | 1:AA:1827:C:C5    | 3.04                     | 0.45              |
| 1:AA:1829:A:N3   | 1:AA:1830:C:O4'   | 2.50                     | 0.45              |
| 1:AA:1958:C:C2'  | 1:AA:1959:G:O5'   | 2.64                     | 0.45              |
| 1:AA:2009:G:N1   | 1:AA:2010:G:N7    | 2.64                     | 0.45              |
| 1:AA:2051:A:OP2  | 1:AA:2051:A:C8    | 2.69                     | 0.45              |
| 1:AA:2091:U:O2'  | 1:AA:2092:U:OP1   | 2.27                     | 0.45              |
| 1:AA:2094:G:C6   | 1:AA:2196:C:C4    | 3.04                     | 0.45              |
| 1:AA:2125:G:C2'  | 3:AC:218:MET:H    | 2.19                     | 0.45              |
| 1:AA:2225:A:C5'  | 1:AA:2226:C:C6    | 2.96                     | 0.45              |
| 1:AA:2263:C:H2'  | 1:AA:2264:C:H5'   | 1.98                     | 0.45              |
| 1:AA:2279:G:O2'  | 1:AA:2280:G:O5'   | 2.28                     | 0.45              |
| 1:AA:2286:A:C1'  | 27:Ac:37:ARG:HH21 | 2.27                     | 0.45              |
| 1:AA:2323:G:N2   | 1:AA:2324:C:N3    | 2.64                     | 0.45              |
| 1:AA:2374:C:N4   | 1:AA:2375:G:O6    | 2.49                     | 0.45              |
| 1:AA:2439:A:N7   | 1:AA:2586:C:H4'   | 2.30                     | 0.45              |
| 1:AA:2510:C:H5'' | 1:AA:2511:U:OP2   | 2.16                     | 0.45              |
| 1:AA:2526:G:O2'  | 30:Af:35:ARG:NH2  | 2.49                     | 0.45              |
| 1:AA:2568:C:H4'  | 57:BZ:552:ASP:OD2 | 2.16                     | 0.45              |
| 1:AA:2630:G:N1   | 1:AA:2789:C:N4    | 2.60                     | 0.45              |
| 1:AA:2645:G:OP2  | 1:AA:2645:G:O4'   | 2.33                     | 0.45              |
| 1:AA:2714:G:C3'  | 1:AA:2715:C:H5'   | 2.45                     | 0.45              |
| 1:AA:2717:G:C4   | 1:AA:2718:G:C8    | 3.04                     | 0.45              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:2717:G:C4     | 1:AA:2718:G:N7     | 2.85                     | 0.45              |
| 1:AA:2721:A:C3'    | 1:AA:2722:G:H8     | 2.28                     | 0.45              |
| 1:AA:2836:U:C6     | 1:AA:2883:A:N6     | 2.84                     | 0.45              |
| 3:AC:103:ILE:HG22  | 3:AC:130:ILE:HG21  | 1.97                     | 0.45              |
| 4:AD:54:ARG:HA     | 4:AD:220:HIS:H     | 1.81                     | 0.45              |
| 5:AE:116:VAL:O     | 5:AE:120:TRP:HD1   | 1.95                     | 0.45              |
| 5:AE:118:LYS:HZ1   | 5:AE:119:ARG:C     | 2.24                     | 0.45              |
| 6:AF:74:ARG:NH1    | 6:AF:75:HIS:C      | 2.73                     | 0.45              |
| 6:AF:80:ALA:O      | 6:AF:83:PHE:HD2    | 2.00                     | 0.45              |
| 6:AF:132:VAL:HG22  | 6:AF:135:LYS:HB2   | 1.99                     | 0.45              |
| 7:AG:39:ILE:N      | 7:AG:39:ILE:CD1    | 2.67                     | 0.45              |
| 7:AG:44:GLY:HA3    | 7:AG:88:ILE:CG2    | 2.46                     | 0.45              |
| 8:AH:42:ARG:HB2    | 8:AH:53:GLU:HG3    | 1.98                     | 0.45              |
| 8:AH:45:VAL:O      | 8:AH:46:GLU:OE1    | 2.34                     | 0.45              |
| 9:AK:7:LYS:HD2     | 9:AK:10:GLU:HB2    | 1.97                     | 0.45              |
| 9:AK:15:LEU:CG     | 9:AK:138:LEU:O     | 2.48                     | 0.45              |
| 9:AK:89:LYS:HA     | 9:AK:92:ALA:HB2    | 1.98                     | 0.45              |
| 10:AL:47:ILE:CD1   | 10:AL:49:ARG:O     | 2.64                     | 0.45              |
| 10:AL:59:LYS:CB    | 10:AL:85:VAL:HA    | 2.46                     | 0.45              |
| 10:AL:69:VAL:C     | 10:AL:104:ARG:HH21 | 2.24                     | 0.45              |
| 11:AM:57:THR:O     | 11:AM:58:THR:CB    | 2.63                     | 0.45              |
| 11:AM:96:THR:HB    | 11:AM:99:LEU:CB    | 2.47                     | 0.45              |
| 12:AN:34:LEU:CG    | 12:AN:67:ARG:NH2   | 2.79                     | 0.45              |
| 12:AN:51:ARG:NH2   | 12:AN:63:LYS:HZ1   | 2.15                     | 0.45              |
| 12:AN:59:ARG:HA    | 12:AN:60:ARG:NE    | 2.31                     | 0.45              |
| 12:AN:67:ARG:NH2   | 12:AN:103:MET:O    | 2.49                     | 0.45              |
| 13:AO:4:LEU:O      | 13:AO:5:LYS:C      | 2.58                     | 0.45              |
| 14:AP:26:LEU:HD11  | 14:AP:37:ALA:CB    | 2.44                     | 0.45              |
| 14:AP:39:ILE:HB    | 14:AP:48:LEU:HB2   | 1.97                     | 0.45              |
| 15:AQ:37:GLY:CA    | 15:AQ:42:ILE:O     | 2.64                     | 0.45              |
| 15:AQ:38:ASN:O     | 15:AQ:39:ARG:O     | 2.34                     | 0.45              |
| 15:AQ:54:ARG:HD3   | 15:AQ:55:ASN:HD21  | 1.76                     | 0.45              |
| 16:AR:46:ALA:O     | 16:AR:50:ARG:CD    | 2.53                     | 0.45              |
| 17:AS:40:LEU:N     | 17:AS:54:GLY:CA    | 2.79                     | 0.45              |
| 19:AU:29:TRP:CG    | 19:AU:76:ARG:HE    | 2.35                     | 0.45              |
| 19:AU:39:ILE:CB    | 19:AU:54:VAL:HG11  | 2.46                     | 0.45              |
| 19:AU:68:ARG:HB3   | 19:AU:68:ARG:HH11  | 1.82                     | 0.45              |
| 20:AV:72:VAL:HG11  | 20:AV:96:ILE:CG2   | 2.43                     | 0.45              |
| 21:AW:17:ALA:O     | 21:AW:20:ARG:HB3   | 2.16                     | 0.45              |
| 21:AW:31:ARG:CZ    | 21:AW:31:ARG:HB3   | 2.42                     | 0.45              |
| 21:AW:125:LEU:HD22 | 21:AW:127:LYS:HE2  | 1.97                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 22:AX:46:LYS:N    | 22:AX:46:LYS:CD   | 2.73                     | 0.45              |
| 22:AX:72:ARG:O    | 22:AX:73:GLY:O    | 2.34                     | 0.45              |
| 23:AY:42:ASN:O    | 23:AY:45:ILE:CG1  | 2.63                     | 0.45              |
| 24:AZ:15:TYR:O    | 24:AZ:20:LYS:HD2  | 2.16                     | 0.45              |
| 24:AZ:30:ARG:O    | 24:AZ:32:GLN:N    | 2.49                     | 0.45              |
| 27:Ac:25:LYS:HE2  | 29:Ae:35:GLN:CB   | 2.42                     | 0.45              |
| 28:Ad:34:ARG:HH12 | 28:Ad:42:LEU:HG   | 1.81                     | 0.45              |
| 31:AI:73:GLY:C    | 31:AI:75:GLN:N    | 2.74                     | 0.45              |
| 32:AJ:23:VAL:CG2  | 32:AJ:41:PHE:CZ   | 2.79                     | 0.45              |
| 32:AJ:110:GLN:C   | 32:AJ:112:MET:N   | 2.73                     | 0.45              |
| 32:AJ:127:ILE:O   | 32:AJ:131:ALA:HB3 | 2.16                     | 0.45              |
| 34:BA:50:A:N1     | 34:BA:361:G:O4'   | 2.49                     | 0.45              |
| 34:BA:81:G:H5''   | 34:BA:82:U:OP2    | 2.15                     | 0.45              |
| 34:BA:97:U:H2'    | 34:BA:99:C:C6     | 2.51                     | 0.45              |
| 34:BA:102:G:N3    | 34:BA:151:A:H2    | 2.14                     | 0.45              |
| 34:BA:186(B):C:N3 | 34:BA:186(C):G:C8 | 2.84                     | 0.45              |
| 34:BA:260:G:C4    | 34:BA:261:U:N3    | 2.84                     | 0.45              |
| 34:BA:301:G:C2    | 34:BA:302:G:N9    | 2.85                     | 0.45              |
| 34:BA:362:G:H4'   | 45:BP:28:LYS:NZ   | 2.28                     | 0.45              |
| 34:BA:363:A:C8    | 45:BP:30:ALA:HB1  | 2.48                     | 0.45              |
| 34:BA:363:A:N1    | 34:BA:364:A:C2    | 2.85                     | 0.45              |
| 34:BA:586:C:P     | 50:BU:34:LYS:NZ   | 2.89                     | 0.45              |
| 34:BA:627:G:H2'   | 34:BA:628:G:C8    | 2.47                     | 0.45              |
| 34:BA:665:A:O4'   | 34:BA:733:A:H1'   | 2.16                     | 0.45              |
| 34:BA:755:G:O2'   | 41:BL:1:MET:HE2   | 2.16                     | 0.45              |
| 34:BA:774:G:H3'   | 34:BA:775:G:H8    | 1.81                     | 0.45              |
| 34:BA:792:A:O2'   | 34:BA:793:U:H5''  | 2.16                     | 0.45              |
| 34:BA:801:U:H2'   | 34:BA:802:A:C8    | 2.50                     | 0.45              |
| 34:BA:947:G:C4    | 34:BA:948:C:C6    | 3.04                     | 0.45              |
| 34:BA:1026:G:C8   | 34:BA:1027:C:C5   | 3.04                     | 0.45              |
| 34:BA:1079:G:N2   | 34:BA:1080:A:C2   | 2.84                     | 0.45              |
| 34:BA:1154:G:HO2' | 34:BA:1155:G:H5'  | 1.77                     | 0.45              |
| 34:BA:1333:A:O5'  | 34:BA:1333:A:C8   | 2.64                     | 0.45              |
| 34:BA:1517:G:N1   | 34:BA:1518:A:N3   | 2.64                     | 0.45              |
| 35:BF:76:GLN:HG3  | 35:BF:206:ASP:OD2 | 2.16                     | 0.45              |
| 35:BF:82:ARG:CD   | 35:BF:92:TYR:OH   | 2.54                     | 0.45              |
| 35:BF:109:SER:O   | 35:BF:111:ARG:N   | 2.49                     | 0.45              |
| 35:BF:122:PHE:O   | 35:BF:123:ALA:C   | 2.59                     | 0.45              |
| 36:BG:5:ILE:CD1   | 36:BG:10:PHE:CE2  | 2.99                     | 0.45              |
| 36:BG:30:ARG:N    | 36:BG:30:ARG:CD   | 2.79                     | 0.45              |
| 36:BG:40:ARG:NE   | 47:BR:52:GLN:NE2  | 2.64                     | 0.45              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 36:BG:47:LEU:O     | 36:BG:52:LEU:HD13  | 2.16                     | 0.45              |
| 36:BG:180:ALA:HB1  | 36:BG:203:PHE:HE1  | 1.80                     | 0.45              |
| 38:BI:17:ALA:CA    | 38:BI:26:PHE:HD2   | 2.27                     | 0.45              |
| 39:BJ:4:TYR:HD1    | 39:BJ:90:VAL:HG22  | 1.81                     | 0.45              |
| 39:BJ:19:LEU:HD11  | 39:BJ:23:LYS:NZ    | 2.31                     | 0.45              |
| 39:BJ:56:PRO:HG2   | 39:BJ:57:GLN:OE1   | 2.16                     | 0.45              |
| 40:BK:5:ARG:HB3    | 40:BK:5:ARG:CZ     | 2.45                     | 0.45              |
| 40:BK:149:ARG:O    | 40:BK:151:TYR:N    | 2.49                     | 0.45              |
| 41:BL:49:GLU:CD    | 41:BL:60:ARG:HB3   | 2.40                     | 0.45              |
| 41:BL:110:ALA:HB3  | 41:BL:121:ASP:OD1  | 2.16                     | 0.45              |
| 41:BL:137:VAL:HG12 | 41:BL:138:TRP:H    | 1.82                     | 0.45              |
| 45:BP:85:ILE:CG1   | 45:BP:87:GLY:H     | 2.19                     | 0.45              |
| 48:BS:65:ARG:CZ    | 48:BS:65:ARG:HB3   | 2.46                     | 0.45              |
| 48:BS:66:LEU:O     | 48:BS:67:LEU:C     | 2.58                     | 0.45              |
| 52:BW:12:ASP:C     | 52:BW:14:HIS:N     | 2.73                     | 0.45              |
| 55:BC:16:U:C3'     | 55:BC:17:C:C5'     | 2.78                     | 0.45              |
| 56:BD:2:C:C5       | 56:BD:3:C:C4       | 3.04                     | 0.45              |
| 56:BD:5:G:C1'      | 56:BD:69:G:H1'     | 2.46                     | 0.45              |
| 56:BE:66:U:O2'     | 56:BE:67:C:H5'     | 2.16                     | 0.45              |
| 57:BZ:49:GLU:HG2   | 57:BZ:49:GLU:O     | 2.16                     | 0.45              |
| 57:BZ:125:VAL:N    | 57:BZ:161:ALA:HB1  | 2.30                     | 0.45              |
| 57:BZ:232:LYS:HE3  | 57:BZ:232:LYS:HB3  | 1.65                     | 0.45              |
| 57:BZ:233:PRO:HB3  | 57:BZ:234:ASN:HA   | 1.97                     | 0.45              |
| 57:BZ:239:ILE:HD12 | 57:BZ:288:VAL:HG22 | 1.99                     | 0.45              |
| 1:AA:6:A:C2        | 1:AA:2897:U:C1'    | 3.00                     | 0.45              |
| 1:AA:30:G:H2'      | 1:AA:31:C:C6       | 2.51                     | 0.45              |
| 1:AA:85:G:P        | 20:AV:28:LYS:HE3   | 2.57                     | 0.45              |
| 1:AA:88:G:C5'      | 1:AA:89:G:OP2      | 2.57                     | 0.45              |
| 1:AA:191:A:N3      | 1:AA:192:C:H1'     | 2.31                     | 0.45              |
| 1:AA:236:C:C4'     | 1:AA:431:U:H1'     | 2.46                     | 0.45              |
| 1:AA:449:A:OP2     | 6:AF:85:GLY:HA2    | 2.16                     | 0.45              |
| 1:AA:489:G:C4      | 1:AA:491:G:C8      | 3.04                     | 0.45              |
| 1:AA:653:A:H5'     | 1:AA:654:A:H4'     | 1.96                     | 0.45              |
| 1:AA:659:C:C5'     | 6:AF:102:PRO:HD3   | 2.45                     | 0.45              |
| 1:AA:705:A:N6      | 1:AA:727:A:C8      | 2.83                     | 0.45              |
| 1:AA:915:C:O2'     | 1:AA:916:G:H5'     | 2.16                     | 0.45              |
| 1:AA:955:C:OP1     | 12:AN:17:LEU:HG    | 2.16                     | 0.45              |
| 1:AA:974:G:C8      | 1:AA:974(A):C:O4'  | 2.69                     | 0.45              |
| 1:AA:1067:A:H5''   | 32:AJ:21:PRO:CB    | 2.36                     | 0.45              |
| 1:AA:1231:G:H2'    | 1:AA:1232:G:H8     | 1.82                     | 0.45              |
| 1:AA:1237:A:O2'    | 1:AA:1238:G:C4'    | 2.62                     | 0.45              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:AA:1338:G:N2   | 1:AA:1393:A:H2   | 2.15                     | 0.45              |
| 1:AA:1534:G:H1'  | 1:AA:1536:A:H62  | 1.81                     | 0.45              |
| 1:AA:1658:C:OP1  | 5:AE:134:ILE:CG1 | 2.64                     | 0.45              |
| 1:AA:1686:C:N4   | 1:AA:1703:G:O6   | 2.49                     | 0.45              |
| 1:AA:1725:G:C2   | 1:AA:1726:G:C8   | 3.04                     | 0.45              |
| 1:AA:1786:A:C2'  | 1:AA:1787:A:H5'  | 2.46                     | 0.45              |
| 1:AA:1789:A:H4'  | 4:AD:222:ARG:NH1 | 2.31                     | 0.45              |
| 1:AA:1813:G:O3'  | 4:AD:46:GLN:HG2  | 2.16                     | 0.45              |
| 1:AA:1908:C:H2'  | 1:AA:1909:C:H6   | 1.73                     | 0.45              |
| 1:AA:1947:C:N3   | 1:AA:1948:G:N7   | 2.65                     | 0.45              |
| 1:AA:2029:G:N1   | 1:AA:2033:A:OP2  | 2.44                     | 0.45              |
| 1:AA:2046:G:P    | 26:Ab:18:ALA:HB1 | 2.56                     | 0.45              |
| 1:AA:2125:G:H3'  | 3:AC:217:THR:OG1 | 2.16                     | 0.45              |
| 1:AA:2232:U:C2'  | 1:AA:2233:U:O5'  | 2.64                     | 0.45              |
| 1:AA:2246:G:N3   | 1:AA:2247:A:C8   | 2.84                     | 0.45              |
| 1:AA:2285:C:C6   | 1:AA:2285:C:C3'  | 2.99                     | 0.45              |
| 1:AA:2305:A:C3'  | 1:AA:2306:C:C5'  | 2.94                     | 0.45              |
| 1:AA:2331:G:H3'  | 1:AA:2332:U:C6   | 2.51                     | 0.45              |
| 1:AA:2346:A:O2'  | 1:AA:2347:C:OP2  | 2.32                     | 0.45              |
| 1:AA:2373:G:OP2  | 1:AA:2373:G:C8   | 2.68                     | 0.45              |
| 1:AA:2585:U:O2   | 1:AA:2585:U:C2'  | 2.57                     | 0.45              |
| 1:AA:2606:C:C2   | 1:AA:2607:G:N7   | 2.84                     | 0.45              |
| 1:AA:2661:G:N1   | 8:AH:175:LYS:HE3 | 2.28                     | 0.45              |
| 1:AA:2673:G:N3   | 1:AA:2674:G:C8   | 2.84                     | 0.45              |
| 1:AA:2691:C:N4   | 1:AA:2719:G:N2   | 2.64                     | 0.45              |
| 1:AA:2742:C:O2   | 1:AA:2742:C:C2'  | 2.64                     | 0.45              |
| 1:AA:2776:A:H1'  | 1:AA:2778:A:H5'' | 1.99                     | 0.45              |
| 1:AA:2780:G:H2'  | 1:AA:2781:A:H5'' | 1.96                     | 0.45              |
| 2:AB:30:C:C5     | 2:AB:31:C:C6     | 3.05                     | 0.45              |
| 2:AB:37:C:N3     | 2:AB:48:A:O2'    | 2.47                     | 0.45              |
| 3:AC:59:ARG:HH11 | 3:AC:59:ARG:HB2  | 1.81                     | 0.45              |
| 3:AC:66:HIS:C    | 3:AC:158:ALA:C   | 2.84                     | 0.45              |
| 3:AC:73:ARG:HB3  | 3:AC:93:TYR:CE2  | 2.52                     | 0.45              |
| 3:AC:89:ALA:HB1  | 3:AC:154:ARG:HA  | 1.95                     | 0.45              |
| 4:AD:54:ARG:HB3  | 4:AD:218:ARG:CB  | 2.44                     | 0.45              |
| 4:AD:117:VAL:CG1 | 4:AD:129:ASN:N   | 2.79                     | 0.45              |
| 4:AD:247:ALA:O   | 4:AD:250:TRP:HB2 | 2.16                     | 0.45              |
| 5:AE:13:ARG:CZ   | 5:AE:21:VAL:N    | 2.80                     | 0.45              |
| 6:AF:21:ALA:O    | 6:AF:22:ALA:HB3  | 2.16                     | 0.45              |
| 6:AF:118:ALA:C   | 6:AF:122:LYS:HB2 | 2.41                     | 0.45              |
| 6:AF:168:ARG:H   | 6:AF:168:ARG:HG3 | 1.36                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:AF:178:PRO:O    | 6:AF:180:GLY:N    | 2.41                     | 0.45              |
| 7:AG:21:ARG:NH1   | 7:AG:27:ASN:HA    | 2.31                     | 0.45              |
| 7:AG:144:ILE:HG23 | 7:AG:145:THR:N    | 2.30                     | 0.45              |
| 7:AG:172:LEU:HD12 | 7:AG:172:LEU:C    | 2.41                     | 0.45              |
| 8:AH:74:ASN:O     | 8:AH:76:VAL:N     | 2.50                     | 0.45              |
| 8:AH:144:VAL:O    | 8:AH:145:ALA:C    | 2.60                     | 0.45              |
| 9:AK:17:ASP:HB3   | 9:AK:21:LYS:HZ1   | 1.80                     | 0.45              |
| 9:AK:109:LYS:HE3  | 9:AK:111:PRO:CD   | 2.46                     | 0.45              |
| 9:AK:117:PHE:CA   | 9:AK:120:LEU:HB3  | 2.42                     | 0.45              |
| 10:AL:80:ASP:OD2  | 10:AL:82:ASN:ND2  | 2.48                     | 0.45              |
| 10:AL:89:ASN:O    | 10:AL:90:GLN:CB   | 2.64                     | 0.45              |
| 11:AM:58:THR:CG2  | 11:AM:60:MET:HG2  | 2.46                     | 0.45              |
| 11:AM:112:LEU:O   | 11:AM:128:HIS:HE1 | 1.94                     | 0.45              |
| 12:AN:62:GLY:N    | 21:AW:177:PRO:HA  | 2.31                     | 0.45              |
| 13:AO:20:LEU:O    | 13:AO:22:ARG:N    | 2.49                     | 0.45              |
| 14:AP:11:LYS:HA   | 14:AP:14:VAL:CB   | 2.47                     | 0.45              |
| 14:AP:98:VAL:O    | 14:AP:99:LYS:C    | 2.58                     | 0.45              |
| 14:AP:106:ARG:HD2 | 14:AP:107:GLU:OE2 | 2.15                     | 0.45              |
| 15:AQ:53:ARG:NH2  | 15:AQ:101:PHE:H   | 2.14                     | 0.45              |
| 15:AQ:64:ARG:CD   | 15:AQ:65:LYS:H    | 1.99                     | 0.45              |
| 15:AQ:87:ASP:OD2  | 15:AQ:88:ILE:N    | 2.49                     | 0.45              |
| 16:AR:36:ARG:O    | 16:AR:37:GLU:C    | 2.59                     | 0.45              |
| 18:AT:18:ARG:CD   | 18:AT:76:VAL:H    | 2.29                     | 0.45              |
| 18:AT:47:VAL:O    | 18:AT:51:LEU:CD1  | 2.57                     | 0.45              |
| 20:AV:2:ARG:NH2   | 20:AV:4:LYS:HB2   | 2.19                     | 0.45              |
| 20:AV:86:ARG:CA   | 20:AV:91:GLU:HB3  | 2.47                     | 0.45              |
| 21:AW:102:LEU:HG  | 21:AW:125:LEU:CG  | 2.46                     | 0.45              |
| 22:AX:27:GLU:CB   | 22:AX:69:PHE:CE1  | 2.97                     | 0.45              |
| 23:AY:2:ARG:HA    | 23:AY:5:LEU:CD1   | 2.28                     | 0.45              |
| 25:Aa:6:HIS:CE1   | 25:Aa:55:ARG:CD   | 2.99                     | 0.45              |
| 27:Ac:19:ARG:O    | 27:Ac:20:ASN:CG   | 2.59                     | 0.45              |
| 29:Ae:26:LYS:O    | 29:Ae:47:LYS:HE3  | 2.17                     | 0.45              |
| 29:Ae:52:LYS:HB2  | 29:Ae:52:LYS:NZ   | 2.31                     | 0.45              |
| 34:BA:18:C:N4     | 34:BA:918:A:H61   | 2.13                     | 0.45              |
| 34:BA:95:G:H2'    | 34:BA:96:G:H5'    | 1.98                     | 0.45              |
| 34:BA:181:G:H2'   | 34:BA:182:U:OP2   | 2.17                     | 0.45              |
| 34:BA:375:U:O3'   | 49:BT:6:LEU:HD11  | 2.15                     | 0.45              |
| 34:BA:398:C:H2'   | 34:BA:399:G:H8    | 1.81                     | 0.45              |
| 34:BA:468:A:N6    | 34:BA:474:G:C6    | 2.84                     | 0.45              |
| 34:BA:509:A:C6    | 34:BA:510:A:N1    | 2.85                     | 0.45              |
| 34:BA:513:C:N3    | 34:BA:514:C:C5    | 2.84                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:564:C:H2'   | 34:BA:565:U:O4'    | 2.16                     | 0.45              |
| 34:BA:589:C:N4    | 34:BA:590:C:H41    | 2.14                     | 0.45              |
| 34:BA:690:G:H2'   | 34:BA:691:G:O5'    | 2.17                     | 0.45              |
| 34:BA:934:C:N4    | 34:BA:939:G:N1     | 2.64                     | 0.45              |
| 34:BA:1027:C:N3   | 34:BA:1028:C:C5    | 2.84                     | 0.45              |
| 34:BA:1068:G:C8   | 34:BA:1094:G:C8    | 3.04                     | 0.45              |
| 34:BA:1082:G:O2'  | 34:BA:1083:U:H5'   | 2.15                     | 0.45              |
| 34:BA:1104:G:H4'  | 35:BF:111:ARG:NH2  | 2.31                     | 0.45              |
| 34:BA:1134:G:N2   | 34:BA:1136:U:C4    | 2.84                     | 0.45              |
| 34:BA:1176:A:N6   | 34:BA:1177:G:N1    | 2.63                     | 0.45              |
| 34:BA:1224:G:C6   | 34:BA:1322:C:H4'   | 2.51                     | 0.45              |
| 34:BA:1225:A:H2'  | 34:BA:1225:A:N3    | 2.32                     | 0.45              |
| 34:BA:1343:G:C5   | 34:BA:1344:C:C4    | 3.04                     | 0.45              |
| 34:BA:1409:C:H2'  | 34:BA:1410:G:H8    | 1.81                     | 0.45              |
| 35:BF:58:ILE:HB   | 35:BF:221:LEU:HG   | 1.98                     | 0.45              |
| 35:BF:179:LYS:HG2 | 41:BL:72:PRO:HA    | 1.98                     | 0.45              |
| 36:BG:140:ARG:HB3 | 36:BG:140:ARG:HH11 | 1.75                     | 0.45              |
| 36:BG:152:ILE:O   | 36:BG:199:LYS:O    | 2.33                     | 0.45              |
| 37:BH:60:GLU:OE1  | 37:BH:202:LEU:HD12 | 2.15                     | 0.45              |
| 37:BH:61:LYS:HA   | 37:BH:203:VAL:CG1  | 2.46                     | 0.45              |
| 37:BH:85:LYS:O    | 37:BH:86:LYS:O     | 2.34                     | 0.45              |
| 38:BI:20:GLN:NE2  | 38:BI:21:ALA:HB3   | 2.29                     | 0.45              |
| 38:BI:35:GLY:N    | 38:BI:112:LEU:CD1  | 2.79                     | 0.45              |
| 40:BK:17:VAL:O    | 40:BK:18:TYR:CD1   | 2.69                     | 0.45              |
| 40:BK:47:CYS:O    | 40:BK:50:ILE:HB    | 2.17                     | 0.45              |
| 41:BL:28:ALA:HA   | 41:BL:59:LEU:HD12  | 1.98                     | 0.45              |
| 41:BL:46:LYS:HG3  | 41:BL:64:LYS:HB2   | 1.97                     | 0.45              |
| 43:BN:49:VAL:HG22 | 47:BR:41:ARG:HB2   | 1.97                     | 0.45              |
| 44:BO:58:PRO:HB3  | 44:BO:90:GLY:HA2   | 1.93                     | 0.45              |
| 44:BO:106:LYS:CG  | 44:BO:107:SER:N    | 2.77                     | 0.45              |
| 45:BP:53:ARG:NH1  | 45:BP:93:LEU:HD22  | 2.32                     | 0.45              |
| 45:BP:126:LYS:HD2 | 45:BP:126:LYS:C    | 2.41                     | 0.45              |
| 47:BR:35:ARG:O    | 47:BR:38:GLY:N     | 2.48                     | 0.45              |
| 52:BW:9:VAL:CG1   | 52:BW:41:VAL:CA    | 2.78                     | 0.45              |
| 53:BX:86:ARG:O    | 53:BX:90:GLN:OE1   | 2.34                     | 0.45              |
| 56:BE:73:A:O3'    | 56:BE:74:C:O4'     | 2.34                     | 0.45              |
| 57:BZ:13:HIS:C    | 57:BZ:15:ASP:N     | 2.73                     | 0.45              |
| 57:BZ:15:ASP:HB2  | 57:BZ:16:HIS:CD2   | 2.28                     | 0.45              |
| 57:BZ:59:LYS:NZ   | 57:BZ:59:LYS:CB    | 2.76                     | 0.45              |
| 57:BZ:68:TYR:O    | 57:BZ:69:ARG:HB2   | 2.15                     | 0.45              |
| 57:BZ:88:VAL:CG1  | 57:BZ:92:VAL:CG1   | 2.88                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:BZ:181:GLU:CD  | 57:BZ:183:MET:CE  | 2.86                     | 0.45              |
| 57:BZ:267:LEU:CD2 | 57:BZ:268:ALA:N   | 2.75                     | 0.45              |
| 57:BZ:374:ARG:CA  | 57:BZ:582:PRO:HA  | 2.46                     | 0.45              |
| 57:BZ:519:TYR:CZ  | 57:BZ:586:ARG:NH2 | 2.81                     | 0.45              |
| 57:BZ:539:THR:OG1 | 57:BZ:541:LYS:HD3 | 2.16                     | 0.45              |
| 57:BZ:581:THR:OG1 | 57:BZ:584:SER:HB2 | 2.15                     | 0.45              |
| 1:AA:19:C:C2      | 1:AA:20:C:C5      | 3.04                     | 0.45              |
| 1:AA:50:U:C6      | 1:AA:50:U:C3'     | 2.99                     | 0.45              |
| 1:AA:107:C:C5'    | 1:AA:293:U:O4'    | 2.65                     | 0.45              |
| 1:AA:218:A:H2'    | 1:AA:219:G:C8     | 2.51                     | 0.45              |
| 1:AA:233:A:C2'    | 1:AA:234:C:O5'    | 2.64                     | 0.45              |
| 1:AA:247:G:HO2'   | 1:AA:386:G:N2     | 2.14                     | 0.45              |
| 1:AA:280:C:C5     | 1:AA:283:A:N7     | 2.84                     | 0.45              |
| 1:AA:371:A:C5     | 1:AA:424:G:O4'    | 2.69                     | 0.45              |
| 1:AA:458:G:N7     | 28:Ad:38:GLY:CA   | 2.79                     | 0.45              |
| 1:AA:533:G:C6     | 1:AA:534:U:C2     | 3.04                     | 0.45              |
| 1:AA:578:A:C3'    | 1:AA:579:G:H5''   | 2.46                     | 0.45              |
| 1:AA:597:U:H2'    | 1:AA:598:G:C8     | 2.51                     | 0.45              |
| 1:AA:602:G:N2     | 1:AA:655:A:C3'    | 2.80                     | 0.45              |
| 1:AA:603:A:N6     | 1:AA:625:G:C8     | 2.84                     | 0.45              |
| 1:AA:607:U:C2     | 1:AA:608:A:H8     | 2.33                     | 0.45              |
| 1:AA:693:C:H2'    | 1:AA:694:U:O5'    | 2.16                     | 0.45              |
| 1:AA:723:G:C2     | 1:AA:724:U:H1'    | 2.50                     | 0.45              |
| 1:AA:762:U:H1'    | 1:AA:763:G:C4     | 2.51                     | 0.45              |
| 1:AA:774:A:C5'    | 1:AA:778:G:O4'    | 2.64                     | 0.45              |
| 1:AA:840:C:H6     | 1:AA:840:C:O5'    | 1.99                     | 0.45              |
| 1:AA:966:G:C2'    | 1:AA:2267:A:N6    | 2.78                     | 0.45              |
| 1:AA:994:C:H5''   | 1:AA:995:C:OP1    | 2.17                     | 0.45              |
| 1:AA:1014:U:H2'   | 1:AA:1015:G:H5'   | 1.98                     | 0.45              |
| 1:AA:1036:G:O6    | 1:AA:1120:G:O6    | 2.22                     | 0.45              |
| 1:AA:1055:G:C2    | 1:AA:1084:A:C2    | 3.01                     | 0.45              |
| 1:AA:1104:C:H2'   | 1:AA:1105:U:H6    | 1.80                     | 0.45              |
| 1:AA:1120:G:C4    | 1:AA:1121:C:C5    | 3.05                     | 0.45              |
| 1:AA:1165:U:C2    | 1:AA:1166:C:C5    | 3.05                     | 0.45              |
| 1:AA:1309:G:H5''  | 28:Ad:9:ARG:H     | 1.81                     | 0.45              |
| 1:AA:1313:U:O2    | 1:AA:1314:C:C5    | 2.69                     | 0.45              |
| 1:AA:1364:G:C2    | 1:AA:1367:A:OP2   | 2.69                     | 0.45              |
| 1:AA:1407:C:OP2   | 1:AA:1407:C:H3'   | 2.16                     | 0.45              |
| 1:AA:1419:A:O4'   | 1:AA:1419:A:OP2   | 2.34                     | 0.45              |
| 1:AA:1449:A:C2    | 1:AA:1449(A):G:C4 | 3.04                     | 0.45              |
| 1:AA:1615:C:N4    | 1:AA:1617:C:O2    | 2.50                     | 0.45              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:1630:G:N1   | 1:AA:1637:A:C6    | 2.84                     | 0.45              |
| 1:AA:1635:G:H2'  | 1:AA:1636:C:H6    | 1.81                     | 0.45              |
| 1:AA:1684:C:N4   | 1:AA:1705:G:N1    | 2.64                     | 0.45              |
| 1:AA:1689:A:C5   | 1:AA:1700:A:C6    | 3.04                     | 0.45              |
| 1:AA:1804:C:C2'  | 1:AA:1805:U:O5'   | 2.64                     | 0.45              |
| 1:AA:1850:G:C6   | 1:AA:1851:U:C4    | 3.04                     | 0.45              |
| 1:AA:1858:G:O2'  | 1:AA:1859:A:O5'   | 2.34                     | 0.45              |
| 1:AA:1892:C:N3   | 1:AA:1893:C:C5    | 2.83                     | 0.45              |
| 1:AA:1928:A:H2'  | 1:AA:1929:G:O4'   | 2.15                     | 0.45              |
| 1:AA:1933:G:O6   | 1:AA:1968:G:C2    | 2.68                     | 0.45              |
| 1:AA:1957:C:C2'  | 1:AA:1958:C:O5'   | 2.65                     | 0.45              |
| 1:AA:1983:C:O2'  | 1:AA:1984:G:C5'   | 2.58                     | 0.45              |
| 1:AA:2051:A:C5   | 1:AA:2614:A:N6    | 2.85                     | 0.45              |
| 1:AA:2091:U:O4   | 1:AA:2092:U:C5    | 2.70                     | 0.45              |
| 1:AA:2114:A:H2'  | 1:AA:2115:G:O4'   | 2.17                     | 0.45              |
| 1:AA:2175:C:N3   | 1:AA:2176:A:N7    | 2.64                     | 0.45              |
| 1:AA:2177:C:O5'  | 3:AC:213:TYR:HE2  | 1.68                     | 0.45              |
| 1:AA:2239:G:N3   | 1:AA:2239:G:H2'   | 2.32                     | 0.45              |
| 1:AA:2244:U:H2'  | 1:AA:2244:U:O2    | 2.17                     | 0.45              |
| 1:AA:2249:U:O4   | 1:AA:2253:G:OP2   | 2.35                     | 0.45              |
| 1:AA:2250:G:O2'  | 1:AA:2496:C:C5'   | 2.63                     | 0.45              |
| 1:AA:2259:G:H2'  | 1:AA:2260:C:H6    | 1.82                     | 0.45              |
| 1:AA:2345:G:N2   | 1:AA:2382:G:OP2   | 2.49                     | 0.45              |
| 1:AA:2415:G:C4   | 1:AA:2416:C:C5    | 3.04                     | 0.45              |
| 1:AA:2484:G:O2'  | 1:AA:2485:G:H5'   | 2.17                     | 0.45              |
| 1:AA:2694:G:H2'  | 1:AA:2695:C:O5'   | 2.16                     | 0.45              |
| 1:AA:2820:A:H4'  | 13:AO:4:LEU:CD2   | 2.46                     | 0.45              |
| 1:AA:2828:C:C2   | 1:AA:2829:C:H5    | 2.28                     | 0.45              |
| 2:AB:6:C:C2'     | 2:AB:7:G:O5'      | 2.65                     | 0.45              |
| 2:AB:12:C:C4'    | 22:AX:74:ARG:HE   | 2.27                     | 0.45              |
| 2:AB:46:A:C2'    | 2:AB:47:C:C6      | 2.78                     | 0.45              |
| 2:AB:50:G:P      | 14:AP:63:THR:OG1  | 2.74                     | 0.45              |
| 2:AB:104:A:H3'   | 2:AB:105:G:O4'    | 2.16                     | 0.45              |
| 3:AC:97:GLU:HG2  | 3:AC:100:ILE:HD12 | 1.99                     | 0.45              |
| 4:AD:61:LEU:HB3  | 4:AD:62:TYR:H     | 1.44                     | 0.45              |
| 4:AD:261:LYS:C   | 4:AD:263:ARG:H    | 2.23                     | 0.45              |
| 5:AE:34:VAL:CG1  | 5:AE:36:ARG:NH2   | 2.79                     | 0.45              |
| 5:AE:163:GLU:OE1 | 5:AE:163:GLU:N    | 2.50                     | 0.45              |
| 6:AF:35:GLU:N    | 6:AF:38:ARG:HD2   | 2.30                     | 0.45              |
| 6:AF:37:VAL:O    | 6:AF:41:LEU:CG    | 2.64                     | 0.45              |
| 6:AF:57:VAL:O    | 6:AF:60:SER:OG    | 2.29                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 7:AG:153:ARG:C    | 7:AG:155:MET:SD    | 3.00                     | 0.45              |
| 8:AH:75:ALA:O     | 8:AH:79:VAL:HG13   | 2.17                     | 0.45              |
| 8:AH:76:VAL:CA    | 8:AH:79:VAL:HG22   | 2.45                     | 0.45              |
| 8:AH:80:SER:OG    | 8:AH:81:GLU:OE2    | 2.33                     | 0.45              |
| 8:AH:97:ARG:O     | 8:AH:104:GLU:CG    | 2.64                     | 0.45              |
| 8:AH:97:ARG:NH1   | 8:AH:104:GLU:OE2   | 2.49                     | 0.45              |
| 8:AH:124:GLU:HB3  | 8:AH:132:ARG:NH1   | 2.32                     | 0.45              |
| 9:AK:72:TYR:HD2   | 9:AK:72:TYR:O      | 1.99                     | 0.45              |
| 9:AK:99:LEU:O     | 9:AK:103:VAL:HG13  | 2.17                     | 0.45              |
| 10:AL:101:PRO:CD  | 10:AL:119:PRO:O    | 2.63                     | 0.45              |
| 11:AM:85:LEU:O    | 11:AM:86:LYS:HE2   | 2.16                     | 0.45              |
| 11:AM:124:LYS:NZ  | 11:AM:141:ALA:HB1  | 2.31                     | 0.45              |
| 11:AM:137:LYS:N   | 11:AM:137:LYS:HZ2  | 2.14                     | 0.45              |
| 13:AO:52:ILE:CD1  | 13:AO:56:LYS:HG2   | 2.47                     | 0.45              |
| 13:AO:75:LEU:HD23 | 13:AO:78:LYS:HB3   | 1.98                     | 0.45              |
| 14:AP:35:ILE:HG13 | 14:AP:36:TYR:N     | 2.31                     | 0.45              |
| 14:AP:49:VAL:HG22 | 14:AP:50:SER:N     | 2.31                     | 0.45              |
| 15:AQ:7:ILE:O     | 15:AQ:10:VAL:N     | 2.49                     | 0.45              |
| 15:AQ:28:VAL:HG22 | 15:AQ:93:ARG:CA    | 2.46                     | 0.45              |
| 15:AQ:52:ILE:N    | 15:AQ:66:VAL:CG1   | 2.73                     | 0.45              |
| 16:AR:11:ARG:CG   | 16:AR:12:ARG:N     | 2.80                     | 0.45              |
| 16:AR:52:ARG:CB   | 16:AR:55:ARG:HD3   | 2.46                     | 0.45              |
| 16:AR:104:GLN:O   | 16:AR:105:VAL:C    | 2.59                     | 0.45              |
| 17:AS:16:PRO:HD3  | 17:AS:100:ARG:HH11 | 1.76                     | 0.45              |
| 17:AS:42:GLY:O    | 17:AS:49:THR:O     | 2.34                     | 0.45              |
| 17:AS:68:LYS:HZ2  | 17:AS:95:LEU:CD1   | 2.29                     | 0.45              |
| 18:AT:10:VAL:CG2  | 18:AT:12:ILE:HD11  | 2.46                     | 0.45              |
| 18:AT:85:VAL:HG12 | 18:AT:95:ILE:CG2   | 2.46                     | 0.45              |
| 19:AU:90:GLU:O    | 19:AU:93:GLU:HG2   | 2.14                     | 0.45              |
| 21:AW:44:PHE:O    | 21:AW:47:VAL:HB    | 2.16                     | 0.45              |
| 22:AX:40:GLN:HE21 | 22:AX:57:PHE:HB3   | 1.80                     | 0.45              |
| 24:AZ:17:LYS:O    | 24:AZ:18:ASP:C     | 2.59                     | 0.45              |
| 26:Ab:9:LYS:HD2   | 26:Ab:9:LYS:H      | 1.78                     | 0.45              |
| 29:Ae:22:VAL:O    | 29:Ae:48:PHE:CD1   | 2.69                     | 0.45              |
| 32:AJ:14:ALA:HB2  | 32:AJ:53:VAL:HB    | 1.98                     | 0.45              |
| 32:AJ:15:GLY:HA2  | 32:AJ:45:THR:C     | 2.42                     | 0.45              |
| 32:AJ:87:GLY:C    | 32:AJ:89:HIS:N     | 2.74                     | 0.45              |
| 34:BA:61:G:C8     | 34:BA:62:U:C5      | 3.05                     | 0.45              |
| 34:BA:99:C:H2'    | 34:BA:101:A:C8     | 2.52                     | 0.45              |
| 34:BA:144:G:C6    | 34:BA:179:A:C6     | 3.05                     | 0.45              |
| 34:BA:251:G:O4'   | 34:BA:252:U:C5     | 2.70                     | 0.45              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:275:G:C2     | 34:BA:276:G:C8     | 3.04                     | 0.45              |
| 34:BA:342:C:O2'    | 34:BA:343:U:H5'    | 2.16                     | 0.45              |
| 34:BA:519:C:OP1    | 45:BP:50:SER:OG    | 2.27                     | 0.45              |
| 34:BA:643:C:O2'    | 41:BL:132:GLU:CD   | 2.58                     | 0.45              |
| 34:BA:679:C:H6     | 34:BA:679:C:O5'    | 2.00                     | 0.45              |
| 34:BA:714:G:C1'    | 34:BA:777:A:N7     | 2.77                     | 0.45              |
| 34:BA:721:G:H1'    | 34:BA:722:A:C2     | 2.52                     | 0.45              |
| 34:BA:752:G:O2'    | 34:BA:753:A:P      | 2.75                     | 0.45              |
| 34:BA:781:A:N7     | 34:BA:802:A:N1     | 2.64                     | 0.45              |
| 34:BA:811:C:C6     | 34:BA:811:C:C3'    | 2.98                     | 0.45              |
| 34:BA:878:G:OP1    | 41:BL:88:LYS:HB2   | 2.17                     | 0.45              |
| 34:BA:1099:G:N7    | 34:BA:1100:C:C5    | 2.85                     | 0.45              |
| 34:BA:1109:C:N1    | 34:BA:1110:A:C8    | 2.84                     | 0.45              |
| 34:BA:1111:A:C5    | 34:BA:1112:C:N4    | 2.85                     | 0.45              |
| 34:BA:1213:A:H2'   | 34:BA:1215:G:N7    | 2.31                     | 0.45              |
| 34:BA:1221:G:H1'   | 52:BW:55:LYS:HB2   | 1.98                     | 0.45              |
| 34:BA:1269:A:H2'   | 34:BA:1270:C:O4'   | 2.15                     | 0.45              |
| 34:BA:1316:G:H5''  | 47:BR:17:LYS:CD    | 2.46                     | 0.45              |
| 34:BA:1342:C:O2'   | 34:BA:1343:G:H5'   | 2.17                     | 0.45              |
| 34:BA:1399:C:C2    | 34:BA:1502:A:N6    | 2.85                     | 0.45              |
| 34:BA:1429:C:H2'   | 34:BA:1430:C:C5    | 2.50                     | 0.45              |
| 34:BA:1451:A:H5''  | 34:BA:1452:C:C5    | 2.50                     | 0.45              |
| 34:BA:1485:U:O2'   | 34:BA:1486:G:H5'   | 2.16                     | 0.45              |
| 35:BF:32:ILE:O     | 35:BF:32:ILE:CG2   | 2.61                     | 0.45              |
| 36:BG:30:ARG:CG    | 36:BG:31:HIS:H     | 2.09                     | 0.45              |
| 36:BG:33:LEU:HD11  | 47:BR:53:LEU:CA    | 2.28                     | 0.45              |
| 36:BG:77:ILE:CD1   | 36:BG:103:VAL:HG21 | 2.45                     | 0.45              |
| 36:BG:126:ARG:C    | 36:BG:127:ARG:HG3  | 2.41                     | 0.45              |
| 36:BG:185:GLY:O    | 36:BG:199:LYS:HA   | 2.16                     | 0.45              |
| 37:BH:13:ARG:CA    | 37:BH:32:ALA:HB2   | 2.47                     | 0.45              |
| 38:BI:55:VAL:C     | 38:BI:57:LYS:N     | 2.71                     | 0.45              |
| 38:BI:105:VAL:HG13 | 38:BI:132:ALA:HA   | 1.96                     | 0.45              |
| 39:BJ:2:ARG:C      | 39:BJ:67:MET:SD    | 3.00                     | 0.45              |
| 41:BL:49:GLU:O     | 41:BL:59:LEU:HD23  | 2.17                     | 0.45              |
| 41:BL:104:ARG:C    | 41:BL:106:GLY:N    | 2.73                     | 0.45              |
| 42:BM:101:PHE:O    | 42:BM:102:LEU:CD2  | 2.65                     | 0.45              |
| 42:BM:112:LYS:HG3  | 42:BM:117:HIS:CA   | 2.41                     | 0.45              |
| 45:BP:125:PRO:O    | 45:BP:127:GLU:N    | 2.46                     | 0.45              |
| 46:BQ:29:ARG:HD2   | 46:BQ:66:LEU:HD11  | 1.55                     | 0.45              |
| 47:BR:23:ARG:CA    | 47:BR:33:VAL:HG21  | 2.46                     | 0.45              |
| 47:BR:34:TYR:CZ    | 47:BR:44:LEU:HD22  | 2.51                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 47:BR:35:ARG:C    | 47:BR:37:PHE:H    | 2.23                     | 0.45              |
| 48:BS:6:GLU:O     | 48:BS:8:LYS:N     | 2.49                     | 0.45              |
| 48:BS:34:LEU:HD12 | 48:BS:38:ARG:NE   | 2.29                     | 0.45              |
| 50:BU:6:LEU:HD12  | 50:BU:6:LEU:O     | 2.15                     | 0.45              |
| 50:BU:67:LYS:C    | 50:BU:69:LYS:H    | 2.23                     | 0.45              |
| 50:BU:101:ARG:HG2 | 50:BU:102:GLY:H   | 1.82                     | 0.45              |
| 52:BW:36:ARG:HB2  | 52:BW:71:LEU:CB   | 2.45                     | 0.45              |
| 56:BD:47:U:O2     | 56:BD:47:U:H5'    | 2.16                     | 0.45              |
| 56:BD:74:C:HO2'   | 56:BD:75:C:P      | 2.33                     | 0.45              |
| 57:BZ:6:ARG:O     | 57:BZ:72:ILE:HD11 | 2.16                     | 0.45              |
| 57:BZ:405:LEU:HB3 | 57:BZ:455:PHE:HZ  | 1.80                     | 0.45              |
| 57:BZ:499:PHE:N   | 57:BZ:540:GLY:HA2 | 2.31                     | 0.45              |
| 57:BZ:502:PHE:HZ  | 57:BZ:556:VAL:O   | 1.85                     | 0.45              |
| 57:BZ:539:THR:H   | 57:BZ:540:GLY:HA3 | 1.80                     | 0.45              |
| 1:AA:47:C:C2      | 1:AA:179:G:C2     | 3.04                     | 0.45              |
| 1:AA:147:U:C4     | 1:AA:148:C:N4     | 2.85                     | 0.45              |
| 1:AA:250:G:OP1    | 29:Ae:12:LYS:NZ   | 2.35                     | 0.45              |
| 1:AA:270:A:C5     | 1:AA:270(A):A:C8  | 3.05                     | 0.45              |
| 1:AA:271(B):G:C3' | 1:AA:271(C):U:H5' | 2.46                     | 0.45              |
| 1:AA:281:G:H2'    | 1:AA:282:A:OP2    | 2.16                     | 0.45              |
| 1:AA:387:U:O2'    | 1:AA:388:G:N7     | 2.48                     | 0.45              |
| 1:AA:459:U:H5     | 1:AA:469:G:C2     | 2.33                     | 0.45              |
| 1:AA:479:A:N3     | 1:AA:480:A:C5     | 2.84                     | 0.45              |
| 1:AA:499:U:O4     | 1:AA:500:G:N2     | 2.50                     | 0.45              |
| 1:AA:500:G:C2'    | 1:AA:501:A:H3'    | 2.46                     | 0.45              |
| 1:AA:539:G:C2     | 1:AA:540:G:N7     | 2.84                     | 0.45              |
| 1:AA:570:G:H2'    | 1:AA:2030:A:C6    | 2.51                     | 0.45              |
| 1:AA:609:A:H61    | 1:AA:619:G:H21    | 1.63                     | 0.45              |
| 1:AA:620:G:O4'    | 1:AA:620:G:OP2    | 2.35                     | 0.45              |
| 1:AA:820:A:OP2    | 1:AA:973:A:N6     | 2.50                     | 0.45              |
| 1:AA:879:G:N1     | 1:AA:898:C:C2     | 2.74                     | 0.45              |
| 1:AA:996:A:N3     | 1:AA:997:G:N7     | 2.64                     | 0.45              |
| 1:AA:1062:G:C4    | 1:AA:1063:G:C8    | 3.04                     | 0.45              |
| 1:AA:1122:G:N2    | 1:AA:1123:C:N1    | 2.64                     | 0.45              |
| 1:AA:1128:A:N1    | 1:AA:1129:A:C6    | 2.84                     | 0.45              |
| 1:AA:1137:G:O2'   | 9:AK:102:ALA:O    | 2.35                     | 0.45              |
| 1:AA:1161:C:H2'   | 1:AA:1162:G:O4'   | 2.16                     | 0.45              |
| 1:AA:1184:G:P     | 24:AZ:30:ARG:HH11 | 2.39                     | 0.45              |
| 1:AA:1325:G:H21   | 18:AT:86:LEU:CD1  | 2.18                     | 0.45              |
| 1:AA:1342:A:N9    | 1:AA:1345:C:N4    | 2.64                     | 0.45              |
| 1:AA:1429:G:H1'   | 1:AA:1568:G:C2    | 2.51                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1449:A:H4'   | 1:AA:1542:G:H21   | 1.80                     | 0.45              |
| 1:AA:1453:A:C8    | 13:AO:73:VAL:HG11 | 2.51                     | 0.45              |
| 1:AA:1523:U:N3    | 1:AA:1524:G:C8    | 2.84                     | 0.45              |
| 1:AA:1525:G:H2'   | 1:AA:1526:G:O5'   | 2.16                     | 0.45              |
| 1:AA:1566:A:N3    | 4:AD:215:LEU:HD22 | 2.31                     | 0.45              |
| 1:AA:1698:A:O2'   | 1:AA:1699:G:H3'   | 2.16                     | 0.45              |
| 1:AA:1743:G:H3'   | 1:AA:1746:G:C8    | 2.34                     | 0.45              |
| 1:AA:1767:C:C4    | 1:AA:1768:U:C4    | 3.04                     | 0.45              |
| 1:AA:1799:G:C5    | 1:AA:1819:A:N7    | 2.84                     | 0.45              |
| 1:AA:2065:C:O2'   | 1:AA:2449:U:O2    | 2.33                     | 0.45              |
| 1:AA:2178:C:C5'   | 3:AC:213:TYR:OH   | 2.65                     | 0.45              |
| 1:AA:2213:U:H5'   | 1:AA:2215:G:C6    | 2.49                     | 0.45              |
| 1:AA:2213:U:C2    | 1:AA:2213:U:H5''  | 2.50                     | 0.45              |
| 1:AA:2532:G:C8    | 1:AA:2533:A:N7    | 2.85                     | 0.45              |
| 1:AA:2547:U:H5''  | 1:AA:2547:U:C6    | 2.52                     | 0.45              |
| 1:AA:2557:G:O2'   | 57:BZ:544:THR:CG2 | 2.61                     | 0.45              |
| 1:AA:2682:U:O2'   | 1:AA:2683:C:H5'   | 2.16                     | 0.45              |
| 1:AA:2723:C:O2'   | 1:AA:2724:C:H5'   | 2.16                     | 0.45              |
| 1:AA:2726:U:H4'   | 1:AA:2727:G:OP1   | 2.16                     | 0.45              |
| 1:AA:2766:G:N3    | 1:AA:2767:C:C6    | 2.84                     | 0.45              |
| 1:AA:2781:A:H3'   | 1:AA:2781:A:H8    | 1.69                     | 0.45              |
| 1:AA:2797:U:H4'   | 1:AA:2798:C:C1'   | 2.47                     | 0.45              |
| 1:AA:2805:G:C2'   | 1:AA:2807:G:C4'   | 2.94                     | 0.45              |
| 1:AA:2846:G:H2'   | 1:AA:2846:G:N3    | 2.31                     | 0.45              |
| 1:AA:2852:G:H2'   | 1:AA:2853:C:H6    | 1.74                     | 0.45              |
| 1:AA:2879:C:C5'   | 1:AA:2880:C:OP1   | 2.64                     | 0.45              |
| 2:AB:37:C:O2      | 2:AB:49:C:H5'     | 2.16                     | 0.45              |
| 2:AB:49:C:C2      | 2:AB:50:G:C8      | 3.05                     | 0.45              |
| 3:AC:25:ALA:O     | 3:AC:26:ALA:C     | 2.57                     | 0.45              |
| 4:AD:27:THR:HG22  | 4:AD:29:PRO:HD3   | 1.90                     | 0.45              |
| 4:AD:49:ILE:HD12  | 4:AD:49:ILE:N     | 2.32                     | 0.45              |
| 4:AD:96:HIS:CE1   | 4:AD:102:LYS:CD   | 2.93                     | 0.45              |
| 4:AD:145:VAL:HG13 | 4:AD:190:TYR:O    | 2.16                     | 0.45              |
| 5:AE:8:LYS:HD3    | 5:AE:9:VAL:CB     | 2.47                     | 0.45              |
| 5:AE:48:GLN:NE2   | 5:AE:48:GLN:H     | 2.11                     | 0.45              |
| 5:AE:53:PRO:HG2   | 5:AE:75:VAL:CG1   | 2.45                     | 0.45              |
| 5:AE:99:GLY:N     | 5:AE:172:VAL:CG2  | 2.80                     | 0.45              |
| 5:AE:125:GLY:H    | 5:AE:136:ARG:CA   | 2.24                     | 0.45              |
| 5:AE:201:THR:O    | 5:AE:202:LYS:CB   | 2.63                     | 0.45              |
| 7:AG:139:LEU:C    | 7:AG:142:PRO:HD3  | 2.40                     | 0.45              |
| 9:AK:34:LEU:HD22  | 9:AK:116:LEU:CD2  | 2.47                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 9:AK:39:ARG:HG2   | 9:AK:40:PRO:N      | 2.32                     | 0.45              |
| 10:AL:56:ASP:OD1  | 10:AL:56:ASP:O     | 2.34                     | 0.45              |
| 11:AM:88:LEU:HG   | 11:AM:124:LYS:CE   | 2.46                     | 0.45              |
| 11:AM:107:LYS:HZ1 | 11:AM:110:TYR:CB   | 2.20                     | 0.45              |
| 12:AN:27:VAL:HG12 | 12:AN:102:VAL:HG21 | 1.99                     | 0.45              |
| 12:AN:32:TYR:N    | 12:AN:32:TYR:CD1   | 2.85                     | 0.45              |
| 12:AN:48:GLU:HA   | 12:AN:51:ARG:HG3   | 1.98                     | 0.45              |
| 13:AO:34:ILE:O    | 13:AO:113:LEU:HD22 | 2.17                     | 0.45              |
| 14:AP:36:TYR:HD1  | 14:AP:51:ALA:HB3   | 1.81                     | 0.45              |
| 15:AQ:108:ARG:O   | 15:AQ:110:ILE:HG13 | 2.16                     | 0.45              |
| 16:AR:86:ALA:HB3  | 16:AR:90:VAL:HG22  | 1.99                     | 0.45              |
| 17:AS:5:VAL:O     | 17:AS:6:LYS:HB2    | 2.17                     | 0.45              |
| 17:AS:40:LEU:CD1  | 17:AS:55:ALA:CA    | 2.92                     | 0.45              |
| 17:AS:40:LEU:CB   | 17:AS:51:VAL:HG13  | 2.47                     | 0.45              |
| 18:AT:24:ILE:CG2  | 18:AT:35:ILE:HG23  | 2.45                     | 0.45              |
| 18:AT:78:GLU:OE2  | 18:AT:99:ARG:C     | 2.60                     | 0.45              |
| 18:AT:81:ALA:HB3  | 18:AT:97:LYS:HB2   | 1.98                     | 0.45              |
| 18:AT:98:LYS:C    | 18:AT:98:LYS:HE2   | 2.42                     | 0.45              |
| 19:AU:31:HIS:O    | 19:AU:32:PRO:C     | 2.59                     | 0.45              |
| 20:AV:49:VAL:HG23 | 20:AV:52:SER:H     | 1.82                     | 0.45              |
| 22:AX:23:VAL:CG2  | 22:AX:44:ARG:HH12  | 2.30                     | 0.45              |
| 23:AY:48:LEU:CD1  | 23:AY:51:GLN:HE22  | 2.29                     | 0.45              |
| 24:AZ:50:VAL:CG2  | 24:AZ:53:LEU:HD12  | 2.44                     | 0.45              |
| 25:Aa:58:ARG:CG   | 25:Aa:62:ARG:NH2   | 2.80                     | 0.45              |
| 28:Ad:10:ARG:O    | 28:Ad:14:LYS:HG3   | 2.15                     | 0.45              |
| 29:Ae:44:LYS:CE   | 29:Ae:44:LYS:HA    | 2.46                     | 0.45              |
| 32:AJ:75:SER:HA   | 32:AJ:78:ILE:HD12  | 1.99                     | 0.45              |
| 32:AJ:85:GLU:OE2  | 32:AJ:96:VAL:HG21  | 2.15                     | 0.45              |
| 34:BA:110:C:C2'   | 34:BA:111:G:C5'    | 2.94                     | 0.45              |
| 34:BA:267:C:C2    | 34:BA:268:C:C5     | 3.04                     | 0.45              |
| 34:BA:311:C:O2'   | 34:BA:312:C:H5'    | 2.17                     | 0.45              |
| 34:BA:320:C:O2'   | 34:BA:321:A:C5'    | 2.65                     | 0.45              |
| 34:BA:343:U:C2'   | 34:BA:344:A:O5'    | 2.64                     | 0.45              |
| 34:BA:483:C:C6    | 34:BA:483:C:C3'    | 3.00                     | 0.45              |
| 34:BA:598:U:C4'   | 41:BL:94:TYR:HD2   | 2.17                     | 0.45              |
| 34:BA:668:G:O2'   | 48:BS:46:HIS:NE2   | 2.24                     | 0.45              |
| 34:BA:697:U:O5'   | 34:BA:697:U:C6     | 2.62                     | 0.45              |
| 34:BA:833:U:C2'   | 34:BA:834:C:H6     | 2.30                     | 0.45              |
| 34:BA:955:U:H2'   | 34:BA:956:U:C6     | 2.51                     | 0.45              |
| 34:BA:956:U:C2    | 34:BA:960:U:O4     | 2.70                     | 0.45              |
| 34:BA:995:C:C2'   | 47:BR:4:LYS:HE2    | 2.46                     | 0.45              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1048:G:OP1   | 47:BR:3:ARG:HD2    | 2.17                     | 0.45              |
| 34:BA:1114:C:C2    | 34:BA:1187:G:N1    | 2.84                     | 0.45              |
| 34:BA:1225:A:H5'   | 52:BW:78:ARG:CG    | 2.25                     | 0.45              |
| 34:BA:1270:C:O4'   | 34:BA:1313:U:C4'   | 2.60                     | 0.45              |
| 34:BA:1284:C:C4    | 34:BA:1285:A:C5    | 3.04                     | 0.45              |
| 34:BA:1307:U:C4    | 34:BA:1308:U:C5    | 3.04                     | 0.45              |
| 34:BA:1394:A:C3'   | 34:BA:1395:C:H5'   | 2.47                     | 0.45              |
| 34:BA:1510:U:C2'   | 34:BA:1511:G:C8    | 2.92                     | 0.45              |
| 34:BA:1523:G:C6    | 34:BA:1524:C:C4    | 3.04                     | 0.45              |
| 34:BA:1533:C:H2'   | 34:BA:1534:A:H8    | 1.80                     | 0.45              |
| 36:BG:8:ILE:O      | 36:BG:9:GLY:C      | 2.59                     | 0.45              |
| 36:BG:27:LYS:HB2   | 36:BG:27:LYS:HE3   | 1.79                     | 0.45              |
| 36:BG:36:ASP:HA    | 36:BG:39:ILE:CD1   | 2.40                     | 0.45              |
| 36:BG:143:GLU:C    | 36:BG:145:GLY:N    | 2.72                     | 0.45              |
| 37:BH:80:GLU:O     | 37:BH:83:SER:OG    | 2.34                     | 0.45              |
| 37:BH:100:ARG:HG2  | 37:BH:100:ARG:HH11 | 1.81                     | 0.45              |
| 37:BH:170:VAL:CG1  | 37:BH:174:LEU:HD12 | 2.45                     | 0.45              |
| 37:BH:200:GLU:HG3  | 37:BH:201:GLN:NE2  | 2.29                     | 0.45              |
| 38:BI:151:LEU:HD11 | 41:BL:67:PRO:HG2   | 1.98                     | 0.45              |
| 39:BJ:54:LYS:HD2   | 39:BJ:54:LYS:N     | 2.31                     | 0.45              |
| 40:BK:21:VAL:HG23  | 40:BK:22:LEU:HD22  | 1.99                     | 0.45              |
| 40:BK:126:ASP:O    | 40:BK:131:LYS:CG   | 2.65                     | 0.45              |
| 41:BL:70:GLN:NE2   | 41:BL:70:GLN:CA    | 2.76                     | 0.45              |
| 42:BM:125:TYR:HB3  | 42:BM:126:SER:H    | 1.58                     | 0.45              |
| 43:BN:55:LYS:HG3   | 43:BN:55:LYS:O     | 2.16                     | 0.45              |
| 44:BO:69:ALA:O     | 44:BO:70:LYS:C     | 2.58                     | 0.45              |
| 44:BO:71:LYS:O     | 44:BO:74:ALA:CB    | 2.62                     | 0.45              |
| 45:BP:52:LEU:N     | 45:BP:52:LEU:CD2   | 2.79                     | 0.45              |
| 45:BP:60:LEU:CD2   | 45:BP:64:TYR:HB3   | 2.46                     | 0.45              |
| 46:BQ:19:LEU:CD1   | 46:BQ:30:ALA:HB2   | 2.47                     | 0.45              |
| 47:BR:9:LYS:HD3    | 47:BR:9:LYS:O      | 2.16                     | 0.45              |
| 47:BR:29:ARG:HD2   | 47:BR:42:ILE:HD11  | 1.98                     | 0.45              |
| 48:BS:40:SER:O     | 48:BS:41:GLU:C     | 2.58                     | 0.45              |
| 48:BS:79:ARG:HB3   | 48:BS:79:ARG:NH1   | 2.31                     | 0.45              |
| 50:BU:7:THR:CG2    | 50:BU:57:VAL:O     | 2.58                     | 0.45              |
| 51:BV:80:PRO:O     | 51:BV:81:PHE:CD1   | 2.69                     | 0.45              |
| 52:BW:77:THR:C     | 52:BW:78:ARG:HG2   | 2.40                     | 0.45              |
| 53:BX:50:GLU:CB    | 53:BX:99:LEU:HD12  | 2.46                     | 0.45              |
| 53:BX:63:ILE:HG23  | 53:BX:72:LEU:CD1   | 2.47                     | 0.45              |
| 53:BX:96:GLY:O     | 53:BX:97:ALA:HB3   | 2.15                     | 0.45              |
| 56:BD:2:C:C5       | 56:BD:3:C:C5       | 3.04                     | 0.45              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 57:BZ:20:THR:OG1 | 60:BZ:701:GCP:O1A | 2.21                     | 0.45              |
| 57:BZ:51:GLU:CD  | 57:BZ:52:ARG:N    | 2.75                     | 0.45              |
| 57:BZ:58:ALA:HB3 | 57:BZ:60:ASN:ND2  | 2.31                     | 0.45              |
| 57:BZ:310:PHE:HA | 57:BZ:385:PRO:HG3 | 1.97                     | 0.45              |
| 57:BZ:563:MET:CA | 57:BZ:563:MET:CE  | 2.88                     | 0.45              |
| 57:BZ:581:THR:C  | 57:BZ:583:THR:H   | 2.24                     | 0.45              |
| 57:BZ:596:ASP:O  | 57:BZ:599:ARG:HB2 | 2.16                     | 0.45              |
| 1:AA:14:A:C8     | 1:AA:15:G:C8      | 3.05                     | 0.45              |
| 1:AA:111:A:H4'   | 23:AY:60:ASN:CG   | 2.41                     | 0.45              |
| 1:AA:111:A:C2    | 1:AA:112:U:C4     | 3.05                     | 0.45              |
| 1:AA:217:G:C2'   | 1:AA:218:A:O5'    | 2.65                     | 0.45              |
| 1:AA:223:A:C2    | 1:AA:407:G:N3     | 2.85                     | 0.45              |
| 1:AA:326:G:N3    | 1:AA:327:G:C8     | 2.84                     | 0.45              |
| 1:AA:460:A:C2'   | 1:AA:461:C:C6     | 2.92                     | 0.45              |
| 1:AA:480:A:H3'   | 1:AA:481:G:H5''   | 1.99                     | 0.45              |
| 1:AA:516:C:O2'   | 1:AA:517:C:C5'    | 2.62                     | 0.45              |
| 1:AA:536:A:C6    | 1:AA:558:G:C6     | 3.05                     | 0.45              |
| 1:AA:539:G:H8    | 1:AA:539:G:O5'    | 2.00                     | 0.45              |
| 1:AA:688:U:H5'   | 1:AA:1780:A:N6    | 2.32                     | 0.45              |
| 1:AA:768:G:C4    | 1:AA:769:G:C8     | 3.04                     | 0.45              |
| 1:AA:775:G:H5'   | 1:AA:777:A:N9     | 2.31                     | 0.45              |
| 1:AA:833:U:H2'   | 1:AA:834:C:H6     | 1.80                     | 0.45              |
| 1:AA:836:G:C5    | 1:AA:837:C:C5     | 3.05                     | 0.45              |
| 1:AA:995:C:P     | 16:AR:53:ARG:HH22 | 2.39                     | 0.45              |
| 1:AA:1000:A:C5   | 1:AA:1001:A:C2    | 3.04                     | 0.45              |
| 1:AA:1052:C:C2'  | 1:AA:1053:C:H5'   | 2.47                     | 0.45              |
| 1:AA:1130:U:HO2' | 1:AA:1131:G:P     | 2.37                     | 0.45              |
| 1:AA:1139:G:H5'  | 9:AK:24:GLY:HA3   | 1.98                     | 0.45              |
| 1:AA:1243:G:N1   | 1:AA:1244:G:C4    | 2.84                     | 0.45              |
| 1:AA:1264:G:C3'  | 1:AA:1264:G:C8    | 2.99                     | 0.45              |
| 1:AA:1343:G:N2   | 1:AA:1405:U:C6    | 2.85                     | 0.45              |
| 1:AA:1363:C:C2   | 1:AA:1369:G:C6    | 3.04                     | 0.45              |
| 1:AA:1434:A:C2   | 1:AA:1435:G:C8    | 3.04                     | 0.45              |
| 1:AA:1451:C:C5'  | 1:AA:1453:A:H4'   | 2.46                     | 0.45              |
| 1:AA:1546:C:H6   | 1:AA:1546:C:O5'   | 1.99                     | 0.45              |
| 1:AA:1781:C:C2'  | 1:AA:1782:C:OP2   | 2.65                     | 0.45              |
| 1:AA:1855:G:C6   | 1:AA:1856:G:N7    | 2.85                     | 0.45              |
| 1:AA:1906:G:C4   | 1:AA:1907:G:N7    | 2.85                     | 0.45              |
| 1:AA:1920:C:C2   | 1:AA:1921:G:N7    | 2.84                     | 0.45              |
| 1:AA:1991:U:C6   | 1:AA:1991:U:C3'   | 2.99                     | 0.45              |
| 1:AA:1999:C:O2'  | 1:AA:2000:G:H5'   | 2.17                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2014:A:C2    | 1:AA:2613:U:C2     | 3.05                     | 0.45              |
| 1:AA:2027:G:N2    | 1:AA:2028:U:H1'    | 2.32                     | 0.45              |
| 1:AA:2056:G:O5'   | 1:AA:2057:A:OP1    | 2.35                     | 0.45              |
| 1:AA:2084:C:O2'   | 1:AA:2085:C:H5'    | 2.17                     | 0.45              |
| 1:AA:2091:U:C5'   | 1:AA:2093:G:OP1    | 2.65                     | 0.45              |
| 1:AA:2115:G:H2'   | 1:AA:2117:A:C5     | 2.46                     | 0.45              |
| 1:AA:2152:G:OP1   | 3:AC:2:LYS:C       | 2.59                     | 0.45              |
| 1:AA:2182:G:C6    | 1:AA:2183:C:C4     | 3.04                     | 0.45              |
| 1:AA:2226:C:N3    | 4:AD:262:ARG:NH2   | 2.64                     | 0.45              |
| 1:AA:2227:A:H5''  | 4:AD:260:ARG:HB3   | 1.97                     | 0.45              |
| 1:AA:2242:G:C6    | 1:AA:2243:U:C4     | 3.04                     | 0.45              |
| 1:AA:2278:A:C6    | 1:AA:2279:G:C5     | 3.04                     | 0.45              |
| 1:AA:2298:A:H3'   | 1:AA:2299:G:C8     | 2.49                     | 0.45              |
| 1:AA:2309:A:N6    | 7:AG:80:PHE:CZ     | 2.85                     | 0.45              |
| 1:AA:2432:A:N7    | 1:AA:2433:A:C6     | 2.85                     | 0.45              |
| 1:AA:2468:G:H5'   | 12:AN:120:ILE:HD11 | 1.98                     | 0.45              |
| 1:AA:2491:U:O2    | 1:AA:2492:U:C4     | 2.70                     | 0.45              |
| 1:AA:2601:C:O2    | 1:AA:2603:G:C8     | 2.68                     | 0.45              |
| 1:AA:2752:C:OP1   | 1:AA:2752:C:C6     | 2.69                     | 0.45              |
| 1:AA:2815:C:O2'   | 26:Ab:42:PRO:HB3   | 2.16                     | 0.45              |
| 2:AB:82:G:C4      | 2:AB:83:G:N7       | 2.84                     | 0.45              |
| 2:AB:99:A:C2      | 2:AB:100:G:N9      | 2.85                     | 0.45              |
| 3:AC:11:LEU:HD12  | 3:AC:14:VAL:HB     | 1.98                     | 0.45              |
| 3:AC:93:TYR:CD1   | 3:AC:107:TRP:HZ2   | 2.34                     | 0.45              |
| 3:AC:199:HIS:O    | 3:AC:200:LYS:C     | 2.59                     | 0.45              |
| 3:AC:222:VAL:HG13 | 3:AC:223:ARG:O     | 2.17                     | 0.45              |
| 4:AD:146:GLU:OE2  | 4:AD:150:LYS:N     | 2.50                     | 0.45              |
| 4:AD:174:ILE:HD12 | 4:AD:174:ILE:H     | 1.79                     | 0.45              |
| 5:AE:48:GLN:C     | 5:AE:77:ILE:HG13   | 2.42                     | 0.45              |
| 5:AE:111:ARG:HB2  | 5:AE:161:GLY:HA3   | 1.98                     | 0.45              |
| 5:AE:133:LYS:HD2  | 5:AE:137:HIS:ND1   | 2.32                     | 0.45              |
| 5:AE:171:GLU:CD   | 5:AE:173:VAL:H     | 2.24                     | 0.45              |
| 6:AF:43:LYS:HE3   | 6:AF:99:TYR:H      | 1.81                     | 0.45              |
| 6:AF:170:LEU:HB3  | 6:AF:171:PRO:HD3   | 1.98                     | 0.45              |
| 7:AG:115:ARG:C    | 7:AG:117:PHE:H     | 2.25                     | 0.45              |
| 7:AG:125:PHE:HA   | 7:AG:132:ASN:HB2   | 1.96                     | 0.45              |
| 8:AH:7:LEU:CD2    | 8:AH:65:HIS:NE2    | 2.78                     | 0.45              |
| 8:AH:10:PRO:O     | 8:AH:12:PRO:HD2    | 2.17                     | 0.45              |
| 8:AH:58:GLU:O     | 8:AH:62:LYS:HG2    | 2.17                     | 0.45              |
| 8:AH:94:TYR:OH    | 8:AH:128:PRO:CG    | 2.62                     | 0.45              |
| 8:AH:98:LEU:HD23  | 8:AH:98:LEU:C      | 2.42                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AH:104:GLU:C    | 8:AH:105:LEU:CG   | 2.89                     | 0.45              |
| 8:AH:117:PRO:HB2  | 8:AH:121:ILE:HG23 | 1.98                     | 0.45              |
| 8:AH:159:GLU:OE2  | 8:AH:163:TYR:CE1  | 2.70                     | 0.45              |
| 9:AK:78:TYR:HB3   | 9:AK:79:PRO:CD    | 2.37                     | 0.45              |
| 9:AK:82:LEU:HD23  | 9:AK:82:LEU:N     | 2.31                     | 0.45              |
| 9:AK:86:PRO:HD2   | 9:AK:89:LYS:CD    | 2.44                     | 0.45              |
| 9:AK:134:ARG:N    | 9:AK:135:PRO:HD2  | 2.31                     | 0.45              |
| 10:AL:78:ARG:N    | 10:AL:78:ARG:NE   | 2.65                     | 0.45              |
| 11:AM:123:LEU:H   | 11:AM:138:LEU:HB2 | 1.82                     | 0.45              |
| 12:AN:22:LYS:CD   | 12:AN:99:PRO:HG3  | 2.25                     | 0.45              |
| 12:AN:25:ASP:C    | 12:AN:26:TYR:CD2  | 2.95                     | 0.45              |
| 13:AO:13:HIS:ND1  | 13:AO:13:HIS:C    | 2.74                     | 0.45              |
| 13:AO:71:GLN:O    | 13:AO:72:ASP:CB   | 2.65                     | 0.45              |
| 15:AQ:58:ASN:CA   | 15:AQ:61:PHE:CE2  | 2.99                     | 0.45              |
| 16:AR:16:LYS:HG2  | 16:AR:20:LEU:CD2  | 2.46                     | 0.45              |
| 19:AU:20:GLY:C    | 19:AU:25:LYS:O    | 2.60                     | 0.45              |
| 19:AU:89:ILE:O    | 19:AU:93:GLU:HG2  | 2.15                     | 0.45              |
| 20:AV:86:ARG:HA   | 20:AV:91:GLU:HB3  | 1.98                     | 0.45              |
| 21:AW:1:MET:CE    | 21:AW:59:LEU:HD22 | 2.46                     | 0.45              |
| 21:AW:51:ALA:O    | 21:AW:53:ILE:C    | 2.60                     | 0.45              |
| 21:AW:114:GLY:N   | 21:AW:145:GLU:OE2 | 2.50                     | 0.45              |
| 22:AX:40:GLN:OE1  | 22:AX:44:ARG:N    | 2.50                     | 0.45              |
| 22:AX:74:ARG:HH11 | 22:AX:75:LEU:CD1  | 2.29                     | 0.45              |
| 23:AY:1:MET:H1    | 23:AY:2:ARG:HH12  | 1.63                     | 0.45              |
| 23:AY:22:GLU:OE1  | 23:AY:22:GLU:CA   | 2.63                     | 0.45              |
| 24:AZ:40:THR:N    | 24:AZ:44:ARG:HG3  | 2.31                     | 0.45              |
| 25:Aa:49:PHE:CD1  | 25:Aa:49:PHE:N    | 2.84                     | 0.45              |
| 27:Ac:19:ARG:CG   | 27:Ac:43:CYS:SG   | 3.02                     | 0.45              |
| 28:Ad:18:PHE:O    | 28:Ad:19:ARG:C    | 2.59                     | 0.45              |
| 29:Ae:29:LYS:HE2  | 29:Ae:36:LYS:HZ3  | 1.82                     | 0.45              |
| 29:Ae:62:LEU:CB   | 29:Ae:63:PRO:HD3  | 2.46                     | 0.45              |
| 34:BA:27:G:H22    | 34:BA:557:G:H1'   | 1.73                     | 0.45              |
| 34:BA:62:U:H5''   | 34:BA:385:C:O2'   | 2.17                     | 0.45              |
| 34:BA:194:C:O3'   | 53:BX:68:LYS:NZ   | 2.50                     | 0.45              |
| 34:BA:322:C:O2'   | 34:BA:323:U:C5'   | 2.56                     | 0.45              |
| 34:BA:632:A:H2'   | 34:BA:633:G:O4'   | 2.16                     | 0.45              |
| 34:BA:659:U:C2    | 34:BA:660:G:N7    | 2.84                     | 0.45              |
| 34:BA:687:A:H2'   | 34:BA:701:C:N4    | 2.30                     | 0.45              |
| 34:BA:716:A:HO2'  | 34:BA:717:C:H5'   | 1.82                     | 0.45              |
| 34:BA:734:G:H2'   | 34:BA:735:C:C5    | 2.50                     | 0.45              |
| 34:BA:747:C:O5'   | 34:BA:747:C:H6    | 1.99                     | 0.45              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:754:C:O2     | 34:BA:754:C:C2'    | 2.65                     | 0.45              |
| 34:BA:767:A:H2'    | 34:BA:768:A:H5'    | 1.98                     | 0.45              |
| 34:BA:779:C:N3     | 34:BA:780:A:N3     | 2.65                     | 0.45              |
| 34:BA:828:A:C8     | 34:BA:829:G:N9     | 2.85                     | 0.45              |
| 34:BA:857:C:H2'    | 34:BA:858:G:C5'    | 2.46                     | 0.45              |
| 34:BA:880:C:O2'    | 34:BA:881:G:H5'    | 2.16                     | 0.45              |
| 34:BA:902:G:H2'    | 34:BA:903:G:C8     | 2.50                     | 0.45              |
| 34:BA:918:A:O2'    | 34:BA:919:A:P      | 2.74                     | 0.45              |
| 34:BA:942:G:H21    | 42:BM:124:GLN:CD   | 2.23                     | 0.45              |
| 34:BA:999:U:O5'    | 34:BA:999:U:H6     | 1.99                     | 0.45              |
| 34:BA:1047:G:O2'   | 34:BA:1048:G:H5'   | 2.16                     | 0.45              |
| 34:BA:1067:A:H4'   | 34:BA:1068:G:O5'   | 2.15                     | 0.45              |
| 34:BA:1101:A:O2'   | 34:BA:1102:A:OP2   | 2.35                     | 0.45              |
| 34:BA:1109:C:C6    | 34:BA:1110:A:N7    | 2.84                     | 0.45              |
| 34:BA:1227:A:H5'   | 52:BW:81:ARG:HE    | 1.76                     | 0.45              |
| 34:BA:1265:G:C6    | 34:BA:1271:G:C6    | 3.03                     | 0.45              |
| 34:BA:1277:C:O2'   | 34:BA:1279:A:H8    | 1.97                     | 0.45              |
| 35:BF:132:LYS:HB3  | 35:BF:132:LYS:NZ   | 2.29                     | 0.45              |
| 35:BF:163:PHE:HE1  | 35:BF:201:ILE:CD1  | 2.30                     | 0.45              |
| 35:BF:165:VAL:CG2  | 35:BF:166:ASP:H    | 2.16                     | 0.45              |
| 35:BF:223:ILE:HA   | 35:BF:226:ARG:CD   | 2.47                     | 0.45              |
| 35:BF:223:ILE:HA   | 35:BF:226:ARG:HD2  | 1.98                     | 0.45              |
| 37:BH:77:ASN:HA    | 37:BH:80:GLU:OE2   | 2.16                     | 0.45              |
| 37:BH:140:VAL:HG12 | 37:BH:185:PHE:HD1  | 1.81                     | 0.45              |
| 37:BH:145:GLU:N    | 37:BH:184:LYS:HE2  | 2.31                     | 0.45              |
| 38:BI:41:VAL:HG21  | 38:BI:113:ALA:CB   | 2.45                     | 0.45              |
| 39:BJ:24:GLU:O     | 39:BJ:25:ILE:C     | 2.60                     | 0.45              |
| 40:BK:26:PHE:CD2   | 40:BK:62:PHE:HE1   | 2.34                     | 0.45              |
| 41:BL:14:ARG:NH1   | 41:BL:14:ARG:CB    | 2.56                     | 0.45              |
| 41:BL:19:VAL:O     | 41:BL:20:TYR:CB    | 2.63                     | 0.45              |
| 41:BL:36:LEU:H     | 41:BL:36:LEU:CD2   | 2.13                     | 0.45              |
| 41:BL:65:TYR:HE2   | 41:BL:78:GLN:CD    | 2.24                     | 0.45              |
| 42:BM:11:LYS:HA    | 42:BM:108:VAL:HG11 | 1.98                     | 0.45              |
| 42:BM:27:THR:HA    | 42:BM:31:GLN:O     | 2.17                     | 0.45              |
| 43:BN:8:LEU:HG     | 43:BN:19:SER:HB3   | 1.97                     | 0.45              |
| 44:BO:42:TRP:CZ3   | 44:BO:47:VAL:HG21  | 2.52                     | 0.45              |
| 44:BO:48:ILE:HD11  | 44:BO:64:ALA:HA    | 1.98                     | 0.45              |
| 44:BO:60:ALA:O     | 44:BO:61:ALA:C     | 2.58                     | 0.45              |
| 44:BO:85:ARG:CD    | 44:BO:113:PRO:HD2  | 2.46                     | 0.45              |
| 44:BO:95:ILE:O     | 44:BO:99:GLN:HG3   | 2.17                     | 0.45              |
| 45:BP:26:ALA:HA    | 45:BP:98:TYR:HE2   | 1.80                     | 0.45              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 45:BP:88:GLY:C     | 45:BP:89:ARG:O     | 2.59                     | 0.45              |
| 46:BQ:11:ARG:C     | 46:BQ:13:LYS:N     | 2.74                     | 0.45              |
| 46:BQ:95:GLY:O     | 46:BQ:111:LYS:N    | 2.49                     | 0.45              |
| 48:BS:29:VAL:O     | 48:BS:33:THR:OG1   | 2.25                     | 0.45              |
| 48:BS:35:ARG:O     | 48:BS:36:ILE:C     | 2.58                     | 0.45              |
| 51:BV:21:LYS:NZ    | 51:BV:23:LYS:CB    | 2.66                     | 0.45              |
| 51:BV:51:LEU:CD1   | 51:BV:51:LEU:H     | 2.28                     | 0.45              |
| 53:BX:61:SER:HG    | 53:BX:62:LEU:H     | 1.64                     | 0.45              |
| 55:BC:23:A:H2'     | 55:BC:24:G:C8      | 2.52                     | 0.45              |
| 55:BC:30:G:N1      | 55:BC:41:C:N4      | 2.65                     | 0.45              |
| 55:BC:59:U:C2'     | 55:BC:60:U:H5'     | 2.46                     | 0.45              |
| 56:BD:47:U:C3'     | 56:BD:48:C:C5'     | 2.94                     | 0.45              |
| 57:BZ:18:LYS:CD    | 60:BZ:701:GCP:H3B2 | 2.46                     | 0.45              |
| 57:BZ:20:THR:O     | 57:BZ:24:LYS:CG    | 2.64                     | 0.45              |
| 57:BZ:128:ASN:HD22 | 57:BZ:165:ALA:CB   | 2.30                     | 0.45              |
| 57:BZ:133:PRO:CG   | 57:BZ:134:GLY:H    | 2.28                     | 0.45              |
| 57:BZ:522:GLN:HA   | 57:BZ:588:ARG:HB3  | 1.99                     | 0.45              |
| 1:AA:270(S):G:C2   | 1:AA:270(T):G:C8   | 3.04                     | 0.45              |
| 1:AA:292:C:H3'     | 1:AA:293:U:C2      | 2.51                     | 0.45              |
| 1:AA:301:G:H2'     | 1:AA:302:C:C5      | 2.49                     | 0.45              |
| 1:AA:324:A:H2      | 1:AA:325:G:H1'     | 1.82                     | 0.45              |
| 1:AA:371:A:C8      | 1:AA:424:G:OP1     | 2.70                     | 0.45              |
| 1:AA:447:A:O2'     | 1:AA:448:U:H5'     | 2.17                     | 0.45              |
| 1:AA:450:G:O5'     | 1:AA:450:G:C8      | 2.68                     | 0.45              |
| 1:AA:457:A:C2      | 1:AA:470:A:C5'     | 2.99                     | 0.45              |
| 1:AA:523:C:H2'     | 1:AA:524:U:C5'     | 2.47                     | 0.45              |
| 1:AA:562:U:O2      | 1:AA:572:A:O4'     | 2.35                     | 0.45              |
| 1:AA:590:A:C2      | 1:AA:591:C:C2      | 3.04                     | 0.45              |
| 1:AA:624:C:C6      | 1:AA:624:C:C4'     | 3.00                     | 0.45              |
| 1:AA:629:G:OP1     | 29:Ae:17:THR:HG22  | 2.17                     | 0.45              |
| 1:AA:672:C:O2      | 1:AA:673:C:C5      | 2.70                     | 0.45              |
| 1:AA:705:A:H62     | 1:AA:727:A:H8      | 1.62                     | 0.45              |
| 1:AA:735:A:C8      | 1:AA:735:A:H3'     | 2.52                     | 0.45              |
| 1:AA:756:C:C4      | 1:AA:757:U:C6      | 3.04                     | 0.45              |
| 1:AA:806:C:O5'     | 1:AA:806:C:C6      | 2.68                     | 0.45              |
| 1:AA:857:C:O2'     | 22:AX:23:VAL:HG11  | 2.15                     | 0.45              |
| 1:AA:879:G:N1      | 1:AA:898:C:N1      | 2.53                     | 0.45              |
| 1:AA:886:C:H6      | 1:AA:886:C:H3'     | 1.82                     | 0.45              |
| 1:AA:972:G:H5''    | 1:AA:974:G:P       | 2.56                     | 0.45              |
| 1:AA:974:G:C2'     | 1:AA:1186:G:C4     | 3.00                     | 0.45              |
| 1:AA:1155:A:C2     | 1:AA:1157:G:C1'    | 2.97                     | 0.45              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:1190:G:O2'  | 1:AA:1191:G:H5'   | 2.17                     | 0.45              |
| 1:AA:1300:U:H2'  | 1:AA:1626:G:C2    | 2.47                     | 0.45              |
| 1:AA:1378:A:C2   | 1:AA:1380:G:N9    | 2.85                     | 0.45              |
| 1:AA:1472:A:H2'  | 1:AA:1473:G:O5'   | 2.17                     | 0.45              |
| 1:AA:1534:G:O2'  | 1:AA:1536:A:N6    | 2.50                     | 0.45              |
| 1:AA:1581:G:C2'  | 1:AA:1582:C:H5'   | 2.47                     | 0.45              |
| 1:AA:1660:C:C2'  | 1:AA:1661:G:O5'   | 2.65                     | 0.45              |
| 1:AA:1837:C:N3   | 1:AA:1899:G:O6    | 2.49                     | 0.45              |
| 1:AA:1996:C:H2'  | 5:AE:123:ALA:HB3  | 1.97                     | 0.45              |
| 1:AA:1996:C:OP2  | 10:AL:31:LYS:NZ   | 2.49                     | 0.45              |
| 1:AA:2009:G:O3'  | 18:AT:41:LYS:HG2  | 2.17                     | 0.45              |
| 1:AA:2121:G:C2'  | 3:AC:167:LYS:CE   | 2.88                     | 0.45              |
| 1:AA:2125:G:N2   | 1:AA:2172:U:C5'   | 2.80                     | 0.45              |
| 1:AA:2183:C:O2   | 1:AA:2183:C:C2'   | 2.64                     | 0.45              |
| 1:AA:2261:C:O4'  | 1:AA:2388:A:H1'   | 2.17                     | 0.45              |
| 1:AA:2268:A:H3'  | 1:AA:2269:A:C5'   | 2.46                     | 0.45              |
| 1:AA:2309:A:N6   | 7:AG:80:PHE:CE1   | 2.85                     | 0.45              |
| 1:AA:2400:G:C2   | 1:AA:2417:C:C4    | 3.05                     | 0.45              |
| 1:AA:2414:G:C2   | 1:AA:2415:G:N7    | 2.85                     | 0.45              |
| 1:AA:2439:A:H2'  | 1:AA:2439:A:N3    | 2.32                     | 0.45              |
| 1:AA:2514:U:C4   | 1:AA:2515:C:N4    | 2.82                     | 0.45              |
| 1:AA:2550:G:N1   | 1:AA:2559:C:N3    | 2.65                     | 0.45              |
| 1:AA:2660:A:C5   | 57:BZ:457:THR:CG2 | 2.95                     | 0.45              |
| 1:AA:2688:U:N3   | 1:AA:2719:G:N3    | 2.62                     | 0.45              |
| 1:AA:2715:C:HO2' | 1:AA:2716:U:H5'   | 1.80                     | 0.45              |
| 1:AA:2729:G:H2'  | 1:AA:2730:C:H5'   | 1.97                     | 0.45              |
| 1:AA:2748:A:N1   | 1:AA:2756:U:O2    | 2.49                     | 0.45              |
| 1:AA:2830:G:H5'  | 5:AE:57:LYS:HZ2   | 1.81                     | 0.45              |
| 1:AA:2851:A:C2'  | 1:AA:2852:G:O5'   | 2.64                     | 0.45              |
| 1:AA:2898:U:C2   | 1:AA:2899:G:C8    | 3.04                     | 0.45              |
| 2:AB:77:U:H5'    | 21:AW:84:GLU:HB3  | 1.99                     | 0.45              |
| 2:AB:87:G:N2     | 2:AB:89:G:C8      | 2.82                     | 0.45              |
| 3:AC:76:ALA:CA   | 3:AC:149:ILE:HD11 | 2.46                     | 0.45              |
| 3:AC:160:ARG:C   | 3:AC:161:ILE:HG23 | 2.42                     | 0.45              |
| 4:AD:42:GLY:HA2  | 4:AD:60:ARG:NH2   | 2.26                     | 0.45              |
| 4:AD:105:ILE:CG1 | 4:AD:106:ILE:HG12 | 2.22                     | 0.45              |
| 4:AD:109:ASP:N   | 4:AD:196:VAL:O    | 2.49                     | 0.45              |
| 4:AD:270:ILE:C   | 4:AD:271:ILE:HG13 | 2.40                     | 0.45              |
| 5:AE:4:ILE:CG1   | 5:AE:27:LEU:HD13  | 2.41                     | 0.45              |
| 5:AE:40:GLU:OE2  | 5:AE:40:GLU:CA    | 2.64                     | 0.45              |
| 5:AE:49:LEU:CD1  | 5:AE:76:ARG:O     | 2.60                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 5:AE:97:LYS:O     | 5:AE:100:GLU:OE1   | 2.35                     | 0.45              |
| 6:AF:31:HIS:HB3   | 11:AM:11:GLY:H     | 1.81                     | 0.45              |
| 6:AF:33:LEU:O     | 6:AF:34:TRP:C      | 2.60                     | 0.45              |
| 6:AF:140:LEU:O    | 6:AF:141:ALA:C     | 2.58                     | 0.45              |
| 7:AG:36:LYS:CA    | 7:AG:95:ARG:O      | 2.64                     | 0.45              |
| 7:AG:39:ILE:CD1   | 7:AG:92:VAL:O      | 2.64                     | 0.45              |
| 7:AG:72:ARG:O     | 7:AG:73:ALA:HB2    | 2.16                     | 0.45              |
| 7:AG:123:ASN:ND2  | 7:AG:126:ASP:OD2   | 2.48                     | 0.45              |
| 8:AH:11:VAL:HG11  | 8:AH:17:VAL:CG2    | 2.46                     | 0.45              |
| 8:AH:101:ARG:HB3  | 8:AH:117:PRO:CD    | 2.45                     | 0.45              |
| 9:AK:96:GLU:HG2   | 9:AK:97:ARG:N      | 2.32                     | 0.45              |
| 10:AL:12:ASP:C    | 10:AL:94:ARG:HB3   | 2.42                     | 0.45              |
| 10:AL:40:VAL:HG22 | 10:AL:41:ALA:N     | 2.30                     | 0.45              |
| 10:AL:85:VAL:CG1  | 10:AL:86:ILE:N     | 2.73                     | 0.45              |
| 11:AM:35:HIS:O    | 11:AM:36:LYS:NZ    | 2.49                     | 0.45              |
| 11:AM:55:ARG:CA   | 11:AM:55:ARG:NH2   | 2.79                     | 0.45              |
| 11:AM:56:SER:O    | 29:Ae:13:ARG:NH1   | 2.49                     | 0.45              |
| 11:AM:71:VAL:N    | 11:AM:72:PRO:HD3   | 2.30                     | 0.45              |
| 12:AN:47:ILE:C    | 12:AN:49:ALA:N     | 2.74                     | 0.45              |
| 12:AN:54:MET:SD   | 12:AN:121:ALA:CB   | 3.02                     | 0.45              |
| 12:AN:74:TYR:CD2  | 12:AN:92:GLY:O     | 2.70                     | 0.45              |
| 13:AO:5:LYS:C     | 13:AO:5:LYS:CE     | 2.90                     | 0.45              |
| 13:AO:6:SER:CB    | 13:AO:9:LYS:HE2    | 2.47                     | 0.45              |
| 13:AO:33:ARG:CB   | 13:AO:113:LEU:HD11 | 2.34                     | 0.45              |
| 13:AO:63:ARG:NH1  | 13:AO:63:ARG:HG2   | 2.32                     | 0.45              |
| 13:AO:87:TYR:N    | 13:AO:87:TYR:HD2   | 2.15                     | 0.45              |
| 14:AP:62:LYS:C    | 14:AP:65:VAL:H     | 2.22                     | 0.45              |
| 14:AP:106:ARG:HD3 | 14:AP:107:GLU:OE2  | 2.15                     | 0.45              |
| 16:AR:88:ILE:O    | 17:AS:52:VAL:CA    | 2.58                     | 0.45              |
| 16:AR:94:ASN:C    | 16:AR:96:ALA:N     | 2.73                     | 0.45              |
| 18:AT:34:ASN:ND2  | 18:AT:34:ASN:H     | 2.15                     | 0.45              |
| 20:AV:6:HIS:CG    | 20:AV:33:LYS:NZ    | 2.84                     | 0.45              |
| 21:AW:2:GLU:OE2   | 21:AW:58:VAL:CG2   | 2.64                     | 0.45              |
| 21:AW:128:VAL:CG2 | 21:AW:164:ALA:HB2  | 2.45                     | 0.45              |
| 25:Aa:42:PHE:N    | 25:Aa:58:ARG:HG3   | 2.31                     | 0.45              |
| 25:Aa:51:ASP:C    | 25:Aa:52:THR:HG1   | 2.24                     | 0.45              |
| 25:Aa:62:ARG:HA   | 25:Aa:65:ASP:OD1   | 2.16                     | 0.45              |
| 26:Ab:31:VAL:HB   | 26:Ab:32:PRO:HD2   | 1.99                     | 0.45              |
| 27:Ac:27:LYS:CE   | 27:Ac:29:ASN:HD21  | 2.30                     | 0.45              |
| 29:Ae:38:GLY:C    | 29:Ae:41:ILE:HG12  | 2.42                     | 0.45              |
| 31:AI:152:VAL:C   | 31:AI:155:GLY:N    | 2.74                     | 0.45              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 32:AJ:113:PRO:CG   | 32:AJ:114:ASP:H   | 2.29                     | 0.45              |
| 34:BA:18:C:N4      | 34:BA:918:A:N6    | 2.64                     | 0.45              |
| 34:BA:27:G:OP2     | 34:BA:27:G:C8     | 2.70                     | 0.45              |
| 34:BA:87:A:C8      | 34:BA:88:C:C2     | 3.05                     | 0.45              |
| 34:BA:152:A:OP2    | 34:BA:153:C:H5    | 1.99                     | 0.45              |
| 34:BA:273:A:C2     | 34:BA:274:A:C1'   | 2.91                     | 0.45              |
| 34:BA:321:A:H2'    | 34:BA:322:C:H6    | 1.81                     | 0.45              |
| 34:BA:366:C:O2'    | 34:BA:367:U:O5'   | 2.26                     | 0.45              |
| 34:BA:409:G:N2     | 34:BA:410:G:O4'   | 2.50                     | 0.45              |
| 34:BA:533:A:H3'    | 34:BA:534:U:C5'   | 2.47                     | 0.45              |
| 34:BA:563:A:C2     | 34:BA:567:G:C5    | 3.04                     | 0.45              |
| 34:BA:577:G:N2     | 34:BA:578:C:C1'   | 2.79                     | 0.45              |
| 34:BA:631:G:O2'    | 34:BA:632:A:C8    | 2.61                     | 0.45              |
| 34:BA:640:A:H2'    | 34:BA:641:U:H5'   | 1.94                     | 0.45              |
| 34:BA:692:U:C2     | 34:BA:694:A:H3'   | 2.48                     | 0.45              |
| 34:BA:695:A:C2     | 34:BA:696:A:N9    | 2.84                     | 0.45              |
| 34:BA:710:G:C2     | 34:BA:711:G:C8    | 3.04                     | 0.45              |
| 34:BA:736:C:C5'    | 51:BV:72:ARG:NH2  | 2.68                     | 0.45              |
| 34:BA:747:C:H2'    | 34:BA:748:C:O4'   | 2.17                     | 0.45              |
| 34:BA:819:A:N3     | 34:BA:1529:G:O6   | 2.50                     | 0.45              |
| 34:BA:828:A:C5'    | 34:BA:859:A:N1    | 2.80                     | 0.45              |
| 34:BA:883:C:H5'    | 34:BA:884:U:OP2   | 2.16                     | 0.45              |
| 34:BA:1065:U:H5    | 34:BA:1190:G:N3   | 2.14                     | 0.45              |
| 34:BA:1083:U:H3'   | 34:BA:1084:G:C8   | 2.52                     | 0.45              |
| 34:BA:1180:A:O5'   | 34:BA:1180:A:H8   | 1.98                     | 0.45              |
| 34:BA:1309:G:C5    | 34:BA:1330:U:O4   | 2.69                     | 0.45              |
| 34:BA:1315:U:H1'   | 34:BA:1361:G:O5'  | 2.17                     | 0.45              |
| 34:BA:1422:G:C2    | 34:BA:1423:G:N7   | 2.84                     | 0.45              |
| 34:BA:1466:C:H2'   | 34:BA:1467:G:H1'  | 1.98                     | 0.45              |
| 34:BA:1468:A:C2'   | 34:BA:1469:G:O5'  | 2.63                     | 0.45              |
| 34:BA:1477:C:N4    | 34:BA:1478:C:N4   | 2.64                     | 0.45              |
| 35:BF:20:GLU:OE2   | 35:BF:189:ASP:OD2 | 2.33                     | 0.45              |
| 36:BG:96:GLY:O     | 36:BG:98:ASN:N    | 2.49                     | 0.45              |
| 36:BG:134:ILE:N    | 36:BG:134:ILE:CD1 | 2.79                     | 0.45              |
| 36:BG:157:ILE:HG13 | 36:BG:164:ARG:CD  | 2.46                     | 0.45              |
| 37:BH:118:ARG:HG3  | 37:BH:136:PRO:HB3 | 1.99                     | 0.45              |
| 38:BI:6:PHE:HZ     | 38:BI:66:MET:SD   | 2.39                     | 0.45              |
| 38:BI:36:ASP:OD1   | 38:BI:38:GLN:HB2  | 2.16                     | 0.45              |
| 38:BI:52:PRO:O     | 38:BI:55:VAL:N    | 2.50                     | 0.45              |
| 38:BI:103:GLY:C    | 38:BI:107:ARG:NH1 | 2.71                     | 0.45              |
| 38:BI:129:ILE:O    | 38:BI:132:ALA:HB3 | 2.15                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 39:BJ:16:GLN:CG   | 39:BJ:17:SER:N     | 2.72                     | 0.45              |
| 39:BJ:41:GLU:O    | 39:BJ:42:GLU:HB3   | 2.16                     | 0.45              |
| 39:BJ:97:PHE:O    | 51:BV:30:ASP:HA    | 2.16                     | 0.45              |
| 40:BK:15:ASP:OD2  | 40:BK:16:LEU:N     | 2.49                     | 0.45              |
| 40:BK:50:ILE:HD13 | 40:BK:58:PRO:CB    | 2.46                     | 0.45              |
| 41:BL:9:MET:HE2   | 41:BL:13:ILE:HD11  | 1.97                     | 0.45              |
| 43:BN:36:GLY:O    | 43:BN:38:ILE:N     | 2.49                     | 0.45              |
| 45:BP:88:GLY:O    | 45:BP:99:HIS:CD2   | 2.70                     | 0.45              |
| 46:BQ:8:GLU:HB2   | 46:BQ:22:ILE:CG1   | 2.29                     | 0.45              |
| 46:BQ:15:VAL:HB   | 46:BQ:34:LEU:HD23  | 0.45                     | 0.45              |
| 46:BQ:80:ARG:CZ   | 46:BQ:81:LEU:HB3   | 2.47                     | 0.45              |
| 48:BS:21:ASP:OD2  | 48:BS:24:SER:HB3   | 2.17                     | 0.45              |
| 49:BT:29:ASP:O    | 49:BT:30:GLY:O     | 2.35                     | 0.45              |
| 50:BU:63:ARG:O    | 50:BU:65:ILE:HG22  | 2.17                     | 0.45              |
| 52:BW:50:ALA:HA   | 52:BW:58:VAL:O     | 2.16                     | 0.45              |
| 53:BX:57:ARG:CZ   | 53:BX:100:ILE:HD12 | 2.47                     | 0.45              |
| 56:BD:71:G:H2'    | 56:BD:72:C:C5'     | 2.46                     | 0.45              |
| 56:BE:1:G:C2'     | 56:BE:72:C:N3      | 2.74                     | 0.45              |
| 56:BE:3:C:H2'     | 56:BE:4:C:N1       | 2.31                     | 0.45              |
| 56:BE:13:C:H6     | 56:BE:13:C:H5''    | 1.82                     | 0.45              |
| 56:BE:20:U:H6     | 56:BE:20:U:H5''    | 1.81                     | 0.45              |
| 1:AA:33:U:O2'     | 1:AA:34:C:C5       | 2.56                     | 0.45              |
| 1:AA:107:C:C4'    | 1:AA:293:U:H1'     | 2.32                     | 0.45              |
| 1:AA:119:A:O2'    | 1:AA:120:U:C5'     | 2.64                     | 0.45              |
| 1:AA:172:C:C2     | 1:AA:173:G:N7      | 2.85                     | 0.45              |
| 1:AA:253:C:O2     | 1:AA:254:G:O4'     | 2.35                     | 0.45              |
| 1:AA:270(Q):C:H2' | 1:AA:270(R):G:C8   | 2.47                     | 0.45              |
| 1:AA:276:A:O4'    | 1:AA:276:A:OP2     | 2.35                     | 0.45              |
| 1:AA:298:G:H1     | 1:AA:338:G:H4'     | 1.82                     | 0.45              |
| 1:AA:378:C:O2'    | 1:AA:379:G:C5'     | 2.63                     | 0.45              |
| 1:AA:390:A:H3'    | 1:AA:390:A:P       | 2.57                     | 0.45              |
| 1:AA:463:G:O2'    | 1:AA:464:U:C5      | 2.67                     | 0.45              |
| 1:AA:507:A:H4'    | 1:AA:509:C:C6      | 2.51                     | 0.45              |
| 1:AA:583:G:C5     | 1:AA:584:C:C5      | 3.05                     | 0.45              |
| 1:AA:596:G:C6     | 1:AA:597:U:N3      | 2.85                     | 0.45              |
| 1:AA:673:C:C5'    | 6:AF:81:PRO:HG2    | 2.44                     | 0.45              |
| 1:AA:686:G:O6     | 28:Ad:12:ARG:NE    | 2.50                     | 0.45              |
| 1:AA:692:C:C2'    | 1:AA:693:C:O5'     | 2.65                     | 0.45              |
| 1:AA:699:A:N6     | 1:AA:734:A:C8      | 2.85                     | 0.45              |
| 1:AA:749:C:C2     | 1:AA:1618:A:C5     | 3.04                     | 0.45              |
| 1:AA:814:C:O3'    | 1:AA:1224:G:N2     | 2.50                     | 0.45              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:AA:826:U:N3    | 1:AA:828:U:H6    | 2.15                     | 0.45              |
| 1:AA:900:A:N7    | 1:AA:901:A:O2'   | 2.37                     | 0.45              |
| 1:AA:923:C:O4'   | 22:AX:26:TYR:CB  | 2.62                     | 0.45              |
| 1:AA:1014:U:C2'  | 1:AA:1015:G:C5'  | 2.92                     | 0.45              |
| 1:AA:1081:U:C5   | 1:AA:1086:A:H2   | 2.34                     | 0.45              |
| 1:AA:1194:A:C6   | 1:AA:1195:G:C5   | 3.05                     | 0.45              |
| 1:AA:1210:A:H5'' | 1:AA:1211:U:O5'  | 2.16                     | 0.45              |
| 1:AA:1323:U:C2'  | 1:AA:1324:G:OP1  | 2.65                     | 0.45              |
| 1:AA:1361:G:O2'  | 1:AA:1362:C:H5'  | 2.16                     | 0.45              |
| 1:AA:1449:A:O4'  | 1:AA:1529:A:C6   | 2.70                     | 0.45              |
| 1:AA:1574:C:C4   | 1:AA:1575:C:C4   | 3.04                     | 0.45              |
| 1:AA:1606:G:H4'  | 1:AA:1608:A:C2   | 2.52                     | 0.45              |
| 1:AA:1613:G:H2'  | 1:AA:1617:C:N4   | 2.29                     | 0.45              |
| 1:AA:1631:A:C8   | 1:AA:1631:A:OP1  | 2.70                     | 0.45              |
| 1:AA:1661:G:C6   | 1:AA:1662:C:N4   | 2.84                     | 0.45              |
| 1:AA:1704:G:N1   | 1:AA:1705:G:C4   | 2.84                     | 0.45              |
| 1:AA:1808:U:C2   | 1:AA:1810:A:C2   | 3.05                     | 0.45              |
| 1:AA:1890:A:C3'  | 1:AA:1891:G:H8   | 2.25                     | 0.45              |
| 1:AA:1980:G:C5   | 1:AA:1982:C:C4   | 3.05                     | 0.45              |
| 1:AA:1992:G:C4'  | 1:AA:1993:U:C5   | 2.99                     | 0.45              |
| 1:AA:1992:G:O2'  | 1:AA:1993:U:H5   | 2.00                     | 0.45              |
| 1:AA:2011:U:C3'  | 1:AA:2012:G:H8   | 2.30                     | 0.45              |
| 1:AA:2107:C:H3'  | 1:AA:2109:U:H6   | 1.82                     | 0.45              |
| 1:AA:2111:C:N4   | 1:AA:2144:U:O2'  | 2.45                     | 0.45              |
| 1:AA:2146:C:P    | 1:AA:2147:G:OP2  | 2.75                     | 0.45              |
| 1:AA:2363:C:O2'  | 1:AA:2364:C:H5'  | 2.16                     | 0.45              |
| 1:AA:2395:C:C5   | 1:AA:2396:G:N7   | 2.84                     | 0.45              |
| 1:AA:2397:G:H2'  | 1:AA:2398:U:C6   | 2.51                     | 0.45              |
| 1:AA:2500:U:O2'  | 1:AA:2501:C:OP1  | 2.34                     | 0.45              |
| 1:AA:2547:U:C6   | 1:AA:2566:A:C2   | 3.05                     | 0.45              |
| 1:AA:2673:G:C2   | 1:AA:2674:G:C6   | 3.04                     | 0.45              |
| 1:AA:2689:U:H4'  | 1:AA:2690:C:O5'  | 2.17                     | 0.45              |
| 1:AA:2745:C:C2   | 1:AA:2746:U:C5   | 3.04                     | 0.45              |
| 1:AA:2781:A:C8   | 1:AA:2781:A:H5'  | 2.52                     | 0.45              |
| 1:AA:2783:G:C6   | 1:AA:2784:C:C4   | 3.05                     | 0.45              |
| 1:AA:2788:C:H6   | 1:AA:2788:C:O5'  | 1.99                     | 0.45              |
| 1:AA:2822:G:H5'' | 5:AE:159:HIS:CE1 | 2.52                     | 0.45              |
| 1:AA:2832:U:C1'  | 1:AA:2834:G:N2   | 2.58                     | 0.45              |
| 1:AA:2851:A:N1   | 1:AA:2852:G:C4   | 2.85                     | 0.45              |
| 3:AC:26:ALA:O    | 3:AC:30:LYS:CG   | 2.65                     | 0.45              |
| 3:AC:47:LEU:C    | 3:AC:210:ARG:HD3 | 2.42                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:AC:162:GLU:O    | 3:AC:163:PHE:HD2  | 1.98                     | 0.45              |
| 4:AD:57:GLY:O     | 4:AD:58:HIS:HB2   | 2.17                     | 0.45              |
| 4:AD:58:HIS:O     | 4:AD:59:LYS:HE2   | 2.17                     | 0.45              |
| 5:AE:50:GLY:CA    | 5:AE:76:ARG:NE    | 2.79                     | 0.45              |
| 5:AE:55:ASN:CG    | 5:AE:73:GLU:CD    | 2.85                     | 0.45              |
| 5:AE:111:ARG:HB3  | 5:AE:112:GLY:H    | 1.37                     | 0.45              |
| 5:AE:149:ARG:C    | 5:AE:149:ARG:CD   | 2.90                     | 0.45              |
| 5:AE:172:VAL:O    | 5:AE:174:ASP:N    | 2.50                     | 0.45              |
| 6:AF:131:GLY:O    | 6:AF:134:GLY:N    | 2.49                     | 0.45              |
| 7:AG:4:ASP:CA     | 7:AG:7:LEU:HB2    | 2.46                     | 0.45              |
| 7:AG:39:ILE:HA    | 7:AG:157:ILE:HA   | 1.98                     | 0.45              |
| 8:AH:168:PRO:O    | 8:AH:169:VAL:C    | 2.60                     | 0.45              |
| 9:AK:33:LEU:HD11  | 9:AK:52:VAL:CG2   | 2.44                     | 0.45              |
| 9:AK:53:VAL:HG22  | 9:AK:121:LYS:HB2  | 1.99                     | 0.45              |
| 11:AM:49:ARG:HD3  | 29:Ae:52:LYS:HE3  | 1.97                     | 0.45              |
| 11:AM:74:GLU:HB2  | 11:AM:107:LYS:CD  | 2.47                     | 0.45              |
| 11:AM:97:PRO:CB   | 11:AM:102:ARG:NH1 | 2.79                     | 0.45              |
| 12:AN:7:MET:O     | 12:AN:69:PHE:CZ   | 2.70                     | 0.45              |
| 13:AO:73:VAL:CG2  | 13:AO:74:LYS:N    | 2.79                     | 0.45              |
| 14:AP:81:GLY:C    | 14:AP:82:ILE:HG12 | 2.40                     | 0.45              |
| 16:AR:27:LEU:HD11 | 26:Ab:12:SER:HB2  | 1.98                     | 0.45              |
| 17:AS:79:VAL:CG1  | 17:AS:81:TYR:HD1  | 2.29                     | 0.45              |
| 21:AW:110:GLY:HA2 | 21:AW:144:LEU:CB  | 2.44                     | 0.45              |
| 22:AX:31:VAL:CG1  | 22:AX:67:VAL:CG2  | 2.94                     | 0.45              |
| 23:AY:51:GLN:C    | 23:AY:55:LEU:HD13 | 2.41                     | 0.45              |
| 24:AZ:7:LYS:HB3   | 24:AZ:55:ARG:CB   | 2.43                     | 0.45              |
| 24:AZ:13:ILE:CG2  | 24:AZ:14:GLY:N    | 2.66                     | 0.45              |
| 26:Ab:8:LYS:C     | 26:Ab:9:LYS:CG    | 2.89                     | 0.45              |
| 28:Ad:8:ASN:CG    | 28:Ad:10:ARG:HB2  | 2.41                     | 0.45              |
| 28:Ad:21:ARG:CB   | 28:Ad:31:LEU:HD21 | 2.47                     | 0.45              |
| 28:Ad:47:ARG:CG   | 28:Ad:48:LYS:N    | 2.78                     | 0.45              |
| 29:Ae:16:ILE:HG23 | 29:Ae:22:VAL:HG22 | 1.95                     | 0.45              |
| 29:Ae:29:LYS:CE   | 29:Ae:36:LYS:HZ3  | 2.29                     | 0.45              |
| 30:Af:7:VAL:CG2   | 30:Af:34:GLN:OE1  | 2.61                     | 0.45              |
| 31:AI:152:VAL:CB  | 33:Ag:19:UNK:CB   | 2.94                     | 0.45              |
| 34:BA:8:A:C5'     | 38:BI:120:THR:O   | 2.65                     | 0.45              |
| 34:BA:29:G:C5'    | 34:BA:296:U:OP1   | 2.59                     | 0.45              |
| 34:BA:110:C:H2'   | 34:BA:111:G:H8    | 1.82                     | 0.45              |
| 34:BA:151:A:C6    | 34:BA:152:A:C2    | 3.05                     | 0.45              |
| 34:BA:242:C:C2'   | 34:BA:243:A:O5'   | 2.65                     | 0.45              |
| 34:BA:307:C:C5'   | 34:BA:308:C:OP2   | 2.65                     | 0.45              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:319:G:H2'    | 34:BA:320:C:C5'    | 2.46                     | 0.45              |
| 34:BA:352:C:H6     | 34:BA:352:C:P      | 2.40                     | 0.45              |
| 34:BA:474:G:OP1    | 49:BT:80:PHE:C     | 2.60                     | 0.45              |
| 34:BA:540:G:H21    | 37:BH:42:GLN:CD    | 2.25                     | 0.45              |
| 34:BA:564:C:OP1    | 45:BP:15:ARG:NE    | 2.50                     | 0.45              |
| 34:BA:686:U:O2'    | 34:BA:687:A:P      | 2.73                     | 0.45              |
| 34:BA:720:C:C4     | 34:BA:721:G:H2'    | 2.51                     | 0.45              |
| 34:BA:738:C:OP1    | 39:BJ:4:TYR:OH     | 2.32                     | 0.45              |
| 34:BA:791:G:C5     | 34:BA:792:A:N7     | 2.85                     | 0.45              |
| 34:BA:872:A:O2'    | 34:BA:873:A:C5'    | 2.58                     | 0.45              |
| 34:BA:920:U:H2'    | 34:BA:921:U:C6     | 2.50                     | 0.45              |
| 34:BA:986:A:H2'    | 34:BA:987:G:H8     | 1.81                     | 0.45              |
| 34:BA:1034:G:C2    | 34:BA:1035:A:N7    | 2.85                     | 0.45              |
| 34:BA:1210:C:H4'   | 34:BA:1214:C:H42   | 1.81                     | 0.45              |
| 34:BA:1213:A:N6    | 34:BA:1215:G:N2    | 2.65                     | 0.45              |
| 34:BA:1250:A:C8    | 34:BA:1251:A:N7    | 2.85                     | 0.45              |
| 34:BA:1263:C:C2'   | 34:BA:1264:C:H6    | 2.16                     | 0.45              |
| 34:BA:1287:A:N6    | 34:BA:1371:G:C4'   | 2.77                     | 0.45              |
| 34:BA:1296:C:C5    | 34:BA:1297:C:N4    | 2.84                     | 0.45              |
| 34:BA:1317:C:H2'   | 34:BA:1318:A:C4'   | 2.10                     | 0.45              |
| 34:BA:1374:A:H2'   | 34:BA:1375:A:O5'   | 2.16                     | 0.45              |
| 34:BA:1401:G:C2'   | 34:BA:1402:C:H5'   | 2.46                     | 0.45              |
| 34:BA:1449:C:N3    | 34:BA:1454:G:N2    | 2.64                     | 0.45              |
| 35:BF:49:GLU:HA    | 35:BF:52:GLU:OE2   | 2.17                     | 0.45              |
| 35:BF:50:GLU:CG    | 35:BF:200:ILE:HB   | 2.47                     | 0.45              |
| 35:BF:143:GLU:CD   | 35:BF:144:ARG:N    | 2.75                     | 0.45              |
| 35:BF:157:ARG:HG2  | 35:BF:158:LEU:HD23 | 1.98                     | 0.45              |
| 36:BG:83:ARG:C     | 36:BG:87:LEU:HG    | 2.40                     | 0.45              |
| 36:BG:182:ILE:CD1  | 36:BG:203:PHE:HD1  | 2.30                     | 0.45              |
| 37:BH:31:CYS:O     | 37:BH:33:MET:CE    | 2.59                     | 0.45              |
| 37:BH:38:TYR:HB2   | 37:BH:39:PRO:CD    | 2.41                     | 0.45              |
| 37:BH:104:VAL:HG11 | 37:BH:140:VAL:CG2  | 2.26                     | 0.45              |
| 37:BH:126:ILE:O    | 37:BH:132:ARG:HB3  | 2.17                     | 0.45              |
| 37:BH:175:SER:OG   | 37:BH:184:LYS:O    | 2.27                     | 0.45              |
| 38:BI:91:LEU:HD12  | 38:BI:118:ILE:HG21 | 1.97                     | 0.45              |
| 38:BI:101:ILE:N    | 38:BI:101:ILE:CD1  | 2.80                     | 0.45              |
| 38:BI:112:LEU:O    | 38:BI:114:GLY:N    | 2.49                     | 0.45              |
| 39:BJ:46:ARG:HH12  | 51:BV:37:VAL:HG22  | 1.81                     | 0.45              |
| 41:BL:32:LYS:O     | 41:BL:33:GLU:C     | 2.60                     | 0.45              |
| 41:BL:39:LEU:HA    | 41:BL:39:LEU:HD13  | 1.71                     | 0.45              |
| 42:BM:43:ALA:C     | 42:BM:45:ALA:H     | 2.25                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 42:BM:47:LEU:CD1  | 42:BM:51:ARG:HH12 | 2.30                     | 0.45              |
| 42:BM:50:LEU:HD21 | 42:BM:56:LEU:HB2  | 1.99                     | 0.45              |
| 43:BN:4:ILE:HD13  | 43:BN:98:ILE:CG2  | 2.47                     | 0.45              |
| 44:BO:34:ASP:CB   | 44:BO:35:PRO:CD   | 2.94                     | 0.45              |
| 45:BP:126:LYS:CD  | 45:BP:128:ALA:HB3 | 2.45                     | 0.45              |
| 46:BQ:91:ARG:HD3  | 46:BQ:97:PRO:O    | 2.16                     | 0.45              |
| 49:BT:9:PHE:CE2   | 49:BT:18:ARG:HG3  | 2.52                     | 0.45              |
| 49:BT:34:GLU:OE2  | 49:BT:35:LYS:N    | 2.50                     | 0.45              |
| 50:BU:87:LYS:HA   | 50:BU:87:LYS:HD2  | 1.53                     | 0.45              |
| 51:BV:22:VAL:CG2  | 51:BV:55:ARG:O    | 2.65                     | 0.45              |
| 51:BV:67:ALA:HA   | 51:BV:70:ILE:CG1  | 2.46                     | 0.45              |
| 52:BW:15:LEU:HD23 | 52:BW:15:LEU:N    | 2.32                     | 0.45              |
| 52:BW:24:ALA:O    | 52:BW:26:GLY:N    | 2.49                     | 0.45              |
| 56:BE:3:C:C2      | 56:BE:70:G:H1'    | 2.46                     | 0.45              |
| 56:BE:67:C:H2'    | 56:BE:68:C:H6     | 1.81                     | 0.45              |
| 57:BZ:125:VAL:CB  | 57:BZ:162:ILE:HA  | 2.29                     | 0.45              |
| 57:BZ:200:ASP:C   | 57:BZ:202:ASP:N   | 2.73                     | 0.45              |
| 57:BZ:551:ALA:HA  | 57:BZ:552:ASP:CB  | 2.46                     | 0.45              |
| 1:AA:64:A:C2      | 1:AA:65:C:C1'     | 3.00                     | 0.45              |
| 1:AA:87:C:O2'     | 23:AY:46:ARG:NH2  | 2.50                     | 0.45              |
| 1:AA:270(B):A:C5' | 1:AA:366:C:O4'    | 2.57                     | 0.45              |
| 1:AA:270(L):U:O2' | 1:AA:270(M):U:OP1 | 2.32                     | 0.45              |
| 1:AA:324:A:C2     | 1:AA:325:G:C4     | 3.05                     | 0.45              |
| 1:AA:424:G:N3     | 1:AA:425:G:C8     | 2.85                     | 0.45              |
| 1:AA:446:G:OP1    | 16:AR:3:ARG:HD3   | 2.17                     | 0.45              |
| 1:AA:479:A:O2'    | 1:AA:480:A:H5'    | 2.17                     | 0.45              |
| 1:AA:479:A:HO2'   | 1:AA:480:A:H3'    | 1.82                     | 0.45              |
| 1:AA:519:U:C4'    | 18:AT:75:TYR:HB2  | 2.47                     | 0.45              |
| 1:AA:739:G:O3'    | 1:AA:1784:A:C2    | 2.68                     | 0.45              |
| 1:AA:745:G:HO2'   | 1:AA:748:G:H1'    | 1.74                     | 0.45              |
| 1:AA:782:A:C5'    | 1:AA:783:A:OP1    | 2.62                     | 0.45              |
| 1:AA:804:A:OP2    | 11:AM:39:LYS:HB3  | 2.17                     | 0.45              |
| 1:AA:817:C:H3'    | 1:AA:818:G:C8     | 2.51                     | 0.45              |
| 1:AA:848:G:H1'    | 1:AA:934:G:O4'    | 2.17                     | 0.45              |
| 1:AA:945:A:H2'    | 1:AA:946:G:H5''   | 1.98                     | 0.45              |
| 1:AA:998:C:O5'    | 1:AA:998:C:H6     | 2.00                     | 0.45              |
| 1:AA:1007:C:H4'   | 9:AK:108:PRO:CG   | 2.47                     | 0.45              |
| 1:AA:1154:G:OP1   | 16:AR:58:ARG:HD3  | 2.16                     | 0.45              |
| 1:AA:1203:G:N1    | 1:AA:1206:G:N1    | 2.59                     | 0.45              |
| 1:AA:1203:G:N7    | 1:AA:1240:U:C4    | 2.85                     | 0.45              |
| 1:AA:1225:C:OP1   | 17:AS:88:ARG:HB3  | 2.16                     | 0.45              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:1275:A:N7   | 1:AA:1296:G:C1'   | 2.76                     | 0.45              |
| 1:AA:1344:G:H4'  | 1:AA:1384:A:C2    | 2.49                     | 0.45              |
| 1:AA:1359:A:C8   | 1:AA:1359:A:C4'   | 3.00                     | 0.45              |
| 1:AA:1366:A:H5'' | 25:Aa:1:MET:N     | 2.31                     | 0.45              |
| 1:AA:1385:G:C6   | 1:AA:1386:C:N4    | 2.85                     | 0.45              |
| 1:AA:1429:G:H2'  | 1:AA:1430:C:C6    | 2.52                     | 0.45              |
| 1:AA:1454:U:C5'  | 1:AA:1455:G:OP2   | 2.56                     | 0.45              |
| 1:AA:1471:A:OP2  | 1:AA:1472:A:C2    | 2.66                     | 0.45              |
| 1:AA:1536:A:C2   | 1:AA:1537:C:C2    | 3.05                     | 0.45              |
| 1:AA:1570:A:N1   | 1:AA:1571:A:N7    | 2.64                     | 0.45              |
| 1:AA:1587:A:H2'  | 1:AA:1588:C:H6    | 1.80                     | 0.45              |
| 1:AA:1690:A:N6   | 1:AA:1697:G:C2    | 2.85                     | 0.45              |
| 1:AA:1799:G:H1   | 4:AD:157:ARG:CZ   | 2.28                     | 0.45              |
| 1:AA:1819:A:N3   | 1:AA:1821:A:N1    | 2.64                     | 0.45              |
| 1:AA:1836:C:N4   | 1:AA:1837:C:N4    | 2.65                     | 0.45              |
| 1:AA:1939:U:O2'  | 1:AA:2592:G:O2'   | 2.18                     | 0.45              |
| 1:AA:1944:U:O4'  | 1:AA:1955:U:H6    | 1.98                     | 0.45              |
| 1:AA:1959:G:O4'  | 34:BA:1418:A:H1'  | 2.13                     | 0.45              |
| 1:AA:1980:G:C6   | 1:AA:1982:C:C4    | 3.04                     | 0.45              |
| 1:AA:2015:A:H8   | 1:AA:2016:U:C5    | 2.33                     | 0.45              |
| 1:AA:2178:C:H5'' | 3:AC:46:LYS:HZ3   | 1.73                     | 0.45              |
| 1:AA:2334:G:OP2  | 14:AP:8:GLU:OE2   | 2.35                     | 0.45              |
| 1:AA:2360:A:OP2  | 1:AA:2360:A:H8    | 1.99                     | 0.45              |
| 1:AA:2444:G:N1   | 1:AA:2445:G:C6    | 2.85                     | 0.45              |
| 1:AA:2457:U:O4   | 1:AA:2458:G:N2    | 2.50                     | 0.45              |
| 1:AA:2482:G:C2   | 1:AA:2483:C:C1'   | 3.00                     | 0.45              |
| 1:AA:2625:G:H2'  | 1:AA:2626:C:O5'   | 2.16                     | 0.45              |
| 1:AA:2721:A:C2'  | 1:AA:2722:G:C8    | 2.98                     | 0.45              |
| 1:AA:2776:A:H5'' | 1:AA:2777:G:OP1   | 2.17                     | 0.45              |
| 1:AA:2830:G:H5'  | 5:AE:57:LYS:HE3   | 1.99                     | 0.45              |
| 2:AB:46:A:H2'    | 2:AB:47:C:O4'     | 2.17                     | 0.45              |
| 2:AB:76:G:OP2    | 21:AW:11:GLU:CA   | 2.46                     | 0.45              |
| 2:AB:78:A:C6     | 2:AB:99:A:N6      | 2.84                     | 0.45              |
| 4:AD:54:ARG:C    | 4:AD:219:PRO:CG   | 2.89                     | 0.45              |
| 5:AE:76:ARG:O    | 5:AE:76:ARG:HG3   | 2.17                     | 0.45              |
| 5:AE:92:THR:O    | 5:AE:92:THR:CG2   | 2.63                     | 0.45              |
| 5:AE:103:ASP:HA  | 5:AE:170:LEU:CD2  | 2.47                     | 0.45              |
| 5:AE:119:ARG:HE  | 5:AE:120:TRP:HB3  | 1.81                     | 0.45              |
| 5:AE:194:GLY:O   | 5:AE:195:LEU:HD22 | 2.17                     | 0.45              |
| 6:AF:11:VAL:CG2  | 6:AF:126:VAL:HG12 | 2.47                     | 0.45              |
| 6:AF:133:ASN:CB  | 6:AF:162:LEU:HD13 | 2.47                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:AG:54:GLU:CD    | 7:AG:70:VAL:HG22  | 2.41                     | 0.45              |
| 7:AG:75:LYS:CB    | 7:AG:84:LYS:CB    | 2.95                     | 0.45              |
| 7:AG:107:LEU:CD1  | 7:AG:111:LEU:HD13 | 2.40                     | 0.45              |
| 7:AG:139:LEU:O    | 7:AG:142:PRO:HD3  | 2.16                     | 0.45              |
| 7:AG:142:PRO:HG2  | 7:AG:143:GLU:HG2  | 1.98                     | 0.45              |
| 7:AG:157:ILE:CG1  | 7:AG:158:ALA:N    | 2.79                     | 0.45              |
| 8:AH:7:LEU:CA     | 8:AH:52:VAL:CG1   | 2.95                     | 0.45              |
| 8:AH:42:ARG:HB2   | 8:AH:53:GLU:CG    | 2.47                     | 0.45              |
| 9:AK:23:LEU:HD23  | 9:AK:23:LEU:H     | 1.82                     | 0.45              |
| 11:AM:131:SER:N   | 11:AM:134:ALA:CB  | 2.79                     | 0.45              |
| 12:AN:64:ILE:HA   | 12:AN:106:VAL:C   | 2.42                     | 0.45              |
| 12:AN:86:GLY:C    | 12:AN:88:GLY:N    | 2.70                     | 0.45              |
| 12:AN:131:ILE:CG2 | 12:AN:132:VAL:N   | 2.80                     | 0.45              |
| 13:AO:3:HIS:ND1   | 13:AO:3:HIS:C     | 2.74                     | 0.45              |
| 13:AO:13:HIS:CD2  | 13:AO:15:SER:HG   | 2.35                     | 0.45              |
| 13:AO:35:THR:HG22 | 13:AO:113:LEU:CD2 | 2.47                     | 0.45              |
| 13:AO:90:ARG:HB2  | 13:AO:94:TYR:HE2  | 1.82                     | 0.45              |
| 13:AO:96:ARG:HG2  | 13:AO:98:LEU:HD12 | 1.98                     | 0.45              |
| 15:AQ:55:ASN:CA   | 15:AQ:62:THR:O    | 2.63                     | 0.45              |
| 17:AS:62:LEU:HB3  | 17:AS:97:LYS:O    | 2.17                     | 0.45              |
| 17:AS:96:ILE:HD12 | 17:AS:96:ILE:C    | 2.41                     | 0.45              |
| 19:AU:7:VAL:CG2   | 23:AY:31:ARG:NH1  | 2.79                     | 0.45              |
| 19:AU:36:LYS:HE3  | 19:AU:56:THR:CG2  | 2.47                     | 0.45              |
| 19:AU:49:VAL:CG1  | 19:AU:88:LYS:HG3  | 2.43                     | 0.45              |
| 20:AV:46:LYS:HB2  | 20:AV:57:GLN:N    | 2.31                     | 0.45              |
| 21:AW:61:LEU:HD23 | 21:AW:66:SER:HA   | 1.98                     | 0.45              |
| 22:AX:50:ASN:HB2  | 22:AX:81:VAL:CB   | 2.46                     | 0.45              |
| 22:AX:74:ARG:HH11 | 22:AX:75:LEU:HD11 | 1.82                     | 0.45              |
| 23:AY:27:LEU:CG   | 23:AY:48:LEU:HD23 | 2.44                     | 0.45              |
| 23:AY:36:ILE:O    | 23:AY:37:GLY:C    | 2.59                     | 0.45              |
| 24:AZ:41:PRO:HA   | 24:AZ:44:ARG:CZ   | 2.47                     | 0.45              |
| 25:Aa:20:ASN:CB   | 25:Aa:30:GLU:OE2  | 2.64                     | 0.45              |
| 26:Ab:15:ARG:O    | 26:Ab:17:ASP:N    | 2.50                     | 0.45              |
| 28:Ad:25:PRO:CA   | 28:Ad:28:ARG:NE   | 2.76                     | 0.45              |
| 28:Ad:33:ARG:O    | 28:Ad:37:LYS:CG   | 2.65                     | 0.45              |
| 29:Ae:53:PRO:C    | 29:Ae:56:GLU:OE2  | 2.59                     | 0.45              |
| 30:Af:19:ARG:HG2  | 30:Af:24:TYR:HB2  | 1.98                     | 0.45              |
| 32:AJ:19:PRO:HB3  | 32:AJ:23:VAL:HB   | 1.99                     | 0.45              |
| 32:AJ:116:ASN:O   | 32:AJ:118:THR:N   | 2.49                     | 0.45              |
| 34:BA:81:G:O6     | 34:BA:82:U:O4     | 2.35                     | 0.45              |
| 34:BA:225:C:C2'   | 34:BA:226:G:O5'   | 2.64                     | 0.45              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:251:G:O4'    | 34:BA:252:U:H5     | 2.00                     | 0.45              |
| 34:BA:294:U:C2     | 34:BA:295:C:H5     | 2.34                     | 0.45              |
| 34:BA:416:G:O6     | 34:BA:428:G:O6     | 2.34                     | 0.45              |
| 34:BA:420:U:H1'    | 34:BA:424:G:N2     | 2.32                     | 0.45              |
| 34:BA:529:G:O6     | 45:BP:49:ASN:CG    | 2.60                     | 0.45              |
| 34:BA:714:G:H2'    | 34:BA:715:A:H8     | 1.77                     | 0.45              |
| 34:BA:829:G:N2     | 34:BA:858:G:O2'    | 2.49                     | 0.45              |
| 34:BA:873:A:C4'    | 34:BA:874:G:OP2    | 2.65                     | 0.45              |
| 34:BA:935:A:C6     | 34:BA:936:C:N4     | 2.85                     | 0.45              |
| 34:BA:976:G:C6     | 34:BA:1362:C:N4    | 2.85                     | 0.45              |
| 34:BA:1181:G:O3'   | 34:BA:1184:G:C5'   | 2.65                     | 0.45              |
| 34:BA:1221:G:H1'   | 52:BW:55:LYS:CB    | 2.47                     | 0.45              |
| 34:BA:1242:C:N3    | 34:BA:1243:C:C5    | 2.85                     | 0.45              |
| 34:BA:1476:G:C6    | 34:BA:1477:C:N4    | 2.85                     | 0.45              |
| 35:BF:16:HIS:CE1   | 35:BF:213:LEU:CD1  | 2.97                     | 0.45              |
| 35:BF:46:LYS:CE    | 35:BF:49:GLU:HG2   | 2.47                     | 0.45              |
| 35:BF:71:VAL:HG21  | 35:BF:93:VAL:HB    | 1.96                     | 0.45              |
| 35:BF:140:HIS:HA   | 35:BF:143:GLU:HB3  | 1.99                     | 0.45              |
| 36:BG:22:TRP:CB    | 36:BG:59:ARG:CB    | 2.87                     | 0.45              |
| 36:BG:73:PRO:HD3   | 36:BG:105:GLU:CD   | 2.42                     | 0.45              |
| 36:BG:123:GLN:HB3  | 36:BG:128:PHE:CZ   | 2.52                     | 0.45              |
| 36:BG:155:GLY:O    | 36:BG:196:LEU:CB   | 2.64                     | 0.45              |
| 37:BH:83:SER:N     | 37:BH:89:THR:CG2   | 2.80                     | 0.45              |
| 37:BH:194:LEU:O    | 37:BH:195:ALA:O    | 2.35                     | 0.45              |
| 38:BI:12:LEU:HD12  | 38:BI:31:LEU:N     | 2.32                     | 0.45              |
| 38:BI:59:GLY:O     | 38:BI:62:ALA:N     | 2.49                     | 0.45              |
| 38:BI:61:TYR:O     | 38:BI:62:ALA:C     | 2.59                     | 0.45              |
| 38:BI:79:GLU:O     | 41:BL:104:ARG:NH1  | 2.50                     | 0.45              |
| 38:BI:110:LEU:HD23 | 38:BI:110:LEU:N    | 2.32                     | 0.45              |
| 41:BL:9:MET:HE3    | 41:BL:13:ILE:HD11  | 1.99                     | 0.45              |
| 41:BL:18:ARG:H     | 41:BL:18:ARG:HD2   | 1.81                     | 0.45              |
| 42:BM:75:ASP:O     | 42:BM:78:LYS:N     | 2.50                     | 0.45              |
| 43:BN:33:GLN:O     | 43:BN:34:VAL:CB    | 2.64                     | 0.45              |
| 43:BN:55:LYS:O     | 43:BN:55:LYS:CG    | 2.65                     | 0.45              |
| 44:BO:43:SER:HA    | 44:BO:47:VAL:HG11  | 1.99                     | 0.45              |
| 44:BO:84:VAL:CG2   | 51:BV:88:LYS:NZ    | 2.80                     | 0.45              |
| 44:BO:86:GLY:H     | 44:BO:112:THR:HG23 | 1.82                     | 0.45              |
| 45:BP:85:ILE:CG1   | 45:BP:98:TYR:HB3   | 2.47                     | 0.45              |
| 46:BQ:65:LYS:CG    | 46:BQ:69:GLU:CB    | 2.91                     | 0.45              |
| 48:BS:69:TYR:O     | 48:BS:72:ARG:N     | 2.50                     | 0.45              |
| 50:BU:50:LYS:HB3   | 50:BU:51:TYR:CD1   | 2.51                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 52:BW:9:VAL:HG21  | 52:BW:42:PRO:C     | 2.41                     | 0.45              |
| 55:BC:13:C:H6     | 55:BC:13:C:H5''    | 1.82                     | 0.45              |
| 56:BE:14:A:H2'    | 56:BE:15:G:C5'     | 2.24                     | 0.45              |
| 57:BZ:2:ILE:HG23  | 57:BZ:268:ALA:N    | 2.30                     | 0.45              |
| 57:BZ:10:ILE:HG12 | 57:BZ:96:LEU:CD1   | 2.47                     | 0.45              |
| 57:BZ:24:LYS:C    | 57:BZ:26:LEU:N     | 2.73                     | 0.45              |
| 57:BZ:54:ILE:HA   | 57:BZ:55:THR:HA    | 1.54                     | 0.45              |
| 57:BZ:101:ALA:O   | 57:BZ:135:ALA:CB   | 2.65                     | 0.45              |
| 57:BZ:119:TYR:HE2 | 57:BZ:121:LEU:HD11 | 1.82                     | 0.45              |
| 57:BZ:207:MET:CE  | 57:BZ:209:ILE:HA   | 2.45                     | 0.45              |
| 57:BZ:407:VAL:CA  | 57:BZ:408:GLU:HG3  | 2.46                     | 0.45              |
| 1:AA:54:G:N2      | 1:AA:55:G:H1'      | 2.31                     | 0.45              |
| 1:AA:65:C:C2      | 1:AA:66:C:H5       | 2.32                     | 0.45              |
| 1:AA:67:U:C5'     | 1:AA:67:U:H6       | 2.30                     | 0.45              |
| 1:AA:188:G:H5'    | 1:AA:1365:A:N3     | 2.32                     | 0.45              |
| 1:AA:211:A:O2'    | 1:AA:212:G:H5'     | 2.17                     | 0.45              |
| 1:AA:249:C:C2'    | 1:AA:250:G:OP2     | 2.65                     | 0.45              |
| 1:AA:251:A:H2'    | 1:AA:252:G:C5'     | 2.46                     | 0.45              |
| 1:AA:252:G:H2'    | 1:AA:253:C:H6      | 1.81                     | 0.45              |
| 1:AA:262:A:H2'    | 1:AA:263:C:C6      | 2.50                     | 0.45              |
| 1:AA:303:U:O5'    | 1:AA:303:U:H6      | 2.00                     | 0.45              |
| 1:AA:329:G:O2'    | 1:AA:330:A:OP1     | 2.31                     | 0.45              |
| 1:AA:476:G:H22    | 1:AA:478:A:H3'     | 1.81                     | 0.45              |
| 1:AA:499:U:H2'    | 1:AA:500:G:O4'     | 2.17                     | 0.45              |
| 1:AA:513:A:C2'    | 1:AA:514:A:H5'     | 2.47                     | 0.45              |
| 1:AA:546:C:H2'    | 1:AA:547:A:C4      | 2.51                     | 0.45              |
| 1:AA:618:G:H2'    | 1:AA:618(A):C:N1   | 2.31                     | 0.45              |
| 1:AA:733:G:O6     | 1:AA:761:A:N9      | 2.50                     | 0.45              |
| 1:AA:748:G:H5'    | 18:AT:88:ARG:CZ    | 2.47                     | 0.45              |
| 1:AA:819:A:C2'    | 1:AA:820:A:O4'     | 2.65                     | 0.45              |
| 1:AA:850:C:O2     | 1:AA:851:U:C6      | 2.70                     | 0.45              |
| 1:AA:865:C:O2     | 1:AA:865:C:C2'     | 2.62                     | 0.45              |
| 1:AA:1046:A:H61   | 31:AI:9:LEU:CB     | 2.29                     | 0.45              |
| 1:AA:1141:U:HO2'  | 1:AA:1142:U:P      | 2.39                     | 0.45              |
| 1:AA:1158:C:C5'   | 24:AZ:31:LEU:HB3   | 2.47                     | 0.45              |
| 1:AA:1242:A:N3    | 1:AA:1242:A:H2'    | 2.31                     | 0.45              |
| 1:AA:1263:U:C5    | 1:AA:1264:G:N1     | 2.85                     | 0.45              |
| 1:AA:1287:A:H8    | 13:AO:104:ARG:HH11 | 1.65                     | 0.45              |
| 1:AA:1419:A:O4'   | 1:AA:1419:A:P      | 2.75                     | 0.45              |
| 1:AA:1635:G:H2'   | 1:AA:1636:C:O4'    | 2.17                     | 0.45              |
| 1:AA:1680:U:O2'   | 1:AA:1763:G:C8     | 2.70                     | 0.45              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:1695:G:C1'  | 4:AD:15:PHE:HB3   | 2.45                     | 0.45              |
| 1:AA:1777:U:H6   | 1:AA:1777:U:O5'   | 2.00                     | 0.45              |
| 1:AA:1798:U:N3   | 1:AA:1819:A:C2    | 2.84                     | 0.45              |
| 1:AA:1996:C:C6   | 1:AA:1996:C:C3'   | 3.00                     | 0.45              |
| 1:AA:2022:U:O4   | 26:Ab:9:LYS:NZ    | 2.48                     | 0.45              |
| 1:AA:2049:G:O2'  | 1:AA:2050:C:P     | 2.75                     | 0.45              |
| 1:AA:2080:G:O2'  | 1:AA:2081:C:C5'   | 2.64                     | 0.45              |
| 1:AA:2097:C:N4   | 1:AA:2193:G:C6    | 2.84                     | 0.45              |
| 1:AA:2176:A:C3'  | 3:AC:221:SER:CB   | 2.86                     | 0.45              |
| 1:AA:2178:C:P    | 3:AC:211:SER:HB3  | 2.56                     | 0.45              |
| 1:AA:2218:G:C4   | 1:AA:2219:G:C8    | 3.05                     | 0.45              |
| 1:AA:2227:A:C5'  | 4:AD:260:ARG:CD   | 2.91                     | 0.45              |
| 1:AA:2236:C:C4   | 1:AA:2237:G:C4    | 3.04                     | 0.45              |
| 1:AA:2284:C:O2'  | 1:AA:2325:G:C2    | 2.70                     | 0.45              |
| 1:AA:2287:A:C2   | 27:Ac:37:ARG:NH2  | 2.84                     | 0.45              |
| 1:AA:2298:A:C2   | 1:AA:2321:G:C6    | 3.05                     | 0.45              |
| 1:AA:2309:A:C4   | 1:AA:2310:A:C8    | 3.05                     | 0.45              |
| 1:AA:2352:A:N1   | 22:AX:34:GLY:CA   | 2.80                     | 0.45              |
| 1:AA:2355:C:C5   | 1:AA:2356:C:C5    | 3.05                     | 0.45              |
| 1:AA:2373:G:C2   | 1:AA:2374:C:N3    | 2.85                     | 0.45              |
| 1:AA:2471:C:H2'  | 1:AA:2472:G:H5'   | 1.99                     | 0.45              |
| 1:AA:2507:C:H4'  | 1:AA:2573:C:N4    | 2.32                     | 0.45              |
| 1:AA:2533:A:C2'  | 1:AA:2534:A:H8    | 2.28                     | 0.45              |
| 1:AA:2586:C:O2'  | 1:AA:2587:A:H5'   | 2.16                     | 0.45              |
| 1:AA:2602:A:O2'  | 1:AA:2603:G:P     | 2.75                     | 0.45              |
| 1:AA:2666:C:H6   | 1:AA:2667:C:H5'   | 1.81                     | 0.45              |
| 1:AA:2690:C:O2'  | 1:AA:2691:C:H5'   | 2.16                     | 0.45              |
| 1:AA:2695:C:O2   | 1:AA:2696:U:C5    | 2.70                     | 0.45              |
| 1:AA:2710:C:H2'  | 1:AA:2711:A:O4'   | 2.16                     | 0.45              |
| 1:AA:2880:C:C6   | 13:AO:91:GLN:HB3  | 2.52                     | 0.45              |
| 2:AB:33:G:C2'    | 2:AB:34:U:H6      | 2.26                     | 0.45              |
| 3:AC:8:ARG:NE    | 3:AC:12:GLU:OE2   | 2.49                     | 0.45              |
| 3:AC:200:LYS:HZ1 | 3:AC:204:ALA:HB3  | 1.78                     | 0.45              |
| 4:AD:39:LYS:HB3  | 4:AD:62:TYR:HD2   | 1.81                     | 0.45              |
| 4:AD:80:ALA:HB1  | 4:AD:96:HIS:CE1   | 2.52                     | 0.45              |
| 4:AD:136:ILE:CD1 | 4:AD:173:VAL:HG11 | 2.40                     | 0.45              |
| 4:AD:148:GLU:C   | 4:AD:149:PRO:O    | 2.59                     | 0.45              |
| 4:AD:183:ARG:CZ  | 4:AD:268:ARG:HD2  | 2.46                     | 0.45              |
| 5:AE:101:ARG:HD2 | 5:AE:170:LEU:O    | 2.17                     | 0.45              |
| 7:AG:8:LYS:HG3   | 7:AG:100:TRP:O    | 2.17                     | 0.45              |
| 7:AG:57:ALA:CA   | 7:AG:68:PRO:CD    | 2.83                     | 0.45              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 7:AG:94:LEU:HB3    | 7:AG:99:MET:HE3    | 1.96                     | 0.45              |
| 7:AG:98:ARG:O      | 7:AG:101:ILE:HG22  | 2.17                     | 0.45              |
| 8:AH:18:GLU:CD     | 8:AH:25:LYS:HB3    | 2.40                     | 0.45              |
| 8:AH:85:LYS:NZ     | 8:AH:141:VAL:C     | 2.75                     | 0.45              |
| 9:AK:26:LEU:HD12   | 9:AK:26:LEU:C      | 2.40                     | 0.45              |
| 9:AK:34:LEU:CD2    | 9:AK:120:LEU:HD13  | 2.46                     | 0.45              |
| 9:AK:128:HIS:O     | 9:AK:131:GLN:N     | 2.50                     | 0.45              |
| 10:AL:14:THR:O     | 10:AL:52:VAL:HG11  | 2.17                     | 0.45              |
| 10:AL:61:VAL:HG12  | 10:AL:61:VAL:O     | 2.15                     | 0.45              |
| 10:AL:63:VAL:HG21  | 10:AL:81:ASP:CA    | 2.47                     | 0.45              |
| 10:AL:88:ASN:C     | 10:AL:90:GLN:H     | 2.25                     | 0.45              |
| 11:AM:86:LYS:HB3   | 11:AM:87:ASP:H     | 1.59                     | 0.45              |
| 11:AM:97:PRO:HB3   | 11:AM:102:ARG:HH11 | 1.80                     | 0.45              |
| 12:AN:131:ILE:C    | 12:AN:132:VAL:HG13 | 2.42                     | 0.45              |
| 12:AN:134:ARG:HH21 | 12:AN:137:TYR:N    | 2.14                     | 0.45              |
| 12:AN:136:ALA:CB   | 21:AW:76:LEU:HD13  | 2.46                     | 0.45              |
| 13:AO:22:ARG:CD    | 13:AO:69:ASP:O     | 2.65                     | 0.45              |
| 13:AO:66:VAL:O     | 13:AO:69:ASP:N     | 2.50                     | 0.45              |
| 13:AO:77:ARG:HH11  | 13:AO:77:ARG:CG    | 2.29                     | 0.45              |
| 14:AP:57:LYS:CD    | 14:AP:65:VAL:HA    | 2.46                     | 0.45              |
| 14:AP:77:ALA:CA    | 14:AP:80:LEU:HB2   | 2.46                     | 0.45              |
| 14:AP:92:TYR:CD2   | 14:AP:93:LYS:N     | 2.85                     | 0.45              |
| 14:AP:93:LYS:CG    | 14:AP:94:TYR:N     | 2.80                     | 0.45              |
| 14:AP:101:LEU:HD13 | 14:AP:101:LEU:C    | 2.41                     | 0.45              |
| 16:AR:68:ALA:HA    | 16:AR:71:GLN:OE1   | 2.17                     | 0.45              |
| 16:AR:106:PHE:O    | 16:AR:110:VAL:HG23 | 2.17                     | 0.45              |
| 16:AR:114:LYS:HE2  | 16:AR:114:LYS:HB3  | 1.37                     | 0.45              |
| 17:AS:40:LEU:HB3   | 17:AS:51:VAL:CG1   | 2.47                     | 0.45              |
| 18:AT:8:ARG:HB3    | 18:AT:9:TYR:H      | 1.38                     | 0.45              |
| 20:AV:46:LYS:HZ2   | 20:AV:52:SER:CB    | 2.25                     | 0.45              |
| 20:AV:72:VAL:HG23  | 20:AV:81:LYS:HE2   | 1.97                     | 0.45              |
| 20:AV:93:GLY:C     | 20:AV:95:LYS:N     | 2.75                     | 0.45              |
| 21:AW:6:LYS:CD     | 21:AW:35:ARG:HD3   | 2.44                     | 0.45              |
| 21:AW:66:SER:O     | 21:AW:67:LEU:HD23  | 2.17                     | 0.45              |
| 22:AX:74:ARG:C     | 22:AX:76:GLY:N     | 2.71                     | 0.45              |
| 23:AY:22:GLU:CD    | 23:AY:22:GLU:N     | 2.74                     | 0.45              |
| 27:Ac:19:ARG:NH1   | 27:Ac:19:ARG:O     | 2.48                     | 0.45              |
| 30:Af:20:HIS:ND1   | 30:Af:20:HIS:N     | 2.65                     | 0.45              |
| 32:AJ:15:GLY:N     | 32:AJ:45:THR:CB    | 2.63                     | 0.45              |
| 32:AJ:23:VAL:CB    | 32:AJ:41:PHE:HE1   | 2.16                     | 0.45              |
| 32:AJ:79:ARG:CD    | 32:AJ:131:ALA:HA   | 2.47                     | 0.45              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 32:AJ:118:THR:CG2  | 32:AJ:119:ASP:N   | 2.79                     | 0.45              |
| 34:BA:26:A:N6      | 34:BA:558:G:H1'   | 2.32                     | 0.45              |
| 34:BA:39:G:N7      | 34:BA:547:A:C8    | 2.84                     | 0.45              |
| 34:BA:67:C:O2'     | 34:BA:171:A:H1'   | 2.15                     | 0.45              |
| 34:BA:92:G:N2      | 34:BA:93:U:H1'    | 2.31                     | 0.45              |
| 34:BA:136:C:H4'    | 49:BT:65:GLN:OE1  | 2.16                     | 0.45              |
| 34:BA:186(D):C:C2  | 34:BA:186(E):C:C5 | 3.05                     | 0.45              |
| 34:BA:251:G:H1     | 34:BA:271:C:H41   | 1.64                     | 0.45              |
| 34:BA:363:A:N7     | 45:BP:30:ALA:CB   | 2.75                     | 0.45              |
| 34:BA:440:A:H2'    | 34:BA:442:C:O4'   | 2.17                     | 0.45              |
| 34:BA:515:G:H3'    | 34:BA:516:U:C6    | 2.51                     | 0.45              |
| 34:BA:538:G:OP2    | 45:BP:115:LYS:HB2 | 2.17                     | 0.45              |
| 34:BA:568:G:C2     | 34:BA:574:A:H2    | 2.35                     | 0.45              |
| 34:BA:571:U:H4'    | 34:BA:572:A:OP2   | 2.16                     | 0.45              |
| 34:BA:588:G:C4     | 34:BA:753:A:C5    | 3.05                     | 0.45              |
| 34:BA:592:G:H2'    | 34:BA:593:G:C5'   | 2.45                     | 0.45              |
| 34:BA:622:A:C4     | 34:BA:623:C:C6    | 3.04                     | 0.45              |
| 34:BA:771:G:O6     | 34:BA:809:G:C6    | 2.69                     | 0.45              |
| 34:BA:963:G:N1     | 34:BA:973:G:C6    | 2.85                     | 0.45              |
| 34:BA:978:A:H61    | 34:BA:1361:G:N2   | 2.05                     | 0.45              |
| 34:BA:1003:G:OP2   | 34:BA:1003:G:C8   | 2.70                     | 0.45              |
| 34:BA:1080:A:H5'   | 38:BI:14:ARG:HH22 | 1.72                     | 0.45              |
| 34:BA:1114:C:C2    | 34:BA:1187:G:C2   | 3.05                     | 0.45              |
| 34:BA:1186:G:H4'   | 42:BM:110:GLU:HG3 | 1.99                     | 0.45              |
| 34:BA:1251:A:H4'   | 34:BA:1370:G:H4'  | 1.99                     | 0.45              |
| 34:BA:1252:A:C6    | 34:BA:1253:G:C5   | 3.05                     | 0.45              |
| 34:BA:1386:G:N1    | 34:BA:1387:G:C5   | 2.85                     | 0.45              |
| 34:BA:1419:G:O2'   | 34:BA:1420:C:O5'  | 2.34                     | 0.45              |
| 34:BA:1423:G:C2    | 34:BA:1424:C:C2   | 3.05                     | 0.45              |
| 34:BA:1470:G:C6    | 34:BA:1471:G:C5   | 3.05                     | 0.45              |
| 35:BF:87:ARG:HB3   | 35:BF:87:ARG:CZ   | 2.46                     | 0.45              |
| 36:BG:55:VAL:CG2   | 36:BG:68:VAL:HG13 | 2.39                     | 0.45              |
| 36:BG:122:GLU:HA   | 36:BG:125:GLU:OE2 | 2.17                     | 0.45              |
| 36:BG:138:VAL:HG13 | 36:BG:149:ALA:HB1 | 1.99                     | 0.45              |
| 36:BG:172:ARG:NH1  | 36:BG:172:ARG:HB3 | 2.31                     | 0.45              |
| 37:BH:39:PRO:HG2   | 37:BH:44:GLY:O    | 2.17                     | 0.45              |
| 37:BH:130:GLY:HA3  | 37:BH:131:ARG:NH1 | 2.31                     | 0.45              |
| 38:BI:149:GLU:HA   | 38:BI:149:GLU:OE2 | 2.15                     | 0.45              |
| 39:BJ:100:ASN:CG   | 51:BV:27:GLY:HA2  | 2.42                     | 0.45              |
| 40:BK:20:ASP:OD1   | 40:BK:23:VAL:HG23 | 2.17                     | 0.45              |
| 40:BK:143:ARG:O    | 40:BK:145:ALA:O   | 2.33                     | 0.45              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 42:BM:26:VAL:HG13  | 42:BM:63:ILE:HD13  | 1.98                     | 0.45              |
| 42:BM:50:LEU:HD11  | 42:BM:56:LEU:CA    | 2.23                     | 0.45              |
| 42:BM:97:LYS:HB3   | 42:BM:98:PRO:CD    | 2.39                     | 0.45              |
| 43:BN:40:LEU:CB    | 43:BN:69:ASN:HB2   | 2.46                     | 0.45              |
| 44:BO:31:THR:HG23  | 44:BO:42:TRP:HB3   | 1.98                     | 0.45              |
| 45:BP:48:PRO:CD    | 45:BP:49:ASN:H     | 2.29                     | 0.45              |
| 45:BP:65:GLU:C     | 45:BP:66:VAL:HG22  | 2.42                     | 0.45              |
| 45:BP:86:ARG:HD3   | 45:BP:101:VAL:CG1  | 2.47                     | 0.45              |
| 45:BP:113:ARG:NH2  | 45:BP:116:SER:O    | 2.42                     | 0.45              |
| 48:BS:60:VAL:HA    | 48:BS:63:ARG:CG    | 2.47                     | 0.45              |
| 49:BT:51:VAL:HG22  | 49:BT:73:LEU:HD11  | 1.96                     | 0.45              |
| 50:BU:86:GLU:O     | 50:BU:89:LEU:N     | 2.50                     | 0.45              |
| 50:BU:97:SER:CB    | 50:BU:104:LYS:H    | 2.30                     | 0.45              |
| 51:BV:31:LEU:N     | 51:BV:31:LEU:CD1   | 2.79                     | 0.45              |
| 51:BV:46:GLU:CB    | 51:BV:85:LEU:HD13  | 2.27                     | 0.45              |
| 52:BW:32:LYS:HA    | 52:BW:50:ALA:CA    | 2.46                     | 0.45              |
| 52:BW:51:VAL:HB    | 52:BW:75:ALA:CB    | 2.47                     | 0.45              |
| 52:BW:68:GLY:C     | 52:BW:69:HIS:CG    | 2.95                     | 0.45              |
| 53:BX:11:SER:CA    | 53:BX:13:LEU:HD11  | 2.35                     | 0.45              |
| 53:BX:38:LYS:HA    | 53:BX:41:ILE:HD12  | 1.98                     | 0.45              |
| 53:BX:50:GLU:HB2   | 53:BX:99:LEU:HD12  | 1.99                     | 0.45              |
| 55:BC:57:G:H2'     | 55:BC:58:A:C5'     | 2.38                     | 0.45              |
| 57:BZ:10:ILE:HG23  | 57:BZ:96:LEU:O     | 2.17                     | 0.45              |
| 57:BZ:128:ASN:HD22 | 57:BZ:165:ALA:HB3  | 1.82                     | 0.45              |
| 57:BZ:188:GLN:C    | 57:BZ:190:ILE:N    | 2.75                     | 0.45              |
| 57:BZ:251:VAL:O    | 57:BZ:262:ARG:N    | 2.48                     | 0.45              |
| 57:BZ:446:ARG:HH11 | 57:BZ:480:VAL:HG12 | 1.80                     | 0.45              |
| 57:BZ:449:ILE:O    | 57:BZ:451:PHE:N    | 2.49                     | 0.45              |
| 57:BZ:520:GLU:CD   | 57:BZ:592:LEU:C    | 2.85                     | 0.45              |
| 57:BZ:560:PRO:CA   | 57:BZ:562:ARG:H    | 2.27                     | 0.45              |
| 1:AA:78:A:C2       | 1:AA:109:G:C2      | 3.05                     | 0.45              |
| 1:AA:110:G:N3      | 1:AA:110:G:H2'     | 2.32                     | 0.45              |
| 1:AA:116:C:H4'     | 1:AA:127:A:H4'     | 1.99                     | 0.45              |
| 1:AA:119:A:O2'     | 1:AA:120:U:O5'     | 2.35                     | 0.45              |
| 1:AA:194:G:C2      | 1:AA:195:A:C4      | 3.05                     | 0.45              |
| 1:AA:287:C:C3'     | 1:AA:288:C:C5      | 2.98                     | 0.45              |
| 1:AA:311:A:H62     | 1:AA:329:G:C5'     | 2.28                     | 0.45              |
| 1:AA:356:G:C3'     | 1:AA:357:A:C8      | 3.00                     | 0.45              |
| 1:AA:416:C:C6      | 1:AA:416:C:C3'     | 3.00                     | 0.45              |
| 1:AA:450:G:H3'     | 1:AA:451:C:C5'     | 2.47                     | 0.45              |
| 1:AA:451:C:C4      | 1:AA:453:C:H3'     | 2.49                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:492:A:N3     | 1:AA:492:A:H2'    | 2.30                     | 0.45              |
| 1:AA:629:G:N2     | 1:AA:640:C:OP1    | 2.49                     | 0.45              |
| 1:AA:687:C:C1'    | 1:AA:788:A:O4'    | 2.65                     | 0.45              |
| 1:AA:703:U:C5     | 1:AA:704:G:C5     | 3.05                     | 0.45              |
| 1:AA:728:G:H21    | 1:AA:730:C:H5''   | 1.81                     | 0.45              |
| 1:AA:803:U:H2'    | 1:AA:804:A:O4'    | 2.17                     | 0.45              |
| 1:AA:835:A:N6     | 1:AA:836:G:C6     | 2.85                     | 0.45              |
| 1:AA:999:U:O2     | 1:AA:1157:G:N2    | 2.50                     | 0.45              |
| 1:AA:1006:C:C6    | 1:AA:1137:G:N2    | 2.85                     | 0.45              |
| 1:AA:1038:C:H5'   | 1:AA:1039:G:P     | 2.57                     | 0.45              |
| 1:AA:1137:G:H2'   | 1:AA:1138:G:O5'   | 2.17                     | 0.45              |
| 1:AA:1191:G:C6    | 1:AA:1192:G:C5    | 3.04                     | 0.45              |
| 1:AA:1304:C:H2'   | 1:AA:1305:C:C5'   | 2.47                     | 0.45              |
| 1:AA:1388:G:N3    | 1:AA:1389:G:C8    | 2.85                     | 0.45              |
| 1:AA:1429:G:C8    | 1:AA:1430:C:C5    | 3.05                     | 0.45              |
| 1:AA:1432:C:N3    | 1:AA:1433:U:C2    | 2.85                     | 0.45              |
| 1:AA:1444(A):A:C8 | 1:AA:1460:A:C2'   | 3.00                     | 0.45              |
| 1:AA:1459:G:N3    | 1:AA:1459:G:H2'   | 2.32                     | 0.45              |
| 1:AA:1560:G:C4    | 1:AA:1561:G:C8    | 3.04                     | 0.45              |
| 1:AA:1657:C:C4    | 1:AA:1658:C:C5    | 3.04                     | 0.45              |
| 1:AA:1665:A:H4'   | 10:AL:1:MET:H1    | 1.82                     | 0.45              |
| 1:AA:1746:G:OP2   | 1:AA:1746:G:C3'   | 2.60                     | 0.45              |
| 1:AA:1784:A:C1'   | 1:AA:1785:A:C8    | 3.00                     | 0.45              |
| 1:AA:1784:A:C1'   | 1:AA:1785:A:N7    | 2.80                     | 0.45              |
| 1:AA:1807:G:N2    | 1:AA:1809:A:OP2   | 2.50                     | 0.45              |
| 1:AA:1824:G:HO2'  | 4:AD:252:TRP:HZ3  | 1.61                     | 0.45              |
| 1:AA:1842:G:N1    | 1:AA:1901:A:C6    | 2.85                     | 0.45              |
| 1:AA:2040:C:N3    | 1:AA:2041:U:C5    | 2.85                     | 0.45              |
| 1:AA:2129:C:C3'   | 3:AC:6:ARG:CD     | 2.95                     | 0.45              |
| 1:AA:2150:U:N3    | 1:AA:2151:G:N7    | 2.64                     | 0.45              |
| 1:AA:2176:A:H1'   | 3:AC:215:THR:CA   | 2.47                     | 0.45              |
| 1:AA:2230:G:C6    | 1:AA:2231:C:C4    | 3.04                     | 0.45              |
| 1:AA:2325:G:C8    | 1:AA:2326:C:C5    | 3.05                     | 0.45              |
| 1:AA:2471:C:C5'   | 57:BZ:529:ARG:NH2 | 2.63                     | 0.45              |
| 1:AA:2496:C:C6    | 1:AA:2497:A:C2    | 3.05                     | 0.45              |
| 1:AA:2500:U:C5'   | 1:AA:2500:U:H6    | 2.29                     | 0.45              |
| 1:AA:2516:G:N9    | 1:AA:2569:G:N2    | 2.64                     | 0.45              |
| 1:AA:2568:C:O5'   | 1:AA:2568:C:H6    | 2.00                     | 0.45              |
| 1:AA:2606:C:H5'   | 1:AA:2606:C:C6    | 2.38                     | 0.45              |
| 1:AA:2624:G:C3'   | 1:AA:2625:G:H5''  | 2.47                     | 0.45              |
| 1:AA:2681:C:H5    | 1:AA:2727:G:N2    | 2.15                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2734:A:N6    | 1:AA:2735:G:N2     | 2.64                     | 0.45              |
| 1:AA:2790:A:H4'   | 1:AA:2791:C:C5'    | 2.40                     | 0.45              |
| 1:AA:2825:C:C2    | 1:AA:2826:A:C8     | 3.05                     | 0.45              |
| 1:AA:2839:G:C6    | 1:AA:2840:C:C4     | 3.05                     | 0.45              |
| 1:AA:2884:U:H2'   | 1:AA:2885:C:C5'    | 2.46                     | 0.45              |
| 2:AB:75:G:H21     | 21:AW:85:HIS:CE1   | 2.35                     | 0.45              |
| 2:AB:99:A:H2'     | 2:AB:100:G:O5'     | 2.16                     | 0.45              |
| 3:AC:65:PRO:HD2   | 3:AC:187:ASP:OD2   | 2.13                     | 0.45              |
| 3:AC:97:GLU:CG    | 3:AC:100:ILE:HD12  | 2.46                     | 0.45              |
| 4:AD:131:LEU:C    | 4:AD:190:TYR:CE2   | 2.94                     | 0.45              |
| 4:AD:173:VAL:O    | 4:AD:184:LYS:HA    | 2.17                     | 0.45              |
| 5:AE:49:LEU:HD21  | 5:AE:75:VAL:N      | 2.32                     | 0.45              |
| 5:AE:170:LEU:N    | 5:AE:170:LEU:CD2   | 2.67                     | 0.45              |
| 7:AG:22:ARG:CG    | 7:AG:23:PHE:N      | 2.80                     | 0.45              |
| 7:AG:68:PRO:CG    | 7:AG:72:ARG:NH1    | 2.77                     | 0.45              |
| 7:AG:95:ARG:O     | 7:AG:95:ARG:HG3    | 2.15                     | 0.45              |
| 7:AG:125:PHE:HD1  | 7:AG:131:TYR:C     | 2.24                     | 0.45              |
| 7:AG:153:ARG:N    | 7:AG:155:MET:HE1   | 2.32                     | 0.45              |
| 8:AH:19:VAL:HG12  | 8:AH:24:VAL:CG1    | 2.37                     | 0.45              |
| 8:AH:54:ARG:HB3   | 8:AH:54:ARG:HH21   | 1.80                     | 0.45              |
| 9:AK:34:LEU:HD21  | 9:AK:120:LEU:CD1   | 2.46                     | 0.45              |
| 10:AL:37:ASP:C    | 10:AL:61:VAL:HG23  | 2.41                     | 0.45              |
| 11:AM:52:GLU:O    | 11:AM:55:ARG:CB    | 2.63                     | 0.45              |
| 11:AM:96:THR:OG1  | 11:AM:102:ARG:CD   | 2.65                     | 0.45              |
| 11:AM:128:HIS:ND1 | 11:AM:128:HIS:N    | 2.63                     | 0.45              |
| 11:AM:130:PHE:O   | 11:AM:131:SER:C    | 2.59                     | 0.45              |
| 12:AN:22:LYS:NZ   | 12:AN:23:GLY:C     | 2.75                     | 0.45              |
| 12:AN:25:ASP:CA   | 12:AN:102:VAL:HG12 | 2.47                     | 0.45              |
| 12:AN:54:MET:HE1  | 12:AN:118:LEU:N    | 2.31                     | 0.45              |
| 12:AN:85:LYS:HE2  | 12:AN:88:GLY:HA3   | 1.98                     | 0.45              |
| 13:AO:17:ARG:HG3  | 13:AO:18:LEU:CD2   | 2.47                     | 0.45              |
| 13:AO:79:LEU:CG   | 13:AO:80:PHE:N     | 2.79                     | 0.45              |
| 14:AP:3:ARG:CG    | 14:AP:4:LEU:N      | 2.57                     | 0.45              |
| 14:AP:67:ARG:HD3  | 14:AP:103:GLU:HB2  | 1.99                     | 0.45              |
| 15:AQ:28:VAL:HG13 | 15:AQ:92:GLY:O     | 2.17                     | 0.45              |
| 15:AQ:38:ASN:O    | 15:AQ:39:ARG:HG2   | 2.17                     | 0.45              |
| 15:AQ:40:THR:O    | 15:AQ:42:ILE:N     | 2.50                     | 0.45              |
| 15:AQ:61:PHE:CD1  | 15:AQ:81:PRO:HD3   | 2.40                     | 0.45              |
| 16:AR:69:CYS:O    | 16:AR:72:HIS:HB2   | 2.17                     | 0.45              |
| 16:AR:84:LYS:C    | 16:AR:86:ALA:N     | 2.71                     | 0.45              |
| 17:AS:13:ARG:C    | 17:AS:14:VAL:HG23  | 2.42                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 18:AT:2:GLU:OE2   | 18:AT:2:GLU:HA     | 2.17                     | 0.45              |
| 18:AT:34:ASN:HD22 | 18:AT:34:ASN:H     | 1.64                     | 0.45              |
| 18:AT:94:ASP:OD2  | 18:AT:94:ASP:N     | 2.49                     | 0.45              |
| 21:AW:25:PRO:O    | 21:AW:85:HIS:HD2   | 2.00                     | 0.45              |
| 21:AW:34:ASN:OD1  | 21:AW:34:ASN:C     | 2.60                     | 0.45              |
| 21:AW:63:ASP:OD1  | 21:AW:65:GLN:N     | 2.50                     | 0.45              |
| 21:AW:122:ARG:CB  | 21:AW:171:ILE:HA   | 2.48                     | 0.45              |
| 21:AW:145:GLU:OE2 | 21:AW:180:VAL:HG11 | 2.17                     | 0.45              |
| 23:AY:1:MET:O     | 23:AY:2:ARG:C      | 2.60                     | 0.45              |
| 24:AZ:41:PRO:HA   | 24:AZ:44:ARG:NE    | 2.32                     | 0.45              |
| 25:Aa:41:PRO:CA   | 25:Aa:58:ARG:HD2   | 2.47                     | 0.45              |
| 26:Ab:4:HIS:CD2   | 26:Ab:4:HIS:O      | 2.69                     | 0.45              |
| 26:Ab:34:PRO:CG   | 26:Ab:40:LYS:HZ1   | 2.30                     | 0.45              |
| 28:Ad:11:LYS:CE   | 28:Ad:15:THR:HG21  | 2.46                     | 0.45              |
| 29:Ae:5:LYS:HA    | 29:Ae:59:LYS:C     | 2.42                     | 0.45              |
| 29:Ae:26:LYS:CD   | 29:Ae:45:GLY:H     | 2.29                     | 0.45              |
| 32:AJ:51:ALA:CB   | 32:AJ:72:PRO:HB3   | 2.39                     | 0.45              |
| 32:AJ:98:ARG:HH12 | 32:AJ:101:TRP:HD1  | 1.65                     | 0.45              |
| 34:BA:21:G:C2     | 34:BA:915:A:N6     | 2.84                     | 0.45              |
| 34:BA:152:A:C8    | 34:BA:152:A:C3'    | 3.00                     | 0.45              |
| 34:BA:266:G:C2'   | 34:BA:267:C:OP2    | 2.65                     | 0.45              |
| 34:BA:299:G:C2    | 34:BA:300:A:C6     | 3.05                     | 0.45              |
| 34:BA:393:A:C5    | 34:BA:394:G:N7     | 2.85                     | 0.45              |
| 34:BA:397:A:H2'   | 34:BA:399:G:OP2    | 2.17                     | 0.45              |
| 34:BA:407:G:C2    | 34:BA:436:C:O2     | 2.70                     | 0.45              |
| 34:BA:415:A:H2'   | 34:BA:416:G:O4'    | 2.16                     | 0.45              |
| 34:BA:448:A:OP2   | 34:BA:485:G:N2     | 2.50                     | 0.45              |
| 34:BA:568:G:H2'   | 34:BA:569:C:C6     | 2.52                     | 0.45              |
| 34:BA:622:A:C2    | 34:BA:623:C:O4'    | 2.70                     | 0.45              |
| 34:BA:674:G:O2'   | 34:BA:675:A:H5'    | 2.16                     | 0.45              |
| 34:BA:688:G:H2'   | 34:BA:689:C:O4'    | 2.16                     | 0.45              |
| 34:BA:689:C:C6    | 34:BA:690:G:C8     | 3.05                     | 0.45              |
| 34:BA:706:A:H2'   | 34:BA:707:C:O5'    | 2.17                     | 0.45              |
| 34:BA:729:A:N6    | 48:BS:51:HIS:NE2   | 2.64                     | 0.45              |
| 34:BA:760:G:C2    | 50:BU:104:LYS:O    | 2.70                     | 0.45              |
| 34:BA:814:A:O2'   | 34:BA:815:A:H5'    | 2.16                     | 0.45              |
| 34:BA:826:C:C5'   | 41:BL:12:ARG:NH2   | 2.77                     | 0.45              |
| 34:BA:836:G:N1    | 34:BA:837:G:C5     | 2.85                     | 0.45              |
| 34:BA:885:G:N2    | 34:BA:913:A:C2     | 2.85                     | 0.45              |
| 34:BA:942:G:C2    | 34:BA:943:U:C6     | 3.05                     | 0.45              |
| 34:BA:943:U:O5'   | 34:BA:943:U:H6     | 2.00                     | 0.45              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 34:BA:962:C:C4   | 34:BA:963:G:N7     | 2.85                     | 0.45              |
| 34:BA:988:G:N1   | 34:BA:989:C:C2     | 2.85                     | 0.45              |
| 34:BA:995:C:O2   | 47:BR:4:LYS:CE     | 2.65                     | 0.45              |
| 34:BA:1057:G:C4  | 34:BA:1058:G:C8    | 3.05                     | 0.45              |
| 34:BA:1074:G:C2' | 34:BA:1075:C:H5'   | 2.47                     | 0.45              |
| 34:BA:1102:A:C2' | 34:BA:1103:C:O5'   | 2.65                     | 0.45              |
| 34:BA:1115:C:O4' | 47:BR:61:TRP:HA    | 2.16                     | 0.45              |
| 34:BA:1117:G:C5  | 34:BA:1184:G:C4    | 3.05                     | 0.45              |
| 34:BA:1220:G:N2  | 52:BW:54:GLY:O     | 2.48                     | 0.45              |
| 34:BA:1252:A:N6  | 34:BA:1253:G:C6    | 2.85                     | 0.45              |
| 34:BA:1256:A:C6  | 34:BA:1278:U:O2'   | 2.64                     | 0.45              |
| 34:BA:1312:G:N2  | 34:BA:1326:C:O4'   | 2.50                     | 0.45              |
| 34:BA:1349:A:O2' | 34:BA:1350:A:H5'   | 2.17                     | 0.45              |
| 34:BA:1434:A:N7  | 34:BA:1435:G:C5    | 2.85                     | 0.45              |
| 35:BF:23:ARG:O   | 35:BF:24:TRP:CD1   | 2.70                     | 0.45              |
| 35:BF:28:PHE:CE1 | 35:BF:31:TYR:C     | 2.95                     | 0.45              |
| 35:BF:28:PHE:HA  | 35:BF:194:PRO:CG   | 2.48                     | 0.45              |
| 35:BF:52:GLU:CD  | 35:BF:53:ARG:N     | 2.74                     | 0.45              |
| 35:BF:106:LYS:O  | 35:BF:110:GLN:OE1  | 2.36                     | 0.45              |
| 35:BF:185:ILE:O  | 35:BF:185:ILE:HG12 | 2.17                     | 0.45              |
| 36:BG:6:HIS:CD2  | 47:BR:49:HIS:ND1   | 2.85                     | 0.45              |
| 37:BH:85:LYS:HB3 | 37:BH:85:LYS:HZ3   | 1.82                     | 0.45              |
| 38:BI:11:ILE:CG2 | 38:BI:31:LEU:HD22  | 2.48                     | 0.45              |
| 40:BK:126:ASP:O  | 40:BK:131:LYS:HG3  | 2.17                     | 0.45              |
| 40:BK:150:ALA:CA | 44:BO:59:TYR:CG    | 2.99                     | 0.45              |
| 41:BL:88:LYS:O   | 41:BL:90:GLY:N     | 2.50                     | 0.45              |
| 41:BL:110:ALA:HA | 41:BL:136:GLU:CB   | 2.40                     | 0.45              |
| 42:BM:71:SER:O   | 42:BM:74:ILE:N     | 2.50                     | 0.45              |
| 43:BN:89:ASP:O   | 43:BN:90:LEU:CG    | 2.63                     | 0.45              |
| 44:BO:26:ASN:O   | 44:BO:27:ASN:CB    | 2.65                     | 0.45              |
| 44:BO:34:ASP:HB2 | 44:BO:35:PRO:CD    | 2.47                     | 0.45              |
| 45:BP:24:VAL:CG1 | 45:BP:98:TYR:CE2   | 3.00                     | 0.45              |
| 45:BP:46:LYS:HZ3 | 45:BP:94:PRO:HG2   | 1.81                     | 0.45              |
| 45:BP:68:ALA:HB1 | 45:BP:99:HIS:CA    | 2.43                     | 0.45              |
| 49:BT:8:ARG:HD3  | 49:BT:15:PRO:CB    | 2.47                     | 0.45              |
| 50:BU:15:MET:H   | 50:BU:15:MET:CE    | 2.30                     | 0.45              |
| 50:BU:83:ASP:O   | 50:BU:84:LEU:C     | 2.59                     | 0.45              |
| 50:BU:100:LYS:C  | 50:BU:101:ARG:HD2  | 2.42                     | 0.45              |
| 51:BV:42:ARG:C   | 51:BV:43:PHE:CD1   | 2.95                     | 0.45              |
| 51:BV:56:THR:HB  | 51:BV:58:LEU:CD1   | 2.44                     | 0.45              |
| 51:BV:74:ARG:O   | 51:BV:77:GLY:HA2   | 2.17                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 52:BW:3:ARG:O     | 52:BW:5:LEU:HB3    | 2.17                     | 0.45              |
| 52:BW:21:GLU:O    | 52:BW:24:ALA:HB2   | 2.17                     | 0.45              |
| 52:BW:27:GLU:O    | 52:BW:28:LYS:HB2   | 2.17                     | 0.45              |
| 53:BX:40:ALA:O    | 53:BX:43:LEU:N     | 2.50                     | 0.45              |
| 53:BX:64:ASP:OD1  | 53:BX:81:LYS:HE3   | 2.17                     | 0.45              |
| 56:BD:33:U:H3'    | 56:BD:34:G:H5''    | 1.99                     | 0.45              |
| 56:BD:47:U:HO2'   | 56:BD:48:C:P       | 2.39                     | 0.45              |
| 56:BD:52:G:N1     | 56:BD:63:G:C6      | 2.85                     | 0.45              |
| 56:BD:67:C:N4     | 56:BD:68:C:N3      | 2.65                     | 0.45              |
| 57:BZ:6:ARG:NE    | 57:BZ:195:PRO:O    | 2.50                     | 0.45              |
| 57:BZ:99:VAL:HG12 | 57:BZ:104:GLY:C    | 2.42                     | 0.45              |
| 57:BZ:160:PHE:CD1 | 57:BZ:161:ALA:O    | 2.70                     | 0.45              |
| 57:BZ:168:LEU:N   | 57:BZ:168:LEU:HD23 | 2.31                     | 0.45              |
| 57:BZ:169:ASN:CA  | 57:BZ:171:ILE:HD13 | 2.45                     | 0.45              |
| 57:BZ:212:LEU:CA  | 57:BZ:223:ILE:HD12 | 2.47                     | 0.45              |
| 57:BZ:309:MET:CE  | 57:BZ:366:LEU:HD13 | 2.46                     | 0.45              |
| 57:BZ:320:GLY:N   | 57:BZ:321:LYS:CA   | 2.79                     | 0.45              |
| 57:BZ:496:ALA:CB  | 57:BZ:516:ALA:HB3  | 2.47                     | 0.45              |
| 57:BZ:539:THR:N   | 57:BZ:540:GLY:CA   | 2.79                     | 0.45              |
| 57:BZ:549:SER:OG  | 57:BZ:550:GLY:HA2  | 2.16                     | 0.45              |
| 1:AA:7:G:O2'      | 1:AA:8:A:C5'       | 2.64                     | 0.44              |
| 1:AA:30:G:H2'     | 1:AA:31:C:H6       | 1.82                     | 0.44              |
| 1:AA:126:A:OP1    | 28:Ad:18:PHE:N     | 2.50                     | 0.44              |
| 1:AA:140:A:H2     | 1:AA:1408:C:C2     | 2.35                     | 0.44              |
| 1:AA:182:A:H1'    | 1:AA:433:C:O2'     | 2.17                     | 0.44              |
| 1:AA:188:G:C8     | 1:AA:189:G:C8      | 3.04                     | 0.44              |
| 1:AA:270(L):U:O2  | 1:AA:270(L):U:C2'  | 2.65                     | 0.44              |
| 1:AA:285:C:N3     | 1:AA:357:A:C2      | 2.85                     | 0.44              |
| 1:AA:370:G:C2'    | 1:AA:371:A:O5'     | 2.65                     | 0.44              |
| 1:AA:403:U:O2     | 1:AA:403:U:C2'     | 2.65                     | 0.44              |
| 1:AA:462:C:H42    | 1:AA:467:G:H1      | 1.65                     | 0.44              |
| 1:AA:507:A:H5'    | 1:AA:509:C:O4'     | 2.18                     | 0.44              |
| 1:AA:573:G:C2'    | 1:AA:574:C:H5''    | 2.46                     | 0.44              |
| 1:AA:579:G:O2'    | 1:AA:2019:A:OP1    | 2.34                     | 0.44              |
| 1:AA:581:C:O3'    | 16:AR:32:PHE:CE2   | 2.70                     | 0.44              |
| 1:AA:612:G:C4'    | 1:AA:616:A:N1      | 2.80                     | 0.44              |
| 1:AA:663:G:H5'    | 11:AM:18:ARG:NE    | 2.33                     | 0.44              |
| 1:AA:687:C:O5'    | 1:AA:688:U:OP2     | 2.35                     | 0.44              |
| 1:AA:727:A:H2'    | 1:AA:728:G:C5'     | 2.43                     | 0.44              |
| 1:AA:727:A:N3     | 1:AA:727:A:C2'     | 2.68                     | 0.44              |
| 1:AA:729:G:C5     | 1:AA:730:C:N1      | 2.85                     | 0.44              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:811:U:O4    | 11:AM:23:PRO:CD   | 2.65                     | 0.44              |
| 1:AA:829:A:OP1   | 1:AA:831:G:H1'    | 2.16                     | 0.44              |
| 1:AA:974:G:H5'   | 1:AA:1187:G:O2'   | 2.17                     | 0.44              |
| 1:AA:1011:G:OP2  | 16:AR:75:ASN:OD1  | 2.35                     | 0.44              |
| 1:AA:1024:G:P    | 1:AA:1025:G:H3'   | 2.57                     | 0.44              |
| 1:AA:1042:G:N2   | 1:AA:1113:U:C2    | 2.73                     | 0.44              |
| 1:AA:1061:U:H1'  | 1:AA:1070:A:N3    | 2.31                     | 0.44              |
| 1:AA:1204:A:C5'  | 1:AA:1206:G:OP1   | 2.56                     | 0.44              |
| 1:AA:1228:G:H5'  | 1:AA:1228:G:C8    | 2.52                     | 0.44              |
| 1:AA:1343:G:C6   | 1:AA:1404:C:N3    | 2.85                     | 0.44              |
| 1:AA:1407:C:H6   | 1:AA:1407:C:OP2   | 1.97                     | 0.44              |
| 1:AA:1535:U:H3'  | 1:AA:1536:A:H8    | 1.82                     | 0.44              |
| 1:AA:1549:C:H2'  | 1:AA:1550:C:C6    | 2.49                     | 0.44              |
| 1:AA:1670:C:H2'  | 1:AA:1671:U:C5'   | 2.46                     | 0.44              |
| 1:AA:1681:G:H1'  | 1:AA:1763:G:H5'   | 1.99                     | 0.44              |
| 1:AA:1825:A:OP1  | 4:AD:247:ALA:HB2  | 2.16                     | 0.44              |
| 1:AA:1964:G:H4'  | 1:AA:1965:C:OP2   | 2.15                     | 0.44              |
| 1:AA:2028:U:H2'  | 1:AA:2029:G:N7    | 2.31                     | 0.44              |
| 1:AA:2052:G:C8   | 5:AE:150:VAL:HG23 | 2.52                     | 0.44              |
| 1:AA:2082:A:H2'  | 1:AA:2082:A:N3    | 2.31                     | 0.44              |
| 1:AA:2090:G:C6   | 1:AA:2230:G:C6    | 3.05                     | 0.44              |
| 1:AA:2129:C:O2'  | 1:AA:2130:U:O4'   | 2.25                     | 0.44              |
| 1:AA:2174:C:C2   | 3:AC:219:GLY:C    | 2.93                     | 0.44              |
| 1:AA:2208:U:C2   | 1:AA:2217:G:C6    | 3.05                     | 0.44              |
| 1:AA:2216:G:H21  | 4:AD:150:LYS:CD   | 2.30                     | 0.44              |
| 1:AA:2259:G:H4'  | 1:AA:2427:C:H2'   | 1.97                     | 0.44              |
| 1:AA:2450:A:C2   | 1:AA:2451:A:N3    | 2.85                     | 0.44              |
| 1:AA:2572:A:C5'  | 1:AA:2573:C:OP1   | 2.65                     | 0.44              |
| 1:AA:2573:C:OP1  | 1:AA:2574:G:OP1   | 2.35                     | 0.44              |
| 1:AA:2630:G:H21  | 1:AA:2892:A:H1'   | 1.81                     | 0.44              |
| 1:AA:2642:G:C2   | 1:AA:2773:C:N3    | 2.86                     | 0.44              |
| 1:AA:2648:C:C5   | 1:AA:2649:U:O4    | 2.70                     | 0.44              |
| 1:AA:2651:C:H42  | 1:AA:2670:A:N6    | 2.14                     | 0.44              |
| 1:AA:2834:G:C4   | 1:AA:2879:C:N4    | 2.85                     | 0.44              |
| 2:AB:100:G:C4    | 2:AB:101:A:C8     | 3.04                     | 0.44              |
| 3:AC:21:THR:CB   | 3:AC:228:SER:CB   | 2.72                     | 0.44              |
| 3:AC:68:LEU:HD23 | 3:AC:68:LEU:C     | 2.41                     | 0.44              |
| 4:AD:121:PRO:C   | 4:AD:135:PHE:CE2  | 2.80                     | 0.44              |
| 4:AD:226:MET:HE1 | 4:AD:237:GLU:C    | 2.42                     | 0.44              |
| 4:AD:259:THR:O   | 4:AD:260:ARG:C    | 2.60                     | 0.44              |
| 5:AE:5:LEU:HD13  | 5:AE:197:ILE:HA   | 2.00                     | 0.44              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 5:AE:105:THR:HG21  | 5:AE:199:ARG:NH2   | 2.32                     | 0.44              |
| 5:AE:119:ARG:HE    | 5:AE:119:ARG:C     | 2.25                     | 0.44              |
| 5:AE:178:GLU:HB3   | 5:AE:179:GLU:OE2   | 2.17                     | 0.44              |
| 6:AF:32:LEU:HD21   | 6:AF:105:VAL:CG1   | 2.47                     | 0.44              |
| 6:AF:36:VAL:HG11   | 6:AF:183:VAL:HG21  | 1.99                     | 0.44              |
| 6:AF:194:MET:SD    | 6:AF:197:ASP:CB    | 3.05                     | 0.44              |
| 7:AG:18:GLU:HB3    | 7:AG:19:LEU:HD12   | 1.98                     | 0.44              |
| 7:AG:27:ASN:HB3    | 7:AG:29:TRP:CZ2    | 2.52                     | 0.44              |
| 7:AG:56:ALA:O      | 7:AG:68:PRO:HD2    | 2.17                     | 0.44              |
| 7:AG:110:ALA:O     | 7:AG:111:LEU:C     | 2.59                     | 0.44              |
| 8:AH:20:ALA:HB3    | 8:AH:21:PRO:HD2    | 1.99                     | 0.44              |
| 8:AH:42:ARG:O      | 8:AH:43:VAL:HG23   | 2.16                     | 0.44              |
| 8:AH:167:GLU:C     | 8:AH:169:VAL:N     | 2.74                     | 0.44              |
| 9:AK:70:LYS:CA     | 9:AK:85:ILE:O      | 2.62                     | 0.44              |
| 9:AK:99:LEU:CD1    | 9:AK:103:VAL:HG11  | 2.46                     | 0.44              |
| 10:AL:22:ILE:HD12  | 10:AL:40:VAL:HG11  | 1.99                     | 0.44              |
| 10:AL:70:LYS:HE2   | 10:AL:104:ARG:HG2  | 1.96                     | 0.44              |
| 10:AL:78:ARG:HE    | 10:AL:78:ARG:HB3   | 1.53                     | 0.44              |
| 11:AM:58:THR:HG22  | 11:AM:59:LEU:N     | 2.32                     | 0.44              |
| 11:AM:65:ARG:HH12  | 11:AM:68:GLN:NE2   | 2.13                     | 0.44              |
| 11:AM:96:THR:O     | 11:AM:102:ARG:CD   | 2.64                     | 0.44              |
| 11:AM:113:LYS:CG   | 11:AM:114:ILE:N    | 2.80                     | 0.44              |
| 11:AM:114:ILE:HD12 | 11:AM:123:LEU:HG   | 1.97                     | 0.44              |
| 12:AN:75:THR:HG21  | 12:AN:89:ASN:O     | 2.17                     | 0.44              |
| 13:AO:113:LEU:C    | 13:AO:114:VAL:HG23 | 2.41                     | 0.44              |
| 14:AP:18:ILE:O     | 14:AP:19:LYS:C     | 2.57                     | 0.44              |
| 14:AP:20:ARG:NH2   | 14:AP:20:ARG:CB    | 2.58                     | 0.44              |
| 14:AP:40:ILE:HD12  | 14:AP:40:ILE:N     | 2.32                     | 0.44              |
| 14:AP:49:VAL:HG21  | 14:AP:80:LEU:CG    | 2.47                     | 0.44              |
| 15:AQ:8:LYS:C      | 15:AQ:11:GLU:OE1   | 2.60                     | 0.44              |
| 16:AR:32:PHE:O     | 16:AR:35:ALA:CB    | 2.59                     | 0.44              |
| 16:AR:36:ARG:O     | 16:AR:39:LEU:HB2   | 2.17                     | 0.44              |
| 16:AR:89:GLU:C     | 16:AR:90:VAL:CG2   | 2.90                     | 0.44              |
| 17:AS:23:GLU:O     | 17:AS:23:GLU:HG2   | 2.17                     | 0.44              |
| 18:AT:20:VAL:HG21  | 18:AT:47:VAL:HG21  | 1.99                     | 0.44              |
| 18:AT:72:LYS:HB3   | 18:AT:108:GLY:CA   | 2.46                     | 0.44              |
| 18:AT:86:LEU:C     | 18:AT:94:ASP:OD1   | 2.60                     | 0.44              |
| 19:AU:65:ARG:HA    | 19:AU:70:LEU:CG    | 2.46                     | 0.44              |
| 21:AW:31:ARG:HG2   | 21:AW:31:ARG:NH1   | 2.32                     | 0.44              |
| 21:AW:59:LEU:C     | 21:AW:59:LEU:CD2   | 2.89                     | 0.44              |
| 21:AW:103:ARG:O    | 21:AW:138:GLU:HB3  | 2.18                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 21:AW:122:ARG:O   | 21:AW:124:ILE:N    | 2.50                     | 0.44              |
| 21:AW:130:PRO:O   | 21:AW:131:ARG:C    | 2.60                     | 0.44              |
| 22:AX:72:ARG:O    | 22:AX:75:LEU:CD1   | 2.65                     | 0.44              |
| 23:AY:24:LYS:O    | 23:AY:25:ARG:C     | 2.60                     | 0.44              |
| 24:AZ:42:ALA:O    | 24:AZ:43:ILE:C     | 2.59                     | 0.44              |
| 25:Aa:57:GLU:H    | 25:Aa:61:ARG:HG2   | 1.82                     | 0.44              |
| 32:AJ:4:VAL:O     | 32:AJ:4:VAL:HG13   | 2.17                     | 0.44              |
| 32:AJ:106:GLU:C   | 32:AJ:109:LYS:HG3  | 2.42                     | 0.44              |
| 33:Ag:7:UNK:HA    | 33:Ag:144:UNK:CA   | 2.43                     | 0.44              |
| 33:Ag:335:UNK:CB  | 33:Ag:346:UNK:C    | 2.95                     | 0.44              |
| 34:BA:20:U:C2'    | 34:BA:20:U:O2      | 2.65                     | 0.44              |
| 34:BA:104:G:H5'   | 34:BA:172:A:N1     | 2.32                     | 0.44              |
| 34:BA:133:U:O3'   | 34:BA:134:A:C8     | 2.70                     | 0.44              |
| 34:BA:169:C:C6    | 34:BA:170:U:H5     | 2.35                     | 0.44              |
| 34:BA:194:C:O2'   | 53:BX:68:LYS:NZ    | 2.38                     | 0.44              |
| 34:BA:195:A:H1'   | 34:BA:223:U:H5'    | 1.99                     | 0.44              |
| 34:BA:245:C:N3    | 34:BA:284:G:C6     | 2.85                     | 0.44              |
| 34:BA:296:U:HO2'  | 34:BA:556:C:HO2'   | 1.55                     | 0.44              |
| 34:BA:311:C:HO2'  | 34:BA:312:C:H5'    | 1.82                     | 0.44              |
| 34:BA:323:U:C5    | 34:BA:324:G:C4     | 2.98                     | 0.44              |
| 34:BA:399:G:C6    | 34:BA:400:C:C4     | 3.05                     | 0.44              |
| 34:BA:408:A:H5'   | 37:BH:116:GLN:HE21 | 1.81                     | 0.44              |
| 34:BA:440:A:C8    | 34:BA:442:C:C5     | 3.04                     | 0.44              |
| 34:BA:544:G:C2    | 34:BA:545:C:C2     | 3.05                     | 0.44              |
| 34:BA:563:A:C2    | 34:BA:567:G:C4     | 3.05                     | 0.44              |
| 34:BA:621:A:N6    | 34:BA:622:A:N6     | 2.65                     | 0.44              |
| 34:BA:689:C:H2'   | 34:BA:689:C:O2     | 2.16                     | 0.44              |
| 34:BA:714:G:H1'   | 34:BA:777:A:C5     | 2.51                     | 0.44              |
| 34:BA:897:C:C2'   | 34:BA:898:G:O5'    | 2.65                     | 0.44              |
| 34:BA:936:C:C2'   | 34:BA:937:A:C5'    | 2.92                     | 0.44              |
| 34:BA:956:U:O2    | 34:BA:960:U:O4     | 2.34                     | 0.44              |
| 34:BA:1000:A:N6   | 34:BA:1001:G:O6    | 2.50                     | 0.44              |
| 34:BA:1048:G:O4'  | 34:BA:1215:G:C4'   | 2.63                     | 0.44              |
| 34:BA:1126:U:OP1  | 34:BA:1126:U:O4'   | 2.35                     | 0.44              |
| 34:BA:1133:G:C8   | 34:BA:1133:G:H3'   | 2.52                     | 0.44              |
| 34:BA:1145:C:O2'  | 34:BA:1146:A:P     | 2.74                     | 0.44              |
| 34:BA:1254:C:OP1  | 43:BN:45:ARG:NE    | 2.50                     | 0.44              |
| 34:BA:1329:A:HO2' | 46:BQ:70:LEU:HD13  | 1.78                     | 0.44              |
| 34:BA:1347:G:O2'  | 34:BA:1348:U:P     | 2.75                     | 0.44              |
| 34:BA:1352:C:H1'  | 34:BA:1371:G:N2    | 2.32                     | 0.44              |
| 34:BA:1433:A:O2'  | 34:BA:1434:A:H5'   | 2.17                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1449:C:C4   | 34:BA:1454:G:N1    | 2.77                     | 0.44              |
| 34:BA:1453:G:C2'  | 34:BA:1454:G:H5'   | 2.46                     | 0.44              |
| 34:BA:1477:C:H2'  | 34:BA:1478:C:O4'   | 2.17                     | 0.44              |
| 34:BA:1519:A:H8   | 34:BA:1519:A:O5'   | 1.99                     | 0.44              |
| 35:BF:83:MET:HB2  | 35:BF:234:PRO:CG   | 2.45                     | 0.44              |
| 35:BF:162:ILE:N   | 35:BF:162:ILE:CD1  | 2.80                     | 0.44              |
| 35:BF:167:PRO:O   | 35:BF:174:VAL:HG21 | 2.17                     | 0.44              |
| 36:BG:55:VAL:HG22 | 36:BG:68:VAL:CG2   | 2.47                     | 0.44              |
| 36:BG:62:ASP:O    | 36:BG:63:ASN:CG    | 2.60                     | 0.44              |
| 37:BH:107:ARG:HD2 | 37:BH:173:TRP:CZ2  | 2.52                     | 0.44              |
| 39:BJ:6:VAL:HG12  | 39:BJ:6:VAL:O      | 2.15                     | 0.44              |
| 39:BJ:50:TYR:OH   | 51:BV:74:ARG:O     | 2.26                     | 0.44              |
| 40:BK:51:GLN:NE2  | 40:BK:58:PRO:HD3   | 2.31                     | 0.44              |
| 40:BK:57:GLU:CB   | 40:BK:58:PRO:HD2   | 2.46                     | 0.44              |
| 40:BK:111:ARG:HD3 | 40:BK:122:HIS:HB3  | 1.98                     | 0.44              |
| 41:BL:26:VAL:O    | 41:BL:58:TYR:CD1   | 2.70                     | 0.44              |
| 41:BL:30:ARG:O    | 41:BL:31:PHE:C     | 2.60                     | 0.44              |
| 41:BL:36:LEU:O    | 41:BL:39:LEU:HB2   | 2.18                     | 0.44              |
| 42:BM:75:ASP:O    | 42:BM:76:ALA:C     | 2.60                     | 0.44              |
| 42:BM:99:LEU:N    | 42:BM:99:LEU:CD2   | 2.80                     | 0.44              |
| 45:BP:34:ARG:O    | 45:BP:60:LEU:HB2   | 2.17                     | 0.44              |
| 48:BS:24:SER:O    | 48:BS:28:GLN:HG2   | 2.17                     | 0.44              |
| 49:BT:19:ILE:HD11 | 49:BT:38:TYR:C     | 2.42                     | 0.44              |
| 50:BU:12:SER:H    | 50:BU:20:THR:HG1   | 1.65                     | 0.44              |
| 52:BW:7:LYS:HA    | 52:BW:8:GLY:C      | 2.41                     | 0.44              |
| 52:BW:17:GLU:OE1  | 52:BW:18:LYS:N     | 2.50                     | 0.44              |
| 53:BX:12:ALA:O    | 53:BX:15:ARG:N     | 2.51                     | 0.44              |
| 53:BX:94:ALA:O    | 53:BX:95:ALA:HB3   | 2.17                     | 0.44              |
| 54:BY:13:ILE:HG23 | 54:BY:14:TRP:N     | 2.32                     | 0.44              |
| 55:BC:37:A:N7     | 55:BC:38:A:C5      | 2.84                     | 0.44              |
| 56:BD:3:C:H2'     | 56:BD:4:C:C6       | 2.52                     | 0.44              |
| 56:BD:52:G:N1     | 56:BD:63:G:C2      | 2.84                     | 0.44              |
| 56:BE:72:C:H5''   | 56:BE:72:C:H6      | 1.82                     | 0.44              |
| 57:BZ:127:ILE:HB  | 57:BZ:164:TYR:CG   | 2.52                     | 0.44              |
| 57:BZ:234:ASN:HA  | 57:BZ:235:GLN:C    | 2.41                     | 0.44              |
| 57:BZ:243:GLU:CD  | 57:BZ:243:GLU:N    | 2.75                     | 0.44              |
| 57:BZ:305:PRO:HB3 | 57:BZ:361:ARG:NE   | 2.32                     | 0.44              |
| 1:AA:4:C:C2       | 1:AA:5:A:N7        | 2.85                     | 0.44              |
| 1:AA:21:A:O2'     | 1:AA:22:C:H5'      | 2.16                     | 0.44              |
| 1:AA:152:G:C2     | 1:AA:153:C:C2      | 3.05                     | 0.44              |
| 1:AA:197:A:C6     | 1:AA:2430:A:N7     | 2.86                     | 0.44              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:AA:228:A:N6    | 1:AA:230:U:C2    | 2.86                     | 0.44              |
| 1:AA:244:A:C2    | 1:AA:255:A:C2    | 3.05                     | 0.44              |
| 1:AA:247:G:H22   | 29:Ae:8:LYS:CG   | 2.31                     | 0.44              |
| 1:AA:270(C):C:P  | 1:AA:365:C:O2'   | 2.75                     | 0.44              |
| 1:AA:270(E):G:C2 | 1:AA:270(V):G:N2 | 2.85                     | 0.44              |
| 1:AA:297:C:H2'   | 1:AA:298:G:C8    | 2.52                     | 0.44              |
| 1:AA:308:G:N2    | 1:AA:309:G:O2'   | 2.50                     | 0.44              |
| 1:AA:322:A:O5'   | 1:AA:341:G:H5'   | 2.17                     | 0.44              |
| 1:AA:457:A:C1'   | 1:AA:459:U:N3    | 2.74                     | 0.44              |
| 1:AA:476:G:N2    | 1:AA:479:A:OP2   | 2.50                     | 0.44              |
| 1:AA:481:G:N2    | 1:AA:507:A:C4    | 2.85                     | 0.44              |
| 1:AA:514:A:O2'   | 1:AA:515:A:H5'   | 2.17                     | 0.44              |
| 1:AA:564:C:OP1   | 17:AS:80:GLN:HB3 | 2.16                     | 0.44              |
| 1:AA:612:G:N2    | 1:AA:617:G:N1    | 2.64                     | 0.44              |
| 1:AA:617:G:N7    | 1:AA:618:G:N7    | 2.64                     | 0.44              |
| 1:AA:620:G:C5'   | 1:AA:621:A:OP1   | 2.60                     | 0.44              |
| 1:AA:660:G:C6    | 1:AA:661:C:C4    | 3.05                     | 0.44              |
| 1:AA:674:G:O3'   | 6:AF:74:ARG:NH2  | 2.50                     | 0.44              |
| 1:AA:718:A:C5'   | 1:AA:719:C:C5    | 2.94                     | 0.44              |
| 1:AA:734:A:C2    | 1:AA:735:A:C1'   | 3.01                     | 0.44              |
| 1:AA:749:C:C5    | 1:AA:1618:A:N6   | 2.85                     | 0.44              |
| 1:AA:771:G:C2    | 1:AA:772:C:C5    | 3.05                     | 0.44              |
| 1:AA:955:C:N4    | 1:AA:956:G:C2    | 2.85                     | 0.44              |
| 1:AA:997:G:H5''  | 16:AR:92:ARG:CZ  | 2.44                     | 0.44              |
| 1:AA:1061:U:OP2  | 1:AA:1061:U:C6   | 2.70                     | 0.44              |
| 1:AA:1266:G:C2'  | 1:AA:1267:U:OP2  | 2.65                     | 0.44              |
| 1:AA:1269:A:N6   | 1:AA:2011:U:H3   | 2.06                     | 0.44              |
| 1:AA:1340:U:C5   | 19:AU:57:LEU:CG  | 2.98                     | 0.44              |
| 1:AA:1342:A:C5   | 1:AA:1601:G:O6   | 2.71                     | 0.44              |
| 1:AA:1388:G:N1   | 1:AA:1400:G:C2   | 2.85                     | 0.44              |
| 1:AA:1636:C:O3'  | 1:AA:1760:A:O2'  | 2.34                     | 0.44              |
| 1:AA:1754:C:C4   | 1:AA:1755:A:C5   | 3.05                     | 0.44              |
| 1:AA:1906:G:C5   | 1:AA:1929:G:N1   | 2.70                     | 0.44              |
| 1:AA:1914:C:OP2  | 1:AA:1914:C:C5   | 2.70                     | 0.44              |
| 1:AA:1926:U:O2   | 1:AA:1929:G:C2   | 2.70                     | 0.44              |
| 1:AA:1926:U:C2   | 1:AA:1928:A:OP2  | 2.71                     | 0.44              |
| 1:AA:2051:A:N3   | 1:AA:2052:G:N7   | 2.65                     | 0.44              |
| 1:AA:2089:U:C2   | 1:AA:2090:G:N7   | 2.85                     | 0.44              |
| 1:AA:2168:G:N2   | 1:AA:2170:A:H2'  | 2.32                     | 0.44              |
| 1:AA:2175:C:C2   | 3:AC:221:SER:N   | 2.51                     | 0.44              |
| 1:AA:2306:C:N4   | 7:AG:43:LEU:HB3  | 2.32                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2431:U:OP2   | 1:AA:2432:A:P      | 2.75                     | 0.44              |
| 1:AA:2484:G:C4    | 12:AN:124:LYS:HE2  | 2.52                     | 0.44              |
| 1:AA:2568:C:O3'   | 57:BZ:552:ASP:OD2  | 2.35                     | 0.44              |
| 1:AA:2666:C:H3'   | 1:AA:2667:C:C5'    | 2.47                     | 0.44              |
| 1:AA:2706:G:C2'   | 1:AA:2707:G:O5'    | 2.65                     | 0.44              |
| 1:AA:2719:G:OP1   | 15:AQ:101:PHE:CE1  | 2.71                     | 0.44              |
| 1:AA:2770:G:C2'   | 1:AA:2771:C:H5'    | 2.47                     | 0.44              |
| 1:AA:2776:A:C5    | 1:AA:2781:A:N7     | 2.85                     | 0.44              |
| 4:AD:62:TYR:C     | 4:AD:63:ARG:NH2    | 2.75                     | 0.44              |
| 4:AD:84:TYR:CD1   | 4:AD:91:ARG:HD2    | 2.52                     | 0.44              |
| 4:AD:107:ALA:O    | 4:AD:108:PRO:O     | 2.35                     | 0.44              |
| 4:AD:181:GLU:CG   | 4:AD:268:ARG:NE    | 2.79                     | 0.44              |
| 4:AD:259:THR:HG22 | 4:AD:260:ARG:H     | 1.81                     | 0.44              |
| 5:AE:9:VAL:HG13   | 15:AQ:3:ARG:HG2    | 1.99                     | 0.44              |
| 5:AE:96:PHE:HD2   | 5:AE:96:PHE:HA     | 1.63                     | 0.44              |
| 6:AF:7:TYR:HD2    | 6:AF:119:ARG:HB3   | 1.77                     | 0.44              |
| 6:AF:39:TRP:CG    | 6:AF:101:LEU:HG    | 2.52                     | 0.44              |
| 6:AF:77:ASP:O     | 6:AF:77:ASP:CG     | 2.60                     | 0.44              |
| 6:AF:176:LEU:CD1  | 6:AF:178:PRO:HD2   | 2.47                     | 0.44              |
| 7:AG:114:ILE:O    | 7:AG:115:ARG:C     | 2.60                     | 0.44              |
| 7:AG:123:ASN:HB2  | 7:AG:126:ASP:CB    | 2.45                     | 0.44              |
| 8:AH:9:ILE:CD1    | 8:AH:69:ARG:HH22   | 2.28                     | 0.44              |
| 8:AH:93:GLY:O     | 8:AH:107:VAL:HB    | 2.16                     | 0.44              |
| 9:AK:38:HIS:O     | 9:AK:42:TRP:HZ3    | 2.00                     | 0.44              |
| 9:AK:109:LYS:HE3  | 9:AK:111:PRO:HD2   | 1.99                     | 0.44              |
| 10:AL:66:LYS:HD2  | 10:AL:66:LYS:HA    | 1.83                     | 0.44              |
| 11:AM:76:LYS:CA   | 11:AM:101:VAL:HG11 | 2.37                     | 0.44              |
| 12:AN:37:LEU:H    | 12:AN:39:PRO:HD3   | 1.82                     | 0.44              |
| 14:AP:17:ARG:HA   | 14:AP:20:ARG:HG3   | 1.99                     | 0.44              |
| 14:AP:28:VAL:HA   | 14:AP:37:ALA:CB    | 2.46                     | 0.44              |
| 15:AQ:111:ARG:HA  | 15:AQ:114:LEU:CG   | 2.47                     | 0.44              |
| 16:AR:61:TRP:CD1  | 16:AR:61:TRP:N     | 2.85                     | 0.44              |
| 17:AS:1:MET:HB3   | 17:AS:15:GLU:HG2   | 1.98                     | 0.44              |
| 17:AS:93:GLU:OE2  | 17:AS:95:LEU:CD2   | 2.66                     | 0.44              |
| 18:AT:23:LEU:HG   | 26:Ab:25:LEU:HG    | 1.99                     | 0.44              |
| 19:AU:9:LEU:N     | 19:AU:9:LEU:CD1    | 2.66                     | 0.44              |
| 19:AU:12:VAL:N    | 19:AU:28:PHE:HA    | 2.32                     | 0.44              |
| 21:AW:18:LEU:CB   | 21:AW:23:LYS:O     | 2.61                     | 0.44              |
| 21:AW:108:PRO:O   | 21:AW:109:ALA:HB2  | 2.18                     | 0.44              |
| 25:Aa:29:PRO:O    | 25:Aa:31:ILE:CD1   | 2.65                     | 0.44              |
| 25:Aa:59:PHE:HA   | 25:Aa:62:ARG:NE    | 2.33                     | 0.44              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 26:Ab:47:PRO:C   | 26:Ab:58:LEU:CG   | 2.84                     | 0.44              |
| 28:Ad:19:ARG:HG2 | 28:Ad:19:ARG:HH11 | 1.82                     | 0.44              |
| 29:Ae:5:LYS:HB2  | 29:Ae:60:LEU:CA   | 2.37                     | 0.44              |
| 29:Ae:27:THR:N   | 29:Ae:44:LYS:NZ   | 2.65                     | 0.44              |
| 29:Ae:39:LYS:NZ  | 29:Ae:39:LYS:N    | 2.65                     | 0.44              |
| 30:Af:7:VAL:HG21 | 30:Af:36:GLN:HE22 | 1.76                     | 0.44              |
| 31:Al:51:LEU:CA  | 31:Al:89:ALA:O    | 2.57                     | 0.44              |
| 32:AJ:72:PRO:O   | 32:AJ:77:LEU:HB2  | 2.17                     | 0.44              |
| 33:Ag:7:UNK:CA   | 33:Ag:147:UNK:CB  | 2.95                     | 0.44              |
| 33:Ag:290:UNK:CB | 33:Ag:342:UNK:C   | 2.95                     | 0.44              |
| 34:BA:22:G:OP1   | 34:BA:561:U:O2    | 2.35                     | 0.44              |
| 34:BA:89:U:N3    | 34:BA:90:C:C4     | 2.86                     | 0.44              |
| 34:BA:110:C:H6   | 34:BA:110:C:P     | 2.40                     | 0.44              |
| 34:BA:131:C:C4   | 34:BA:232:G:N1    | 2.85                     | 0.44              |
| 34:BA:142:G:H2'  | 34:BA:142:G:N3    | 2.31                     | 0.44              |
| 34:BA:160:A:C1'  | 34:BA:344:A:H62   | 2.31                     | 0.44              |
| 34:BA:181:G:H22  | 34:BA:223:U:H4'   | 1.83                     | 0.44              |
| 34:BA:261:U:H5   | 53:BX:79:ARG:NH1  | 2.15                     | 0.44              |
| 34:BA:404:U:OP1  | 37:BH:118:ARG:NH1 | 2.51                     | 0.44              |
| 34:BA:530:G:H5'  | 34:BA:531:U:H5''  | 1.99                     | 0.44              |
| 34:BA:567:G:N2   | 34:BA:568:G:H1'   | 2.33                     | 0.44              |
| 34:BA:568:G:N3   | 34:BA:574:A:H2    | 2.16                     | 0.44              |
| 34:BA:704:A:H2'  | 34:BA:705:U:H6    | 1.79                     | 0.44              |
| 34:BA:715:A:C4'  | 34:BA:777:A:N6    | 2.81                     | 0.44              |
| 34:BA:722:A:H5'  | 34:BA:723:U:O4    | 2.16                     | 0.44              |
| 34:BA:854:G:H3'  | 34:BA:871:U:C4    | 2.48                     | 0.44              |
| 34:BA:924:C:H5'  | 34:BA:1399:C:OP1  | 2.16                     | 0.44              |
| 34:BA:991:U:N3   | 34:BA:1212:U:O2   | 2.49                     | 0.44              |
| 34:BA:1064:G:O3' | 34:BA:1065:U:O4'  | 2.35                     | 0.44              |
| 34:BA:1085:U:O4' | 34:BA:1094:G:C2   | 2.71                     | 0.44              |
| 34:BA:1152:A:P   | 43:BN:13:HIS:HE2  | 2.38                     | 0.44              |
| 34:BA:1236:A:H2' | 34:BA:1237:C:C6   | 2.53                     | 0.44              |
| 34:BA:1241:G:O2' | 34:BA:1242:C:C5'  | 2.65                     | 0.44              |
| 34:BA:1305:G:OP1 | 54:BY:2:GLY:N     | 2.50                     | 0.44              |
| 34:BA:1399:C:O2  | 34:BA:1401:G:N7   | 2.50                     | 0.44              |
| 34:BA:1436:U:O2' | 34:BA:1437:C:H5'  | 2.17                     | 0.44              |
| 35:BF:111:ARG:O  | 35:BF:114:ARG:HG3 | 2.18                     | 0.44              |
| 37:BH:29:PRO:O   | 37:BH:30:LYS:HB2  | 2.18                     | 0.44              |
| 37:BH:120:LEU:HG | 37:BH:121:VAL:H   | 1.82                     | 0.44              |
| 38:BI:41:VAL:CG2 | 38:BI:113:ALA:HA  | 2.47                     | 0.44              |
| 39:BJ:23:LYS:HA  | 39:BJ:26:ILE:HG13 | 1.98                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 39:BJ:96:PRO:N    | 51:BV:32:ARG:HG3   | 2.32                     | 0.44              |
| 40:BK:13:GLN:O    | 40:BK:14:PRO:O     | 2.35                     | 0.44              |
| 40:BK:37:ASN:OD1  | 40:BK:38:LEU:HD13  | 2.16                     | 0.44              |
| 40:BK:65:ALA:HA   | 40:BK:68:ASN:HD22  | 1.83                     | 0.44              |
| 41:BL:44:PHE:HA   | 41:BL:79:VAL:CG1   | 2.47                     | 0.44              |
| 41:BL:49:GLU:OE2  | 41:BL:60:ARG:HB3   | 2.16                     | 0.44              |
| 41:BL:112:LEU:CD1 | 41:BL:133:LEU:HD23 | 2.48                     | 0.44              |
| 42:BM:6:GLY:HA3   | 42:BM:84:ALA:N     | 2.32                     | 0.44              |
| 42:BM:36:TYR:HD2  | 42:BM:37:PHE:HE2   | 1.66                     | 0.44              |
| 42:BM:40:LEU:HB3  | 42:BM:42:ARG:CB    | 2.28                     | 0.44              |
| 43:BN:65:LEU:HD13 | 47:BR:36:PHE:HE2   | 1.80                     | 0.44              |
| 44:BO:81:ASP:OD1  | 44:BO:106:LYS:CD   | 2.64                     | 0.44              |
| 46:BQ:5:ALA:HB1   | 46:BQ:67:GLU:HG2   | 0.55                     | 0.44              |
| 48:BS:21:ASP:C    | 48:BS:23:GLY:H     | 2.25                     | 0.44              |
| 48:BS:35:ARG:NH2  | 48:BS:59:MET:HE2   | 2.31                     | 0.44              |
| 49:BT:8:ARG:NH1   | 49:BT:14:ASN:O     | 2.50                     | 0.44              |
| 49:BT:26:ARG:HD3  | 49:BT:31:LYS:HZ3   | 1.82                     | 0.44              |
| 49:BT:82:GLN:O    | 49:BT:83:GLU:C     | 2.60                     | 0.44              |
| 50:BU:29:HIS:ND1  | 50:BU:32:TYR:N     | 2.63                     | 0.44              |
| 53:BX:10:LEU:HD12 | 53:BX:11:SER:N     | 2.32                     | 0.44              |
| 55:BC:31:A:O5'    | 55:BC:31:A:H8      | 2.00                     | 0.44              |
| 56:BD:67:C:C6     | 56:BD:67:C:O5'     | 2.71                     | 0.44              |
| 56:BD:72:C:C5     | 56:BD:73:A:C2      | 3.02                     | 0.44              |
| 56:BE:74:C:O5'    | 56:BE:74:C:C6      | 2.71                     | 0.44              |
| 57:BZ:2:ILE:HG22  | 57:BZ:199:VAL:HG11 | 1.93                     | 0.44              |
| 57:BZ:167:ALA:C   | 57:BZ:169:ASN:H    | 2.25                     | 0.44              |
| 57:BZ:382:VAL:H   | 57:BZ:578:VAL:H    | 1.65                     | 0.44              |
| 57:BZ:426:LEU:C   | 57:BZ:428:ASN:N    | 2.72                     | 0.44              |
| 1:AA:28:A:C2      | 1:AA:29:U:C4'      | 3.01                     | 0.44              |
| 1:AA:120:U:O2     | 1:AA:149:A:C2      | 2.70                     | 0.44              |
| 1:AA:120:U:H1'    | 1:AA:149:A:C1'     | 2.47                     | 0.44              |
| 1:AA:145:G:C2     | 1:AA:146:G:C4      | 3.06                     | 0.44              |
| 1:AA:237:C:O2'    | 1:AA:608:A:H4'     | 2.18                     | 0.44              |
| 1:AA:270(A):A:N6  | 1:AA:270(Z):U:O5'  | 2.50                     | 0.44              |
| 1:AA:270(V):G:C4  | 1:AA:270(W):G:N7   | 2.85                     | 0.44              |
| 1:AA:304:G:H2'    | 1:AA:305:U:O4'     | 2.16                     | 0.44              |
| 1:AA:365:C:C2     | 1:AA:366:C:C5      | 3.05                     | 0.44              |
| 1:AA:423:A:H3'    | 1:AA:423:A:OP2     | 2.17                     | 0.44              |
| 1:AA:447:A:C6     | 1:AA:473:G:C1'     | 3.01                     | 0.44              |
| 1:AA:572:A:C8     | 1:AA:573:G:C5      | 3.06                     | 0.44              |
| 1:AA:584:C:OP2    | 16:AR:10:ARG:NH2   | 2.45                     | 0.44              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:AA:588:U:H1'   | 6:AF:90:PHE:CD1  | 2.52                     | 0.44              |
| 1:AA:675:A:H5''  | 6:AF:67:GLN:NE2  | 2.32                     | 0.44              |
| 1:AA:727:A:H61   | 1:AA:729:G:H1    | 1.63                     | 0.44              |
| 1:AA:754:C:H2'   | 1:AA:754:C:O2    | 2.18                     | 0.44              |
| 1:AA:763:G:C5    | 1:AA:765:G:C8    | 3.05                     | 0.44              |
| 1:AA:785:G:N3    | 1:AA:786:C:C6    | 2.85                     | 0.44              |
| 1:AA:813:U:H2'   | 1:AA:814:C:H6    | 1.82                     | 0.44              |
| 1:AA:815:C:H2'   | 1:AA:816:C:H6    | 1.82                     | 0.44              |
| 1:AA:908:C:H2'   | 1:AA:909:A:C5'   | 2.48                     | 0.44              |
| 1:AA:943:U:OP2   | 11:AM:32:THR:C   | 2.61                     | 0.44              |
| 1:AA:944:G:H2'   | 1:AA:944:G:N3    | 2.32                     | 0.44              |
| 1:AA:971:C:N4    | 1:AA:972:G:N2    | 2.66                     | 0.44              |
| 1:AA:983:A:C2    | 1:AA:984:A:N1    | 2.85                     | 0.44              |
| 1:AA:1027:A:N1   | 1:AA:1126:A:C4   | 2.85                     | 0.44              |
| 1:AA:1069:A:OP1  | 1:AA:1070:A:C6   | 2.70                     | 0.44              |
| 1:AA:1129:A:N7   | 1:AA:2570:G:O2'  | 2.30                     | 0.44              |
| 1:AA:1131:G:C2   | 1:AA:1132:A:C5   | 3.05                     | 0.44              |
| 1:AA:1292:U:H2'  | 1:AA:1293:C:H6   | 1.82                     | 0.44              |
| 1:AA:1372:U:C4   | 1:AA:1373:A:N7   | 2.85                     | 0.44              |
| 1:AA:1472:A:O2'  | 1:AA:1473:G:C8   | 2.62                     | 0.44              |
| 1:AA:1537:C:OP2  | 1:AA:1538:G:OP2  | 2.35                     | 0.44              |
| 1:AA:1661:G:C5   | 1:AA:1662:C:C5   | 3.05                     | 0.44              |
| 1:AA:1821:A:N6   | 1:AA:1822:G:C6   | 2.85                     | 0.44              |
| 1:AA:1970:A:C5   | 1:AA:1972:A:C5   | 3.05                     | 0.44              |
| 1:AA:2024:G:C6   | 1:AA:2025:C:C5   | 3.05                     | 0.44              |
| 1:AA:2046:G:C2   | 1:AA:2047:U:C4   | 3.06                     | 0.44              |
| 1:AA:2104:G:H2'  | 1:AA:2104:G:N3   | 2.32                     | 0.44              |
| 1:AA:2126:A:HO2' | 1:AA:2127:G:P    | 2.40                     | 0.44              |
| 1:AA:2150:U:C2   | 1:AA:2151:G:C8   | 3.05                     | 0.44              |
| 1:AA:2258:C:N4   | 1:AA:2426:A:O4'  | 2.50                     | 0.44              |
| 1:AA:2307:G:O2'  | 1:AA:2311:A:N7   | 2.50                     | 0.44              |
| 1:AA:2445:G:C2   | 1:AA:2446:G:C5   | 3.05                     | 0.44              |
| 1:AA:2450:A:H2   | 1:AA:2451:A:H1'  | 1.82                     | 0.44              |
| 1:AA:2524:G:C4   | 1:AA:2525:G:H1'  | 2.52                     | 0.44              |
| 1:AA:2644:G:H1   | 1:AA:2645:G:H21  | 1.64                     | 0.44              |
| 1:AA:2647:U:C2'  | 1:AA:2648:C:C6   | 2.88                     | 0.44              |
| 1:AA:2653:U:H6   | 1:AA:2653:U:H3'  | 1.83                     | 0.44              |
| 1:AA:2674:G:H5'' | 10:AL:26:LYS:HD2 | 1.99                     | 0.44              |
| 1:AA:2687:U:O2   | 1:AA:2688:U:O4'  | 2.35                     | 0.44              |
| 1:AA:2776:A:N7   | 1:AA:2781:A:N7   | 2.65                     | 0.44              |
| 1:AA:2786:U:N3   | 1:AA:2787:C:C5   | 2.86                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2820:A:OP1   | 13:AO:5:LYS:HG2    | 2.16                     | 0.44              |
| 1:AA:2820:A:OP1   | 13:AO:5:LYS:CE     | 2.66                     | 0.44              |
| 1:AA:2825:C:N4    | 1:AA:2826:A:H62    | 2.15                     | 0.44              |
| 1:AA:2875:C:O5'   | 1:AA:2875:C:H6     | 2.01                     | 0.44              |
| 2:AB:46:A:O2'     | 2:AB:47:C:H5'      | 2.16                     | 0.44              |
| 4:AD:6:PHE:N      | 4:AD:28:GLU:OE1    | 2.51                     | 0.44              |
| 4:AD:55:GLY:N     | 4:AD:218:ARG:HH11  | 2.16                     | 0.44              |
| 4:AD:55:GLY:H     | 4:AD:218:ARG:HD2   | 1.79                     | 0.44              |
| 4:AD:203:ASN:O    | 4:AD:204:ILE:C     | 2.60                     | 0.44              |
| 4:AD:208:LYS:NZ   | 4:AD:211:ARG:CZ    | 2.80                     | 0.44              |
| 5:AE:6:GLY:O      | 5:AE:26:ILE:HG22   | 2.17                     | 0.44              |
| 6:AF:31:HIS:CE1   | 11:AM:14:LYS:HE3   | 2.51                     | 0.44              |
| 6:AF:185:ASP:HA   | 6:AF:188:ARG:HG2   | 1.99                     | 0.44              |
| 7:AG:9:ARG:HD2    | 7:AG:10:LYS:HZ3    | 1.79                     | 0.44              |
| 7:AG:83:ARG:O     | 56:BE:53:G:OP1     | 2.36                     | 0.44              |
| 7:AG:139:LEU:CD1  | 7:AG:142:PRO:CB    | 2.94                     | 0.44              |
| 8:AH:4:ILE:N      | 8:AH:4:ILE:CD1     | 2.80                     | 0.44              |
| 8:AH:8:PRO:N      | 8:AH:69:ARG:NH1    | 2.63                     | 0.44              |
| 8:AH:52:VAL:HG22  | 8:AH:65:HIS:ND1    | 2.32                     | 0.44              |
| 8:AH:60:ARG:HD2   | 8:AH:61:HIS:CD2    | 2.52                     | 0.44              |
| 8:AH:97:ARG:NH2   | 8:AH:97:ARG:CB     | 2.79                     | 0.44              |
| 8:AH:105:LEU:CD1  | 8:AH:113:VAL:HG11  | 2.45                     | 0.44              |
| 8:AH:124:GLU:O    | 8:AH:131:VAL:HG22  | 2.17                     | 0.44              |
| 9:AK:23:LEU:CG    | 9:AK:63:THR:HG23   | 2.46                     | 0.44              |
| 9:AK:43:THR:O     | 9:AK:44:PRO:C      | 2.58                     | 0.44              |
| 9:AK:90:MET:HB3   | 9:AK:91:LEU:HD23   | 1.99                     | 0.44              |
| 9:AK:113:GLY:O    | 9:AK:114:ARG:C     | 2.61                     | 0.44              |
| 10:AL:7:TYR:CB    | 10:AL:18:LYS:CE    | 2.83                     | 0.44              |
| 10:AL:39:ILE:CB   | 10:AL:59:LYS:HZ1   | 2.28                     | 0.44              |
| 10:AL:77:ILE:O    | 15:AQ:75:ILE:CD1   | 2.66                     | 0.44              |
| 11:AM:35:HIS:O    | 11:AM:36:LYS:CD    | 2.65                     | 0.44              |
| 11:AM:45:LEU:CD1  | 29:Ae:3:LYS:NZ     | 2.80                     | 0.44              |
| 12:AN:68:ILE:CG2  | 12:AN:95:ALA:HB2   | 2.48                     | 0.44              |
| 12:AN:115:MET:HA  | 12:AN:118:LEU:CD1  | 2.47                     | 0.44              |
| 13:AO:98:LEU:CD2  | 13:AO:99:LYS:NZ    | 2.77                     | 0.44              |
| 15:AQ:104:ASN:C   | 15:AQ:108:ARG:HH12 | 2.24                     | 0.44              |
| 16:AR:17:ILE:HD13 | 16:AR:20:LEU:HD11  | 1.99                     | 0.44              |
| 16:AR:83:LEU:HD12 | 16:AR:83:LEU:N     | 2.17                     | 0.44              |
| 16:AR:113:ALA:O   | 16:AR:114:LYS:C    | 2.61                     | 0.44              |
| 17:AS:4:ILE:HD11  | 17:AS:43:GLU:OE1   | 2.17                     | 0.44              |
| 17:AS:12:TYR:HE1  | 17:AS:14:VAL:CB    | 2.30                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 17:AS:20:LEU:HD13 | 17:AS:95:LEU:CD1   | 2.47                     | 0.44              |
| 17:AS:31:ALA:O    | 17:AS:32:THR:C     | 2.59                     | 0.44              |
| 17:AS:48:GLY:C    | 17:AS:49:THR:OG1   | 2.60                     | 0.44              |
| 18:AT:5:ALA:HB3   | 18:AT:105:VAL:HG13 | 1.98                     | 0.44              |
| 18:AT:25:ARG:CA   | 18:AT:71:VAL:HG11  | 2.42                     | 0.44              |
| 18:AT:70:TYR:CD1  | 18:AT:71:VAL:O     | 2.71                     | 0.44              |
| 19:AU:3:THR:N     | 19:AU:5:TYR:CE2    | 2.85                     | 0.44              |
| 20:AV:24:VAL:HG23 | 20:AV:38:ILE:HD12  | 2.00                     | 0.44              |
| 20:AV:26:LYS:NZ   | 20:AV:36:ALA:HB3   | 2.32                     | 0.44              |
| 21:AW:2:GLU:OE1   | 21:AW:58:VAL:C     | 2.61                     | 0.44              |
| 21:AW:9:TYR:HB2   | 21:AW:14:LYS:HG3   | 1.98                     | 0.44              |
| 21:AW:41:LEU:O    | 21:AW:44:PHE:CB    | 2.63                     | 0.44              |
| 22:AX:5:LYS:CG    | 22:AX:6:GLY:N      | 2.56                     | 0.44              |
| 22:AX:56:ASP:OD2  | 22:AX:58:THR:OG1   | 2.24                     | 0.44              |
| 24:AZ:8:LEU:HD12  | 24:AZ:31:LEU:C     | 2.40                     | 0.44              |
| 24:AZ:40:THR:C    | 24:AZ:42:ALA:N     | 2.72                     | 0.44              |
| 24:AZ:55:ARG:NH2  | 24:AZ:55:ARG:HG3   | 2.33                     | 0.44              |
| 26:Ab:12:SER:HB3  | 26:Ab:14:ALA:CB    | 2.47                     | 0.44              |
| 29:Ae:37:SER:OG   | 29:Ae:38:GLY:N     | 2.43                     | 0.44              |
| 29:Ae:51:ALA:O    | 29:Ae:54:GLU:CD    | 2.60                     | 0.44              |
| 29:Ae:58:ILE:HD12 | 29:Ae:59:LYS:N     | 2.33                     | 0.44              |
| 32:AJ:52:ILE:HG13 | 32:AJ:76:TYR:HB2   | 1.98                     | 0.44              |
| 32:AJ:59:ILE:N    | 32:AJ:59:ILE:CD1   | 2.73                     | 0.44              |
| 32:AJ:76:TYR:HE2  | 32:AJ:80:LYS:NZ    | 2.15                     | 0.44              |
| 34:BA:19:C:N3     | 34:BA:20:U:H5      | 2.14                     | 0.44              |
| 34:BA:24:U:C4     | 34:BA:25:C:C5      | 3.05                     | 0.44              |
| 34:BA:50:A:N3     | 34:BA:360:A:N3     | 2.65                     | 0.44              |
| 34:BA:148:G:O2'   | 34:BA:149:A:H5'    | 2.17                     | 0.44              |
| 34:BA:189:U:H2'   | 50:BU:63:ARG:HH22  | 1.82                     | 0.44              |
| 34:BA:222:U:O2'   | 34:BA:223:U:H5'    | 2.18                     | 0.44              |
| 34:BA:254:G:C1'   | 50:BU:15:MET:HG2   | 2.48                     | 0.44              |
| 34:BA:278:G:C4    | 50:BU:95:TYR:CE2   | 3.04                     | 0.44              |
| 34:BA:332:G:H2'   | 34:BA:333:G:C8     | 2.39                     | 0.44              |
| 34:BA:392:G:N2    | 34:BA:393:A:H1'    | 2.32                     | 0.44              |
| 34:BA:573:A:H2'   | 34:BA:574:A:N7     | 2.31                     | 0.44              |
| 34:BA:644:G:H2'   | 34:BA:645:C:C5'    | 2.48                     | 0.44              |
| 34:BA:679:C:O2'   | 34:BA:680:C:C5'    | 2.65                     | 0.44              |
| 34:BA:696:A:C2    | 34:BA:697:U:C1'    | 3.00                     | 0.44              |
| 34:BA:723:U:O5'   | 34:BA:723:U:C6     | 2.71                     | 0.44              |
| 34:BA:739:C:H2'   | 34:BA:740:U:O5'    | 2.16                     | 0.44              |
| 34:BA:841:U:O2    | 34:BA:841:U:C2'    | 2.63                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:895:G:N2    | 34:BA:896:C:C2     | 2.85                     | 0.44              |
| 34:BA:1109:C:C6   | 34:BA:1110:A:C8    | 3.05                     | 0.44              |
| 34:BA:1129:C:H4'  | 34:BA:1130:A:C8    | 2.52                     | 0.44              |
| 34:BA:1192:C:N4   | 34:BA:1193:G:C6    | 2.85                     | 0.44              |
| 34:BA:1219:U:H2'  | 52:BW:34:TRP:HE1   | 0.99                     | 0.44              |
| 34:BA:1268:A:C2'  | 34:BA:1269:A:O5'   | 2.65                     | 0.44              |
| 34:BA:1392:G:C2'  | 34:BA:1393:U:O5'   | 2.65                     | 0.44              |
| 34:BA:1412:C:C2   | 34:BA:1413:A:C8    | 3.05                     | 0.44              |
| 34:BA:1424:C:H2'  | 34:BA:1425:U:C6    | 2.52                     | 0.44              |
| 34:BA:1480:G:C2'  | 34:BA:1481:U:C5'   | 2.95                     | 0.44              |
| 34:BA:1506:U:C5   | 34:BA:1506:U:OP1   | 2.70                     | 0.44              |
| 35:BF:14:GLY:HA3  | 35:BF:209:ARG:NH2  | 2.17                     | 0.44              |
| 35:BF:97:TRP:C    | 35:BF:99:GLY:H     | 2.25                     | 0.44              |
| 35:BF:97:TRP:HE3  | 35:BF:172:ILE:HB   | 1.80                     | 0.44              |
| 35:BF:153:ARG:O   | 35:BF:153:ARG:CZ   | 2.65                     | 0.44              |
| 35:BF:160:ASP:HB3 | 35:BF:182:ILE:CG2  | 2.35                     | 0.44              |
| 35:BF:207:ALA:O   | 35:BF:210:SER:N    | 2.50                     | 0.44              |
| 36:BG:23:TYR:CD1  | 43:BN:11:PHE:N     | 2.85                     | 0.44              |
| 36:BG:176:HIS:HB3 | 36:BG:177:THR:H    | 1.54                     | 0.44              |
| 37:BH:15:GLU:OE2  | 37:BH:63:LYS:HE3   | 2.17                     | 0.44              |
| 37:BH:130:GLY:C   | 37:BH:131:ARG:HH11 | 2.25                     | 0.44              |
| 38:BI:5:ASP:HB3   | 38:BI:6:PHE:H      | 1.61                     | 0.44              |
| 39:BJ:97:PHE:CE2  | 51:BV:62:GLU:OE2   | 2.69                     | 0.44              |
| 40:BK:14:PRO:HG3  | 40:BK:21:VAL:HG13  | 1.99                     | 0.44              |
| 40:BK:95:ARG:C    | 40:BK:97:GLN:N     | 2.75                     | 0.44              |
| 41:BL:79:VAL:HG12 | 41:BL:80:ILE:N     | 2.31                     | 0.44              |
| 42:BM:33:PHE:C    | 42:BM:35:GLU:H     | 2.25                     | 0.44              |
| 43:BN:33:GLN:O    | 43:BN:34:VAL:HB    | 2.17                     | 0.44              |
| 43:BN:63:PHE:HA   | 47:BR:59:ALA:CB    | 2.48                     | 0.44              |
| 44:BO:73:MET:HE2  | 44:BO:103:LEU:CD2  | 2.42                     | 0.44              |
| 46:BQ:70:LEU:CD1  | 46:BQ:74:VAL:CG2   | 2.96                     | 0.44              |
| 48:BS:62:GLN:CA   | 48:BS:65:ARG:HH12  | 2.30                     | 0.44              |
| 49:BT:4:ILE:HG12  | 49:BT:65:GLN:O     | 2.17                     | 0.44              |
| 51:BV:67:ALA:O    | 51:BV:68:LYS:C     | 2.61                     | 0.44              |
| 52:BW:10:PHE:O    | 52:BW:11:VAL:HG22  | 2.17                     | 0.44              |
| 57:BZ:4:LYS:C     | 57:BZ:68:TYR:CG    | 2.96                     | 0.44              |
| 57:BZ:67:ASP:CB   | 57:BZ:191:VAL:CG1  | 2.47                     | 0.44              |
| 57:BZ:109:THR:C   | 57:BZ:111:PHE:N    | 2.76                     | 0.44              |
| 57:BZ:129:LYS:C   | 57:BZ:131:ASP:N    | 2.73                     | 0.44              |
| 57:BZ:234:ASN:CA  | 57:BZ:235:GLN:HB2  | 2.48                     | 0.44              |
| 57:BZ:488:LEU:CB  | 57:BZ:525:GLY:O    | 2.65                     | 0.44              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 57:BZ:497:VAL:CB   | 57:BZ:540:GLY:HA3 | 2.48                     | 0.44              |
| 57:BZ:572:ILE:HG22 | 57:BZ:576:GLU:CB  | 2.46                     | 0.44              |
| 1:AA:2:G:O6        | 1:AA:2902:C:C5    | 2.64                     | 0.44              |
| 1:AA:18:C:N3       | 1:AA:19:C:C5      | 2.85                     | 0.44              |
| 1:AA:140:A:N3      | 1:AA:1408:C:O2'   | 2.40                     | 0.44              |
| 1:AA:144:C:H2'     | 1:AA:145:G:H5'    | 1.99                     | 0.44              |
| 1:AA:162:U:O5'     | 1:AA:162:U:C6     | 2.70                     | 0.44              |
| 1:AA:182:A:O2'     | 1:AA:183:C:C5'    | 2.64                     | 0.44              |
| 1:AA:266:G:C2      | 1:AA:267:C:H1'    | 2.53                     | 0.44              |
| 1:AA:298:G:H1      | 1:AA:338:G:C2'    | 2.31                     | 0.44              |
| 1:AA:310:A:C8      | 1:AA:312:G:C6     | 3.05                     | 0.44              |
| 1:AA:325:G:H3'     | 1:AA:325:G:C8     | 2.52                     | 0.44              |
| 1:AA:427:U:O2'     | 1:AA:428:A:O4'    | 2.35                     | 0.44              |
| 1:AA:465:G:H21     | 1:AA:683:C:C2'    | 2.27                     | 0.44              |
| 1:AA:481:G:C2'     | 1:AA:507:A:N6     | 2.81                     | 0.44              |
| 1:AA:493:G:O2'     | 1:AA:494:G:H5'    | 2.17                     | 0.44              |
| 1:AA:515:A:H5'     | 16:AR:32:PHE:CZ   | 2.50                     | 0.44              |
| 1:AA:542:C:C4      | 1:AA:552:G:N1     | 2.85                     | 0.44              |
| 1:AA:590:A:C6      | 1:AA:591:C:C4     | 3.05                     | 0.44              |
| 1:AA:600:G:H21     | 1:AA:604:G:H4'    | 1.77                     | 0.44              |
| 1:AA:702:G:C2'     | 1:AA:703:U:C5'    | 2.94                     | 0.44              |
| 1:AA:705:A:N3      | 1:AA:705:A:C2'    | 2.71                     | 0.44              |
| 1:AA:705:A:N7      | 1:AA:727:A:N7     | 2.64                     | 0.44              |
| 1:AA:783:A:C6      | 1:AA:785:G:O4'    | 2.71                     | 0.44              |
| 1:AA:813:U:C5      | 11:AM:25:SER:HB3  | 2.53                     | 0.44              |
| 1:AA:902:C:O3'     | 1:AA:903:C:C6     | 2.71                     | 0.44              |
| 1:AA:958:U:O2'     | 1:AA:959:A:O5'    | 2.33                     | 0.44              |
| 1:AA:971:C:O2      | 1:AA:972:G:H1'    | 2.17                     | 0.44              |
| 1:AA:987:G:O2'     | 1:AA:1000:A:C1'   | 2.58                     | 0.44              |
| 1:AA:1020:A:H2     | 1:AA:1140:C:C2'   | 2.30                     | 0.44              |
| 1:AA:1023:U:O2     | 1:AA:1024:G:H4'   | 2.17                     | 0.44              |
| 1:AA:1077:A:N6     | 1:AA:1088:A:HO2'  | 2.10                     | 0.44              |
| 1:AA:1080:C:C4'    | 32:AJ:128:ALA:C   | 2.89                     | 0.44              |
| 1:AA:1088:A:H2'    | 1:AA:1089:G:OP1   | 2.18                     | 0.44              |
| 1:AA:1102:C:O2'    | 1:AA:1103:A:H8    | 2.01                     | 0.44              |
| 1:AA:1144:G:C5     | 1:AA:1145:C:N4    | 2.85                     | 0.44              |
| 1:AA:1184:G:C5     | 1:AA:1185:C:C5    | 3.05                     | 0.44              |
| 1:AA:1186:G:H8     | 1:AA:1187:G:N7    | 2.12                     | 0.44              |
| 1:AA:1222:C:HO2'   | 1:AA:1223:C:H5'   | 1.79                     | 0.44              |
| 1:AA:1255:U:O2     | 1:AA:1255:U:H2'   | 2.17                     | 0.44              |
| 1:AA:1297:C:OP1    | 1:AA:2710:C:O3'   | 2.35                     | 0.44              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:1298:C:OP2  | 1:AA:1639:U:OP2   | 2.35                     | 0.44              |
| 1:AA:1316:U:H2'  | 1:AA:1317:A:C8    | 2.53                     | 0.44              |
| 1:AA:1344:G:C6   | 1:AA:1385:G:N7    | 2.86                     | 0.44              |
| 1:AA:1458:C:H4'  | 1:AA:1459:G:C4    | 2.52                     | 0.44              |
| 1:AA:1535:U:C4   | 1:AA:1536:A:C6    | 3.06                     | 0.44              |
| 1:AA:1563:G:C6   | 1:AA:1564:C:C4    | 3.05                     | 0.44              |
| 1:AA:1641:A:N6   | 1:AA:1642:G:N3    | 2.65                     | 0.44              |
| 1:AA:1652:A:OP1  | 13:AO:39:PRO:HG2  | 2.18                     | 0.44              |
| 1:AA:1761:C:H6   | 1:AA:1761:C:H3'   | 1.82                     | 0.44              |
| 1:AA:1784:A:H2'  | 1:AA:1981:A:C8    | 2.53                     | 0.44              |
| 1:AA:1814:G:OP2  | 4:AD:43:ARG:HD2   | 2.18                     | 0.44              |
| 1:AA:1869:G:C4   | 1:AA:1878:G:O6    | 2.70                     | 0.44              |
| 1:AA:2023:G:C4   | 1:AA:2024:G:N7    | 2.85                     | 0.44              |
| 1:AA:2051:A:C2   | 1:AA:2614:A:N6    | 2.85                     | 0.44              |
| 1:AA:2073:C:C3'  | 1:AA:2074:U:H5'   | 2.46                     | 0.44              |
| 1:AA:2135:A:O5'  | 1:AA:2136:C:C5    | 2.69                     | 0.44              |
| 1:AA:2177:C:O2'  | 1:AA:2178:C:H5'   | 2.17                     | 0.44              |
| 1:AA:2194:G:C3'  | 1:AA:2195:C:H5    | 2.30                     | 0.44              |
| 1:AA:2257:U:C5'  | 22:AX:11:ARG:HD3  | 2.47                     | 0.44              |
| 1:AA:2266:A:C4   | 1:AA:2272:U:C5    | 3.06                     | 0.44              |
| 1:AA:2309:A:C6   | 1:AA:2310:A:C4    | 3.06                     | 0.44              |
| 1:AA:2392:A:N6   | 1:AA:2393:A:C6    | 2.85                     | 0.44              |
| 1:AA:2414:G:N1   | 1:AA:2415:G:N7    | 2.65                     | 0.44              |
| 1:AA:2464:C:H2'  | 1:AA:2465:C:H6    | 1.82                     | 0.44              |
| 1:AA:2588:G:C6   | 1:AA:2607:G:O6    | 2.70                     | 0.44              |
| 1:AA:2799:A:C1'  | 1:AA:2802:G:H1    | 2.30                     | 0.44              |
| 1:AA:2866:U:O2   | 1:AA:2868:A:O2'   | 2.30                     | 0.44              |
| 2:AB:80:U:H2'    | 2:AB:81:G:H8      | 1.78                     | 0.44              |
| 2:AB:87:G:N1     | 2:AB:90:C:N4      | 2.66                     | 0.44              |
| 2:AB:106:G:C4    | 2:AB:107:U:C5     | 3.06                     | 0.44              |
| 3:AC:10:LEU:HD11 | 3:AC:32:LEU:HD22  | 1.99                     | 0.44              |
| 3:AC:13:LYS:CB   | 3:AC:32:LEU:HD23  | 2.48                     | 0.44              |
| 3:AC:38:ASP:O    | 3:AC:39:GLU:C     | 2.60                     | 0.44              |
| 3:AC:78:ALA:C    | 3:AC:119:VAL:HG11 | 2.42                     | 0.44              |
| 3:AC:89:ALA:CB   | 3:AC:150:GLY:O    | 2.66                     | 0.44              |
| 3:AC:117:PRO:HD2 | 3:AC:147:PHE:CG   | 2.52                     | 0.44              |
| 4:AD:246:PRO:HG2 | 4:AD:250:TRP:HD1  | 1.74                     | 0.44              |
| 4:AD:263:ARG:O   | 4:AD:266:SER:CB   | 2.63                     | 0.44              |
| 5:AE:98:PRO:HA   | 5:AE:172:VAL:HG21 | 1.95                     | 0.44              |
| 5:AE:176:ILE:CG2 | 5:AE:181:LEU:CB   | 2.95                     | 0.44              |
| 6:AF:9:ILE:HA    | 6:AF:10:PRO:HD3   | 1.76                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 6:AF:38:ARG:O     | 6:AF:41:LEU:HG     | 2.18                     | 0.44              |
| 7:AG:41:GLN:HE22  | 7:AG:155:MET:CB    | 2.31                     | 0.44              |
| 7:AG:47:LYS:HB3   | 7:AG:72:ARG:HB3    | 1.99                     | 0.44              |
| 8:AH:15:VAL:CG2   | 8:AH:16:SER:N      | 2.81                     | 0.44              |
| 8:AH:20:ALA:HB3   | 8:AH:21:PRO:CD     | 2.46                     | 0.44              |
| 8:AH:46:GLU:O     | 8:AH:47:GLU:HB2    | 2.17                     | 0.44              |
| 8:AH:54:ARG:NH1   | 8:AH:57:ASP:CB     | 2.81                     | 0.44              |
| 8:AH:89:ILE:CD1   | 8:AH:90:LYS:N      | 2.76                     | 0.44              |
| 8:AH:135:GLY:HA3  | 8:AH:141:VAL:CG2   | 2.47                     | 0.44              |
| 9:AK:91:LEU:HA    | 9:AK:95:PRO:N      | 2.32                     | 0.44              |
| 9:AK:96:GLU:O     | 9:AK:99:LEU:CG     | 2.50                     | 0.44              |
| 9:AK:103:VAL:HG23 | 9:AK:104:LYS:N     | 2.32                     | 0.44              |
| 10:AL:101:PRO:HG3 | 34:BA:346:G:C5'    | 2.48                     | 0.44              |
| 11:AM:56:SER:OG   | 29:Ae:27:THR:CB    | 2.66                     | 0.44              |
| 11:AM:76:LYS:HB2  | 11:AM:101:VAL:HG21 | 1.99                     | 0.44              |
| 11:AM:77:ARG:HA   | 11:AM:78:PRO:HD2   | 1.90                     | 0.44              |
| 11:AM:91:PHE:HE2  | 11:AM:96:THR:HG22  | 1.81                     | 0.44              |
| 12:AN:25:ASP:OD1  | 12:AN:101:ARG:NH1  | 2.50                     | 0.44              |
| 12:AN:37:LEU:HB3  | 12:AN:38:GLU:OE2   | 2.18                     | 0.44              |
| 12:AN:42:ILE:O    | 12:AN:47:ILE:HD11  | 2.18                     | 0.44              |
| 13:AO:60:LEU:HD23 | 13:AO:60:LEU:N     | 2.30                     | 0.44              |
| 14:AP:70:GLY:HA3  | 14:AP:104:GLY:HA3  | 1.99                     | 0.44              |
| 14:AP:75:GLU:O    | 14:AP:78:LEU:CD1   | 2.65                     | 0.44              |
| 14:AP:77:ALA:O    | 14:AP:79:ALA:N     | 2.50                     | 0.44              |
| 15:AQ:48:ILE:CD1  | 15:AQ:50:ILE:HD13  | 2.26                     | 0.44              |
| 15:AQ:64:ARG:NH1  | 15:AQ:78:LEU:N     | 2.65                     | 0.44              |
| 15:AQ:81:PRO:O    | 15:AQ:85:LYS:NZ    | 2.50                     | 0.44              |
| 15:AQ:85:LYS:HZ2  | 15:AQ:85:LYS:H     | 1.64                     | 0.44              |
| 16:AR:61:TRP:O    | 16:AR:65:ILE:CD1   | 2.66                     | 0.44              |
| 17:AS:28:GLU:N    | 17:AS:29:PRO:HD2   | 2.33                     | 0.44              |
| 18:AT:7:ALA:N     | 18:AT:103:ILE:CD1  | 2.80                     | 0.44              |
| 18:AT:47:VAL:O    | 18:AT:48:ALA:C     | 2.60                     | 0.44              |
| 18:AT:49:LYS:HA   | 18:AT:49:LYS:HE2   | 1.99                     | 0.44              |
| 19:AU:47:PHE:O    | 19:AU:48:LYS:C     | 2.59                     | 0.44              |
| 19:AU:63:LYS:N    | 19:AU:72:LYS:HG2   | 2.25                     | 0.44              |
| 20:AV:44:ILE:O    | 20:AV:44:ILE:CG2   | 2.63                     | 0.44              |
| 20:AV:76:CYS:N    | 20:AV:100:ALA:HB3  | 2.33                     | 0.44              |
| 21:AW:14:LYS:N    | 21:AW:14:LYS:CD    | 2.80                     | 0.44              |
| 21:AW:51:ALA:O    | 21:AW:53:ILE:N     | 2.51                     | 0.44              |
| 21:AW:70:LEU:O    | 21:AW:88:PHE:CA    | 2.64                     | 0.44              |
| 21:AW:112:ARG:HG3 | 21:AW:112:ARG:HH11 | 1.83                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 23:AY:16:LEU:HD22 | 23:AY:58:VAL:CG2   | 2.47                     | 0.44              |
| 25:Aa:7:PRO:HG2   | 25:Aa:60:GLN:HB2   | 1.98                     | 0.44              |
| 27:Ac:50:ARG:O    | 27:Ac:51:GLU:HB3   | 2.15                     | 0.44              |
| 29:Ae:5:LYS:HG2   | 29:Ae:7:HIS:CA     | 2.48                     | 0.44              |
| 29:Ae:34:TRP:CA   | 29:Ae:36:LYS:HB2   | 2.48                     | 0.44              |
| 30:Af:12:ASP:O    | 30:Af:13:LYS:HG3   | 2.18                     | 0.44              |
| 32:AJ:90:LYS:CE   | 32:AJ:90:LYS:CA    | 2.92                     | 0.44              |
| 32:AJ:104:VAL:CA  | 32:AJ:127:ILE:CD1  | 2.91                     | 0.44              |
| 34:BA:84:U:C2'    | 34:BA:85:U:O4'     | 2.61                     | 0.44              |
| 34:BA:108:G:C5    | 53:BX:15:ARG:CZ    | 3.01                     | 0.44              |
| 34:BA:132:C:C2    | 34:BA:231:G:C2     | 3.04                     | 0.44              |
| 34:BA:141:A:O4'   | 34:BA:182:U:H1'    | 2.17                     | 0.44              |
| 34:BA:152:A:C8    | 34:BA:153:C:C5     | 3.05                     | 0.44              |
| 34:BA:185:A:O2'   | 34:BA:186:C:H5'    | 2.18                     | 0.44              |
| 34:BA:210:U:H5'   | 34:BA:216:G:OP1    | 2.17                     | 0.44              |
| 34:BA:251:G:C4'   | 34:BA:252:U:OP1    | 2.65                     | 0.44              |
| 34:BA:278:G:N2    | 34:BA:279:A:H62    | 2.15                     | 0.44              |
| 34:BA:279:A:OP2   | 50:BU:95:TYR:OH    | 2.32                     | 0.44              |
| 34:BA:285:G:C6    | 34:BA:286:G:N7     | 2.86                     | 0.44              |
| 34:BA:318:G:O2'   | 34:BA:319:G:H5'    | 2.17                     | 0.44              |
| 34:BA:416:G:C2'   | 34:BA:417:C:C6     | 2.89                     | 0.44              |
| 34:BA:456:C:C2    | 34:BA:477:G:C2     | 3.05                     | 0.44              |
| 34:BA:548:G:H2'   | 34:BA:549:C:O5'    | 2.18                     | 0.44              |
| 34:BA:640:A:C5    | 34:BA:641:U:C6     | 3.04                     | 0.44              |
| 34:BA:754:C:O5'   | 48:BS:72:ARG:NH2   | 2.50                     | 0.44              |
| 34:BA:965:A:N7    | 34:BA:969:A:N3     | 2.66                     | 0.44              |
| 34:BA:1004:A:C3'  | 34:BA:1025:U:C4    | 2.89                     | 0.44              |
| 34:BA:1148:U:O2   | 34:BA:1149:C:C1'   | 2.66                     | 0.44              |
| 34:BA:1203:C:H2'  | 34:BA:1204:A:C8    | 2.51                     | 0.44              |
| 34:BA:1349:A:H2'  | 34:BA:1350:A:O4'   | 2.17                     | 0.44              |
| 34:BA:1462:G:C6   | 34:BA:1463:C:C4    | 3.05                     | 0.44              |
| 34:BA:1537:U:H2'  | 34:BA:1538:C:H6    | 1.80                     | 0.44              |
| 35:BF:87:ARG:O    | 35:BF:88:ALA:C     | 2.61                     | 0.44              |
| 35:BF:115:LEU:HA  | 35:BF:145:LEU:HD23 | 1.99                     | 0.44              |
| 35:BF:189:ASP:CB  | 35:BF:205:ASP:CG   | 2.90                     | 0.44              |
| 35:BF:199:TYR:HD2 | 35:BF:199:TYR:HA   | 1.64                     | 0.44              |
| 36:BG:70:VAL:HG12 | 36:BG:72:LYS:H     | 1.82                     | 0.44              |
| 37:BH:11:LEU:O    | 37:BH:12:CYS:C     | 2.59                     | 0.44              |
| 37:BH:30:LYS:HG2  | 37:BH:35:ARG:HG3   | 2.00                     | 0.44              |
| 37:BH:155:LEU:O   | 37:BH:158:ILE:N    | 2.51                     | 0.44              |
| 38:BI:82:VAL:HG13 | 38:BI:134:ALA:HB1  | 2.00                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 38:BI:91:LEU:CD1  | 38:BI:118:ILE:HG23 | 2.48                     | 0.44              |
| 39:BJ:2:ARG:O     | 39:BJ:67:MET:HE1   | 2.17                     | 0.44              |
| 40:BK:65:ALA:O    | 40:BK:69:VAL:CG2   | 2.63                     | 0.44              |
| 40:BK:74:GLU:CA   | 40:BK:145:ALA:HB1  | 2.46                     | 0.44              |
| 41:BL:48:TYR:CA   | 41:BL:61:VAL:HG22  | 2.47                     | 0.44              |
| 41:BL:120:THR:OG1 | 41:BL:122:ARG:NH1  | 2.45                     | 0.44              |
| 41:BL:137:VAL:CG1 | 41:BL:138:TRP:N    | 2.79                     | 0.44              |
| 42:BM:16:ARG:HG2  | 42:BM:18:PHE:HE1   | 1.72                     | 0.44              |
| 42:BM:105:ASP:OD1 | 42:BM:107:ARG:NH2  | 2.50                     | 0.44              |
| 44:BO:67:ASP:C    | 44:BO:69:ALA:N     | 2.73                     | 0.44              |
| 44:BO:78:GLN:O    | 44:BO:104:GLN:CB   | 2.59                     | 0.44              |
| 44:BO:108:ILE:HB  | 51:BV:88:LYS:OXT   | 2.17                     | 0.44              |
| 47:BR:34:TYR:OH   | 47:BR:41:ARG:CA    | 2.65                     | 0.44              |
| 48:BS:87:ILE:CG2  | 48:BS:88:ARG:N     | 2.81                     | 0.44              |
| 49:BT:8:ARG:C     | 49:BT:9:PHE:CD2    | 2.84                     | 0.44              |
| 52:BW:38:SER:OG   | 52:BW:39:THR:N     | 2.50                     | 0.44              |
| 53:BX:85:MET:HB2  | 53:BX:104:LEU:CD2  | 2.35                     | 0.44              |
| 56:BD:15:G:O2'    | 56:BD:16:U:OP1     | 2.25                     | 0.44              |
| 56:BD:27:G:N2     | 56:BD:43:C:H5      | 2.10                     | 0.44              |
| 56:BD:71:G:C2'    | 56:BD:72:C:H5'     | 2.48                     | 0.44              |
| 57:BZ:189:ALA:O   | 57:BZ:193:HIS:CD2  | 2.70                     | 0.44              |
| 57:BZ:233:PRO:CB  | 57:BZ:234:ASN:HA   | 2.47                     | 0.44              |
| 57:BZ:381:ALA:HA  | 57:BZ:578:VAL:O    | 2.18                     | 0.44              |
| 57:BZ:547:ARG:HB3 | 57:BZ:548:ALA:CA   | 2.46                     | 0.44              |
| 1:AA:126:A:OP1    | 28:Ad:17:GLY:HA3   | 2.17                     | 0.44              |
| 1:AA:172:C:C2'    | 1:AA:173:G:C8      | 2.91                     | 0.44              |
| 1:AA:271:G:H2'    | 1:AA:272:G:H8      | 1.83                     | 0.44              |
| 1:AA:280:C:O3'    | 1:AA:281:G:C3'     | 2.34                     | 0.44              |
| 1:AA:295:G:C2'    | 1:AA:296:C:H5'     | 2.47                     | 0.44              |
| 1:AA:348:G:C4     | 1:AA:349:G:N7      | 2.85                     | 0.44              |
| 1:AA:411:G:C2     | 1:AA:2407:G:N7     | 2.86                     | 0.44              |
| 1:AA:456:C:N4     | 19:AU:68:ARG:HB3   | 2.32                     | 0.44              |
| 1:AA:508:G:H4'    | 1:AA:509:C:O5'     | 2.18                     | 0.44              |
| 1:AA:533:G:H5'    | 16:AR:24:TYR:CD2   | 2.51                     | 0.44              |
| 1:AA:557:U:H6     | 1:AA:557:U:O5'     | 2.00                     | 0.44              |
| 1:AA:586:A:H5'    | 6:AF:89:VAL:CB     | 2.47                     | 0.44              |
| 1:AA:590:A:H5'    | 6:AF:93:LYS:HZ2    | 1.82                     | 0.44              |
| 1:AA:705:A:C2     | 1:AA:706:A:N9      | 2.85                     | 0.44              |
| 1:AA:730:C:OP2    | 4:AD:211:ARG:NH2   | 2.50                     | 0.44              |
| 1:AA:743:G:H2'    | 1:AA:744:G:C8      | 2.52                     | 0.44              |
| 1:AA:747:U:O2     | 1:AA:2613:U:C4     | 2.71                     | 0.44              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:AA:774:A:H5'' | 1:AA:778:G:H4'   | 2.00                     | 0.44              |
| 1:AA:830:G:O6   | 1:AA:2446:G:H1'  | 2.17                     | 0.44              |
| 1:AA:833:U:H2'  | 1:AA:834:C:O5'   | 2.18                     | 0.44              |
| 1:AA:893:C:C2'  | 1:AA:894:C:C6    | 2.86                     | 0.44              |
| 1:AA:1031:G:H5' | 1:AA:1032:A:OP2  | 2.18                     | 0.44              |
| 1:AA:1048:A:C2  | 1:AA:1113:U:C4'  | 3.00                     | 0.44              |
| 1:AA:1128:A:O4' | 1:AA:1128:A:OP2  | 2.35                     | 0.44              |
| 1:AA:1148:A:C6  | 1:AA:1149:G:C5   | 3.06                     | 0.44              |
| 1:AA:1196:C:C2  | 1:AA:1197:G:C8   | 3.05                     | 0.44              |
| 1:AA:1198:U:C2  | 1:AA:1199:U:C5   | 3.05                     | 0.44              |
| 1:AA:1260:G:N2  | 1:AA:1261:C:C2   | 2.85                     | 0.44              |
| 1:AA:1272:A:H3' | 1:AA:1646:C:N4   | 2.33                     | 0.44              |
| 1:AA:1284:A:C2  | 1:AA:1285:G:C2   | 3.05                     | 0.44              |
| 1:AA:1284:A:O2' | 1:AA:1285:G:H5'  | 2.17                     | 0.44              |
| 1:AA:1294:U:C2' | 1:AA:1295:C:H5'  | 2.48                     | 0.44              |
| 1:AA:1299:G:OP1 | 1:AA:1300:U:H5'  | 2.18                     | 0.44              |
| 1:AA:1312:U:O3' | 19:AU:63:LYS:HD2 | 2.18                     | 0.44              |
| 1:AA:1414:G:N1  | 1:AA:1415:U:C4   | 2.86                     | 0.44              |
| 1:AA:1422:G:O3' | 1:AA:1493:C:O2'  | 2.35                     | 0.44              |
| 1:AA:1435:G:C4  | 1:AA:1436:G:C8   | 3.06                     | 0.44              |
| 1:AA:1464:C:C2  | 1:AA:1465:G:C8   | 3.05                     | 0.44              |
| 1:AA:1477:A:C2  | 1:AA:1516:U:O2   | 2.70                     | 0.44              |
| 1:AA:1667:G:O6  | 1:AA:1992:G:OP2  | 2.36                     | 0.44              |
| 1:AA:1700:A:H2' | 1:AA:1701:A:O4'  | 2.16                     | 0.44              |
| 1:AA:1707:G:H2' | 1:AA:1708:C:O4'  | 2.17                     | 0.44              |
| 1:AA:1709:U:C4  | 1:AA:1710:C:N4   | 2.86                     | 0.44              |
| 1:AA:1759:A:H4' | 1:AA:2715:C:O4'  | 2.18                     | 0.44              |
| 1:AA:1778:U:H3' | 1:AA:1779:U:C5   | 2.52                     | 0.44              |
| 1:AA:1907:G:C2  | 1:AA:1908:C:C2   | 3.05                     | 0.44              |
| 1:AA:2007:C:H2' | 1:AA:2008:C:O5'  | 2.18                     | 0.44              |
| 1:AA:2026:C:H2' | 1:AA:2027:G:C5'  | 2.48                     | 0.44              |
| 1:AA:2070:G:C2  | 1:AA:2071:A:C4   | 3.06                     | 0.44              |
| 1:AA:2227:A:C4' | 4:AD:262:ARG:HD2 | 2.48                     | 0.44              |
| 1:AA:2277:G:C5  | 1:AA:2278:A:C8   | 3.05                     | 0.44              |
| 1:AA:2296:U:C4  | 14:AP:5:THR:HG23 | 2.53                     | 0.44              |
| 1:AA:2302:G:C2  | 1:AA:2303:G:N9   | 2.85                     | 0.44              |
| 1:AA:2349:G:C3' | 1:AA:2350:C:C5'  | 2.90                     | 0.44              |
| 1:AA:2427:C:H3' | 1:AA:2427:C:H6   | 1.82                     | 0.44              |
| 1:AA:2427:C:C2' | 1:AA:2428:G:OP2  | 2.66                     | 0.44              |
| 1:AA:2464:C:C2  | 1:AA:2465:C:C6   | 3.05                     | 0.44              |
| 1:AA:2466:C:OP1 | 30:Af:5:ALA:CB   | 2.65                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:2472:G:H1'   | 1:AA:2478:A:N6     | 2.32                     | 0.44              |
| 1:AA:2484:G:H2'   | 1:AA:2485:G:C5'    | 2.46                     | 0.44              |
| 1:AA:2487:G:C2'   | 1:AA:2488:A:O5'    | 2.65                     | 0.44              |
| 1:AA:2543:G:H2'   | 1:AA:2544:G:C8     | 2.53                     | 0.44              |
| 1:AA:2562:U:O2'   | 10:AL:23:ARG:NH2   | 2.51                     | 0.44              |
| 1:AA:2597:G:N9    | 4:AD:242:ARG:NH2   | 2.62                     | 0.44              |
| 1:AA:2649:U:C5    | 1:AA:2649:U:OP2    | 2.70                     | 0.44              |
| 1:AA:2734:A:C2    | 5:AE:203:LYS:HD2   | 2.52                     | 0.44              |
| 1:AA:2805:G:C2'   | 1:AA:2807:G:H4'    | 2.48                     | 0.44              |
| 1:AA:2807:G:N3    | 1:AA:2807:G:C2'    | 2.78                     | 0.44              |
| 1:AA:2816:C:C2    | 1:AA:2831:G:C2     | 3.06                     | 0.44              |
| 1:AA:2820:A:N7    | 5:AE:191:PRO:HB3   | 2.33                     | 0.44              |
| 1:AA:2833:G:N2    | 5:AE:56:PRO:HB3    | 2.32                     | 0.44              |
| 2:AB:3:C:O2'      | 2:AB:4:C:H5'       | 2.16                     | 0.44              |
| 2:AB:6:C:C4       | 2:AB:115:G:N2      | 2.86                     | 0.44              |
| 2:AB:12:C:N4      | 22:AX:74:ARG:O     | 2.51                     | 0.44              |
| 2:AB:65:C:C4      | 2:AB:108:C:C4      | 3.06                     | 0.44              |
| 2:AB:73:A:N7      | 2:AB:104:A:C4      | 2.86                     | 0.44              |
| 2:AB:111:U:O2     | 2:AB:112:G:C8      | 2.71                     | 0.44              |
| 3:AC:73:ARG:CG    | 3:AC:93:TYR:HE2    | 2.30                     | 0.44              |
| 3:AC:103:ILE:HG21 | 3:AC:108:MET:SD    | 2.58                     | 0.44              |
| 4:AD:132:PRO:HB2  | 4:AD:134:ARG:HD2   | 1.99                     | 0.44              |
| 4:AD:136:ILE:HB   | 4:AD:168:ARG:CZ    | 2.42                     | 0.44              |
| 4:AD:182:LEU:H    | 4:AD:270:ILE:HG13  | 1.83                     | 0.44              |
| 4:AD:208:LYS:HE2  | 4:AD:211:ARG:HG2   | 1.98                     | 0.44              |
| 4:AD:246:PRO:HB2  | 4:AD:250:TRP:CD1   | 2.52                     | 0.44              |
| 5:AE:95:ILE:HG22  | 5:AE:96:PHE:N      | 2.31                     | 0.44              |
| 6:AF:65:TRP:O     | 6:AF:67:GLN:N      | 2.51                     | 0.44              |
| 6:AF:95:ARG:HE    | 6:AF:96:ASP:H      | 1.65                     | 0.44              |
| 6:AF:122:LYS:HD3  | 6:AF:122:LYS:C     | 2.42                     | 0.44              |
| 7:AG:41:GLN:HE21  | 7:AG:41:GLN:HB2    | 1.54                     | 0.44              |
| 7:AG:138:GLN:HG2  | 7:AG:139:LEU:N     | 2.33                     | 0.44              |
| 8:AH:7:LEU:HD12   | 8:AH:51:ARG:HD2    | 1.98                     | 0.44              |
| 8:AH:140:LYS:O    | 8:AH:143:GLN:HB2   | 2.17                     | 0.44              |
| 9:AK:19:GLU:HG3   | 9:AK:59:LYS:HB2    | 1.99                     | 0.44              |
| 9:AK:67:LEU:CA    | 9:AK:70:LYS:HZ1    | 2.29                     | 0.44              |
| 9:AK:70:LYS:HZ3   | 9:AK:86:PRO:HB3    | 1.79                     | 0.44              |
| 9:AK:75:TYR:CD1   | 9:AK:75:TYR:N      | 2.81                     | 0.44              |
| 10:AL:72:PRO:HG3  | 10:AL:107:ARG:HH22 | 1.81                     | 0.44              |
| 10:AL:122:LEU:HA  | 15:AQ:71:GLY:CA    | 2.47                     | 0.44              |
| 11:AM:42:SER:HB3  | 11:AM:43:GLY:H     | 1.59                     | 0.44              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 11:AM:81:GLN:C     | 11:AM:86:LYS:HG2   | 2.42                     | 0.44              |
| 12:AN:125:LEU:HD23 | 12:AN:125:LEU:H    | 1.83                     | 0.44              |
| 13:AO:45:ARG:HA    | 13:AO:95:THR:HG21  | 1.99                     | 0.44              |
| 13:AO:88:ARG:NH1   | 13:AO:88:ARG:CB    | 2.63                     | 0.44              |
| 15:AQ:114:LEU:O    | 15:AQ:115:ARG:C    | 2.59                     | 0.44              |
| 16:AR:24:TYR:O     | 16:AR:29:SER:HB3   | 2.17                     | 0.44              |
| 16:AR:89:GLU:CD    | 17:AS:52:VAL:CB    | 2.89                     | 0.44              |
| 17:AS:9:GLY:O      | 17:AS:10:LYS:CB    | 2.57                     | 0.44              |
| 17:AS:18:LEU:CB    | 17:AS:66:ARG:HH22  | 2.21                     | 0.44              |
| 17:AS:48:GLY:O     | 17:AS:49:THR:HG23  | 2.17                     | 0.44              |
| 19:AU:18:TYR:CZ    | 19:AU:96:ILE:HG12  | 2.51                     | 0.44              |
| 19:AU:23:GLU:OE1   | 19:AU:24:GLY:N     | 2.50                     | 0.44              |
| 21:AW:43:GLU:HA    | 21:AW:46:LYS:NZ    | 2.31                     | 0.44              |
| 21:AW:68:PRO:HG3   | 21:AW:131:ARG:NH2  | 2.27                     | 0.44              |
| 21:AW:69:THR:HB    | 21:AW:90:VAL:HG13  | 2.00                     | 0.44              |
| 21:AW:102:LEU:O    | 21:AW:123:ASP:O    | 2.36                     | 0.44              |
| 22:AX:52:GLY:O     | 22:AX:60:PHE:CD2   | 2.71                     | 0.44              |
| 22:AX:75:LEU:HB2   | 22:AX:78:TYR:CE1   | 2.52                     | 0.44              |
| 24:AZ:2:PRO:HD2    | 24:AZ:39:ASP:HB3   | 2.00                     | 0.44              |
| 24:AZ:5:LYS:C      | 24:AZ:6:VAL:HG22   | 2.43                     | 0.44              |
| 26:Ab:33:CYS:C     | 26:Ab:35:GLU:N     | 2.74                     | 0.44              |
| 28:Ad:2:LYS:C      | 28:Ad:4:THR:N      | 2.66                     | 0.44              |
| 29:Ae:31:HIS:O     | 29:Ae:32:LEU:CD2   | 2.65                     | 0.44              |
| 31:AI:141:VAL:O    | 33:Ag:134:UNK:CB   | 2.66                     | 0.44              |
| 33:Ag:302:UNK:CB   | 57:BZ:142:ASP:OD1  | 2.65                     | 0.44              |
| 33:Ag:336:UNK:HA   | 33:Ag:345:UNK:CB   | 2.47                     | 0.44              |
| 34:BA:122:G:C2     | 34:BA:123:C:C1'    | 3.01                     | 0.44              |
| 34:BA:179:A:H2'    | 34:BA:179:A:N3     | 2.32                     | 0.44              |
| 34:BA:186(A):C:C4' | 53:BX:85:MET:HG3   | 2.47                     | 0.44              |
| 34:BA:194:C:O3'    | 53:BX:65:LYS:NZ    | 2.50                     | 0.44              |
| 34:BA:301:G:C2     | 34:BA:302:G:C4     | 3.05                     | 0.44              |
| 34:BA:421:U:C2     | 36:BG:127:ARG:CZ   | 3.01                     | 0.44              |
| 34:BA:483:C:OP2    | 34:BA:483:C:C6     | 2.71                     | 0.44              |
| 34:BA:508:C:O2'    | 34:BA:509:A:C8     | 2.60                     | 0.44              |
| 34:BA:558:G:C5'    | 34:BA:559:A:C5'    | 2.96                     | 0.44              |
| 34:BA:619:U:H1'    | 37:BH:133:VAL:HG22 | 1.99                     | 0.44              |
| 34:BA:637:G:C6     | 34:BA:638:G:N7     | 2.85                     | 0.44              |
| 34:BA:665:A:C8     | 34:BA:725:G:C2     | 3.06                     | 0.44              |
| 34:BA:692:U:C4     | 44:BO:26:ASN:ND2   | 2.84                     | 0.44              |
| 34:BA:736:C:H5''   | 51:BV:72:ARG:CZ    | 2.44                     | 0.44              |
| 34:BA:779:C:N4     | 34:BA:780:A:C2     | 2.85                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:950:U:H1'   | 34:BA:971:G:C4     | 2.53                     | 0.44              |
| 34:BA:1000:A:H2'  | 34:BA:1001:G:H5'   | 2.00                     | 0.44              |
| 34:BA:1003:G:H21  | 34:BA:1005:A:H5'   | 1.82                     | 0.44              |
| 34:BA:1084:G:N3   | 34:BA:1085:U:H5    | 2.14                     | 0.44              |
| 34:BA:1115:C:O2   | 34:BA:1186:G:N3    | 2.50                     | 0.44              |
| 34:BA:1164:G:C5   | 34:BA:1173:G:C2    | 3.05                     | 0.44              |
| 34:BA:1365:G:C2   | 34:BA:1366:C:C6    | 3.05                     | 0.44              |
| 35:BF:80:ILE:HG23 | 35:BF:212:GLN:NE2  | 2.32                     | 0.44              |
| 35:BF:80:ILE:HG13 | 35:BF:239:VAL:HG21 | 1.99                     | 0.44              |
| 35:BF:104:ASN:OD1 | 35:BF:104:ASN:C    | 2.60                     | 0.44              |
| 35:BF:119:GLU:CA  | 35:BF:142:LEU:CD1  | 2.95                     | 0.44              |
| 38:BI:153:LYS:HG2 | 38:BI:154:GLY:N    | 2.25                     | 0.44              |
| 40:BK:71:PRO:HG2  | 40:BK:96:GLN:HA    | 1.98                     | 0.44              |
| 40:BK:126:ASP:CA  | 40:BK:131:LYS:HG3  | 2.47                     | 0.44              |
| 43:BN:40:LEU:HD12 | 43:BN:69:ASN:HB3   | 1.99                     | 0.44              |
| 43:BN:56:HIS:C    | 43:BN:58:ASP:H     | 2.24                     | 0.44              |
| 44:BO:65:ALA:O    | 44:BO:68:ALA:HB3   | 2.18                     | 0.44              |
| 45:BP:78:GLN:CD   | 45:BP:78:GLN:N     | 2.76                     | 0.44              |
| 46:BQ:8:GLU:HB3   | 46:BQ:22:ILE:CG1   | 2.41                     | 0.44              |
| 46:BQ:16:ASP:OD1  | 46:BQ:41:PRO:HB3   | 2.17                     | 0.44              |
| 46:BQ:63:THR:O    | 46:BQ:64:TRP:HB2   | 2.17                     | 0.44              |
| 50:BU:61:GLU:CA   | 50:BU:71:PHE:CE2   | 2.97                     | 0.44              |
| 50:BU:65:ILE:HG23 | 50:BU:69:LYS:CD    | 2.41                     | 0.44              |
| 51:BV:51:LEU:HD13 | 51:BV:51:LEU:H     | 1.82                     | 0.44              |
| 51:BV:64:ARG:HG3  | 51:BV:64:ARG:HH11  | 1.82                     | 0.44              |
| 53:BX:25:ARG:O    | 53:BX:28:ALA:N     | 2.51                     | 0.44              |
| 53:BX:99:LEU:H    | 53:BX:99:LEU:HD23  | 1.80                     | 0.44              |
| 55:BC:11:C:O5'    | 55:BC:11:C:H6      | 2.01                     | 0.44              |
| 55:BC:26:A:C2'    | 55:BC:27:G:H5'     | 2.47                     | 0.44              |
| 56:BE:2:C:C6      | 56:BE:71:G:O6      | 2.70                     | 0.44              |
| 56:BE:18:G:N9     | 56:BE:58:A:N3      | 2.66                     | 0.44              |
| 56:BE:20:U:H5'    | 56:BE:21:A:OP2     | 2.18                     | 0.44              |
| 57:BZ:13:HIS:HD2  | 57:BZ:106:MET:CB   | 2.10                     | 0.44              |
| 57:BZ:397:GLN:CG  | 57:BZ:472:TYR:C    | 2.71                     | 0.44              |
| 57:BZ:546:MET:HG3 | 57:BZ:547:ARG:HA   | 1.99                     | 0.44              |
| 1:AA:7:G:O6       | 1:AA:2896:C:C4     | 2.71                     | 0.44              |
| 1:AA:179:G:C5     | 1:AA:180:G:C5      | 3.06                     | 0.44              |
| 1:AA:271(C):U:O4  | 1:AA:421:U:N3      | 2.50                     | 0.44              |
| 1:AA:317:G:C2     | 1:AA:318:C:C6      | 3.05                     | 0.44              |
| 1:AA:411:G:C2     | 1:AA:2407:G:C6     | 3.05                     | 0.44              |
| 1:AA:457:A:H4'    | 1:AA:459:U:O2      | 2.17                     | 0.44              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:AA:458:G:H2'   | 28:Ad:40:TRP:CD1 | 2.53                     | 0.44              |
| 1:AA:458:G:O2'   | 28:Ad:40:TRP:CZ2 | 2.67                     | 0.44              |
| 1:AA:515:A:H8    | 1:AA:515:A:H3'   | 1.82                     | 0.44              |
| 1:AA:609:A:N6    | 1:AA:609(A):G:O6 | 2.49                     | 0.44              |
| 1:AA:682:G:H2'   | 1:AA:683:C:C6    | 2.53                     | 0.44              |
| 1:AA:701:G:H5'   | 1:AA:1632:A:H1'  | 2.00                     | 0.44              |
| 1:AA:824:A:C5    | 1:AA:825:C:N4    | 2.86                     | 0.44              |
| 1:AA:877:U:C2    | 1:AA:899:A:N6    | 2.64                     | 0.44              |
| 1:AA:897:C:C3'   | 1:AA:898:C:C5    | 3.00                     | 0.44              |
| 1:AA:931:G:C8    | 1:AA:932:G:C1'   | 2.72                     | 0.44              |
| 1:AA:968:G:C6    | 1:AA:969:U:C4    | 3.06                     | 0.44              |
| 1:AA:996:A:N6    | 1:AA:1160:G:N1   | 2.65                     | 0.44              |
| 1:AA:1011:G:O2'  | 1:AA:1013:C:H4'  | 2.18                     | 0.44              |
| 1:AA:1054:A:C6   | 1:AA:1107:G:N2   | 2.85                     | 0.44              |
| 1:AA:1055:G:H4'  | 31:Al:32:LEU:C   | 2.42                     | 0.44              |
| 1:AA:1161:C:O4'  | 17:AS:8:GLY:HA3  | 2.17                     | 0.44              |
| 1:AA:1171:G:C8   | 1:AA:1173:G:H4'  | 2.52                     | 0.44              |
| 1:AA:1183:G:O2'  | 1:AA:1184:G:P    | 2.75                     | 0.44              |
| 1:AA:1314:C:C2   | 1:AA:1315:C:C6   | 3.06                     | 0.44              |
| 1:AA:1314:C:C4   | 1:AA:1315:C:N4   | 2.86                     | 0.44              |
| 1:AA:1388:G:C4   | 1:AA:1389:G:C8   | 3.05                     | 0.44              |
| 1:AA:1438:U:H3   | 1:AA:1553:A:H62  | 1.60                     | 0.44              |
| 1:AA:1615:C:O2   | 18:AT:87:PRO:HG3 | 2.17                     | 0.44              |
| 1:AA:1635:G:H8   | 1:AA:1635:G:C5'  | 2.30                     | 0.44              |
| 1:AA:1728:G:N2   | 1:AA:1730:U:O2   | 2.51                     | 0.44              |
| 1:AA:1777:U:O2'  | 1:AA:1778:U:C5'  | 2.54                     | 0.44              |
| 1:AA:1799:G:O2'  | 1:AA:1800:C:O4'  | 2.31                     | 0.44              |
| 1:AA:1809:A:H61  | 25:Aa:3:GLU:CB   | 2.31                     | 0.44              |
| 1:AA:2026:C:C2   | 1:AA:2027:G:C8   | 3.06                     | 0.44              |
| 1:AA:2033:A:H2'  | 1:AA:2034:U:O5'  | 2.18                     | 0.44              |
| 1:AA:2040:C:N4   | 1:AA:2041:U:O4   | 2.50                     | 0.44              |
| 1:AA:2046:G:C6   | 1:AA:2623:G:C6   | 3.06                     | 0.44              |
| 1:AA:2276:G:N2   | 1:AA:2277:G:C4   | 2.85                     | 0.44              |
| 1:AA:2298:A:H2'  | 1:AA:2299:G:H8   | 1.81                     | 0.44              |
| 1:AA:2358:G:N2   | 29:Ae:52:LYS:HZ1 | 2.15                     | 0.44              |
| 1:AA:2376:A:C2   | 1:AA:2377:A:N3   | 2.85                     | 0.44              |
| 1:AA:2447:G:HO2' | 1:AA:2448:A:P    | 2.33                     | 0.44              |
| 1:AA:2468:G:O2'  | 1:AA:2469:A:C5'  | 2.59                     | 0.44              |
| 1:AA:2482:G:C4   | 1:AA:2483:C:C6   | 3.06                     | 0.44              |
| 1:AA:2642:G:C2   | 1:AA:2773:C:C2   | 3.05                     | 0.44              |
| 1:AA:2674:G:C6   | 1:AA:2675:A:N6   | 2.86                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2674:G:C5'   | 10:AL:26:LYS:HD2  | 2.47                     | 0.44              |
| 1:AA:2795:G:C8    | 1:AA:2795:G:OP2   | 2.70                     | 0.44              |
| 1:AA:2832:U:O2    | 1:AA:2832:U:H2'   | 2.18                     | 0.44              |
| 1:AA:2896:C:H2'   | 1:AA:2897:U:O5'   | 2.17                     | 0.44              |
| 2:AB:21:G:C2      | 2:AB:63:G:C6      | 3.04                     | 0.44              |
| 2:AB:27:C:N4      | 2:AB:56:G:C6      | 2.74                     | 0.44              |
| 2:AB:43:C:C2      | 2:AB:45:A:C8      | 3.05                     | 0.44              |
| 3:AC:7:TYR:O      | 3:AC:8:ARG:C      | 2.59                     | 0.44              |
| 3:AC:52:ARG:HD3   | 55:BC:62:C:C4'    | 2.48                     | 0.44              |
| 3:AC:59:ARG:HD3   | 3:AC:164:ARG:HG2  | 2.00                     | 0.44              |
| 3:AC:104:LEU:HD21 | 3:AC:126:LYS:C    | 2.42                     | 0.44              |
| 4:AD:5:LYS:C      | 4:AD:6:PHE:O      | 2.59                     | 0.44              |
| 4:AD:33:LEU:C     | 4:AD:34:VAL:CG1   | 2.90                     | 0.44              |
| 4:AD:55:GLY:H     | 4:AD:218:ARG:HA   | 1.83                     | 0.44              |
| 4:AD:63:ARG:CZ    | 4:AD:63:ARG:N     | 2.79                     | 0.44              |
| 4:AD:117:VAL:CG2  | 4:AD:126:GLN:NE2  | 2.68                     | 0.44              |
| 5:AE:13:ARG:HG3   | 5:AE:22:PRO:HG3   | 1.98                     | 0.44              |
| 5:AE:23:VAL:CG2   | 5:AE:184:VAL:HG23 | 2.38                     | 0.44              |
| 5:AE:51:PHE:HE1   | 5:AE:75:VAL:H     | 1.64                     | 0.44              |
| 5:AE:179:GLU:HB2  | 5:AE:181:LEU:CG   | 2.48                     | 0.44              |
| 6:AF:31:HIS:CE1   | 11:AM:11:GLY:HA3  | 2.52                     | 0.44              |
| 6:AF:96:ASP:OD1   | 6:AF:97:TYR:N     | 2.51                     | 0.44              |
| 6:AF:175:THR:O    | 6:AF:175:THR:OG1  | 2.33                     | 0.44              |
| 7:AG:55:LYS:HG3   | 7:AG:148:MET:CG   | 2.46                     | 0.44              |
| 7:AG:78:SER:CB    | 7:AG:82:LEU:HB3   | 2.45                     | 0.44              |
| 7:AG:96:ARG:NH1   | 7:AG:96:ARG:HB2   | 2.32                     | 0.44              |
| 7:AG:135:LEU:CD2  | 7:AG:137:GLU:N    | 2.80                     | 0.44              |
| 8:AH:97:ARG:O     | 8:AH:99:VAL:HG23  | 2.18                     | 0.44              |
| 9:AK:139:GLU:CD   | 9:AK:140:VAL:N    | 2.76                     | 0.44              |
| 11:AM:36:LYS:HD3  | 11:AM:36:LYS:HA   | 1.52                     | 0.44              |
| 11:AM:85:LEU:HD23 | 11:AM:98:GLU:CD   | 2.43                     | 0.44              |
| 11:AM:122:PRO:CG  | 11:AM:138:LEU:HA  | 2.48                     | 0.44              |
| 13:AO:43:GLU:O    | 13:AO:46:GLY:N    | 2.51                     | 0.44              |
| 13:AO:57:ARG:NE   | 13:AO:62:ALA:CB   | 2.68                     | 0.44              |
| 14:AP:14:VAL:O    | 14:AP:15:ARG:C    | 2.60                     | 0.44              |
| 15:AQ:23:ARG:HH21 | 15:AQ:90:GLN:N    | 2.16                     | 0.44              |
| 17:AS:6:LYS:HG2   | 17:AS:12:TYR:CA   | 2.47                     | 0.44              |
| 18:AT:3:ALA:CB    | 18:AT:107:LEU:HB3 | 2.41                     | 0.44              |
| 18:AT:79:GLY:HA3  | 18:AT:102:HIS:CE1 | 2.52                     | 0.44              |
| 19:AU:84:ALA:N    | 19:AU:85:PRO:HD2  | 2.32                     | 0.44              |
| 20:AV:65:ALA:O    | 20:AV:66:PRO:O    | 2.35                     | 0.44              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 23:AY:55:LEU:H     | 23:AY:55:LEU:CD1   | 2.31                     | 0.44              |
| 27:Ac:22:ALA:O     | 27:Ac:23:THR:CG2   | 2.66                     | 0.44              |
| 29:Ae:16:ILE:HA    | 29:Ae:21:LYS:O     | 2.18                     | 0.44              |
| 29:Ae:19:SER:HG    | 29:Ae:21:LYS:HZ1   | 1.63                     | 0.44              |
| 29:Ae:21:LYS:HZ2   | 29:Ae:21:LYS:CB    | 2.11                     | 0.44              |
| 32:AJ:17:ALA:HB1   | 32:AJ:41:PHE:CA    | 2.47                     | 0.44              |
| 32:AJ:115:LEU:HD13 | 32:AJ:116:ASN:CG   | 2.43                     | 0.44              |
| 34:BA:8:A:H1'      | 38:BI:102:ALA:C    | 2.39                     | 0.44              |
| 34:BA:20:U:O4'     | 34:BA:572:A:C6     | 2.70                     | 0.44              |
| 34:BA:22:G:O4'     | 34:BA:885:G:C1'    | 2.65                     | 0.44              |
| 34:BA:47:C:C5      | 34:BA:365:U:O2     | 2.70                     | 0.44              |
| 34:BA:199:G:H2'    | 34:BA:200:G:C8     | 2.53                     | 0.44              |
| 34:BA:251:G:N3     | 34:BA:266:G:O6     | 2.51                     | 0.44              |
| 34:BA:280:C:O2     | 50:BU:39:SER:HB3   | 2.18                     | 0.44              |
| 34:BA:540:G:C5     | 34:BA:541:G:N7     | 2.85                     | 0.44              |
| 34:BA:563:A:O2'    | 34:BA:566:G:H2'    | 2.17                     | 0.44              |
| 34:BA:581:G:O6     | 34:BA:758:G:N7     | 2.51                     | 0.44              |
| 34:BA:677:U:C2'    | 34:BA:678:U:C5     | 2.79                     | 0.44              |
| 34:BA:761:G:H4'    | 50:BU:103:GLY:H    | 1.81                     | 0.44              |
| 34:BA:789:U:H6     | 34:BA:789:U:C3'    | 2.26                     | 0.44              |
| 34:BA:812:C:C4'    | 34:BA:813:U:C6     | 3.00                     | 0.44              |
| 34:BA:818:G:H3'    | 34:BA:820:U:OP2    | 2.18                     | 0.44              |
| 34:BA:1203:C:H6    | 34:BA:1203:C:O5'   | 2.01                     | 0.44              |
| 34:BA:1242:C:O3'   | 54:BY:10:ARG:NH1   | 2.50                     | 0.44              |
| 34:BA:1263:C:H2'   | 34:BA:1264:C:C5    | 2.50                     | 0.44              |
| 34:BA:1300:G:H2'   | 34:BA:1301:U:OP2   | 2.18                     | 0.44              |
| 34:BA:1317:C:N3    | 34:BA:1318:A:N9    | 2.63                     | 0.44              |
| 34:BA:1345:U:N3    | 34:BA:1377:A:N6    | 2.66                     | 0.44              |
| 34:BA:1347:G:N2    | 34:BA:1373:G:H2'   | 2.33                     | 0.44              |
| 34:BA:1349:A:C2'   | 34:BA:1350:A:H8    | 2.27                     | 0.44              |
| 34:BA:1401:G:O2'   | 34:BA:1402:C:H5'   | 2.17                     | 0.44              |
| 34:BA:1430:C:O2'   | 34:BA:1431:C:H5'   | 2.18                     | 0.44              |
| 34:BA:1438:G:O6    | 34:BA:1464:G:C6    | 2.71                     | 0.44              |
| 34:BA:1446:A:O2'   | 34:BA:1447:G:OP1   | 2.26                     | 0.44              |
| 35:BF:97:TRP:HZ2   | 35:BF:102:LEU:HD11 | 1.80                     | 0.44              |
| 35:BF:132:LYS:NZ   | 35:BF:132:LYS:CB   | 2.81                     | 0.44              |
| 36:BG:43:LEU:HD11  | 36:BG:55:VAL:CG1   | 2.48                     | 0.44              |
| 36:BG:130:VAL:O    | 36:BG:134:ILE:HD13 | 2.17                     | 0.44              |
| 36:BG:186:PHE:CD1  | 36:BG:187:ALA:N    | 2.85                     | 0.44              |
| 37:BH:30:LYS:HA    | 37:BH:34:GLU:HB3   | 1.98                     | 0.44              |
| 37:BH:61:LYS:HA    | 37:BH:203:VAL:HG13 | 2.00                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 37:BH:135:LEU:HB2 | 37:BH:138:TYR:HB2  | 1.99                     | 0.44              |
| 37:BH:145:GLU:C   | 37:BH:146:ILE:HG13 | 2.42                     | 0.44              |
| 37:BH:145:GLU:CB  | 37:BH:184:LYS:HG2  | 2.36                     | 0.44              |
| 38:BI:7:GLU:OE1   | 38:BI:37:ARG:NH2   | 2.50                     | 0.44              |
| 39:BJ:11:ASN:OD1  | 39:BJ:11:ASN:C     | 2.61                     | 0.44              |
| 39:BJ:21:LEU:O    | 39:BJ:24:GLU:HG3   | 2.17                     | 0.44              |
| 39:BJ:30:LEU:CB   | 39:BJ:35:ALA:HB3   | 2.44                     | 0.44              |
| 39:BJ:49:ALA:HB3  | 51:BV:79:LEU:C     | 2.43                     | 0.44              |
| 39:BJ:66:GLU:C    | 39:BJ:67:MET:HE3   | 2.42                     | 0.44              |
| 39:BJ:89:MET:CB   | 51:BV:76:LEU:HD11  | 2.40                     | 0.44              |
| 40:BK:42:ILE:HG21 | 40:BK:116:ALA:HB1  | 1.98                     | 0.44              |
| 40:BK:113:GLU:OE1 | 40:BK:118:VAL:CG1  | 2.65                     | 0.44              |
| 40:BK:129:GLU:HB3 | 40:BK:131:LYS:HG2  | 1.98                     | 0.44              |
| 40:BK:143:ARG:O   | 40:BK:144:MET:C    | 2.59                     | 0.44              |
| 41:BL:81:HIS:HD2  | 41:BL:138:TRP:C    | 2.25                     | 0.44              |
| 43:BN:30:SER:O    | 43:BN:78:ASN:HB3   | 2.18                     | 0.44              |
| 43:BN:82:ILE:HD13 | 43:BN:86:MET:HE1   | 2.00                     | 0.44              |
| 44:BO:57:THR:O    | 44:BO:58:PRO:C     | 2.58                     | 0.44              |
| 44:BO:99:GLN:O    | 44:BO:102:GLY:HA2  | 2.18                     | 0.44              |
| 44:BO:100:ALA:O   | 44:BO:102:GLY:N    | 2.50                     | 0.44              |
| 45:BP:36:VAL:O    | 45:BP:59:ARG:O     | 2.36                     | 0.44              |
| 45:BP:39:VAL:HG11 | 45:BP:41:ARG:HH22  | 1.83                     | 0.44              |
| 45:BP:41:ARG:CB   | 45:BP:41:ARG:CZ    | 2.95                     | 0.44              |
| 46:BQ:52:GLU:CA   | 46:BQ:55:ARG:NE    | 2.80                     | 0.44              |
| 46:BQ:77:ASN:O    | 46:BQ:81:LEU:CD1   | 2.65                     | 0.44              |
| 48:BS:33:THR:O    | 48:BS:37:ASN:ND2   | 2.47                     | 0.44              |
| 50:BU:5:VAL:CB    | 50:BU:59:ILE:O     | 2.66                     | 0.44              |
| 50:BU:45:HIS:CE1  | 50:BU:46:ASP:C     | 2.96                     | 0.44              |
| 51:BV:17:SER:HB2  | 51:BV:54:ARG:HH12  | 1.82                     | 0.44              |
| 51:BV:21:LYS:C    | 51:BV:55:ARG:HH12  | 2.26                     | 0.44              |
| 53:BX:17:ARG:HA   | 53:BX:20:LEU:HG    | 2.00                     | 0.44              |
| 55:BC:19:G:H5'    | 55:BC:20:U:H5      | 1.83                     | 0.44              |
| 55:BC:26:A:N6     | 55:BC:27:G:C6      | 2.85                     | 0.44              |
| 55:BC:39:U:C2'    | 55:BC:40:C:C5'     | 2.95                     | 0.44              |
| 56:BE:16:U:O3'    | 56:BE:17:C:C6      | 2.70                     | 0.44              |
| 57:BZ:1:MET:N     | 57:BZ:3:GLU:OE2    | 2.48                     | 0.44              |
| 57:BZ:18:LYS:CG   | 57:BZ:76:PRO:CG    | 2.60                     | 0.44              |
| 57:BZ:27:GLN:N    | 57:BZ:29:SER:N     | 2.61                     | 0.44              |
| 57:BZ:87:ARG:HH22 | 57:BZ:210:SER:HB2  | 1.81                     | 0.44              |
| 57:BZ:425:ASP:O   | 57:BZ:441:TYR:HA   | 2.18                     | 0.44              |
| 1:AA:13:A:N6      | 1:AA:525:U:C5      | 2.74                     | 0.44              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:76:C:C5       | 1:AA:76:C:OP2     | 2.70                     | 0.44              |
| 1:AA:118:A:O2'     | 1:AA:178:G:C5'    | 2.63                     | 0.44              |
| 1:AA:138:G:N3      | 1:AA:138:G:H2'    | 2.33                     | 0.44              |
| 1:AA:176:G:C3'     | 1:AA:177:G:H8     | 2.30                     | 0.44              |
| 1:AA:219:G:H2'     | 1:AA:220:G:H5'    | 1.99                     | 0.44              |
| 1:AA:261:G:C2'     | 1:AA:262:A:H5'    | 2.47                     | 0.44              |
| 1:AA:266:G:C5      | 1:AA:267:C:C6     | 3.06                     | 0.44              |
| 1:AA:270(M):U:O3'  | 1:AA:270(N):G:C4' | 2.66                     | 0.44              |
| 1:AA:278:A:H2'     | 1:AA:279:C:C6     | 2.52                     | 0.44              |
| 1:AA:300:A:C8      | 1:AA:300:A:H3'    | 2.53                     | 0.44              |
| 1:AA:332:A:O2'     | 1:AA:333:G:P      | 2.76                     | 0.44              |
| 1:AA:344:G:C2      | 1:AA:345:A:C6     | 3.06                     | 0.44              |
| 1:AA:366:C:H6      | 1:AA:366:C:O5'    | 2.00                     | 0.44              |
| 1:AA:463:G:O3'     | 1:AA:464:U:C5     | 2.71                     | 0.44              |
| 1:AA:565:C:O2'     | 1:AA:1253:A:C2    | 2.70                     | 0.44              |
| 1:AA:566:U:C5      | 1:AA:567:A:C5     | 3.05                     | 0.44              |
| 1:AA:610:C:H2'     | 1:AA:611:C:H6     | 1.80                     | 0.44              |
| 1:AA:649:G:C2      | 1:AA:650:C:H1'    | 2.52                     | 0.44              |
| 1:AA:663:G:OP1     | 11:AM:18:ARG:O    | 2.35                     | 0.44              |
| 1:AA:687:C:H2'     | 1:AA:688:U:C6     | 2.52                     | 0.44              |
| 1:AA:751:A:H62     | 1:AA:789:A:H62    | 1.66                     | 0.44              |
| 1:AA:850:C:O2'     | 24:AZ:22:ALA:HB2  | 2.18                     | 0.44              |
| 1:AA:859:G:C8      | 1:AA:859:G:C3'    | 2.93                     | 0.44              |
| 1:AA:943:U:C2'     | 1:AA:944:G:OP1    | 2.65                     | 0.44              |
| 1:AA:969:U:C2'     | 1:AA:970:C:C5'    | 2.94                     | 0.44              |
| 1:AA:1022:G:C6     | 1:AA:1139:G:C6    | 3.05                     | 0.44              |
| 1:AA:1081:U:C6     | 1:AA:1081:U:O5'   | 2.71                     | 0.44              |
| 1:AA:1178:C:C2     | 1:AA:1179:C:C4    | 3.05                     | 0.44              |
| 1:AA:1267:U:C4     | 1:AA:2012:G:N2    | 2.86                     | 0.44              |
| 1:AA:1444(A):A:H2' | 1:AA:1460:A:O2'   | 2.17                     | 0.44              |
| 1:AA:1449:A:C4     | 1:AA:1529:A:C2    | 3.06                     | 0.44              |
| 1:AA:1487:G:HO2'   | 1:AA:1488:G:H5'   | 1.77                     | 0.44              |
| 1:AA:1518:C:N3     | 1:AA:1519:G:C1'   | 2.81                     | 0.44              |
| 1:AA:1518:C:C4     | 1:AA:1519:G:C8    | 3.05                     | 0.44              |
| 1:AA:1532:C:H3'    | 1:AA:1532:C:P     | 2.57                     | 0.44              |
| 1:AA:1569:A:H4'    | 4:AD:39:LYS:HE2   | 2.00                     | 0.44              |
| 1:AA:1596:A:C6     | 1:AA:1597:A:C5    | 3.05                     | 0.44              |
| 1:AA:1759:A:H8     | 1:AA:1759:A:O5'   | 1.99                     | 0.44              |
| 1:AA:1791:A:P      | 4:AD:213:ARG:HD3  | 2.58                     | 0.44              |
| 1:AA:1799:G:C8     | 4:AD:183:ARG:NH2  | 2.80                     | 0.44              |
| 1:AA:1827:C:C5'    | 1:AA:1971:A:H4'   | 2.48                     | 0.44              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:1916:A:N1   | 34:BA:1409:C:C4'  | 2.72                     | 0.44              |
| 1:AA:2076:U:C5'  | 1:AA:2077:A:OP2   | 2.65                     | 0.44              |
| 1:AA:2092:U:P    | 1:AA:2199:A:H1'   | 2.57                     | 0.44              |
| 1:AA:2175:C:H5'  | 3:AC:7:TYR:CE1    | 2.52                     | 0.44              |
| 1:AA:2199:A:C2   | 1:AA:2205:C:N1    | 2.86                     | 0.44              |
| 1:AA:2210:G:C6   | 4:AD:70:TRP:CE2   | 3.05                     | 0.44              |
| 1:AA:2230:G:H1'  | 25:Aa:58:ARG:CZ   | 2.47                     | 0.44              |
| 1:AA:2232:U:H2'  | 1:AA:2233:U:H5'   | 1.99                     | 0.44              |
| 1:AA:2278:A:C5   | 22:AX:14:ARG:HB3  | 2.51                     | 0.44              |
| 1:AA:2307:G:O2'  | 1:AA:2311:A:N6    | 2.50                     | 0.44              |
| 1:AA:2397:G:O2'  | 1:AA:2398:U:H5'   | 2.18                     | 0.44              |
| 1:AA:2466:C:O2'  | 1:AA:2467:C:H5'   | 2.17                     | 0.44              |
| 1:AA:2521:C:C2   | 1:AA:2522:U:H6    | 2.31                     | 0.44              |
| 1:AA:2564:A:C2   | 1:AA:2647:U:C4'   | 2.98                     | 0.44              |
| 1:AA:2603:G:OP2  | 22:AX:1:MET:CB    | 2.61                     | 0.44              |
| 1:AA:2657:A:H3'  | 1:AA:2657:A:P     | 2.58                     | 0.44              |
| 1:AA:2689:U:H5'  | 1:AA:2690:C:H5'   | 1.98                     | 0.44              |
| 1:AA:2737:G:C6   | 1:AA:2738:A:N7    | 2.86                     | 0.44              |
| 1:AA:2803:C:N3   | 1:AA:2804:C:N3    | 2.65                     | 0.44              |
| 1:AA:2839:G:H2'  | 1:AA:2840:C:O4'   | 2.17                     | 0.44              |
| 1:AA:2880:C:N3   | 1:AA:2881:C:C5    | 2.86                     | 0.44              |
| 2:AB:7:G:HO2'    | 2:AB:8:U:P        | 2.40                     | 0.44              |
| 2:AB:9:G:N3      | 2:AB:9:G:C2'      | 2.78                     | 0.44              |
| 2:AB:24:G:H21    | 2:AB:27:C:H42     | 1.63                     | 0.44              |
| 2:AB:93:C:H2'    | 2:AB:94:C:C6      | 2.47                     | 0.44              |
| 3:AC:28:LEU:O    | 3:AC:32:LEU:CG    | 2.66                     | 0.44              |
| 3:AC:62:VAL:CB   | 3:AC:192:PHE:HA   | 2.42                     | 0.44              |
| 3:AC:108:MET:CE  | 3:AC:131:LEU:HA   | 2.44                     | 0.44              |
| 4:AD:95:LEU:C    | 4:AD:95:LEU:CD1   | 2.77                     | 0.44              |
| 4:AD:161:THR:N   | 4:AD:196:VAL:HG21 | 2.32                     | 0.44              |
| 4:AD:219:PRO:HG2 | 4:AD:220:HIS:H    | 1.83                     | 0.44              |
| 5:AE:66:HIS:ND1  | 5:AE:67:PHE:CA    | 2.81                     | 0.44              |
| 5:AE:125:GLY:C   | 5:AE:135:HIS:O    | 2.60                     | 0.44              |
| 5:AE:129:HIS:CD2 | 5:AE:129:HIS:N    | 2.78                     | 0.44              |
| 5:AE:148:GLY:C   | 5:AE:149:ARG:CG   | 2.90                     | 0.44              |
| 7:AG:9:ARG:O     | 7:AG:13:GLU:CD    | 2.61                     | 0.44              |
| 7:AG:27:ASN:OD1  | 7:AG:27:ASN:O     | 2.36                     | 0.44              |
| 7:AG:33:ARG:HH22 | 7:AG:34:LEU:CA    | 2.31                     | 0.44              |
| 7:AG:56:ALA:HA   | 7:AG:59:GLU:CG    | 2.48                     | 0.44              |
| 7:AG:131:TYR:CD2 | 7:AG:158:ALA:CB   | 3.01                     | 0.44              |
| 8:AH:119:GLU:O   | 8:AH:120:GLY:C    | 2.61                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AH:164:TYR:CD2  | 8:AH:167:GLU:HG2   | 2.53                     | 0.44              |
| 9:AK:91:LEU:HD23  | 9:AK:98:VAL:CG2    | 2.40                     | 0.44              |
| 9:AK:107:LEU:CB   | 9:AK:117:PHE:CZ    | 2.98                     | 0.44              |
| 10:AL:3:GLN:CD    | 10:AL:3:GLN:N      | 2.76                     | 0.44              |
| 10:AL:9:GLU:HB2   | 10:AL:82:ASN:CB    | 2.27                     | 0.44              |
| 10:AL:25:LEU:HB2  | 10:AL:39:ILE:HA    | 2.00                     | 0.44              |
| 10:AL:31:LYS:CB   | 10:AL:32:TYR:CE2   | 3.01                     | 0.44              |
| 10:AL:36:GLY:N    | 10:AL:61:VAL:CG1   | 2.81                     | 0.44              |
| 10:AL:59:LYS:HA   | 10:AL:86:ILE:CG1   | 2.48                     | 0.44              |
| 10:AL:115:VAL:CG1 | 34:BA:345:C:C2'    | 2.82                     | 0.44              |
| 11:AM:99:LEU:CD1  | 11:AM:101:VAL:HG22 | 2.44                     | 0.44              |
| 11:AM:102:ARG:O   | 11:AM:108:LYS:HB2  | 2.17                     | 0.44              |
| 12:AN:48:GLU:O    | 12:AN:49:ALA:C     | 2.57                     | 0.44              |
| 12:AN:75:THR:HG22 | 12:AN:77:LYS:CA    | 2.47                     | 0.44              |
| 13:AO:72:ASP:C    | 13:AO:76:VAL:HG23  | 2.42                     | 0.44              |
| 14:AP:9:ARG:HD3   | 14:AP:9:ARG:HA     | 1.52                     | 0.44              |
| 14:AP:10:ARG:O    | 14:AP:14:VAL:HG23  | 2.17                     | 0.44              |
| 14:AP:13:ARG:NH2  | 14:AP:92:TYR:N     | 2.66                     | 0.44              |
| 14:AP:41:ASP:OD2  | 14:AP:42:ASP:O     | 2.36                     | 0.44              |
| 14:AP:58:LEU:O    | 14:AP:60:GLY:N     | 2.50                     | 0.44              |
| 15:AQ:27:THR:O    | 15:AQ:52:ILE:CB    | 2.63                     | 0.44              |
| 16:AR:30:LYS:H    | 16:AR:30:LYS:CD    | 2.27                     | 0.44              |
| 16:AR:59:ARG:HA   | 16:AR:62:ILE:HB    | 2.00                     | 0.44              |
| 17:AS:30:GLY:C    | 17:AS:31:ALA:O     | 2.61                     | 0.44              |
| 18:AT:12:ILE:HD13 | 18:AT:12:ILE:H     | 1.82                     | 0.44              |
| 19:AU:6:ASP:CG    | 19:AU:7:VAL:N      | 2.75                     | 0.44              |
| 19:AU:6:ASP:OD1   | 19:AU:7:VAL:N      | 2.49                     | 0.44              |
| 19:AU:25:LYS:C    | 19:AU:26:TYR:CD1   | 2.96                     | 0.44              |
| 19:AU:70:LEU:HD23 | 19:AU:71:GLY:CA    | 2.48                     | 0.44              |
| 20:AV:8:LYS:HE3   | 20:AV:28:LYS:HD2   | 2.00                     | 0.44              |
| 20:AV:38:ILE:O    | 20:AV:38:ILE:HG22  | 2.17                     | 0.44              |
| 20:AV:74:PRO:CB   | 20:AV:101:LYS:CA   | 2.96                     | 0.44              |
| 21:AW:76:LEU:CD2  | 21:AW:83:PRO:HB3   | 2.47                     | 0.44              |
| 22:AX:46:LYS:HE2  | 22:AX:77:ARG:H     | 1.82                     | 0.44              |
| 23:AY:6:GLU:OE1   | 23:AY:6:GLU:CA     | 2.65                     | 0.44              |
| 23:AY:37:GLY:O    | 23:AY:38:GLN:HB2   | 2.17                     | 0.44              |
| 25:Aa:5:ILE:HG13  | 25:Aa:10:VAL:H     | 1.82                     | 0.44              |
| 25:Aa:57:GLU:N    | 25:Aa:61:ARG:CG    | 2.81                     | 0.44              |
| 28:Ad:30:VAL:HG22 | 28:Ad:33:ARG:HH21  | 1.82                     | 0.44              |
| 29:Ae:26:LYS:HB2  | 29:Ae:44:LYS:NZ    | 2.31                     | 0.44              |
| 32:AJ:19:PRO:HB2  | 32:AJ:23:VAL:O     | 2.18                     | 0.44              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BA:15:G:N3      | 34:BA:15:G:H2'    | 2.31                     | 0.44              |
| 34:BA:74:C:N3      | 34:BA:75:C:C5     | 2.86                     | 0.44              |
| 34:BA:166:G:C2'    | 34:BA:167:G:O5'   | 2.66                     | 0.44              |
| 34:BA:189:U:H3     | 50:BU:63:ARG:CB   | 2.30                     | 0.44              |
| 34:BA:320:C:O2'    | 34:BA:321:A:O4'   | 2.28                     | 0.44              |
| 34:BA:407:G:O2'    | 37:BH:116:GLN:HG2 | 2.17                     | 0.44              |
| 34:BA:408:A:C6     | 34:BA:409:G:C6    | 3.06                     | 0.44              |
| 34:BA:411:A:C6     | 34:BA:429:U:C4    | 3.06                     | 0.44              |
| 34:BA:425:G:C2     | 34:BA:426:G:C8    | 3.05                     | 0.44              |
| 34:BA:517:G:C8     | 34:BA:531:U:C6    | 3.06                     | 0.44              |
| 34:BA:518:C:C6     | 34:BA:530:G:C4    | 3.05                     | 0.44              |
| 34:BA:544:G:C6     | 34:BA:545:C:N4    | 2.86                     | 0.44              |
| 34:BA:579:G:H2'    | 34:BA:580:U:H6    | 1.82                     | 0.44              |
| 34:BA:750:G:O2'    | 48:BS:23:GLY:O    | 2.35                     | 0.44              |
| 34:BA:760:G:C5'    | 34:BA:761:G:OP2   | 2.66                     | 0.44              |
| 34:BA:915:A:H2'    | 34:BA:916:G:C4'   | 2.48                     | 0.44              |
| 34:BA:1081:G:H2'   | 34:BA:1082:G:H8   | 1.83                     | 0.44              |
| 34:BA:1082:G:C6    | 34:BA:1083:U:C5   | 3.06                     | 0.44              |
| 34:BA:1129:C:C5'   | 34:BA:1130:A:OP1  | 2.51                     | 0.44              |
| 34:BA:1194:U:O5'   | 34:BA:1194:U:H6   | 2.01                     | 0.44              |
| 34:BA:1236:A:H5''  | 34:BA:1305:G:OP1  | 2.17                     | 0.44              |
| 34:BA:1236:A:C4'   | 34:BA:1304:G:H4'  | 2.28                     | 0.44              |
| 34:BA:1241:G:C4    | 34:BA:1242:C:C5   | 3.05                     | 0.44              |
| 34:BA:1293:G:O2'   | 34:BA:1294:G:H5'  | 2.17                     | 0.44              |
| 34:BA:1305:G:OP1   | 54:BY:2:GLY:CA    | 2.66                     | 0.44              |
| 34:BA:1343:G:C2    | 34:BA:1344:C:C2   | 3.06                     | 0.44              |
| 34:BA:1361:G:C8    | 34:BA:1362:C:C5   | 3.06                     | 0.44              |
| 34:BA:1368:G:O2'   | 34:BA:1369:C:H5'  | 2.17                     | 0.44              |
| 34:BA:1390:U:N3    | 34:BA:1391:U:C4   | 2.86                     | 0.44              |
| 34:BA:1394:A:C8    | 34:BA:1501:C:H1'  | 2.53                     | 0.44              |
| 34:BA:1431:C:O2    | 34:BA:1432:G:C1'  | 2.66                     | 0.44              |
| 34:BA:1448:C:O2    | 34:BA:1459:C:O2   | 2.34                     | 0.44              |
| 34:BA:1480:G:C6    | 34:BA:1481:U:C2   | 3.05                     | 0.44              |
| 34:BA:1489:G:C2    | 34:BA:1490:C:O2   | 2.71                     | 0.44              |
| 36:BG:5:ILE:HG22   | 43:BN:51:ARG:HH22 | 1.83                     | 0.44              |
| 36:BG:164:ARG:HG2  | 36:BG:165:THR:N   | 2.32                     | 0.44              |
| 37:BH:114:ARG:CG   | 37:BH:114:ARG:NH1 | 2.76                     | 0.44              |
| 37:BH:129:ASN:HD21 | 37:BH:145:GLU:HG2 | 1.82                     | 0.44              |
| 38:BI:10:MET:O     | 38:BI:10:MET:SD   | 2.75                     | 0.44              |
| 39:BJ:8:ILE:HG23   | 39:BJ:89:MET:H    | 1.82                     | 0.44              |
| 40:BK:69:VAL:HG13  | 40:BK:135:VAL:CA  | 2.47                     | 0.44              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 40:BK:76:ARG:HH12  | 40:BK:89:MET:HG3   | 1.82                     | 0.44              |
| 40:BK:90:GLU:O     | 40:BK:92:SER:N     | 2.50                     | 0.44              |
| 40:BK:121:ALA:HB1  | 40:BK:125:MET:CE   | 2.48                     | 0.44              |
| 40:BK:150:ALA:HA   | 44:BO:59:TYR:CB    | 2.48                     | 0.44              |
| 41:BL:111:ILE:HD12 | 41:BL:136:GLU:HA   | 2.00                     | 0.44              |
| 42:BM:23:ASN:HA    | 42:BM:57:GLY:O     | 2.18                     | 0.44              |
| 45:BP:11:VAL:O     | 45:BP:11:VAL:HG12  | 2.18                     | 0.44              |
| 45:BP:102:ARG:HH11 | 45:BP:110:VAL:CG1  | 2.31                     | 0.44              |
| 46:BQ:10:PRO:HB3   | 46:BQ:18:ALA:HB1   | 1.92                     | 0.44              |
| 46:BQ:65:LYS:HG2   | 46:BQ:65:LYS:O     | 2.17                     | 0.44              |
| 46:BQ:71:ARG:O     | 46:BQ:75:ALA:CB    | 2.65                     | 0.44              |
| 47:BR:26:ARG:HB2   | 47:BR:39:LEU:HD22  | 1.99                     | 0.44              |
| 48:BS:5:LYS:NZ     | 48:BS:5:LYS:CB     | 2.79                     | 0.44              |
| 49:BT:59:TRP:O     | 49:BT:61:SER:N     | 2.51                     | 0.44              |
| 50:BU:5:VAL:CA     | 50:BU:59:ILE:O     | 2.66                     | 0.44              |
| 51:BV:21:LYS:C     | 51:BV:55:ARG:NH1   | 2.76                     | 0.44              |
| 51:BV:58:LEU:HB3   | 51:BV:62:GLU:HB2   | 1.90                     | 0.44              |
| 53:BX:33:ILE:CD1   | 53:BX:63:ILE:HA    | 2.24                     | 0.44              |
| 55:BC:4:C:O2       | 55:BC:5:G:C8       | 2.70                     | 0.44              |
| 56:BE:8:U:O2       | 56:BE:48:C:O2      | 2.36                     | 0.44              |
| 56:BE:8:U:C2       | 56:BE:15:G:O6      | 2.71                     | 0.44              |
| 57:BZ:11:ILE:CD1   | 57:BZ:95:VAL:HG12  | 2.27                     | 0.44              |
| 57:BZ:11:ILE:HG22  | 57:BZ:12:ALA:H     | 1.82                     | 0.44              |
| 57:BZ:66:TRP:O     | 57:BZ:191:VAL:HG11 | 2.18                     | 0.44              |
| 57:BZ:129:LYS:C    | 57:BZ:131:ASP:H    | 2.25                     | 0.44              |
| 57:BZ:224:GLY:O    | 57:BZ:271:GLY:O    | 2.36                     | 0.44              |
| 57:BZ:390:ARG:CG   | 57:BZ:391:GLU:CB   | 2.95                     | 0.44              |
| 1:AA:22:C:H2'      | 1:AA:23:G:O5'      | 2.17                     | 0.44              |
| 1:AA:35:G:N9       | 1:AA:454:A:N3      | 2.65                     | 0.44              |
| 1:AA:108:U:H4'     | 1:AA:348:G:H21     | 1.82                     | 0.44              |
| 1:AA:118:A:H1'     | 1:AA:178:G:H4'     | 2.00                     | 0.44              |
| 1:AA:147:U:H2'     | 1:AA:148:C:C5      | 2.51                     | 0.44              |
| 1:AA:220:G:C4'     | 1:AA:234:C:H4'     | 2.21                     | 0.44              |
| 1:AA:270(C):C:OP1  | 1:AA:365:C:O2      | 2.35                     | 0.44              |
| 1:AA:270(X):G:C2   | 1:AA:270(Y):G:H4'  | 2.53                     | 0.44              |
| 1:AA:351:G:C2'     | 1:AA:352:G:OP2     | 2.66                     | 0.44              |
| 1:AA:419:C:C4      | 1:AA:420:C:C4      | 3.06                     | 0.44              |
| 1:AA:470:A:H2'     | 1:AA:471:A:O5'     | 2.17                     | 0.44              |
| 1:AA:479:A:C2'     | 1:AA:480:A:OP2     | 2.66                     | 0.44              |
| 1:AA:487:C:N4      | 1:AA:488:G:C5      | 2.86                     | 0.44              |
| 1:AA:566:U:C4'     | 17:AS:82:ARG:HH22  | 2.31                     | 0.44              |

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| Atom-1          | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-------------------|--------------------------|-------------------|
| 1:AA:596:G:N1   | 1:AA:597:U:C2     | 2.86                     | 0.44              |
| 1:AA:633:A:H3'  | 1:AA:634:C:O4'    | 2.18                     | 0.44              |
| 1:AA:662:G:OP1  | 11:AM:19:VAL:HG11 | 2.17                     | 0.44              |
| 1:AA:709:U:O5'  | 1:AA:709:U:H6     | 2.01                     | 0.44              |
| 1:AA:731:C:H2'  | 1:AA:732:C:H5'    | 2.00                     | 0.44              |
| 1:AA:775:G:N2   | 1:AA:787:U:O3'    | 2.51                     | 0.44              |
| 1:AA:822:U:O2'  | 1:AA:823:G:OP1    | 2.21                     | 0.44              |
| 1:AA:872:A:O2'  | 12:AN:66:ILE:CD1  | 2.66                     | 0.44              |
| 1:AA:872:A:N3   | 1:AA:872:A:H2'    | 2.32                     | 0.44              |
| 1:AA:914:C:H5   | 1:AA:915:C:H5     | 1.64                     | 0.44              |
| 1:AA:931:G:N3   | 24:AZ:24:LYS:CE   | 2.80                     | 0.44              |
| 1:AA:943:U:OP2  | 11:AM:32:THR:HB   | 2.18                     | 0.44              |
| 1:AA:960:A:C8   | 1:AA:960:A:O5'    | 2.70                     | 0.44              |
| 1:AA:1013:C:C2  | 1:AA:1014:U:C5    | 3.06                     | 0.44              |
| 1:AA:1058:G:C2' | 1:AA:1059:G:C5'   | 2.94                     | 0.44              |
| 1:AA:1080:C:O4' | 32:AJ:128:ALA:CA  | 2.66                     | 0.44              |
| 1:AA:1111:A:O2' | 1:AA:1112:G:H1'   | 2.17                     | 0.44              |
| 1:AA:1171:G:O4' | 1:AA:1171:G:P     | 2.76                     | 0.44              |
| 1:AA:1223:C:C5  | 1:AA:1227:A:N6    | 2.83                     | 0.44              |
| 1:AA:1264:G:N7  | 1:AA:1265:A:C5    | 2.85                     | 0.44              |
| 1:AA:1323:U:O4  | 1:AA:1324:G:O6    | 2.36                     | 0.44              |
| 1:AA:1323:U:OP2 | 18:AT:84:ARG:NH1  | 2.51                     | 0.44              |
| 1:AA:1324:G:C2  | 1:AA:1331:A:C2    | 3.06                     | 0.44              |
| 1:AA:1332:G:C4  | 1:AA:1609:A:C6    | 3.05                     | 0.44              |
| 1:AA:1341:U:H3  | 1:AA:1398:C:C5'   | 2.16                     | 0.44              |
| 1:AA:1355:G:N2  | 1:AA:1377:G:C1'   | 2.75                     | 0.44              |
| 1:AA:1360:A:H2' | 1:AA:1361:G:H5'   | 1.98                     | 0.44              |
| 1:AA:1471:A:N7  | 1:AA:1521:G:C2    | 2.86                     | 0.44              |
| 1:AA:1529:A:H2' | 1:AA:1530:G:O4'   | 2.17                     | 0.44              |
| 1:AA:1608:A:C8  | 1:AA:1611:C:N4    | 2.86                     | 0.44              |
| 1:AA:1620:G:C6  | 1:AA:1621:U:C4    | 3.06                     | 0.44              |
| 1:AA:1621:U:C6  | 1:AA:1621:U:C3'   | 3.00                     | 0.44              |
| 1:AA:1630:G:C8  | 1:AA:1630(A):C:H5 | 2.35                     | 0.44              |
| 1:AA:1660:C:O2' | 1:AA:1661:G:C5'   | 2.65                     | 0.44              |
| 1:AA:1662:C:N3  | 1:AA:1663:C:C4    | 2.85                     | 0.44              |
| 1:AA:1691:C:H2' | 1:AA:1692:U:C5'   | 2.48                     | 0.44              |
| 1:AA:1741:C:C2' | 1:AA:1742:C:O4'   | 2.66                     | 0.44              |
| 1:AA:1753:G:C6  | 1:AA:1756:G:C6    | 3.06                     | 0.44              |
| 1:AA:1940:U:H5' | 1:AA:1941:C:OP1   | 2.17                     | 0.44              |
| 1:AA:1953:A:N7  | 1:AA:2550:G:H1'   | 2.33                     | 0.44              |
| 1:AA:1954:G:O2' | 1:AA:1955:U:C5'   | 2.56                     | 0.44              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 1:AA:1954:G:N3   | 1:AA:2551:C:C5'    | 2.79                     | 0.44              |
| 1:AA:2020:A:OP2  | 16:AR:27:LEU:CD2   | 2.65                     | 0.44              |
| 1:AA:2114:A:C6   | 1:AA:2170:A:N6     | 2.86                     | 0.44              |
| 1:AA:2180:U:H2'  | 1:AA:2181:G:O4'    | 2.18                     | 0.44              |
| 1:AA:2239:G:H3'  | 1:AA:2240:C:C5'    | 2.17                     | 0.44              |
| 1:AA:2245:U:H1'  | 1:AA:2435:A:H3'    | 2.00                     | 0.44              |
| 1:AA:2348:U:C2'  | 1:AA:2349:G:O5'    | 2.65                     | 0.44              |
| 1:AA:2444:G:C2   | 1:AA:2445:G:C5     | 3.05                     | 0.44              |
| 1:AA:2447:G:O2'  | 1:AA:2448:A:P      | 2.74                     | 0.44              |
| 1:AA:2554:U:H5   | 1:AA:2556:C:C4     | 2.36                     | 0.44              |
| 1:AA:2583:G:N1   | 59:AA:3002:8AN:H2' | 2.29                     | 0.44              |
| 1:AA:2626:C:C6   | 1:AA:2626:C:H3'    | 2.52                     | 0.44              |
| 1:AA:2648:C:C4   | 1:AA:2649:U:O4     | 2.71                     | 0.44              |
| 1:AA:2657:A:OP2  | 1:AA:2658:C:C5     | 2.71                     | 0.44              |
| 1:AA:2716:U:H2'  | 1:AA:2717:G:O5'    | 2.15                     | 0.44              |
| 1:AA:2717:G:N3   | 1:AA:2718:G:C8     | 2.86                     | 0.44              |
| 1:AA:2718:G:C2   | 1:AA:2719:G:C4     | 3.06                     | 0.44              |
| 1:AA:2729:G:C6   | 1:AA:2730:C:C5     | 3.06                     | 0.44              |
| 1:AA:2748:A:C4   | 1:AA:2757:A:N6     | 2.86                     | 0.44              |
| 1:AA:2748:A:C5   | 1:AA:2757:A:N6     | 2.86                     | 0.44              |
| 1:AA:2799:A:C1'  | 1:AA:2802:G:C6     | 3.01                     | 0.44              |
| 1:AA:2801:A:OP1  | 1:AA:2802:G:C8     | 2.71                     | 0.44              |
| 1:AA:2851:A:N1   | 1:AA:2852:G:C2     | 2.85                     | 0.44              |
| 1:AA:2863:C:C2'  | 1:AA:2864:G:H5'    | 2.47                     | 0.44              |
| 3:AC:47:LEU:HD23 | 3:AC:169:GLY:O     | 2.18                     | 0.44              |
| 3:AC:87:GLU:HA   | 3:AC:91:ALA:HB3    | 1.99                     | 0.44              |
| 4:AD:122:ASP:C   | 4:AD:131:LEU:HD21  | 2.43                     | 0.44              |
| 4:AD:142:VAL:CB  | 4:AD:192:THR:O     | 2.66                     | 0.44              |
| 4:AD:165:ILE:N   | 4:AD:165:ILE:CD1   | 2.81                     | 0.44              |
| 4:AD:208:LYS:HZ3 | 4:AD:211:ARG:NH2   | 2.14                     | 0.44              |
| 4:AD:264:LYS:HB2 | 4:AD:265:PRO:CD    | 2.47                     | 0.44              |
| 5:AE:55:ASN:C    | 5:AE:57:LYS:H      | 2.24                     | 0.44              |
| 5:AE:115:GLY:O   | 5:AE:118:LYS:N     | 2.50                     | 0.44              |
| 5:AE:115:GLY:O   | 5:AE:116:VAL:C     | 2.60                     | 0.44              |
| 5:AE:178:GLU:O   | 5:AE:179:GLU:C     | 2.59                     | 0.44              |
| 6:AF:142:TRP:C   | 6:AF:142:TRP:CD1   | 2.94                     | 0.44              |
| 8:AH:8:PRO:N     | 8:AH:51:ARG:NH2    | 2.64                     | 0.44              |
| 8:AH:25:LYS:CE   | 8:AH:27:LYS:HZ2    | 2.29                     | 0.44              |
| 8:AH:111:HIS:O   | 8:AH:113:VAL:N     | 2.50                     | 0.44              |
| 8:AH:125:VAL:O   | 8:AH:125:VAL:HG12  | 2.18                     | 0.44              |
| 9:AK:74:ARG:HH11 | 9:AK:76:SER:HB2    | 1.83                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 10:AL:9:GLU:C     | 10:AL:82:ASN:HB3  | 2.42                     | 0.44              |
| 10:AL:52:VAL:O    | 10:AL:53:LYS:CG   | 2.65                     | 0.44              |
| 10:AL:63:VAL:CG2  | 10:AL:82:ASN:N    | 2.79                     | 0.44              |
| 10:AL:63:VAL:HB   | 10:AL:78:ARG:HG2  | 1.98                     | 0.44              |
| 10:AL:77:ILE:HG12 | 15:AQ:75:ILE:HD12 | 1.99                     | 0.44              |
| 11:AM:78:PRO:O    | 11:AM:81:GLN:HB2  | 2.17                     | 0.44              |
| 12:AN:16:ARG:HG3  | 12:AN:72:LYS:CG   | 2.48                     | 0.44              |
| 13:AO:10:LEU:HD22 | 13:AO:43:GLU:HG2  | 1.99                     | 0.44              |
| 13:AO:49:ASP:OD2  | 13:AO:50:HIS:N    | 2.51                     | 0.44              |
| 14:AP:13:ARG:NH1  | 14:AP:89:ARG:O    | 2.51                     | 0.44              |
| 14:AP:57:LYS:NZ   | 14:AP:62:LYS:CG   | 2.79                     | 0.44              |
| 15:AQ:26:ASP:O    | 15:AQ:52:ILE:HG22 | 2.17                     | 0.44              |
| 15:AQ:28:VAL:CG2  | 15:AQ:94:ALA:N    | 2.80                     | 0.44              |
| 15:AQ:85:LYS:NZ   | 15:AQ:85:LYS:CB   | 2.81                     | 0.44              |
| 16:AR:74:LEU:HD23 | 16:AR:75:ASN:H    | 1.83                     | 0.44              |
| 16:AR:98:LEU:C    | 16:AR:100:VAL:N   | 2.70                     | 0.44              |
| 17:AS:5:VAL:CG2   | 17:AS:39:LEU:HA   | 2.42                     | 0.44              |
| 17:AS:33:VAL:CG1  | 17:AS:34:GLU:H    | 2.31                     | 0.44              |
| 18:AT:24:ILE:O    | 18:AT:32:ALA:HB2  | 2.17                     | 0.44              |
| 18:AT:70:TYR:CE1  | 18:AT:72:LYS:HB2  | 2.51                     | 0.44              |
| 19:AU:5:TYR:HB3   | 23:AY:24:LYS:CD   | 2.40                     | 0.44              |
| 19:AU:15:GLU:O    | 19:AU:16:LYS:C    | 2.60                     | 0.44              |
| 19:AU:50:LYS:NZ   | 19:AU:87:GLN:H    | 2.15                     | 0.44              |
| 20:AV:10:GLY:N    | 20:AV:110:GLU:OE1 | 2.47                     | 0.44              |
| 21:AW:17:ALA:O    | 21:AW:18:LEU:C    | 2.60                     | 0.44              |
| 21:AW:41:LEU:O    | 21:AW:45:ASP:CG   | 2.60                     | 0.44              |
| 21:AW:109:ALA:C   | 21:AW:113:ALA:CB  | 2.90                     | 0.44              |
| 21:AW:168:GLU:OE1 | 21:AW:168:GLU:C   | 2.61                     | 0.44              |
| 25:Aa:56:VAL:C    | 25:Aa:61:ARG:NE   | 2.76                     | 0.44              |
| 27:Ac:46:HIS:O    | 27:Ac:47:THR:OG1  | 2.35                     | 0.44              |
| 29:Ae:6:THR:HG23  | 29:Ae:9:GLY:N     | 2.33                     | 0.44              |
| 32:AJ:51:ALA:HB1  | 32:AJ:76:TYR:C    | 2.43                     | 0.44              |
| 34:BA:46:G:N3     | 34:BA:396:G:N1    | 2.66                     | 0.44              |
| 34:BA:50:A:C6     | 34:BA:361:G:O4'   | 2.71                     | 0.44              |
| 34:BA:110:C:H2'   | 34:BA:111:G:C8    | 2.53                     | 0.44              |
| 34:BA:130:A:C6    | 50:BU:64:PRO:HG2  | 2.52                     | 0.44              |
| 34:BA:133:U:OP1   | 53:BX:74:LYS:NZ   | 2.50                     | 0.44              |
| 34:BA:183:G:H2'   | 34:BA:184:G:O4'   | 2.17                     | 0.44              |
| 34:BA:185:A:C4    | 34:BA:186:C:C5    | 3.06                     | 0.44              |
| 34:BA:230:G:OP1   | 49:BT:33:ILE:HG12 | 2.17                     | 0.44              |
| 34:BA:270:A:C5    | 34:BA:271:C:C5    | 3.06                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:292:G:C2    | 34:BA:309:G:N3     | 2.86                     | 0.44              |
| 34:BA:298:A:C2    | 34:BA:299:G:H1'    | 2.53                     | 0.44              |
| 34:BA:414:A:C4    | 34:BA:415:A:C8     | 3.06                     | 0.44              |
| 34:BA:414:A:C6    | 34:BA:431:A:C2     | 3.06                     | 0.44              |
| 34:BA:539:A:P     | 45:BP:114:LYS:NZ   | 2.91                     | 0.44              |
| 34:BA:579:G:N3    | 34:BA:580:U:C6     | 2.86                     | 0.44              |
| 34:BA:664:G:N3    | 34:BA:726:C:H4'    | 2.32                     | 0.44              |
| 34:BA:675:A:C2'   | 34:BA:676:A:H8     | 2.31                     | 0.44              |
| 34:BA:701:C:H1'   | 34:BA:703:G:C6     | 2.52                     | 0.44              |
| 34:BA:738:C:C4    | 34:BA:739:C:C5     | 3.06                     | 0.44              |
| 34:BA:750:G:C2'   | 48:BS:23:GLY:O     | 2.66                     | 0.44              |
| 34:BA:917:G:H2'   | 34:BA:918:A:H8     | 1.81                     | 0.44              |
| 34:BA:1059:C:C4   | 34:BA:1060:C:C5    | 3.06                     | 0.44              |
| 34:BA:1309:G:H4'  | 46:BQ:74:VAL:HG13  | 1.98                     | 0.44              |
| 34:BA:1321:C:H6   | 34:BA:1321:C:H3'   | 1.81                     | 0.44              |
| 34:BA:1336:C:C2'  | 34:BA:1337:G:OP2   | 2.65                     | 0.44              |
| 34:BA:1342:C:O2'  | 42:BM:124:GLN:CA   | 2.66                     | 0.44              |
| 34:BA:1343:G:O2'  | 42:BM:121:ARG:HA   | 2.18                     | 0.44              |
| 34:BA:1350:A:C6   | 34:BA:1351:U:C4    | 3.06                     | 0.44              |
| 34:BA:1364:U:HO2' | 34:BA:1365:G:P     | 2.38                     | 0.44              |
| 34:BA:1389:C:H2'  | 34:BA:1390:U:C4'   | 2.47                     | 0.44              |
| 34:BA:1424:C:H2'  | 34:BA:1425:U:O5'   | 2.18                     | 0.44              |
| 35:BF:31:TYR:CZ   | 35:BF:200:ILE:HG21 | 2.51                     | 0.44              |
| 35:BF:33:TYR:CD2  | 35:BF:43:ASP:HB2   | 2.53                     | 0.44              |
| 35:BF:69:LEU:HB3  | 35:BF:162:ILE:CG2  | 2.37                     | 0.44              |
| 35:BF:122:PHE:HB3 | 35:BF:123:ALA:H    | 1.56                     | 0.44              |
| 35:BF:218:ALA:O   | 35:BF:221:LEU:N    | 2.51                     | 0.44              |
| 37:BH:76:ARG:O    | 37:BH:80:GLU:HG3   | 2.18                     | 0.44              |
| 37:BH:92:VAL:O    | 37:BH:96:LEU:HG    | 2.17                     | 0.44              |
| 37:BH:101:LEU:C   | 37:BH:101:LEU:HD12 | 2.43                     | 0.44              |
| 37:BH:119:GLN:CG  | 37:BH:123:HIS:CE1  | 3.00                     | 0.44              |
| 37:BH:177:ASP:C   | 37:BH:179:GLU:N    | 2.74                     | 0.44              |
| 38:BI:36:ASP:OD2  | 38:BI:40:ARG:HB3   | 2.18                     | 0.44              |
| 38:BI:71:LEU:O    | 38:BI:72:GLN:HG2   | 2.18                     | 0.44              |
| 38:BI:141:GLN:O   | 38:BI:142:LEU:CB   | 2.66                     | 0.44              |
| 38:BI:144:THR:O   | 38:BI:145:LYS:C    | 2.60                     | 0.44              |
| 39:BJ:24:GLU:OE2  | 39:BJ:28:ARG:NH2   | 2.43                     | 0.44              |
| 39:BJ:91:VAL:HG12 | 39:BJ:92:LYS:O     | 2.18                     | 0.44              |
| 40:BK:6:ARG:O     | 40:BK:7:ALA:HB3    | 2.17                     | 0.44              |
| 40:BK:29:LYS:HD2  | 40:BK:102:ARG:HA   | 1.98                     | 0.44              |
| 40:BK:46:ALA:O    | 40:BK:47:CYS:C     | 2.60                     | 0.44              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 40:BK:79:ARG:CG  | 40:BK:84:ASN:HB3   | 2.48                     | 0.44              |
| 40:BK:138:LYS:O  | 40:BK:139:GLU:C    | 2.60                     | 0.44              |
| 41:BL:28:ALA:C   | 41:BL:32:LYS:CD    | 2.82                     | 0.44              |
| 43:BN:43:ARG:HG3 | 43:BN:44:VAL:N     | 2.33                     | 0.44              |
| 44:BO:23:ALA:CB  | 44:BO:28:THR:CG2   | 2.95                     | 0.44              |
| 44:BO:32:ILE:O   | 44:BO:40:ILE:HD13  | 2.17                     | 0.44              |
| 44:BO:42:TRP:CZ3 | 44:BO:47:VAL:HG22  | 2.53                     | 0.44              |
| 44:BO:65:ALA:CB  | 44:BO:98:LEU:CD2   | 2.94                     | 0.44              |
| 45:BP:36:VAL:HA  | 45:BP:82:VAL:HA    | 1.99                     | 0.44              |
| 45:BP:64:TYR:O   | 45:BP:65:GLU:HG3   | 2.17                     | 0.44              |
| 47:BR:34:TYR:HB2 | 47:BR:35:ARG:H     | 1.51                     | 0.44              |
| 48:BS:39:LEU:CD2 | 48:BS:39:LEU:C     | 2.89                     | 0.44              |
| 48:BS:63:ARG:HG3 | 48:BS:64:ARG:H     | 1.83                     | 0.44              |
| 49:BT:52:ASP:OD1 | 49:BT:55:ARG:HG2   | 2.18                     | 0.44              |
| 50:BU:48:GLU:OE1 | 50:BU:48:GLU:N     | 2.51                     | 0.44              |
| 50:BU:83:ASP:O   | 50:BU:86:GLU:HB2   | 2.18                     | 0.44              |
| 52:BW:3:ARG:NE   | 52:BW:45:VAL:HG11  | 2.20                     | 0.44              |
| 52:BW:47:HIS:H   | 52:BW:62:ILE:HG23  | 1.82                     | 0.44              |
| 53:BX:56:MET:SD  | 53:BX:56:MET:C     | 3.01                     | 0.44              |
| 57:BZ:128:ASN:CA | 57:BZ:164:TYR:O    | 2.60                     | 0.44              |
| 57:BZ:153:ALA:H  | 57:BZ:154:THR:CA   | 2.11                     | 0.44              |
| 57:BZ:568:ALA:O  | 57:BZ:571:PHE:HB3  | 2.18                     | 0.44              |
| 57:BZ:568:ALA:CB | 57:BZ:587:ILE:HD11 | 2.44                     | 0.44              |
| 1:AA:28:A:H2'    | 1:AA:28:A:N3       | 2.33                     | 0.44              |
| 1:AA:49:A:N7     | 1:AA:177:G:C6      | 2.86                     | 0.44              |
| 1:AA:64:A:HO2'   | 1:AA:65:C:H5'      | 1.77                     | 0.44              |
| 1:AA:84:A:H5'    | 1:AA:85:G:OP1      | 2.17                     | 0.44              |
| 1:AA:117:G:C2    | 1:AA:119:A:N6      | 2.85                     | 0.44              |
| 1:AA:154:G:C6    | 1:AA:155:C:N4      | 2.86                     | 0.44              |
| 1:AA:246:C:H2'   | 1:AA:247:G:C8      | 2.52                     | 0.44              |
| 1:AA:422:A:C2'   | 1:AA:423:A:O5'     | 2.65                     | 0.44              |
| 1:AA:495:G:C2'   | 1:AA:496:G:O5'     | 2.65                     | 0.44              |
| 1:AA:499:U:C2'   | 1:AA:500:G:H5'     | 2.48                     | 0.44              |
| 1:AA:523:C:H2'   | 1:AA:524:U:O4'     | 2.18                     | 0.44              |
| 1:AA:528:A:H2'   | 1:AA:529:A:OP1     | 2.17                     | 0.44              |
| 1:AA:559:G:C2'   | 1:AA:560:C:O4'     | 2.65                     | 0.44              |
| 1:AA:627:A:H8    | 11:AM:75:ILE:CG2   | 2.31                     | 0.44              |
| 1:AA:638:G:C5    | 1:AA:639:U:C2      | 3.06                     | 0.44              |
| 1:AA:716:A:N9    | 48:BS:44:LYS:HD3   | 2.32                     | 0.44              |
| 1:AA:718:A:C5'   | 1:AA:719:C:OP2     | 2.66                     | 0.44              |
| 1:AA:883:G:C2'   | 1:AA:884:C:C5'     | 2.88                     | 0.44              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:AA:903:C:OP2   | 1:AA:903:C:C5    | 2.70                     | 0.44              |
| 1:AA:1000:A:C6   | 1:AA:1001:A:C2   | 3.05                     | 0.44              |
| 1:AA:1176:G:H3'  | 1:AA:1177:A:O4'  | 2.18                     | 0.44              |
| 1:AA:1207:C:N3   | 1:AA:1208:C:C4   | 2.86                     | 0.44              |
| 1:AA:1312:U:C6   | 19:AU:62:LYS:HG3 | 2.52                     | 0.44              |
| 1:AA:1348:G:C6   | 1:AA:1599:C:N3   | 2.86                     | 0.44              |
| 1:AA:1366:A:H2'  | 1:AA:1366:A:N3   | 2.33                     | 0.44              |
| 1:AA:1378:A:C2   | 1:AA:1380:G:C1'  | 3.00                     | 0.44              |
| 1:AA:1417:C:H2'  | 1:AA:1418:G:O5'  | 2.18                     | 0.44              |
| 1:AA:1434:A:H61  | 1:AA:1558:A:N6   | 2.13                     | 0.44              |
| 1:AA:1453:A:N6   | 13:AO:63:ARG:NH2 | 2.53                     | 0.44              |
| 1:AA:1477:A:H2   | 1:AA:1516:U:C2   | 2.35                     | 0.44              |
| 1:AA:1529:A:H8   | 1:AA:1530:G:C4   | 2.36                     | 0.44              |
| 1:AA:1578:U:H5'' | 1:AA:1580:A:N1   | 2.33                     | 0.44              |
| 1:AA:1596:A:N6   | 1:AA:1597:A:N1   | 2.65                     | 0.44              |
| 1:AA:1605:C:C6   | 1:AA:1606:G:C8   | 3.06                     | 0.44              |
| 1:AA:1615:C:C4   | 1:AA:1617:C:H1'  | 2.53                     | 0.44              |
| 1:AA:1625:C:C3'  | 1:AA:1626:G:H4'  | 2.47                     | 0.44              |
| 1:AA:1678:G:O2'  | 1:AA:1679:U:H5'  | 2.18                     | 0.44              |
| 1:AA:1750:G:O2'  | 1:AA:2860:A:C2   | 2.67                     | 0.44              |
| 1:AA:1816:G:OP1  | 4:AD:43:ARG:NH2  | 2.51                     | 0.44              |
| 1:AA:1819:A:O2'  | 1:AA:1820:U:O5'  | 2.35                     | 0.44              |
| 1:AA:1890:A:C8   | 1:AA:1891:G:C8   | 3.06                     | 0.44              |
| 1:AA:1916:A:C2   | 1:AA:1917:U:O4   | 2.70                     | 0.44              |
| 1:AA:1977:A:H2   | 1:AA:1978:A:H1'  | 1.82                     | 0.44              |
| 1:AA:2000:G:C6   | 1:AA:2001:A:N6   | 2.84                     | 0.44              |
| 1:AA:2051:A:H1'  | 5:AE:141:ILE:CD1 | 2.48                     | 0.44              |
| 1:AA:2119:A:C6   | 1:AA:2170:A:C6   | 3.06                     | 0.44              |
| 1:AA:2133:G:O6   | 1:AA:2157:G:N9   | 2.51                     | 0.44              |
| 1:AA:2177:C:N3   | 1:AA:2178:C:C5   | 2.86                     | 0.44              |
| 1:AA:2225:A:C4'  | 1:AA:2226:C:H6   | 2.29                     | 0.44              |
| 1:AA:2267:A:N1   | 1:AA:2272:U:O4   | 2.51                     | 0.44              |
| 1:AA:2273:A:H2'  | 1:AA:2274:A:H5'  | 2.00                     | 0.44              |
| 1:AA:2314:C:C2   | 1:AA:2315:G:C8   | 3.06                     | 0.44              |
| 1:AA:2345:G:OP1  | 27:Ac:39:TYR:O   | 2.35                     | 0.44              |
| 1:AA:2356:C:H2'  | 1:AA:2357:U:O5'  | 2.18                     | 0.44              |
| 1:AA:2408:U:C2   | 1:AA:2409:G:N7   | 2.86                     | 0.44              |
| 1:AA:2423:U:O2'  | 1:AA:2425:A:C3'  | 2.61                     | 0.44              |
| 1:AA:2550:G:N2   | 1:AA:2559:C:N1   | 2.65                     | 0.44              |
| 1:AA:2634:G:O2'  | 1:AA:2635:C:O5'  | 2.35                     | 0.44              |
| 1:AA:2651:C:O2   | 1:AA:2670:A:C5   | 2.71                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2681:C:C2'   | 1:AA:2682:U:H5'   | 2.45                     | 0.44              |
| 1:AA:2710:C:C2'   | 1:AA:2711:A:C5'   | 2.92                     | 0.44              |
| 1:AA:2741:A:H5''  | 30:Af:22:ARG:HH12 | 1.83                     | 0.44              |
| 1:AA:2809:A:OP1   | 1:AA:2809:A:C8    | 2.70                     | 0.44              |
| 1:AA:2848:G:N1    | 1:AA:2867:G:N3    | 2.66                     | 0.44              |
| 1:AA:2849:U:H3    | 1:AA:2867:G:H1'   | 1.82                     | 0.44              |
| 3:AC:74:VAL:HG12  | 3:AC:114:VAL:HG22 | 2.00                     | 0.44              |
| 3:AC:224:ILE:O    | 3:AC:226:PRO:HD3  | 2.18                     | 0.44              |
| 5:AE:13:ARG:CD    | 5:AE:20:ALA:O     | 2.65                     | 0.44              |
| 5:AE:66:HIS:O     | 5:AE:68:ALA:N     | 2.50                     | 0.44              |
| 5:AE:185:LYS:O    | 5:AE:185:LYS:CD   | 2.65                     | 0.44              |
| 6:AF:8:GLN:HB3    | 6:AF:18:ARG:CB    | 2.47                     | 0.44              |
| 6:AF:37:VAL:O     | 6:AF:41:LEU:CD2   | 2.66                     | 0.44              |
| 6:AF:37:VAL:CA    | 6:AF:184:TYR:CZ   | 2.99                     | 0.44              |
| 6:AF:53:THR:O     | 6:AF:55:GLY:N     | 2.51                     | 0.44              |
| 6:AF:109:GLY:O    | 6:AF:112:MET:N    | 2.50                     | 0.44              |
| 7:AG:131:TYR:CE2  | 7:AG:132:ASN:HA   | 2.53                     | 0.44              |
| 8:AH:42:ARG:NE    | 8:AH:42:ARG:CA    | 2.71                     | 0.44              |
| 8:AH:102:ALA:HA   | 8:AH:115:VAL:C    | 2.42                     | 0.44              |
| 8:AH:118:PRO:CG   | 8:AH:121:ILE:HG21 | 2.48                     | 0.44              |
| 8:AH:153:LYS:O    | 8:AH:161:GLY:HA3  | 2.18                     | 0.44              |
| 9:AK:22:THR:HG21  | 9:AK:61:ARG:NH1   | 2.32                     | 0.44              |
| 9:AK:46:VAL:HG11  | 9:AK:119:ARG:HH22 | 1.81                     | 0.44              |
| 9:AK:91:LEU:C     | 9:AK:93:THR:N     | 2.76                     | 0.44              |
| 10:AL:90:GLN:O    | 10:AL:91:LEU:O    | 2.36                     | 0.44              |
| 10:AL:106:LEU:CD2 | 15:AQ:38:ASN:ND2  | 2.81                     | 0.44              |
| 11:AM:86:LYS:HZ1  | 11:AM:99:LEU:CD1  | 2.31                     | 0.44              |
| 12:AN:39:PRO:HB2  | 12:AN:40:ALA:H    | 1.47                     | 0.44              |
| 12:AN:61:GLY:C    | 21:AW:177:PRO:O   | 2.60                     | 0.44              |
| 12:AN:67:ARG:NH2  | 12:AN:103:MET:CB  | 2.78                     | 0.44              |
| 13:AO:28:LEU:C    | 13:AO:30:THR:N    | 2.75                     | 0.44              |
| 13:AO:47:PHE:O    | 13:AO:49:ASP:N    | 2.51                     | 0.44              |
| 13:AO:83:ILE:O    | 13:AO:86:ARG:HB2  | 2.17                     | 0.44              |
| 14:AP:62:LYS:CB   | 14:AP:65:VAL:CG1  | 2.88                     | 0.44              |
| 14:AP:94:TYR:HD1  | 14:AP:94:TYR:H    | 1.66                     | 0.44              |
| 16:AR:47:TYR:HE2  | 17:AS:75:PHE:C    | 2.25                     | 0.44              |
| 16:AR:61:TRP:CB   | 16:AR:65:ILE:HD11 | 2.48                     | 0.44              |
| 18:AT:19:LEU:CD2  | 26:Ab:25:LEU:HD22 | 2.47                     | 0.44              |
| 18:AT:21:VAL:HG22 | 18:AT:75:TYR:CE2  | 2.53                     | 0.44              |
| 18:AT:46:PHE:O    | 18:AT:50:VAL:HG23 | 2.17                     | 0.44              |
| 19:AU:6:ASP:O     | 19:AU:7:VAL:C     | 2.61                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 21:AW:30:ASN:C    | 21:AW:89:PHE:HE2  | 2.26                     | 0.44              |
| 21:AW:43:GLU:HA   | 21:AW:46:LYS:CE   | 2.48                     | 0.44              |
| 21:AW:46:LYS:HZ2  | 21:AW:46:LYS:HG3  | 1.52                     | 0.44              |
| 21:AW:60:GLU:OE2  | 21:AW:69:THR:HG22 | 2.18                     | 0.44              |
| 21:AW:76:LEU:HD23 | 21:AW:82:ARG:C    | 2.43                     | 0.44              |
| 21:AW:111:VAL:C   | 21:AW:113:ALA:H   | 2.22                     | 0.44              |
| 24:AZ:5:LYS:C     | 24:AZ:5:LYS:HD2   | 2.42                     | 0.44              |
| 26:Ab:8:LYS:HB2   | 26:Ab:9:LYS:HE2   | 2.00                     | 0.44              |
| 27:Ac:52:VAL:CG1  | 27:Ac:53:LYS:H    | 2.23                     | 0.44              |
| 29:Ae:29:LYS:CB   | 29:Ae:34:TRP:CH2  | 2.90                     | 0.44              |
| 32:AJ:21:PRO:O    | 32:AJ:25:PRO:HD2  | 2.17                     | 0.44              |
| 34:BA:78:G:N1     | 34:BA:79:G:C5     | 2.86                     | 0.44              |
| 34:BA:124:G:C6    | 34:BA:125:U:N3    | 2.86                     | 0.44              |
| 34:BA:139:G:N2    | 34:BA:225:C:C2    | 2.86                     | 0.44              |
| 34:BA:285:G:C6    | 34:BA:286:G:C5    | 3.06                     | 0.44              |
| 34:BA:319:G:H4'   | 34:BA:1468:A:H4'  | 1.99                     | 0.44              |
| 34:BA:342:C:C2    | 34:BA:348:G:C2    | 3.06                     | 0.44              |
| 34:BA:377:G:OP1   | 49:BT:5:ARG:NH1   | 2.51                     | 0.44              |
| 34:BA:450:G:C8    | 34:BA:481:G:C6    | 3.06                     | 0.44              |
| 34:BA:737:A:C2'   | 34:BA:738:C:O5'   | 2.66                     | 0.44              |
| 34:BA:874:G:H2'   | 34:BA:875:C:C5'   | 2.47                     | 0.44              |
| 34:BA:901:A:HO2'  | 34:BA:902:G:P     | 2.40                     | 0.44              |
| 34:BA:975:A:O2'   | 34:BA:976:G:P     | 2.76                     | 0.44              |
| 34:BA:977:A:O2'   | 34:BA:979:C:P     | 2.75                     | 0.44              |
| 34:BA:1116:C:O2   | 34:BA:1185:G:N1   | 2.51                     | 0.44              |
| 34:BA:1142:G:C4   | 34:BA:1143:G:C8   | 3.06                     | 0.44              |
| 34:BA:1148:U:H5'  | 42:BM:7:THR:OG1   | 2.17                     | 0.44              |
| 34:BA:1171:G:C2'  | 34:BA:1172:C:H6   | 2.31                     | 0.44              |
| 34:BA:1187:G:C2'  | 34:BA:1188:A:H8   | 2.31                     | 0.44              |
| 34:BA:1300:G:C6   | 34:BA:1335:C:C5   | 3.05                     | 0.44              |
| 34:BA:1320:C:N3   | 52:BW:75:ALA:O    | 2.51                     | 0.44              |
| 34:BA:1324:A:C4'  | 34:BA:1362:C:H4'  | 2.48                     | 0.44              |
| 34:BA:1346:A:N1   | 40:BK:10:ARG:HD3  | 2.31                     | 0.44              |
| 34:BA:1350:A:C5   | 34:BA:1351:U:C5   | 3.06                     | 0.44              |
| 34:BA:1454:G:O2'  | 34:BA:1455:G:C8   | 2.55                     | 0.44              |
| 34:BA:1511:G:C6   | 34:BA:1512:U:C4   | 3.06                     | 0.44              |
| 35:BF:7:VAL:CG2   | 35:BF:8:LYS:H     | 2.21                     | 0.44              |
| 35:BF:101:MET:HB3 | 35:BF:105:PHE:CD1 | 2.53                     | 0.44              |
| 35:BF:208:ILE:O   | 35:BF:211:ILE:HB  | 2.17                     | 0.44              |
| 36:BG:8:ILE:CG2   | 47:BR:49:HIS:O    | 2.66                     | 0.44              |
| 36:BG:47:LEU:CD1  | 36:BG:49:SER:HB3  | 2.47                     | 0.44              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 36:BG:119:ARG:O    | 36:BG:120:VAL:C    | 2.60                     | 0.44              |
| 36:BG:165:THR:CG2  | 36:BG:166:GLU:N    | 2.81                     | 0.44              |
| 37:BH:133:VAL:HG21 | 37:BH:138:TYR:HE1  | 1.83                     | 0.44              |
| 37:BH:176:LEU:H    | 37:BH:176:LEU:HD23 | 1.82                     | 0.44              |
| 38:BI:105:VAL:CG1  | 38:BI:132:ALA:HA   | 2.48                     | 0.44              |
| 39:BJ:36:ARG:HB2   | 39:BJ:36:ARG:HH11  | 1.81                     | 0.44              |
| 39:BJ:94:GLN:CB    | 51:BV:32:ARG:NH2   | 2.81                     | 0.44              |
| 40:BK:26:PHE:CD1   | 40:BK:26:PHE:C     | 2.92                     | 0.44              |
| 41:BL:113:SER:O    | 41:BL:131:GLY:CA   | 2.65                     | 0.44              |
| 42:BM:17:VAL:HG11  | 42:BM:81:ILE:CA    | 2.48                     | 0.44              |
| 42:BM:53:VAL:HG12  | 42:BM:53:VAL:O     | 2.18                     | 0.44              |
| 43:BN:5:ARG:CZ     | 43:BN:5:ARG:CB     | 2.87                     | 0.44              |
| 43:BN:71:LEU:O     | 43:BN:72:VAL:C     | 2.61                     | 0.44              |
| 45:BP:98:TYR:CD1   | 45:BP:98:TYR:N     | 2.86                     | 0.44              |
| 46:BQ:50:GLU:HA    | 46:BQ:53:VAL:HB    | 2.00                     | 0.44              |
| 47:BR:29:ARG:HD3   | 47:BR:40:CYS:HB3   | 2.00                     | 0.44              |
| 47:BR:35:ARG:O     | 47:BR:36:PHE:C     | 2.61                     | 0.44              |
| 50:BU:7:THR:OG1    | 50:BU:57:VAL:C     | 2.60                     | 0.44              |
| 53:BX:20:LEU:O     | 53:BX:24:LEU:HG    | 2.17                     | 0.44              |
| 53:BX:45:GLN:HE21  | 53:BX:91:LEU:CD1   | 2.17                     | 0.44              |
| 53:BX:57:ARG:HH21  | 53:BX:100:ILE:CD1  | 2.30                     | 0.44              |
| 54:BY:6:ARG:HG3    | 54:BY:7:ARG:H      | 1.82                     | 0.44              |
| 55:BC:10:G:C2'     | 55:BC:11:C:H5'     | 2.48                     | 0.44              |
| 55:BC:16:U:H2'     | 55:BC:17:C:H5'     | 1.98                     | 0.44              |
| 56:BD:1:G:C6       | 56:BD:71:G:C6      | 3.06                     | 0.44              |
| 56:BD:4:C:C6       | 56:BD:70:G:N2      | 2.86                     | 0.44              |
| 56:BE:72:C:H3'     | 56:BE:73:A:C5'     | 2.46                     | 0.44              |
| 57:BZ:35:ARG:CA    | 57:BZ:36:ALA:CB    | 2.93                     | 0.44              |
| 57:BZ:220:VAL:CG1  | 57:BZ:279:LEU:HB3  | 2.04                     | 0.44              |
| 57:BZ:239:ILE:HG22 | 57:BZ:240:ILE:H    | 1.82                     | 0.44              |
| 57:BZ:309:MET:O    | 57:BZ:311:PHE:CD1  | 2.70                     | 0.44              |
| 57:BZ:434:LYS:HB2  | 57:BZ:434:LYS:HE3  | 1.81                     | 0.44              |
| 57:BZ:488:LEU:O    | 57:BZ:523:ILE:HA   | 2.18                     | 0.44              |
| 1:AA:29:U:O2       | 1:AA:30:G:C6       | 2.71                     | 0.43              |
| 1:AA:110:G:O6      | 1:AA:111:A:N6      | 2.51                     | 0.43              |
| 1:AA:118:A:H1'     | 1:AA:178:G:C4'     | 2.48                     | 0.43              |
| 1:AA:193:U:O2'     | 1:AA:194:G:H5'     | 2.17                     | 0.43              |
| 1:AA:207:A:C2      | 1:AA:208:C:H1'     | 2.53                     | 0.43              |
| 1:AA:213:A:H2'     | 1:AA:213:A:N3      | 2.33                     | 0.43              |
| 1:AA:270(C):C:P    | 1:AA:365:C:H1'     | 2.58                     | 0.43              |
| 1:AA:454:A:C8      | 1:AA:454:A:C3'     | 3.01                     | 0.43              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:AA:487:C:C6    | 1:AA:487:C:O5'   | 2.70                     | 0.43              |
| 1:AA:512:G:OP2   | 1:AA:1235:G:C5'  | 2.65                     | 0.43              |
| 1:AA:566:U:O2'   | 1:AA:808:G:OP1   | 2.35                     | 0.43              |
| 1:AA:630:G:N2    | 1:AA:634:C:C4    | 2.86                     | 0.43              |
| 1:AA:675:A:C5    | 1:AA:676:A:N1    | 2.85                     | 0.43              |
| 1:AA:778:G:C6    | 1:AA:779:U:N3    | 2.85                     | 0.43              |
| 1:AA:783:A:O3'   | 1:AA:2589:A:P    | 2.76                     | 0.43              |
| 1:AA:819:A:C2'   | 1:AA:820:A:H8    | 2.30                     | 0.43              |
| 1:AA:842:G:C6    | 1:AA:843:G:C5    | 3.06                     | 0.43              |
| 1:AA:844:C:OP2   | 1:AA:844:C:H6    | 2.01                     | 0.43              |
| 1:AA:866:A:C2    | 1:AA:867:C:C6    | 3.06                     | 0.43              |
| 1:AA:873:G:C6    | 1:AA:874:G:C5    | 3.06                     | 0.43              |
| 1:AA:972:G:H3'   | 1:AA:973:A:C3'   | 2.48                     | 0.43              |
| 1:AA:979:G:C3'   | 1:AA:980:A:C5'   | 2.78                     | 0.43              |
| 1:AA:981:A:O2'   | 1:AA:2036:C:O2'  | 2.23                     | 0.43              |
| 1:AA:984:A:P     | 1:AA:985:C:H41   | 2.41                     | 0.43              |
| 1:AA:1025:G:H8   | 1:AA:1134:G:C1'  | 2.31                     | 0.43              |
| 1:AA:1060:U:H5'' | 1:AA:1060:U:H6   | 1.83                     | 0.43              |
| 1:AA:1112:G:OP1  | 8:AH:4:ILE:HG12  | 2.18                     | 0.43              |
| 1:AA:1174:A:N6   | 1:AA:1177:A:C5   | 2.82                     | 0.43              |
| 1:AA:1195:G:C2   | 1:AA:1196:C:C6   | 3.06                     | 0.43              |
| 1:AA:1202:C:N4   | 1:AA:1241:A:N7   | 2.65                     | 0.43              |
| 1:AA:1314:C:C2   | 1:AA:1339:G:C2   | 3.05                     | 0.43              |
| 1:AA:1344:G:C5   | 1:AA:1385:G:N7   | 2.86                     | 0.43              |
| 1:AA:1353:A:C2'  | 1:AA:1354:A:O4'  | 2.65                     | 0.43              |
| 1:AA:1449:A:P    | 1:AA:1543:A:N1   | 2.91                     | 0.43              |
| 1:AA:1471:A:C6   | 1:AA:1473:G:C8   | 3.06                     | 0.43              |
| 1:AA:1530:G:N2   | 1:AA:1541:U:H2'  | 2.23                     | 0.43              |
| 1:AA:1550:C:C2   | 1:AA:1551:C:C5   | 3.06                     | 0.43              |
| 1:AA:1565:C:OP1  | 4:AD:24:ILE:HG23 | 2.18                     | 0.43              |
| 1:AA:1604:C:O2   | 1:AA:1604:C:C2'  | 2.66                     | 0.43              |
| 1:AA:1682:G:H3'  | 1:AA:1683:C:H5   | 1.83                     | 0.43              |
| 1:AA:1697:G:H3'  | 1:AA:1697:G:C8   | 2.52                     | 0.43              |
| 1:AA:1728:G:H1   | 1:AA:1733:G:N2   | 2.17                     | 0.43              |
| 1:AA:1789:A:H4'  | 4:AD:222:ARG:NE  | 2.33                     | 0.43              |
| 1:AA:1790:C:H1'  | 4:AD:213:ARG:NH2 | 2.33                     | 0.43              |
| 1:AA:1814:G:N2   | 1:AA:1815:A:N6   | 2.65                     | 0.43              |
| 1:AA:1824:G:H2'  | 1:AA:1825:A:C1'  | 2.48                     | 0.43              |
| 1:AA:1905:C:C4   | 1:AA:1930:G:C2   | 3.06                     | 0.43              |
| 1:AA:1959:G:H4'  | 34:BA:1418:A:C2' | 2.43                     | 0.43              |
| 1:AA:1959:G:C2'  | 34:BA:1418:A:C2  | 2.48                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1977:A:C2    | 1:AA:1978:A:C1'   | 3.01                     | 0.43              |
| 1:AA:1991:U:O5'   | 1:AA:1991:U:H6    | 2.01                     | 0.43              |
| 1:AA:1995:U:C5    | 1:AA:1996:C:H5    | 2.33                     | 0.43              |
| 1:AA:2020:A:C8    | 26:Ab:9:LYS:NZ    | 2.86                     | 0.43              |
| 1:AA:2082:A:C2    | 1:AA:2083:G:C4    | 3.06                     | 0.43              |
| 1:AA:2086:U:OP2   | 4:AD:260:ARG:NH2  | 2.51                     | 0.43              |
| 1:AA:2094:G:C2    | 1:AA:2196:C:N3    | 2.86                     | 0.43              |
| 1:AA:2234:G:N2    | 1:AA:2235:G:H1'   | 2.33                     | 0.43              |
| 1:AA:2312:U:OP1   | 7:AG:86:MET:HG2   | 2.18                     | 0.43              |
| 1:AA:2335:A:N7    | 1:AA:2337:G:C6    | 2.85                     | 0.43              |
| 1:AA:2358:G:N2    | 1:AA:2359:C:H1'   | 2.33                     | 0.43              |
| 1:AA:2459:A:OP2   | 1:AA:2460:U:C4    | 2.71                     | 0.43              |
| 1:AA:2520:C:C5    | 1:AA:2567:G:N9    | 2.85                     | 0.43              |
| 1:AA:2636:U:C4'   | 5:AE:79:ARG:HH21  | 2.20                     | 0.43              |
| 1:AA:2690:C:O2'   | 1:AA:2691:C:P     | 2.76                     | 0.43              |
| 1:AA:2708:G:H4'   | 13:AO:71:GLN:OE1  | 2.18                     | 0.43              |
| 1:AA:2726:U:O2'   | 1:AA:2727:G:OP1   | 2.28                     | 0.43              |
| 1:AA:2820:A:OP1   | 13:AO:5:LYS:HE2   | 2.17                     | 0.43              |
| 1:AA:2848:G:N2    | 1:AA:2849:U:O2    | 2.51                     | 0.43              |
| 1:AA:2848:G:HO2'  | 1:AA:2849:U:P     | 2.41                     | 0.43              |
| 2:AB:88:C:C4      | 2:AB:89:G:N3      | 2.86                     | 0.43              |
| 3:AC:42:GLU:CB    | 3:AC:215:THR:H    | 2.31                     | 0.43              |
| 3:AC:89:ALA:CB    | 3:AC:154:ARG:HH11 | 2.31                     | 0.43              |
| 4:AD:55:GLY:CA    | 4:AD:217:ARG:NH2  | 2.82                     | 0.43              |
| 4:AD:198:ASN:HD21 | 4:AD:201:HIS:HB2  | 1.83                     | 0.43              |
| 4:AD:246:PRO:C    | 4:AD:250:TRP:HB2  | 2.43                     | 0.43              |
| 5:AE:5:LEU:HD23   | 5:AE:7:VAL:CA     | 2.48                     | 0.43              |
| 5:AE:32:PRO:HG3   | 5:AE:88:GLY:CA    | 2.47                     | 0.43              |
| 5:AE:60:ASN:OD1   | 5:AE:61:ARG:HD3   | 2.18                     | 0.43              |
| 6:AF:11:VAL:HB    | 6:AF:17:ARG:NH1   | 2.33                     | 0.43              |
| 6:AF:34:TRP:CG    | 11:AM:8:PRO:HB2   | 2.51                     | 0.43              |
| 6:AF:75:HIS:CE1   | 6:AF:80:ALA:CB    | 3.01                     | 0.43              |
| 7:AG:32:PRO:HB2   | 7:AG:163:ALA:CB   | 2.48                     | 0.43              |
| 7:AG:44:GLY:C     | 7:AG:46:ALA:N     | 2.75                     | 0.43              |
| 7:AG:44:GLY:CA    | 7:AG:88:ILE:HG21  | 2.48                     | 0.43              |
| 7:AG:59:GLU:HB3   | 7:AG:152:LEU:CD1  | 2.48                     | 0.43              |
| 7:AG:59:GLU:O     | 7:AG:63:ILE:HB    | 2.18                     | 0.43              |
| 8:AH:33:LEU:C     | 8:AH:33:LEU:HD23  | 2.42                     | 0.43              |
| 8:AH:75:ALA:O     | 8:AH:79:VAL:HG22  | 2.18                     | 0.43              |
| 8:AH:149:ARG:NH2  | 8:AH:164:TYR:CD1  | 2.85                     | 0.43              |
| 8:AH:156:ALA:O    | 8:AH:157:TYR:CB   | 2.65                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 9:AK:4:TYR:HB3    | 16:AR:64:ARG:NH1   | 2.33                     | 0.43              |
| 9:AK:86:PRO:CD    | 9:AK:89:LYS:HD2    | 2.43                     | 0.43              |
| 10:AL:105:GLU:O   | 10:AL:107:ARG:N    | 2.51                     | 0.43              |
| 11:AM:49:ARG:CD   | 29:Ae:52:LYS:HE3   | 2.48                     | 0.43              |
| 11:AM:78:PRO:HA   | 11:AM:81:GLN:NE2   | 2.33                     | 0.43              |
| 11:AM:91:PHE:CE2  | 11:AM:96:THR:HA    | 2.54                     | 0.43              |
| 11:AM:96:THR:O    | 11:AM:99:LEU:CB    | 2.66                     | 0.43              |
| 12:AN:68:ILE:HG12 | 12:AN:97:VAL:HG13  | 2.00                     | 0.43              |
| 12:AN:113:GLN:O   | 12:AN:114:ALA:C    | 2.61                     | 0.43              |
| 13:AO:20:LEU:HD22 | 13:AO:24:GLN:HG3   | 1.88                     | 0.43              |
| 13:AO:105:ARG:C   | 13:AO:107:ASP:N    | 2.76                     | 0.43              |
| 14:AP:26:LEU:HD12 | 14:AP:101:LEU:HD11 | 2.00                     | 0.43              |
| 14:AP:32:LEU:C    | 14:AP:34:HIS:N     | 2.74                     | 0.43              |
| 15:AQ:54:ARG:CA   | 15:AQ:64:ARG:HB2   | 2.45                     | 0.43              |
| 15:AQ:93:ARG:CG   | 15:AQ:95:ARG:NH1   | 2.80                     | 0.43              |
| 16:AR:70:ARG:NH1  | 16:AR:70:ARG:CB    | 2.80                     | 0.43              |
| 16:AR:89:GLU:O    | 16:AR:90:VAL:HG23  | 2.18                     | 0.43              |
| 17:AS:5:VAL:CG2   | 17:AS:39:LEU:HD22  | 2.48                     | 0.43              |
| 18:AT:13:SER:OG   | 18:AT:16:LYS:CE    | 2.65                     | 0.43              |
| 19:AU:39:ILE:O    | 19:AU:43:VAL:CG2   | 2.66                     | 0.43              |
| 20:AV:38:ILE:CG2  | 20:AV:60:PHE:HZ    | 2.27                     | 0.43              |
| 21:AW:18:LEU:CD2  | 21:AW:23:LYS:HD3   | 2.47                     | 0.43              |
| 21:AW:102:LEU:CG  | 21:AW:125:LEU:HD12 | 2.48                     | 0.43              |
| 21:AW:138:GLU:O   | 21:AW:139:VAL:CG2  | 2.66                     | 0.43              |
| 21:AW:169:GLU:O   | 21:AW:170:THR:CB   | 2.66                     | 0.43              |
| 23:AY:7:GLU:O     | 23:AY:10:LYS:HG2   | 2.18                     | 0.43              |
| 25:Aa:10:VAL:CG2  | 25:Aa:60:GLN:HE22  | 2.31                     | 0.43              |
| 25:Aa:31:ILE:O    | 25:Aa:31:ILE:HG12  | 2.17                     | 0.43              |
| 25:Aa:59:PHE:O    | 25:Aa:62:ARG:N     | 2.51                     | 0.43              |
| 26:Ab:55:ARG:C    | 26:Ab:56:LYS:HG2   | 2.43                     | 0.43              |
| 27:Ac:17:LYS:C    | 27:Ac:19:ARG:H     | 2.26                     | 0.43              |
| 27:Ac:20:ASN:HD22 | 27:Ac:43:CYS:H     | 1.62                     | 0.43              |
| 30:Af:22:ARG:HD3  | 30:Af:24:TYR:CE1   | 2.53                     | 0.43              |
| 32:AJ:15:GLY:C    | 32:AJ:45:THR:OG1   | 2.61                     | 0.43              |
| 34:BA:7:G:H1'     | 34:BA:298:A:C4     | 2.53                     | 0.43              |
| 34:BA:36:C:OP1    | 45:BP:123:LYS:HG2  | 2.18                     | 0.43              |
| 34:BA:64:G:C4'    | 34:BA:65:U:H5''    | 2.29                     | 0.43              |
| 34:BA:133:U:H5'   | 34:BA:134:A:OP1    | 2.17                     | 0.43              |
| 34:BA:187:C:N3    | 34:BA:188:U:O2     | 2.51                     | 0.43              |
| 34:BA:355:C:C2    | 34:BA:356:A:C8     | 3.06                     | 0.43              |
| 34:BA:394:G:C5    | 34:BA:395:C:C5     | 3.06                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 34:BA:511:C:C2'   | 34:BA:512:U:C6    | 3.01                     | 0.43              |
| 34:BA:580:U:C5'   | 48:BS:58:MET:HG2  | 2.48                     | 0.43              |
| 34:BA:584:G:OP2   | 50:BU:87:LYS:NZ   | 2.51                     | 0.43              |
| 34:BA:597:G:C4    | 34:BA:644:G:C2    | 3.06                     | 0.43              |
| 34:BA:598:U:C2    | 34:BA:599:C:C5    | 3.06                     | 0.43              |
| 34:BA:666:G:H4'   | 34:BA:731:G:N2    | 2.33                     | 0.43              |
| 34:BA:676:A:C4'   | 44:BO:114:VAL:O   | 2.65                     | 0.43              |
| 34:BA:737:A:O2'   | 34:BA:738:C:C5'   | 2.65                     | 0.43              |
| 34:BA:737:A:H2'   | 34:BA:738:C:C6    | 2.51                     | 0.43              |
| 34:BA:766:A:C2    | 34:BA:767:A:C1'   | 3.01                     | 0.43              |
| 34:BA:787:A:H2'   | 34:BA:787:A:N3    | 2.33                     | 0.43              |
| 34:BA:831:U:H2'   | 34:BA:832:C:O4'   | 2.18                     | 0.43              |
| 34:BA:833:U:H2'   | 34:BA:834:C:C6    | 2.52                     | 0.43              |
| 34:BA:953:G:C2'   | 34:BA:954:G:O5'   | 2.65                     | 0.43              |
| 34:BA:957:U:O2    | 34:BA:960:U:C5    | 2.71                     | 0.43              |
| 34:BA:960:U:H5'   | 34:BA:960:U:C6    | 2.53                     | 0.43              |
| 34:BA:1011:G:N1   | 34:BA:1012:U:H1'  | 2.33                     | 0.43              |
| 34:BA:1219:U:C3'  | 52:BW:34:TRP:NE1  | 2.19                     | 0.43              |
| 34:BA:1253:G:N2   | 34:BA:1285:A:N6   | 2.66                     | 0.43              |
| 34:BA:1255:G:N2   | 34:BA:1276:G:H21  | 2.16                     | 0.43              |
| 34:BA:1259:C:O2'  | 34:BA:1283:G:N2   | 2.43                     | 0.43              |
| 34:BA:1268:A:H2   | 34:BA:1327:C:H1'  | 1.83                     | 0.43              |
| 34:BA:1337:G:H5'' | 34:BA:1338:G:OP1  | 2.18                     | 0.43              |
| 34:BA:1360:A:N1   | 34:BA:1361:G:C2   | 2.86                     | 0.43              |
| 35:BF:28:PHE:HA   | 35:BF:194:PRO:HG2 | 1.99                     | 0.43              |
| 35:BF:171:ALA:C   | 35:BF:174:VAL:HB  | 2.42                     | 0.43              |
| 36:BG:58:GLU:O    | 36:BG:65:ALA:N    | 2.51                     | 0.43              |
| 36:BG:67:THR:HG23 | 36:BG:102:ASN:HB3 | 1.99                     | 0.43              |
| 37:BH:66:ARG:C    | 37:BH:68:TYR:H    | 2.26                     | 0.43              |
| 37:BH:67:ILE:CD1  | 37:BH:68:TYR:CD1  | 3.00                     | 0.43              |
| 37:BH:134:ASP:O   | 37:BH:134:ASP:OD2 | 2.36                     | 0.43              |
| 38:BI:37:ARG:NH1  | 38:BI:112:LEU:HA  | 2.33                     | 0.43              |
| 38:BI:74:GLY:O    | 38:BI:75:THR:CB   | 2.61                     | 0.43              |
| 38:BI:82:VAL:HB   | 38:BI:138:ALA:HB2 | 2.00                     | 0.43              |
| 39:BJ:60:PHE:CZ   | 51:BV:78:LEU:HD21 | 2.52                     | 0.43              |
| 40:BK:75:VAL:HG22 | 40:BK:87:VAL:C    | 2.43                     | 0.43              |
| 40:BK:123:GLU:OE1 | 40:BK:134:ALA:N   | 2.45                     | 0.43              |
| 41:BL:63:LEU:CD2  | 41:BL:63:LEU:N    | 2.80                     | 0.43              |
| 42:BM:10:ARG:NE   | 42:BM:75:ASP:OD2  | 2.51                     | 0.43              |
| 42:BM:23:ASN:O    | 42:BM:59:PHE:O    | 2.36                     | 0.43              |
| 43:BN:3:LYS:N     | 43:BN:3:LYS:HD2   | 2.33                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 43:BN:40:LEU:O    | 43:BN:42:THR:N    | 2.51                     | 0.43              |
| 43:BN:65:LEU:CD1  | 47:BR:36:PHE:CZ   | 3.01                     | 0.43              |
| 44:BO:25:TYR:OH   | 44:BO:87:THR:HB   | 2.18                     | 0.43              |
| 44:BO:87:THR:CG2  | 44:BO:91:ARG:HH12 | 2.23                     | 0.43              |
| 44:BO:88:GLY:O    | 44:BO:90:GLY:N    | 2.50                     | 0.43              |
| 45:BP:82:VAL:O    | 45:BP:83:VAL:CB   | 2.65                     | 0.43              |
| 46:BQ:53:VAL:O    | 46:BQ:57:ARG:HB2  | 2.17                     | 0.43              |
| 46:BQ:54:VAL:CG1  | 46:BQ:58:GLU:OE1  | 2.66                     | 0.43              |
| 47:BR:12:ARG:C    | 47:BR:14:PRO:N    | 2.75                     | 0.43              |
| 48:BS:27:VAL:O    | 48:BS:31:LEU:HD13 | 2.18                     | 0.43              |
| 49:BT:26:ARG:HG3  | 49:BT:26:ARG:HH11 | 1.83                     | 0.43              |
| 49:BT:38:TYR:CE1  | 49:BT:50:LYS:HB3  | 2.53                     | 0.43              |
| 50:BU:7:THR:CG2   | 50:BU:56:VAL:CG1  | 2.85                     | 0.43              |
| 50:BU:7:THR:HG22  | 50:BU:56:VAL:CG1  | 2.47                     | 0.43              |
| 50:BU:43:LEU:HD11 | 50:BU:69:LYS:HB2  | 2.00                     | 0.43              |
| 50:BU:53:LEU:O    | 50:BU:53:LEU:CG   | 2.66                     | 0.43              |
| 50:BU:60:ILE:CD1  | 50:BU:62:SER:HA   | 2.48                     | 0.43              |
| 55:BC:62:C:H2'    | 55:BC:63:G:C8     | 2.53                     | 0.43              |
| 57:BZ:89:MET:CE   | 57:BZ:116:ALA:HA  | 2.47                     | 0.43              |
| 57:BZ:136:ARG:O   | 57:BZ:136:ARG:HG2 | 2.18                     | 0.43              |
| 57:BZ:151:LEU:O   | 57:BZ:152:ASP:CB  | 2.66                     | 0.43              |
| 57:BZ:180:ALA:CB  | 57:BZ:181:GLU:C   | 2.85                     | 0.43              |
| 57:BZ:240:ILE:O   | 57:BZ:242:SER:N   | 2.42                     | 0.43              |
| 57:BZ:408:GLU:C   | 57:BZ:410:GLN:N   | 2.74                     | 0.43              |
| 57:BZ:521:GLY:CA  | 57:BZ:592:LEU:HA  | 2.47                     | 0.43              |
| 1:AA:20:C:H2'     | 1:AA:21:A:H8      | 1.83                     | 0.43              |
| 1:AA:67:U:C6      | 1:AA:67:U:C4'     | 3.01                     | 0.43              |
| 1:AA:77:C:H6      | 1:AA:77:C:OP2     | 2.02                     | 0.43              |
| 1:AA:120:U:C2'    | 1:AA:121:G:OP2    | 2.66                     | 0.43              |
| 1:AA:216:A:N6     | 1:AA:431:U:H3     | 2.13                     | 0.43              |
| 1:AA:246:C:N3     | 1:AA:247:G:C5     | 2.86                     | 0.43              |
| 1:AA:268:C:C2     | 1:AA:269:U:C5     | 3.06                     | 0.43              |
| 1:AA:270(J):G:C5  | 1:AA:270(K):C:C4  | 3.06                     | 0.43              |
| 1:AA:322:A:OP1    | 6:AF:168:ARG:HG2  | 2.18                     | 0.43              |
| 1:AA:349:G:H2'    | 1:AA:350:U:C5     | 2.49                     | 0.43              |
| 1:AA:389:G:OP2    | 25:Aa:24:THR:CG2  | 2.58                     | 0.43              |
| 1:AA:389:G:H1'    | 1:AA:2412:A:H2'   | 2.00                     | 0.43              |
| 1:AA:393:C:C2     | 1:AA:394:A:C8     | 3.06                     | 0.43              |
| 1:AA:400:G:N1     | 25:Aa:63:TYR:OH   | 2.30                     | 0.43              |
| 1:AA:414:C:H2'    | 1:AA:415:A:H8     | 1.82                     | 0.43              |
| 1:AA:449:A:OP2    | 6:AF:85:GLY:CA    | 2.66                     | 0.43              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:552:G:O2'   | 1:AA:553:U:C5'    | 2.65                     | 0.43              |
| 1:AA:600:G:H4'   | 6:AF:105:VAL:CG1  | 2.48                     | 0.43              |
| 1:AA:603:A:H62   | 11:AM:104:GLY:HA2 | 1.82                     | 0.43              |
| 1:AA:609:A:N6    | 1:AA:619:G:H21    | 2.16                     | 0.43              |
| 1:AA:659:C:H4'   | 6:AF:102:PRO:HD3  | 2.00                     | 0.43              |
| 1:AA:783:A:C3'   | 4:AD:227:ASN:OD1  | 2.66                     | 0.43              |
| 1:AA:814:C:C4'   | 1:AA:1224:G:H22   | 2.30                     | 0.43              |
| 1:AA:892:G:C2'   | 1:AA:893:C:C6     | 2.97                     | 0.43              |
| 1:AA:923:C:H4'   | 22:AX:26:TYR:CD1  | 2.53                     | 0.43              |
| 1:AA:963:U:C1'   | 1:AA:2250:G:H21   | 2.19                     | 0.43              |
| 1:AA:1011:G:O6   | 1:AA:1151:G:C6    | 2.71                     | 0.43              |
| 1:AA:1022:G:N7   | 1:AA:1139:G:O6    | 2.51                     | 0.43              |
| 1:AA:1024:G:N7   | 1:AA:1134:G:H1'   | 2.33                     | 0.43              |
| 1:AA:1033:U:H5'' | 30:Af:9:ARG:HH21  | 1.83                     | 0.43              |
| 1:AA:1062:G:H2'  | 1:AA:1065:U:O4    | 2.18                     | 0.43              |
| 1:AA:1089:G:C8   | 1:AA:1089:G:O5'   | 2.70                     | 0.43              |
| 1:AA:1183:G:HO2' | 1:AA:1184:G:P     | 2.41                     | 0.43              |
| 1:AA:1212:G:H1'  | 1:AA:1237:A:N6    | 2.33                     | 0.43              |
| 1:AA:1255:U:O4   | 6:AF:72:ARG:O     | 2.36                     | 0.43              |
| 1:AA:1450:C:C2'  | 1:AA:1451:C:OP2   | 2.66                     | 0.43              |
| 1:AA:1466:G:O2'  | 1:AA:1546:C:H4'   | 2.18                     | 0.43              |
| 1:AA:1537:C:O5'  | 1:AA:1537:C:H6    | 2.01                     | 0.43              |
| 1:AA:1544:C:O2'  | 1:AA:1545:A:H4'   | 2.18                     | 0.43              |
| 1:AA:1568:G:OP1  | 4:AD:86:PRO:HG2   | 2.18                     | 0.43              |
| 1:AA:1630:G:H2'  | 1:AA:1630(A):C:C6 | 2.48                     | 0.43              |
| 1:AA:1649:G:N3   | 13:AO:107:ASP:HB3 | 2.32                     | 0.43              |
| 1:AA:1661:G:C4   | 1:AA:2000:G:C2    | 3.06                     | 0.43              |
| 1:AA:1662:C:C2   | 1:AA:1663:C:C5    | 3.07                     | 0.43              |
| 1:AA:1663:C:H5'' | 1:AA:1664:A:OP1   | 2.18                     | 0.43              |
| 1:AA:1696:G:C6   | 1:AA:1697:G:N1    | 2.87                     | 0.43              |
| 1:AA:1793:C:C4   | 1:AA:1794:U:O4    | 2.71                     | 0.43              |
| 1:AA:1974:C:C2   | 1:AA:1975:G:C8    | 3.05                     | 0.43              |
| 1:AA:1995:U:C6   | 1:AA:1995:U:C3'   | 3.01                     | 0.43              |
| 1:AA:2002:G:C6   | 1:AA:2003:G:N7    | 2.87                     | 0.43              |
| 1:AA:2018:G:OP2  | 1:AA:2018:G:C8    | 2.70                     | 0.43              |
| 1:AA:2052:G:C6   | 1:AA:2053:G:C6    | 3.06                     | 0.43              |
| 1:AA:2125:G:C4'  | 3:AC:217:THR:OG1  | 2.62                     | 0.43              |
| 1:AA:2133:G:N3   | 1:AA:2133:G:H2'   | 2.32                     | 0.43              |
| 1:AA:2369:A:N6   | 1:AA:2382:G:H22   | 2.16                     | 0.43              |
| 1:AA:2383:G:N2   | 1:AA:2384:G:C4    | 2.86                     | 0.43              |
| 1:AA:2387:U:OP2  | 1:AA:2387:U:C6    | 2.72                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2472:G:H22   | 1:AA:2477:C:P     | 2.38                     | 0.43              |
| 1:AA:2474:C:H6    | 1:AA:2474:C:O5'   | 2.01                     | 0.43              |
| 1:AA:2596:U:C3'   | 4:AD:242:ARG:CZ   | 2.96                     | 0.43              |
| 1:AA:2642:G:N1    | 1:AA:2643:G:C5    | 2.86                     | 0.43              |
| 1:AA:2695:C:O2'   | 1:AA:2696:U:H6    | 2.00                     | 0.43              |
| 1:AA:2706:G:N1    | 1:AA:2707:G:C5    | 2.86                     | 0.43              |
| 1:AA:2733:A:C2    | 5:AE:204:ALA:HB2  | 2.52                     | 0.43              |
| 1:AA:2742:C:O3'   | 30:Af:35:ARG:NH2  | 2.51                     | 0.43              |
| 1:AA:2787:C:H4'   | 5:AE:60:ASN:OD1   | 2.17                     | 0.43              |
| 1:AA:2813:A:H2'   | 1:AA:2814:C:O4'   | 2.18                     | 0.43              |
| 1:AA:2876:G:C2    | 1:AA:2877:G:C5    | 3.06                     | 0.43              |
| 2:AB:29:A:H2'     | 2:AB:30:C:O4'     | 2.18                     | 0.43              |
| 2:AB:73:A:C2      | 2:AB:74:U:N1      | 2.87                     | 0.43              |
| 2:AB:74:U:C3'     | 2:AB:75:G:O4'     | 2.65                     | 0.43              |
| 3:AC:44:HIS:CA    | 3:AC:213:TYR:HB2  | 2.48                     | 0.43              |
| 3:AC:74:VAL:HG13  | 3:AC:112:ALA:O    | 2.17                     | 0.43              |
| 3:AC:104:LEU:HA   | 3:AC:130:ILE:HG12 | 1.99                     | 0.43              |
| 3:AC:175:VAL:CB   | 3:AC:185:LEU:O    | 2.66                     | 0.43              |
| 3:AC:182:PRO:HG2  | 3:AC:183:GLU:OE1  | 2.17                     | 0.43              |
| 3:AC:210:ARG:CG   | 3:AC:210:ARG:HH11 | 2.31                     | 0.43              |
| 3:AC:223:ARG:CG   | 3:AC:224:ILE:N    | 2.80                     | 0.43              |
| 4:AD:63:ARG:CG    | 4:AD:65:ILE:HD11  | 2.48                     | 0.43              |
| 5:AE:19:ARG:HB3   | 10:AL:73:ASP:OD2  | 2.18                     | 0.43              |
| 5:AE:36:ARG:CB    | 5:AE:41:LYS:HB2   | 2.44                     | 0.43              |
| 5:AE:80:GLU:C     | 5:AE:83:ASP:OD2   | 2.62                     | 0.43              |
| 6:AF:124:LEU:HD21 | 6:AF:201:VAL:HG21 | 2.00                     | 0.43              |
| 6:AF:143:ALA:O    | 6:AF:144:LYS:C    | 2.61                     | 0.43              |
| 6:AF:169:ASN:OD1  | 6:AF:171:PRO:HG2  | 2.18                     | 0.43              |
| 7:AG:29:TRP:HB2   | 7:AG:31:VAL:CG2   | 2.48                     | 0.43              |
| 7:AG:111:LEU:CD2  | 7:AG:178:PHE:HD2  | 2.31                     | 0.43              |
| 7:AG:166:ASP:C    | 7:AG:168:GLU:N    | 2.77                     | 0.43              |
| 8:AH:95:ARG:O     | 8:AH:105:LEU:HA   | 2.18                     | 0.43              |
| 8:AH:119:GLU:H    | 8:AH:121:ILE:HG22 | 1.81                     | 0.43              |
| 8:AH:143:GLN:O    | 8:AH:146:ALA:N    | 2.51                     | 0.43              |
| 9:AK:14:VAL:CG1   | 9:AK:138:LEU:HB3  | 2.29                     | 0.43              |
| 9:AK:21:LYS:HB3   | 9:AK:25:ARG:NH2   | 2.33                     | 0.43              |
| 10:AL:22:ILE:HB   | 10:AL:23:ARG:CD   | 2.48                     | 0.43              |
| 10:AL:116:SER:HB3 | 34:BA:345:C:N3    | 2.32                     | 0.43              |
| 11:AM:46:LYS:HZ3  | 11:AM:50:ARG:CZ   | 2.30                     | 0.43              |
| 11:AM:76:LYS:CE   | 11:AM:81:GLN:CD   | 2.91                     | 0.43              |
| 12:AN:32:TYR:CB   | 12:AN:105:GLU:O   | 2.53                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 12:AN:36:ALA:HB3  | 12:AN:101:ARG:H    | 1.82                     | 0.43              |
| 12:AN:36:ALA:CA   | 12:AN:129:THR:HG22 | 2.48                     | 0.43              |
| 12:AN:46:GLN:CG   | 12:AN:125:LEU:HA   | 2.48                     | 0.43              |
| 12:AN:64:ILE:O    | 12:AN:65:PHE:CD2   | 2.71                     | 0.43              |
| 12:AN:91:GLU:OE2  | 12:AN:91:GLU:N     | 2.51                     | 0.43              |
| 12:AN:130:LYS:HE3 | 12:AN:131:ILE:CA   | 2.47                     | 0.43              |
| 13:AO:28:LEU:O    | 13:AO:31:HIS:N     | 2.52                     | 0.43              |
| 14:AP:13:ARG:NH2  | 14:AP:90:GLY:C     | 2.76                     | 0.43              |
| 14:AP:20:ARG:HG2  | 14:AP:20:ARG:H     | 1.60                     | 0.43              |
| 14:AP:52:SER:OG   | 14:AP:69:VAL:CG1   | 2.66                     | 0.43              |
| 14:AP:64:GLU:OE2  | 14:AP:67:ARG:CB    | 2.61                     | 0.43              |
| 14:AP:102:ALA:O   | 14:AP:103:GLU:C    | 2.60                     | 0.43              |
| 14:AP:106:ARG:NH1 | 14:AP:110:LEU:CB   | 2.63                     | 0.43              |
| 15:AQ:70:VAL:HB   | 15:AQ:74:ARG:CZ    | 2.43                     | 0.43              |
| 16:AR:55:ARG:HA   | 16:AR:58:ARG:HB3   | 2.01                     | 0.43              |
| 16:AR:80:ILE:C    | 16:AR:82:GLY:N     | 2.72                     | 0.43              |
| 16:AR:95:LEU:HD23 | 16:AR:95:LEU:H     | 1.82                     | 0.43              |
| 16:AR:98:LEU:HD12 | 16:AR:105:VAL:HG11 | 1.99                     | 0.43              |
| 19:AU:12:VAL:HA   | 19:AU:29:TRP:NE1   | 2.33                     | 0.43              |
| 19:AU:18:TYR:HA   | 19:AU:21:PHE:CE1   | 2.53                     | 0.43              |
| 21:AW:41:LEU:CA   | 21:AW:44:PHE:HB2   | 2.48                     | 0.43              |
| 22:AX:60:PHE:C    | 22:AX:60:PHE:CD1   | 2.96                     | 0.43              |
| 23:AY:16:LEU:O    | 23:AY:16:LEU:HD12  | 2.18                     | 0.43              |
| 23:AY:60:ASN:O    | 23:AY:61:GLU:C     | 2.61                     | 0.43              |
| 25:Aa:14:ILE:HG23 | 25:Aa:16:CYS:SG    | 2.59                     | 0.43              |
| 27:Ac:10:LEU:HD12 | 27:Ac:28:ARG:HH21  | 1.82                     | 0.43              |
| 28:Ad:18:PHE:C    | 28:Ad:22:MET:HE3   | 2.43                     | 0.43              |
| 29:Ae:26:LYS:C    | 29:Ae:28:GLY:N     | 2.77                     | 0.43              |
| 32:AJ:33:ASN:H    | 32:AJ:59:ILE:CG2   | 2.31                     | 0.43              |
| 33:Ag:291:UNK:C   | 33:Ag:342:UNK:CB   | 2.95                     | 0.43              |
| 34:BA:15:G:H2'    | 34:BA:16:A:C8      | 2.53                     | 0.43              |
| 34:BA:57:G:O6     | 34:BA:356:A:N6     | 2.51                     | 0.43              |
| 34:BA:66:G:N1     | 34:BA:67:C:C4      | 2.86                     | 0.43              |
| 34:BA:255:G:OP1   | 50:BU:69:LYS:HE2   | 2.18                     | 0.43              |
| 34:BA:261:U:O4    | 34:BA:264:U:OP2    | 2.36                     | 0.43              |
| 34:BA:363:A:P     | 45:BP:33:ARG:HH21  | 2.41                     | 0.43              |
| 34:BA:377:G:P     | 49:BT:5:ARG:HD3    | 2.58                     | 0.43              |
| 34:BA:383:A:OP2   | 34:BA:383:A:H8     | 2.01                     | 0.43              |
| 34:BA:531:U:H3'   | 34:BA:531:U:P      | 2.59                     | 0.43              |
| 34:BA:606:G:N2    | 34:BA:631:G:H2'    | 2.33                     | 0.43              |
| 34:BA:692:U:C2    | 34:BA:694:A:OP2    | 2.71                     | 0.43              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:867:G:C2     | 34:BA:868:C:C4     | 3.06                     | 0.43              |
| 34:BA:880:C:P      | 45:BP:9:GLN:NE2    | 2.90                     | 0.43              |
| 34:BA:901:A:C2'    | 34:BA:902:G:O5'    | 2.65                     | 0.43              |
| 34:BA:945:G:C2     | 34:BA:1337:G:N3    | 2.86                     | 0.43              |
| 34:BA:977:A:N6     | 34:BA:1224:G:O5'   | 2.51                     | 0.43              |
| 34:BA:1018:C:C4    | 34:BA:1019:C:C5    | 3.06                     | 0.43              |
| 34:BA:1225:A:H2'   | 52:BW:80:TYR:HB2   | 1.99                     | 0.43              |
| 34:BA:1227:A:O2'   | 46:BQ:115:LYS:HE2  | 2.17                     | 0.43              |
| 34:BA:1250:A:H4'   | 42:BM:68:GLY:N     | 2.31                     | 0.43              |
| 34:BA:1270:C:C2'   | 34:BA:1313:U:C3'   | 2.86                     | 0.43              |
| 34:BA:1347:G:C8    | 42:BM:107:ARG:HB2  | 2.54                     | 0.43              |
| 34:BA:1363:A:N3    | 34:BA:1365:G:O6    | 2.51                     | 0.43              |
| 34:BA:1410:G:C6    | 34:BA:1411:C:N4    | 2.86                     | 0.43              |
| 34:BA:1483:A:H2'   | 34:BA:1484:C:H5'   | 2.00                     | 0.43              |
| 34:BA:1487:G:N3    | 34:BA:1488:G:C8    | 2.86                     | 0.43              |
| 34:BA:1519:A:C3'   | 34:BA:1520:G:H5'   | 2.47                     | 0.43              |
| 34:BA:1533:C:C5    | 34:BA:1534:A:N7    | 2.86                     | 0.43              |
| 35:BF:16:HIS:O     | 35:BF:18:GLY:N     | 2.51                     | 0.43              |
| 35:BF:80:ILE:HG22  | 35:BF:81:VAL:N     | 2.33                     | 0.43              |
| 35:BF:193:ASP:O    | 35:BF:194:PRO:O    | 2.36                     | 0.43              |
| 35:BF:207:ALA:O    | 35:BF:208:ILE:C    | 2.58                     | 0.43              |
| 36:BG:10:PHE:C     | 36:BG:11:ARG:NE    | 2.75                     | 0.43              |
| 36:BG:82:GLU:OE1   | 36:BG:83:ARG:N     | 2.51                     | 0.43              |
| 36:BG:138:VAL:HG13 | 36:BG:149:ALA:CB   | 2.48                     | 0.43              |
| 36:BG:190:ARG:O    | 36:BG:191:THR:O    | 2.36                     | 0.43              |
| 36:BG:195:VAL:C    | 36:BG:196:LEU:HD23 | 2.43                     | 0.43              |
| 37:BH:139:ARG:CG   | 37:BH:140:VAL:H    | 2.29                     | 0.43              |
| 37:BH:190:ASP:H    | 37:BH:193:ASP:CG   | 2.25                     | 0.43              |
| 40:BK:115:ARG:CG   | 40:BK:118:VAL:HG21 | 2.48                     | 0.43              |
| 41:BL:9:MET:SD     | 41:BL:32:LYS:HB2   | 2.57                     | 0.43              |
| 41:BL:11:THR:OG1   | 41:BL:12:ARG:N     | 2.52                     | 0.43              |
| 41:BL:12:ARG:HH11  | 41:BL:26:VAL:HG22  | 1.83                     | 0.43              |
| 41:BL:45:ILE:HD11  | 41:BL:48:TYR:CB    | 2.38                     | 0.43              |
| 42:BM:49:PRO:HB2   | 42:BM:82:ALA:HA    | 2.00                     | 0.43              |
| 42:BM:116:LYS:O    | 42:BM:118:LYS:N    | 2.51                     | 0.43              |
| 44:BO:87:THR:HA    | 44:BO:91:ARG:HH12  | 1.77                     | 0.43              |
| 45:BP:34:ARG:CA    | 45:BP:84:LEU:HD12  | 2.48                     | 0.43              |
| 45:BP:78:GLN:N     | 45:BP:81:SER:OG    | 2.51                     | 0.43              |
| 46:BQ:15:VAL:C     | 46:BQ:34:LEU:CG    | 2.83                     | 0.43              |
| 47:BR:6:LEU:C      | 47:BR:8:GLU:H      | 2.26                     | 0.43              |
| 49:BT:66:PRO:HG2   | 49:BT:71:ARG:NH1   | 2.32                     | 0.43              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 51:BV:53:ARG:C    | 51:BV:55:ARG:N   | 2.76                     | 0.43              |
| 53:BX:8:ARG:NH1   | 53:BX:8:ARG:CB   | 2.81                     | 0.43              |
| 53:BX:31:SER:O    | 53:BX:34:LYS:HB2 | 2.17                     | 0.43              |
| 53:BX:54:LYS:HA   | 53:BX:57:ARG:CD  | 2.49                     | 0.43              |
| 53:BX:77:ALA:C    | 53:BX:80:ARG:HB2 | 2.43                     | 0.43              |
| 55:BC:16:U:C4     | 55:BC:19:G:P     | 3.11                     | 0.43              |
| 55:BC:29:G:H1     | 55:BC:41:C:H42   | 1.65                     | 0.43              |
| 56:BD:65:G:C6     | 56:BD:66:U:C4    | 3.06                     | 0.43              |
| 56:BE:41:C:H2'    | 56:BE:42:C:H5''  | 1.99                     | 0.43              |
| 57:BZ:18:LYS:HD2  | 60:BZ:701:GCP:PG | 2.58                     | 0.43              |
| 57:BZ:230:LYS:HB2 | 57:BZ:231:VAL:CB | 2.48                     | 0.43              |
| 57:BZ:377:GLY:O   | 57:BZ:378:PHE:CG | 2.71                     | 0.43              |
| 57:BZ:397:GLN:HG2 | 57:BZ:473:ASP:CA | 2.48                     | 0.43              |
| 57:BZ:404:THR:HB  | 57:BZ:438:ARG:HA | 1.23                     | 0.43              |
| 1:AA:55:G:H2'     | 1:AA:56:A:C8     | 2.53                     | 0.43              |
| 1:AA:219:G:O5'    | 1:AA:219:G:C8    | 2.59                     | 0.43              |
| 1:AA:300:A:H3'    | 1:AA:300:A:H8    | 1.84                     | 0.43              |
| 1:AA:447:A:O2'    | 1:AA:448:U:C5'   | 2.66                     | 0.43              |
| 1:AA:535:C:O2'    | 16:AR:53:ARG:HD2 | 2.18                     | 0.43              |
| 1:AA:548:A:N6     | 1:AA:549:G:N3    | 2.66                     | 0.43              |
| 1:AA:558:G:C5'    | 9:AK:109:LYS:HG2 | 2.47                     | 0.43              |
| 1:AA:713:G:N3     | 1:AA:713:G:C2'   | 2.78                     | 0.43              |
| 1:AA:716:A:C2     | 48:BS:44:LYS:CB  | 2.99                     | 0.43              |
| 1:AA:727:A:N6     | 1:AA:729:G:C6    | 2.86                     | 0.43              |
| 1:AA:838:C:N1     | 1:AA:941:A:N6    | 2.66                     | 0.43              |
| 1:AA:915:C:C2'    | 1:AA:916:G:H8    | 2.28                     | 0.43              |
| 1:AA:1006:C:C2    | 1:AA:1137:G:N2   | 2.87                     | 0.43              |
| 1:AA:1051:G:H2'   | 1:AA:1052:C:H5'' | 2.00                     | 0.43              |
| 1:AA:1083:U:C2'   | 1:AA:1084:A:C5'  | 2.95                     | 0.43              |
| 1:AA:1124:C:H2'   | 1:AA:1125:G:O4'  | 2.18                     | 0.43              |
| 1:AA:1129:A:C5    | 1:AA:2570:G:H1'  | 2.53                     | 0.43              |
| 1:AA:1131:G:O6    | 1:AA:2025:C:H1'  | 2.18                     | 0.43              |
| 1:AA:1190:G:OP2   | 11:AM:29:LYS:HD3 | 2.17                     | 0.43              |
| 1:AA:1440:G:C5    | 1:AA:1441:G:N7   | 2.86                     | 0.43              |
| 1:AA:1448:G:N2    | 1:AA:1529:A:H2   | 2.16                     | 0.43              |
| 1:AA:1476:C:N4    | 1:AA:1477:A:N1   | 2.67                     | 0.43              |
| 1:AA:1608:A:C2    | 1:AA:1611:C:C6   | 3.06                     | 0.43              |
| 1:AA:1635:G:C8    | 1:AA:1635:G:C5'  | 3.02                     | 0.43              |
| 1:AA:1635:G:N3    | 1:AA:1636:C:C6   | 2.87                     | 0.43              |
| 1:AA:1806:C:H2'   | 1:AA:1807:G:C5'  | 2.47                     | 0.43              |
| 1:AA:1852:C:OP1   | 55:BC:72:C:C5'   | 2.66                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1944:U:O2'   | 1:AA:1955:U:H1'   | 2.18                     | 0.43              |
| 1:AA:1949:G:N7    | 1:AA:1950:G:C8    | 2.86                     | 0.43              |
| 1:AA:1952:A:C6    | 1:AA:1953:A:N1    | 2.86                     | 0.43              |
| 1:AA:1992:G:N7    | 1:AA:1997:G:N1    | 2.66                     | 0.43              |
| 1:AA:2004:G:N7    | 1:AA:2005:A:C5    | 2.86                     | 0.43              |
| 1:AA:2026:C:C2'   | 1:AA:2027:G:C5'   | 2.96                     | 0.43              |
| 1:AA:2205:C:H2'   | 1:AA:2206:C:C6    | 2.52                     | 0.43              |
| 1:AA:2341:G:H2'   | 1:AA:2342:C:H6    | 1.72                     | 0.43              |
| 1:AA:2399:G:N3    | 27:Ac:21:TYR:HE1  | 2.15                     | 0.43              |
| 1:AA:2431:U:O2    | 1:AA:2433:A:N3    | 2.51                     | 0.43              |
| 1:AA:2526:G:C6    | 1:AA:2527:C:C5    | 3.05                     | 0.43              |
| 1:AA:2595:G:C2    | 1:AA:2599:G:C6    | 3.06                     | 0.43              |
| 1:AA:2690:C:C4    | 13:AO:14:SER:HB2  | 2.53                     | 0.43              |
| 1:AA:2773:C:O2'   | 1:AA:2774:C:O5'   | 2.31                     | 0.43              |
| 1:AA:2786:U:O2'   | 5:AE:64:LYS:HB2   | 2.18                     | 0.43              |
| 1:AA:2788:C:H42   | 1:AA:2789:C:H42   | 1.50                     | 0.43              |
| 1:AA:2848:G:N2    | 1:AA:2849:U:C2    | 2.85                     | 0.43              |
| 1:AA:2897:U:H2'   | 1:AA:2898:U:H6    | 1.82                     | 0.43              |
| 3:AC:19:ILE:O     | 3:AC:19:ILE:CG2   | 2.66                     | 0.43              |
| 3:AC:114:VAL:HG23 | 3:AC:114:VAL:O    | 2.17                     | 0.43              |
| 4:AD:63:ARG:HB2   | 4:AD:87:ASN:OD1   | 2.19                     | 0.43              |
| 4:AD:133:LEU:CA   | 4:AD:136:ILE:HG13 | 2.49                     | 0.43              |
| 4:AD:196:VAL:HG13 | 4:AD:197:GLY:H    | 1.70                     | 0.43              |
| 4:AD:257:LEU:C    | 4:AD:258:LYS:O    | 2.62                     | 0.43              |
| 4:AD:258:LYS:CA   | 4:AD:261:LYS:HD2  | 2.49                     | 0.43              |
| 5:AE:6:GLY:O      | 5:AE:26:ILE:CG2   | 2.66                     | 0.43              |
| 5:AE:27:LEU:HD13  | 5:AE:76:ARG:HH12  | 1.81                     | 0.43              |
| 5:AE:37:ARG:N     | 5:AE:40:GLU:HB2   | 2.33                     | 0.43              |
| 5:AE:188:VAL:O    | 5:AE:189:PRO:C    | 2.60                     | 0.43              |
| 7:AG:64:THR:HB    | 7:AG:102:PHE:CE1  | 2.53                     | 0.43              |
| 7:AG:82:LEU:C     | 7:AG:83:ARG:HD2   | 2.43                     | 0.43              |
| 7:AG:99:MET:O     | 7:AG:102:PHE:HB2  | 2.18                     | 0.43              |
| 8:AH:143:GLN:O    | 8:AH:144:VAL:C    | 2.61                     | 0.43              |
| 8:AH:153:LYS:HD3  | 8:AH:154:PRO:HD3  | 2.00                     | 0.43              |
| 9:AK:89:LYS:O     | 9:AK:92:ALA:HB3   | 2.17                     | 0.43              |
| 9:AK:116:LEU:C    | 9:AK:116:LEU:CD2  | 2.86                     | 0.43              |
| 9:AK:123:TYR:HB2  | 9:AK:129:PRO:HG3  | 2.00                     | 0.43              |
| 10:AL:10:VAL:HG13 | 10:AL:14:THR:CG2  | 2.48                     | 0.43              |
| 10:AL:38:VAL:HG12 | 10:AL:59:LYS:O    | 2.17                     | 0.43              |
| 10:AL:75:SER:O    | 15:AQ:77:PRO:HG2  | 2.18                     | 0.43              |
| 11:AM:6:LEU:O     | 11:AM:6:LEU:CD2   | 2.64                     | 0.43              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 11:AM:96:THR:O     | 11:AM:97:PRO:C     | 2.57                     | 0.43              |
| 11:AM:106:LEU:O    | 11:AM:107:LYS:HB3  | 2.18                     | 0.43              |
| 12:AN:42:ILE:HD11  | 12:AN:46:GLN:HE21  | 1.82                     | 0.43              |
| 12:AN:64:ILE:CG2   | 12:AN:106:VAL:O    | 2.65                     | 0.43              |
| 13:AO:36:THR:OG1   | 13:AO:40:LYS:HB3   | 2.17                     | 0.43              |
| 14:AP:11:LYS:N     | 14:AP:11:LYS:HD2   | 2.33                     | 0.43              |
| 14:AP:52:SER:OG    | 14:AP:69:VAL:HG11  | 2.18                     | 0.43              |
| 14:AP:73:LEU:CA    | 14:AP:76:LYS:HD2   | 2.44                     | 0.43              |
| 15:AQ:25:GLY:O     | 15:AQ:100:TYR:OH   | 2.36                     | 0.43              |
| 15:AQ:85:LYS:HB3   | 15:AQ:85:LYS:NZ    | 2.31                     | 0.43              |
| 15:AQ:91:ARG:C     | 15:AQ:93:ARG:HH21  | 2.12                     | 0.43              |
| 15:AQ:92:GLY:HA2   | 15:AQ:93:ARG:NE    | 2.33                     | 0.43              |
| 16:AR:3:ARG:O      | 16:AR:4:ALA:CB     | 2.67                     | 0.43              |
| 16:AR:31:SER:O     | 16:AR:33:ARG:N     | 2.51                     | 0.43              |
| 18:AT:5:ALA:CB     | 18:AT:105:VAL:HG13 | 2.49                     | 0.43              |
| 18:AT:24:ILE:HD11  | 18:AT:47:VAL:HG11  | 2.00                     | 0.43              |
| 19:AU:18:TYR:HD1   | 19:AU:21:PHE:HE1   | 1.66                     | 0.43              |
| 20:AV:12:THR:CA    | 20:AV:73:ARG:CZ    | 2.95                     | 0.43              |
| 20:AV:26:LYS:HZ1   | 20:AV:36:ALA:CB    | 2.31                     | 0.43              |
| 20:AV:35:TYR:O     | 20:AV:64:GLU:CA    | 2.66                     | 0.43              |
| 21:AW:47:VAL:O     | 21:AW:50:GLN:N     | 2.50                     | 0.43              |
| 21:AW:157:LEU:HD22 | 21:AW:161:VAL:HG13 | 2.00                     | 0.43              |
| 25:Aa:5:ILE:CB     | 25:Aa:7:PRO:HD2    | 2.46                     | 0.43              |
| 26:Ab:40:LYS:CE    | 26:Ab:52:TYR:HE1   | 2.31                     | 0.43              |
| 30:Af:8:LYS:O      | 30:Af:9:ARG:O      | 2.35                     | 0.43              |
| 32:AJ:12:LEU:HD22  | 32:AJ:22:PRO:HB2   | 2.00                     | 0.43              |
| 32:AJ:17:ALA:C     | 32:AJ:38:VAL:O     | 2.60                     | 0.43              |
| 32:AJ:81:ALA:O     | 32:AJ:99:ILE:HG22  | 2.16                     | 0.43              |
| 32:AJ:113:PRO:HG2  | 32:AJ:114:ASP:H    | 1.83                     | 0.43              |
| 34:BA:118:U:C4     | 34:BA:288:A:H2'    | 2.52                     | 0.43              |
| 34:BA:129(A):G:C8  | 34:BA:189:U:OP1    | 2.72                     | 0.43              |
| 34:BA:217:C:C4     | 34:BA:218:C:C5     | 3.07                     | 0.43              |
| 34:BA:279:A:C2     | 50:BU:98:LEU:HG    | 2.47                     | 0.43              |
| 34:BA:314:C:H2'    | 34:BA:315:A:C8     | 2.53                     | 0.43              |
| 34:BA:321:A:C4     | 34:BA:322:C:C5     | 3.06                     | 0.43              |
| 34:BA:323:U:C6     | 34:BA:323:U:C3'    | 3.01                     | 0.43              |
| 34:BA:332:G:N3     | 34:BA:333:G:C8     | 2.87                     | 0.43              |
| 34:BA:380:G:C6     | 34:BA:384:G:O6     | 2.71                     | 0.43              |
| 34:BA:411:A:N7     | 34:BA:429:U:C5     | 2.86                     | 0.43              |
| 34:BA:429:U:C1'    | 34:BA:430:A:H5''   | 2.48                     | 0.43              |
| 34:BA:503:C:C4     | 34:BA:504:C:C5     | 3.07                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:520:A:H3'   | 34:BA:520:A:H8     | 1.82                     | 0.43              |
| 34:BA:593:G:N1    | 34:BA:647:C:C2     | 2.86                     | 0.43              |
| 34:BA:604:G:N2    | 34:BA:605:U:H1'    | 2.33                     | 0.43              |
| 34:BA:629:G:C4    | 34:BA:630:G:C8     | 3.06                     | 0.43              |
| 34:BA:658:G:C6    | 34:BA:659:U:C4     | 3.07                     | 0.43              |
| 34:BA:674:G:H4'   | 51:BV:81:PHE:HZ    | 1.82                     | 0.43              |
| 34:BA:723:U:O5'   | 34:BA:723:U:N1     | 2.51                     | 0.43              |
| 34:BA:761:G:C5    | 34:BA:762:C:C5     | 3.05                     | 0.43              |
| 34:BA:824:C:H4'   | 41:BL:1:MET:HA     | 1.99                     | 0.43              |
| 34:BA:830:G:C2    | 34:BA:857:C:C2     | 3.07                     | 0.43              |
| 34:BA:830:G:C5    | 34:BA:831:U:C5     | 3.06                     | 0.43              |
| 34:BA:851:G:HO2'  | 34:BA:852:G:H5'    | 1.83                     | 0.43              |
| 34:BA:865:A:C8    | 34:BA:865:A:OP2    | 2.70                     | 0.43              |
| 34:BA:874:G:N2    | 34:BA:875:C:N1     | 2.66                     | 0.43              |
| 34:BA:894:G:C6    | 34:BA:895:G:C5     | 3.06                     | 0.43              |
| 34:BA:973:G:C2    | 34:BA:974:A:N7     | 2.86                     | 0.43              |
| 34:BA:973:G:H3'   | 34:BA:974:A:H5''   | 2.01                     | 0.43              |
| 34:BA:994:A:OP1   | 34:BA:995:C:H5     | 2.01                     | 0.43              |
| 34:BA:1048:G:HO2' | 34:BA:1050:G:P     | 2.37                     | 0.43              |
| 34:BA:1068:G:N2   | 34:BA:1191:A:C2    | 2.84                     | 0.43              |
| 34:BA:1104:G:H4'  | 35:BF:111:ARG:HH21 | 1.83                     | 0.43              |
| 34:BA:1171:G:O2'  | 34:BA:1172:C:H6    | 1.99                     | 0.43              |
| 34:BA:1318:A:C8   | 52:BW:37:ARG:HG3   | 2.53                     | 0.43              |
| 34:BA:1362:C:O2'  | 34:BA:1362(A):C:C6 | 2.71                     | 0.43              |
| 34:BA:1396:A:H2'  | 34:BA:1397:C:OP2   | 2.17                     | 0.43              |
| 34:BA:1416:G:N1   | 34:BA:1485:U:O2    | 2.50                     | 0.43              |
| 34:BA:1466:C:H2'  | 34:BA:1467:G:C1'   | 2.48                     | 0.43              |
| 35:BF:84:GLU:HG2  | 35:BF:234:PRO:CG   | 2.47                     | 0.43              |
| 35:BF:139:LYS:CG  | 35:BF:140:HIS:H    | 2.23                     | 0.43              |
| 35:BF:186:ALA:O   | 35:BF:201:ILE:CB   | 2.57                     | 0.43              |
| 36:BG:62:ASP:C    | 36:BG:63:ASN:CG    | 2.85                     | 0.43              |
| 36:BG:123:GLN:O   | 36:BG:124:ILE:C    | 2.60                     | 0.43              |
| 36:BG:151:VAL:C   | 36:BG:152:ILE:HG23 | 2.43                     | 0.43              |
| 36:BG:187:ALA:HB3 | 36:BG:198:VAL:HG21 | 1.98                     | 0.43              |
| 37:BH:15:GLU:HG2  | 37:BH:63:LYS:HB2   | 1.99                     | 0.43              |
| 37:BH:63:LYS:HA   | 37:BH:66:ARG:CD    | 2.44                     | 0.43              |
| 37:BH:155:LEU:O   | 37:BH:158:ILE:HB   | 2.18                     | 0.43              |
| 38:BI:25:ARG:C    | 38:BI:26:PHE:CD1   | 2.96                     | 0.43              |
| 38:BI:36:ASP:OD1  | 38:BI:36:ASP:C     | 2.61                     | 0.43              |
| 38:BI:79:GLU:HG3  | 38:BI:93:PRO:HD3   | 2.00                     | 0.43              |
| 38:BI:97:GLY:O    | 38:BI:98:THR:C     | 2.61                     | 0.43              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 38:BI:131:ILE:HG22 | 38:BI:132:ALA:N    | 2.33                     | 0.43              |
| 39:BJ:45:LEU:HD23  | 39:BJ:59:TYR:HA    | 2.00                     | 0.43              |
| 40:BK:49:ILE:HG12  | 40:BK:121:ALA:CB   | 2.47                     | 0.43              |
| 40:BK:77:SER:HA    | 40:BK:85:TYR:O     | 2.17                     | 0.43              |
| 40:BK:145:ALA:O    | 40:BK:146:GLU:CB   | 2.49                     | 0.43              |
| 41:BL:26:VAL:CG2   | 41:BL:27:PRO:CD    | 2.87                     | 0.43              |
| 41:BL:44:PHE:O     | 41:BL:64:LYS:HD3   | 2.17                     | 0.43              |
| 41:BL:112:LEU:C    | 41:BL:112:LEU:HD23 | 2.43                     | 0.43              |
| 42:BM:23:ASN:ND2   | 42:BM:23:ASN:C     | 2.74                     | 0.43              |
| 43:BN:5:ARG:HH11   | 43:BN:5:ARG:CG     | 2.30                     | 0.43              |
| 43:BN:30:SER:CA    | 43:BN:80:LYS:HG3   | 2.48                     | 0.43              |
| 44:BO:13:GLN:CD    | 44:BO:76:GLY:H     | 2.23                     | 0.43              |
| 44:BO:84:VAL:HG21  | 51:BV:88:LYS:CE    | 2.48                     | 0.43              |
| 45:BP:41:ARG:HG2   | 45:BP:42:THR:HG22  | 2.00                     | 0.43              |
| 46:BQ:81:LEU:CB    | 46:BQ:86:CYS:SG    | 2.94                     | 0.43              |
| 47:BR:13:THR:HG22  | 47:BR:13:THR:O     | 2.17                     | 0.43              |
| 48:BS:27:VAL:HG12  | 48:BS:31:LEU:CD2   | 2.47                     | 0.43              |
| 49:BT:10:GLY:CA    | 49:BT:14:ASN:ND2   | 2.81                     | 0.43              |
| 49:BT:67:THR:CB    | 49:BT:70:ALA:HB2   | 2.43                     | 0.43              |
| 50:BU:19:VAL:HG21  | 50:BU:73:VAL:HG21  | 2.01                     | 0.43              |
| 51:BV:43:PHE:O     | 51:BV:51:LEU:CD1   | 2.52                     | 0.43              |
| 51:BV:59:SER:O     | 51:BV:62:GLU:N     | 2.51                     | 0.43              |
| 55:BC:2:C:N4       | 55:BC:71:G:H1      | 2.12                     | 0.43              |
| 56:BD:55:U:H2'     | 56:BD:56:C:H3'     | 2.01                     | 0.43              |
| 56:BE:15:G:H2'     | 56:BE:16:U:H5''    | 1.95                     | 0.43              |
| 56:BE:16:U:C4      | 56:BE:59:U:C2      | 2.97                     | 0.43              |
| 57:BZ:12:ALA:O     | 57:BZ:109:THR:CG2  | 2.48                     | 0.43              |
| 57:BZ:81:PHE:HE2   | 57:BZ:342:ASN:ND2  | 2.12                     | 0.43              |
| 57:BZ:146:ASP:O    | 57:BZ:150:ASN:ND2  | 2.51                     | 0.43              |
| 57:BZ:202:ASP:HB2  | 57:BZ:203:GLY:H    | 1.68                     | 0.43              |
| 57:BZ:338:GLU:HG3  | 57:BZ:345:LEU:CD2  | 2.48                     | 0.43              |
| 57:BZ:402:ASN:C    | 57:BZ:403:VAL:HG23 | 2.43                     | 0.43              |
| 57:BZ:403:VAL:HB   | 57:BZ:465:LEU:CB   | 2.42                     | 0.43              |
| 1:AA:30:G:N7       | 1:AA:31:C:C5       | 2.86                     | 0.43              |
| 1:AA:215:G:H1'     | 1:AA:216:A:H5''    | 2.00                     | 0.43              |
| 1:AA:270(X):G:C2   | 1:AA:270(Y):G:C1'  | 3.01                     | 0.43              |
| 1:AA:270(Z):U:O2   | 1:AA:270(Z):U:C2'  | 2.56                     | 0.43              |
| 1:AA:295:G:H3'     | 1:AA:338:G:N1      | 2.31                     | 0.43              |
| 1:AA:457:A:H1'     | 1:AA:459:U:C4      | 2.53                     | 0.43              |
| 1:AA:565:C:OP2     | 17:AS:82:ARG:HA    | 2.18                     | 0.43              |
| 1:AA:625:G:N1      | 1:AA:626:U:H1'     | 2.32                     | 0.43              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:AA:650:C:P    | 29:Ae:21:LYS:HZ3 | 2.40                     | 0.43              |
| 1:AA:669:G:C4   | 1:AA:801:G:N1    | 2.86                     | 0.43              |
| 1:AA:689:A:H2'  | 1:AA:690:G:H5''  | 1.99                     | 0.43              |
| 1:AA:705:A:C6   | 1:AA:727:A:H1'   | 2.54                     | 0.43              |
| 1:AA:713:G:N2   | 1:AA:714:U:C6    | 2.86                     | 0.43              |
| 1:AA:771:G:H2'  | 1:AA:772:C:H6    | 1.83                     | 0.43              |
| 1:AA:813:U:C2   | 1:AA:814:C:C6    | 3.07                     | 0.43              |
| 1:AA:849:A:C4   | 1:AA:850:C:C5    | 3.06                     | 0.43              |
| 1:AA:855:G:C6   | 1:AA:856:C:C4    | 3.07                     | 0.43              |
| 1:AA:865:C:O2'  | 1:AA:866:A:C8    | 2.62                     | 0.43              |
| 1:AA:878:A:O4'  | 1:AA:899:A:C6    | 2.71                     | 0.43              |
| 1:AA:902:C:H3'  | 1:AA:903:C:C5    | 2.53                     | 0.43              |
| 1:AA:922:U:N3   | 1:AA:923:C:N4    | 2.66                     | 0.43              |
| 1:AA:943:U:H2'  | 1:AA:944:G:OP1   | 2.18                     | 0.43              |
| 1:AA:1057:A:H62 | 1:AA:1086:A:C2'  | 2.29                     | 0.43              |
| 1:AA:1068:G:H1' | 1:AA:1069:A:C6   | 2.53                     | 0.43              |
| 1:AA:1090:U:C4  | 1:AA:1103:A:N1   | 2.86                     | 0.43              |
| 1:AA:1119:C:O2  | 1:AA:1119:C:C2'  | 2.64                     | 0.43              |
| 1:AA:1163:G:N3  | 1:AA:1164:G:C8   | 2.86                     | 0.43              |
| 1:AA:1279:G:C6  | 1:AA:1280:G:C6   | 3.06                     | 0.43              |
| 1:AA:1317:A:C6  | 1:AA:1318:C:C4   | 3.06                     | 0.43              |
| 1:AA:1334:G:H2' | 1:AA:1335:U:H6   | 1.82                     | 0.43              |
| 1:AA:1342:A:C2  | 1:AA:1397:U:C6   | 3.06                     | 0.43              |
| 1:AA:1491:G:N2  | 1:AA:1493:C:H41  | 2.13                     | 0.43              |
| 1:AA:1527:G:N7  | 1:AA:1541:U:O4   | 2.52                     | 0.43              |
| 1:AA:1654:A:C6  | 1:AA:1655:A:N7   | 2.87                     | 0.43              |
| 1:AA:1656:C:H2' | 1:AA:1656:C:O2   | 2.19                     | 0.43              |
| 1:AA:1703:G:C2' | 1:AA:1704:G:C5'  | 2.97                     | 0.43              |
| 1:AA:1727:U:O2' | 1:AA:1728:G:P    | 2.77                     | 0.43              |
| 1:AA:1731:G:O2' | 1:AA:1732:A:C5'  | 2.66                     | 0.43              |
| 1:AA:1743:G:H2' | 1:AA:1746:G:O4'  | 2.18                     | 0.43              |
| 1:AA:1769:G:C2  | 1:AA:1984:G:C5   | 3.06                     | 0.43              |
| 1:AA:1809:A:H61 | 25:Aa:3:GLU:HB2  | 1.83                     | 0.43              |
| 1:AA:1820:U:C1' | 4:AD:202:LYS:HG2 | 2.48                     | 0.43              |
| 1:AA:1914:C:C4  | 1:AA:1915:U:O4   | 2.72                     | 0.43              |
| 1:AA:1919:A:O5' | 1:AA:1919:A:C8   | 2.71                     | 0.43              |
| 1:AA:2043:C:H2' | 1:AA:2044:C:O5'  | 2.19                     | 0.43              |
| 1:AA:2075:U:H1' | 1:AA:2597:G:N2   | 2.33                     | 0.43              |
| 1:AA:2110:G:C2' | 1:AA:2120:G:C5'  | 2.93                     | 0.43              |
| 1:AA:2227:A:H2' | 1:AA:2228:G:O5'  | 2.16                     | 0.43              |
| 1:AA:2292:C:H2' | 1:AA:2293:C:H6   | 1.84                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2358:G:C8    | 1:AA:2358:G:OP1   | 2.71                     | 0.43              |
| 1:AA:2373:G:C4    | 1:AA:2374:C:C4    | 3.06                     | 0.43              |
| 1:AA:2414:G:C6    | 1:AA:2415:G:N7    | 2.86                     | 0.43              |
| 1:AA:2485:G:H4'   | 12:AN:125:LEU:O   | 2.19                     | 0.43              |
| 1:AA:2532:G:C5    | 1:AA:2533:A:C5    | 3.06                     | 0.43              |
| 1:AA:2564:A:C6    | 1:AA:2565:A:N6    | 2.87                     | 0.43              |
| 1:AA:2564:A:C2    | 1:AA:2647:U:C5'   | 3.02                     | 0.43              |
| 1:AA:2607:G:N3    | 1:AA:2608:G:O4'   | 2.51                     | 0.43              |
| 1:AA:2611:U:H6    | 1:AA:2611:U:C5'   | 2.26                     | 0.43              |
| 1:AA:2782:G:H2'   | 1:AA:2783:G:C8    | 2.53                     | 0.43              |
| 1:AA:2804:C:C4    | 1:AA:2805:G:O6    | 2.70                     | 0.43              |
| 1:AA:2876:G:C2    | 1:AA:2877:G:C8    | 3.07                     | 0.43              |
| 2:AB:82:G:C2'     | 2:AB:83:G:OP2     | 2.67                     | 0.43              |
| 3:AC:56:GLN:HG2   | 3:AC:201:PRO:HG2  | 2.00                     | 0.43              |
| 3:AC:120:MET:CE   | 3:AC:145:VAL:HG22 | 2.49                     | 0.43              |
| 4:AD:61:LEU:CD1   | 4:AD:86:PRO:CD    | 2.95                     | 0.43              |
| 4:AD:137:PRO:HG2  | 4:AD:140:THR:HG21 | 1.99                     | 0.43              |
| 4:AD:173:VAL:O    | 4:AD:184:LYS:CG   | 2.65                     | 0.43              |
| 5:AE:34:VAL:HG11  | 5:AE:36:ARG:CZ    | 2.49                     | 0.43              |
| 5:AE:49:LEU:CB    | 5:AE:76:ARG:O     | 2.66                     | 0.43              |
| 6:AF:140:LEU:HD22 | 6:AF:140:LEU:C    | 2.43                     | 0.43              |
| 7:AG:37:VAL:HG13  | 7:AG:158:ALA:O    | 2.17                     | 0.43              |
| 7:AG:62:LEU:HB3   | 7:AG:143:GLU:HG3  | 2.01                     | 0.43              |
| 7:AG:101:ILE:C    | 7:AG:104:GLU:HB3  | 2.39                     | 0.43              |
| 9:AK:4:TYR:CZ     | 16:AR:101:ARG:NH1 | 2.86                     | 0.43              |
| 9:AK:67:LEU:O     | 9:AK:68:GLU:CG    | 2.67                     | 0.43              |
| 9:AK:70:LYS:HD3   | 9:AK:70:LYS:N     | 2.33                     | 0.43              |
| 9:AK:86:PRO:O     | 9:AK:87:LEU:C     | 2.61                     | 0.43              |
| 9:AK:95:PRO:HG2   | 9:AK:96:GLU:N     | 2.33                     | 0.43              |
| 9:AK:136:GLU:C    | 9:AK:136:GLU:OE1  | 2.61                     | 0.43              |
| 9:AK:139:GLU:C    | 9:AK:139:GLU:CD   | 2.85                     | 0.43              |
| 10:AL:3:GLN:CD    | 10:AL:3:GLN:O     | 2.61                     | 0.43              |
| 10:AL:23:ARG:HH12 | 10:AL:30:ALA:HB2  | 1.83                     | 0.43              |
| 10:AL:42:SER:OG   | 10:AL:43:VAL:N    | 2.51                     | 0.43              |
| 11:AM:99:LEU:C    | 11:AM:101:VAL:H   | 2.27                     | 0.43              |
| 12:AN:79:LEU:O    | 12:AN:80:GLU:HB3  | 2.18                     | 0.43              |
| 13:AO:102:GLU:CD  | 13:AO:103:ARG:N   | 2.62                     | 0.43              |
| 13:AO:105:ARG:CG  | 13:AO:106:GLY:H   | 2.27                     | 0.43              |
| 14:AP:32:LEU:HG   | 14:AP:97:ARG:HH12 | 1.83                     | 0.43              |
| 14:AP:77:ALA:O    | 14:AP:80:LEU:N    | 2.52                     | 0.43              |
| 15:AQ:48:ILE:HG21 | 15:AQ:50:ILE:HD11 | 1.99                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:AQ:65:LYS:CA   | 15:AQ:76:PHE:O    | 2.63                     | 0.43              |
| 15:AQ:85:LYS:HZ2  | 15:AQ:85:LYS:CB   | 2.27                     | 0.43              |
| 15:AQ:105:LEU:HG  | 15:AQ:106:SER:H   | 1.82                     | 0.43              |
| 17:AS:15:GLU:O    | 17:AS:100:ARG:NH2 | 2.52                     | 0.43              |
| 18:AT:17:VAL:HG23 | 18:AT:18:ARG:N    | 2.33                     | 0.43              |
| 19:AU:31:HIS:HE1  | 19:AU:33:LYS:HD2  | 1.83                     | 0.43              |
| 22:AX:70:GLN:OE1  | 22:AX:80:HIS:CD2  | 2.71                     | 0.43              |
| 22:AX:72:ARG:O    | 22:AX:75:LEU:HD13 | 2.17                     | 0.43              |
| 24:AZ:16:PRO:O    | 24:AZ:17:LYS:C    | 2.61                     | 0.43              |
| 24:AZ:55:ARG:NH2  | 24:AZ:55:ARG:CG   | 2.81                     | 0.43              |
| 26:Ab:11:THR:HG23 | 26:Ab:15:ARG:CG   | 2.49                     | 0.43              |
| 29:Ae:33:ASN:O    | 29:Ae:34:TRP:CB   | 2.66                     | 0.43              |
| 30:Af:29:ASN:HA   | 30:Af:30:PRO:HD2  | 1.84                     | 0.43              |
| 33:Ag:24:UNK:O    | 33:Ag:127:UNK:HA  | 2.19                     | 0.43              |
| 34:BA:44:G:C6     | 34:BA:399:G:C6    | 3.06                     | 0.43              |
| 34:BA:65:U:C6     | 34:BA:381:C:C5    | 3.07                     | 0.43              |
| 34:BA:247:G:N1    | 34:BA:278:G:C2    | 2.86                     | 0.43              |
| 34:BA:270:A:C4    | 34:BA:271:C:C5    | 3.06                     | 0.43              |
| 34:BA:310:G:H2'   | 34:BA:311:C:C5    | 2.49                     | 0.43              |
| 34:BA:416:G:C2    | 34:BA:417:C:C2    | 3.05                     | 0.43              |
| 34:BA:525:C:H6    | 34:BA:525:C:O5'   | 2.02                     | 0.43              |
| 34:BA:547:A:H4'   | 34:BA:548:G:OP1   | 2.17                     | 0.43              |
| 34:BA:640:A:N3    | 41:BL:115:SER:OG  | 2.46                     | 0.43              |
| 34:BA:763:G:C2    | 34:BA:764:C:C6    | 3.07                     | 0.43              |
| 34:BA:887:G:H21   | 34:BA:1489:G:H4'  | 1.84                     | 0.43              |
| 34:BA:892:A:H2'   | 34:BA:893:C:C6    | 2.53                     | 0.43              |
| 34:BA:896:C:C2    | 34:BA:897:C:C6    | 3.06                     | 0.43              |
| 34:BA:950:U:H2'   | 34:BA:951:G:H5'   | 2.00                     | 0.43              |
| 34:BA:951:G:C5    | 34:BA:1231:G:C6   | 3.07                     | 0.43              |
| 34:BA:1227:A:C8   | 34:BA:1228:C:C6   | 3.06                     | 0.43              |
| 34:BA:1272:G:C4   | 34:BA:1273:G:C8   | 3.07                     | 0.43              |
| 34:BA:1320:C:O3'  | 52:BW:73:GLU:CB   | 2.52                     | 0.43              |
| 34:BA:1369:C:OP2  | 42:BM:111:ARG:HA  | 2.18                     | 0.43              |
| 34:BA:1392:G:H2'  | 34:BA:1393:U:O4'  | 2.18                     | 0.43              |
| 34:BA:1424:C:C2'  | 34:BA:1425:U:O5'  | 2.66                     | 0.43              |
| 34:BA:1434:A:N7   | 34:BA:1435:G:N7   | 2.66                     | 0.43              |
| 34:BA:1441:G:H8   | 34:BA:1441:G:O5'  | 2.01                     | 0.43              |
| 34:BA:1484:C:N3   | 34:BA:1485:U:C5   | 2.87                     | 0.43              |
| 34:BA:1499:A:O2'  | 34:BA:1500:A:H5'  | 2.17                     | 0.43              |
| 35:BF:32:ILE:HD11 | 35:BF:40:HIS:CD2  | 2.40                     | 0.43              |
| 35:BF:54:THR:CG2  | 35:BF:199:TYR:HB3 | 2.48                     | 0.43              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BF:152:PHE:HZ   | 35:BF:155:LEU:O    | 2.01                     | 0.43              |
| 35:BF:164:VAL:HG22 | 35:BF:165:VAL:H    | 1.82                     | 0.43              |
| 35:BF:187:LEU:C    | 35:BF:187:LEU:CD1  | 2.81                     | 0.43              |
| 36:BG:49:SER:C     | 36:BG:51:GLY:N     | 2.76                     | 0.43              |
| 36:BG:117:ALA:O    | 36:BG:121:ALA:HB2  | 2.18                     | 0.43              |
| 36:BG:138:VAL:O    | 36:BG:170:GLN:NE2  | 2.51                     | 0.43              |
| 37:BH:13:ARG:NH1   | 37:BH:36:ARG:HD3   | 2.34                     | 0.43              |
| 37:BH:25:ARG:NH1   | 37:BH:25:ARG:HB3   | 2.34                     | 0.43              |
| 37:BH:91:SER:O     | 37:BH:94:LEU:N     | 2.51                     | 0.43              |
| 37:BH:166:LYS:CD   | 37:BH:178:VAL:HG12 | 2.48                     | 0.43              |
| 38:BI:56:GLN:HE21  | 38:BI:56:GLN:CA    | 2.30                     | 0.43              |
| 39:BJ:82:ARG:O     | 39:BJ:83:ASP:C     | 2.59                     | 0.43              |
| 39:BJ:98:LEU:HD23  | 51:BV:28:GLU:HA    | 1.99                     | 0.43              |
| 40:BK:75:VAL:HG22  | 40:BK:88:PRO:HA    | 1.95                     | 0.43              |
| 40:BK:139:GLU:O    | 40:BK:142:GLU:HB2  | 2.18                     | 0.43              |
| 41:BL:19:VAL:O     | 41:BL:19:VAL:HG12  | 2.18                     | 0.43              |
| 41:BL:45:ILE:HD12  | 41:BL:61:VAL:HG22  | 2.01                     | 0.43              |
| 41:BL:72:PRO:O     | 41:BL:73:ASP:CB    | 2.66                     | 0.43              |
| 42:BM:27:THR:CG2   | 42:BM:30:GLY:H     | 2.32                     | 0.43              |
| 42:BM:98:PRO:O     | 42:BM:100:GLY:N    | 2.51                     | 0.43              |
| 44:BO:32:ILE:O     | 44:BO:39:PRO:CB    | 2.66                     | 0.43              |
| 44:BO:80:VAL:N     | 44:BO:104:GLN:HE21 | 2.17                     | 0.43              |
| 45:BP:21:LYS:O     | 45:BP:22:SER:C     | 2.60                     | 0.43              |
| 46:BQ:12:ASN:C     | 46:BQ:44:ARG:C     | 2.80                     | 0.43              |
| 47:BR:26:ARG:HE    | 47:BR:43:CYS:CB    | 2.31                     | 0.43              |
| 48:BS:60:VAL:O     | 48:BS:63:ARG:CG    | 2.49                     | 0.43              |
| 48:BS:71:GLN:HA    | 48:BS:75:PRO:HB3   | 1.98                     | 0.43              |
| 49:BT:19:ILE:CG2   | 49:BT:36:ILE:O     | 2.67                     | 0.43              |
| 50:BU:81:ARG:CG    | 50:BU:84:LEU:HD11  | 2.47                     | 0.43              |
| 51:BV:81:PHE:O     | 51:BV:82:THR:CG2   | 2.67                     | 0.43              |
| 52:BW:5:LEU:CD2    | 52:BW:6:LYS:N      | 2.74                     | 0.43              |
| 52:BW:7:LYS:O      | 52:BW:7:LYS:NZ     | 2.52                     | 0.43              |
| 52:BW:18:LYS:O     | 52:BW:22:LEU:HB3   | 2.18                     | 0.43              |
| 52:BW:28:LYS:O     | 52:BW:29:ARG:HB2   | 2.18                     | 0.43              |
| 52:BW:34:TRP:HE1   | 52:BW:52:TYR:HE2   | 1.62                     | 0.43              |
| 53:BX:13:LEU:HD13  | 53:BX:17:ARG:HH22  | 1.83                     | 0.43              |
| 56:BD:55:U:H3'     | 56:BD:55:U:O2      | 2.19                     | 0.43              |
| 56:BE:74:C:C6      | 56:BE:74:C:P       | 3.12                     | 0.43              |
| 57:BZ:18:LYS:N     | 60:BZ:701:GCP:O2B  | 2.49                     | 0.43              |
| 57:BZ:86:GLU:C     | 57:BZ:88:VAL:N     | 2.77                     | 0.43              |
| 57:BZ:233:PRO:HB3  | 57:BZ:248:ASN:HB3  | 1.96                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:BZ:362:GLY:O   | 57:BZ:365:HIS:HB3 | 2.18                     | 0.43              |
| 57:BZ:379:GLU:CG  | 57:BZ:581:THR:HB  | 2.35                     | 0.43              |
| 57:BZ:468:THR:OG1 | 57:BZ:469:PHE:CD1 | 2.72                     | 0.43              |
| 1:AA:10:G:N1      | 1:AA:2629:A:N3    | 2.66                     | 0.43              |
| 1:AA:35:G:H21     | 1:AA:450:G:N2     | 2.16                     | 0.43              |
| 1:AA:132:G:H2'    | 1:AA:132:G:N3     | 2.34                     | 0.43              |
| 1:AA:144:C:C2     | 1:AA:145:G:C8     | 3.06                     | 0.43              |
| 1:AA:285:C:N3     | 1:AA:357:A:N1     | 2.66                     | 0.43              |
| 1:AA:300:A:C5     | 1:AA:334:C:H4'    | 2.54                     | 0.43              |
| 1:AA:389:G:C6     | 11:AM:64:LYS:HG2  | 2.54                     | 0.43              |
| 1:AA:391:G:H5'    | 1:AA:412:A:H4'    | 2.01                     | 0.43              |
| 1:AA:398:G:N2     | 1:AA:399:G:H1'    | 2.32                     | 0.43              |
| 1:AA:449:A:C2     | 1:AA:450:G:N7     | 2.86                     | 0.43              |
| 1:AA:489:G:C2     | 1:AA:491:G:C4     | 3.07                     | 0.43              |
| 1:AA:567:A:N1     | 1:AA:568:U:C2     | 2.86                     | 0.43              |
| 1:AA:574:C:N1     | 1:AA:2055:C:C5    | 2.73                     | 0.43              |
| 1:AA:585:G:O6     | 1:AA:1251:C:C6    | 2.71                     | 0.43              |
| 1:AA:594:U:C2     | 1:AA:595:C:C5     | 3.07                     | 0.43              |
| 1:AA:602:G:H21    | 1:AA:655:A:H2'    | 1.84                     | 0.43              |
| 1:AA:674:G:O3'    | 6:AF:74:ARG:CZ    | 2.66                     | 0.43              |
| 1:AA:685:A:C2     | 1:AA:774:A:N1     | 2.87                     | 0.43              |
| 1:AA:687:C:H4'    | 28:Ad:4:THR:HG22  | 2.01                     | 0.43              |
| 1:AA:769:G:N3     | 1:AA:770:G:C8     | 2.87                     | 0.43              |
| 1:AA:862:G:H21    | 2:AB:99:A:H2      | 1.62                     | 0.43              |
| 1:AA:945:A:H3'    | 1:AA:946:G:C5'    | 2.47                     | 0.43              |
| 1:AA:1020:A:N3    | 1:AA:1140:C:C2    | 2.87                     | 0.43              |
| 1:AA:1047:G:N9    | 1:AA:1110:G:N7    | 2.57                     | 0.43              |
| 1:AA:1111:A:H5''  | 8:AH:4:ILE:HG23   | 2.01                     | 0.43              |
| 1:AA:1155:A:H3'   | 1:AA:1155:A:P     | 2.57                     | 0.43              |
| 1:AA:1231:G:C5    | 1:AA:1232:G:N7    | 2.87                     | 0.43              |
| 1:AA:1326:U:C2    | 1:AA:1327:C:O4'   | 2.71                     | 0.43              |
| 1:AA:1356:G:C4    | 1:AA:1357:U:C6    | 3.06                     | 0.43              |
| 1:AA:1362:C:C4    | 1:AA:1363:C:C5    | 3.07                     | 0.43              |
| 1:AA:1373:A:H2'   | 1:AA:1374:G:H8    | 1.79                     | 0.43              |
| 1:AA:1416:G:N3    | 1:AA:1583:A:C6    | 2.86                     | 0.43              |
| 1:AA:1419:A:OP2   | 1:AA:1419:A:C4'   | 2.66                     | 0.43              |
| 1:AA:1442:G:N1    | 1:AA:1443:G:C6    | 2.86                     | 0.43              |
| 1:AA:1473:G:O2'   | 1:AA:1474:C:O4'   | 2.35                     | 0.43              |
| 1:AA:1540:G:C3'   | 1:AA:1541:U:C5'   | 2.96                     | 0.43              |
| 1:AA:1655:A:H3'   | 1:AA:1656:C:C6    | 2.51                     | 0.43              |
| 1:AA:1742:C:OP2   | 1:AA:1742:C:H6    | 2.01                     | 0.43              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:1795:C:H6   | 1:AA:1795:C:O5'   | 2.01                     | 0.43              |
| 1:AA:1796:U:O2'  | 1:AA:1797:C:O5'   | 2.36                     | 0.43              |
| 1:AA:1864:U:OP1  | 1:AA:2410:G:O2'   | 2.36                     | 0.43              |
| 1:AA:1887:C:O2'  | 1:AA:1888:G:H5'   | 2.19                     | 0.43              |
| 1:AA:1920:C:C5   | 58:AA:3001:NMY:C4 | 3.01                     | 0.43              |
| 1:AA:2025:C:C4   | 1:AA:2026:C:N4    | 2.87                     | 0.43              |
| 1:AA:2047:U:C2   | 1:AA:2048:G:C8    | 3.07                     | 0.43              |
| 1:AA:2069:G:C2   | 1:AA:2443:C:C4    | 3.07                     | 0.43              |
| 1:AA:2084:C:C2   | 1:AA:2085:C:C5    | 3.05                     | 0.43              |
| 1:AA:2114:A:C8   | 1:AA:2114:A:OP2   | 2.71                     | 0.43              |
| 1:AA:2153:G:O2'  | 1:AA:2154:G:H5'   | 2.18                     | 0.43              |
| 1:AA:2169:A:O2'  | 55:BC:56:C:H5'    | 2.18                     | 0.43              |
| 1:AA:2226:C:N3   | 1:AA:2227:A:N3    | 2.67                     | 0.43              |
| 1:AA:2268:A:C3'  | 1:AA:2269:A:H5''  | 2.48                     | 0.43              |
| 1:AA:2284:C:H5'' | 27:Ac:9:LEU:CG    | 2.48                     | 0.43              |
| 1:AA:2311:A:C2   | 7:AG:45:GLU:OE1   | 2.71                     | 0.43              |
| 1:AA:2373:G:H2'  | 1:AA:2374:C:H5    | 1.82                     | 0.43              |
| 1:AA:2556:C:H2'  | 1:AA:2557:G:C5'   | 2.49                     | 0.43              |
| 1:AA:2563:U:O2   | 1:AA:2565:A:O5'   | 2.36                     | 0.43              |
| 1:AA:2636:U:C4'  | 5:AE:79:ARG:NH2   | 2.80                     | 0.43              |
| 1:AA:2646:C:C4   | 1:AA:2647:U:N3    | 2.85                     | 0.43              |
| 1:AA:2670:A:C5   | 1:AA:2671:A:N7    | 2.84                     | 0.43              |
| 1:AA:2694:G:C2   | 1:AA:2716:U:C2    | 3.06                     | 0.43              |
| 1:AA:2705:A:C2'  | 1:AA:2706:G:O5'   | 2.66                     | 0.43              |
| 1:AA:2720:U:C2'  | 1:AA:2721:A:C8    | 2.97                     | 0.43              |
| 1:AA:2737:G:C2   | 1:AA:2738:A:N7    | 2.86                     | 0.43              |
| 1:AA:2737:G:C5   | 1:AA:2738:A:N7    | 2.87                     | 0.43              |
| 1:AA:2774:C:H2'  | 1:AA:2774:C:O2    | 2.17                     | 0.43              |
| 1:AA:2816:C:O3'  | 26:Ab:43:HIS:CE1  | 2.71                     | 0.43              |
| 1:AA:2850:A:H2'  | 1:AA:2851:A:O5'   | 2.18                     | 0.43              |
| 1:AA:2863:C:C2   | 1:AA:2864:G:C8    | 3.06                     | 0.43              |
| 2:AB:40:U:H1'    | 2:AB:45:A:N6      | 2.23                     | 0.43              |
| 2:AB:46:A:H8     | 2:AB:46:A:O5'     | 2.02                     | 0.43              |
| 3:AC:7:TYR:O     | 3:AC:10:LEU:N     | 2.51                     | 0.43              |
| 3:AC:79:LYS:HG3  | 3:AC:119:VAL:CG1  | 2.49                     | 0.43              |
| 3:AC:103:ILE:CD1 | 3:AC:110:PHE:CZ   | 3.00                     | 0.43              |
| 4:AD:9:TYR:CG    | 4:AD:25:THR:HG23  | 2.53                     | 0.43              |
| 4:AD:23:GLU:HB3  | 4:AD:205:VAL:H    | 1.84                     | 0.43              |
| 4:AD:122:ASP:O   | 4:AD:123:ALA:C    | 2.61                     | 0.43              |
| 5:AE:33:VAL:CG2  | 5:AE:34:VAL:N     | 2.80                     | 0.43              |
| 5:AE:38:THR:C    | 5:AE:42:ASP:OD2   | 2.62                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 5:AE:59:VAL:HG12  | 5:AE:61:ARG:N      | 2.32                     | 0.43              |
| 5:AE:97:LYS:HG3   | 5:AE:100:GLU:HG3   | 1.99                     | 0.43              |
| 6:AF:53:THR:O     | 6:AF:56:GLU:HG3    | 2.19                     | 0.43              |
| 6:AF:62:ARG:HG3   | 6:AF:63:LYS:HD3    | 2.00                     | 0.43              |
| 6:AF:169:ASN:ND2  | 6:AF:171:PRO:HG2   | 2.33                     | 0.43              |
| 7:AG:2:PRO:HA     | 7:AG:5:VAL:HG21    | 2.00                     | 0.43              |
| 7:AG:17:PRO:O     | 7:AG:18:GLU:C      | 2.61                     | 0.43              |
| 7:AG:57:ALA:N     | 7:AG:68:PRO:CB     | 2.77                     | 0.43              |
| 7:AG:68:PRO:CB    | 7:AG:72:ARG:NH1    | 2.79                     | 0.43              |
| 7:AG:111:LEU:HB3  | 7:AG:112:PRO:HD2   | 1.94                     | 0.43              |
| 8:AH:35:VAL:HG11  | 8:AH:75:ALA:HB2    | 2.01                     | 0.43              |
| 8:AH:43:VAL:HG13  | 8:AH:44:VAL:H      | 1.82                     | 0.43              |
| 9:AK:19:GLU:HG2   | 9:AK:20:GLY:N      | 2.33                     | 0.43              |
| 9:AK:86:PRO:O     | 9:AK:89:LYS:CE     | 2.57                     | 0.43              |
| 9:AK:89:LYS:CA    | 9:AK:92:ALA:HB3    | 2.48                     | 0.43              |
| 9:AK:93:THR:O     | 9:AK:94:HIS:CD2    | 2.68                     | 0.43              |
| 9:AK:102:ALA:O    | 9:AK:105:GLY:N     | 2.50                     | 0.43              |
| 10:AL:12:ASP:OD2  | 10:AL:93:PRO:HG3   | 2.19                     | 0.43              |
| 10:AL:18:LYS:NZ   | 10:AL:44:LYS:CD    | 2.79                     | 0.43              |
| 11:AM:78:PRO:HD2  | 11:AM:115:LEU:C    | 2.43                     | 0.43              |
| 12:AN:68:ILE:HD12 | 12:AN:68:ILE:HA    | 1.86                     | 0.43              |
| 12:AN:85:LYS:CD   | 12:AN:86:GLY:H     | 2.30                     | 0.43              |
| 15:AQ:56:GLY:C    | 15:AQ:57:PHE:HD2   | 2.24                     | 0.43              |
| 16:AR:53:ARG:CB   | 16:AR:53:ARG:CZ    | 2.97                     | 0.43              |
| 17:AS:69:LYS:HE2  | 17:AS:70:ILE:CG1   | 2.48                     | 0.43              |
| 18:AT:22:ASP:HA   | 18:AT:75:TYR:CE2   | 2.54                     | 0.43              |
| 18:AT:37:ARG:HG3  | 18:AT:38:TYR:HD1   | 1.84                     | 0.43              |
| 20:AV:35:TYR:O    | 20:AV:64:GLU:O     | 2.36                     | 0.43              |
| 20:AV:49:VAL:CB   | 20:AV:51:VAL:H     | 2.29                     | 0.43              |
| 20:AV:53:PRO:HG2  | 20:AV:56:PRO:HA    | 1.99                     | 0.43              |
| 21:AW:55:HIS:HB3  | 21:AW:101:PRO:CD   | 2.47                     | 0.43              |
| 21:AW:95:PRO:O    | 21:AW:129:SER:C    | 2.60                     | 0.43              |
| 21:AW:118:GLN:HB3 | 21:AW:144:LEU:HD13 | 2.01                     | 0.43              |
| 22:AX:21:LEU:HD12 | 22:AX:39:ARG:CB    | 2.40                     | 0.43              |
| 22:AX:44:ARG:HE   | 22:AX:77:ARG:NE    | 2.17                     | 0.43              |
| 22:AX:44:ARG:HG2  | 22:AX:45:PHE:CE2   | 2.54                     | 0.43              |
| 23:AY:19:LEU:HD11 | 23:AY:23:LYS:HD3   | 1.99                     | 0.43              |
| 23:AY:50:ARG:HB2  | 23:AY:54:ARG:NH1   | 2.33                     | 0.43              |
| 28:Ad:17:GLY:O    | 28:Ad:21:ARG:NH1   | 2.51                     | 0.43              |
| 28:Ad:19:ARG:HH11 | 28:Ad:19:ARG:CG    | 2.31                     | 0.43              |
| 28:Ad:21:ARG:CB   | 28:Ad:21:ARG:CZ    | 2.97                     | 0.43              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 28:Ad:35:ARG:NH1   | 28:Ad:35:ARG:CB    | 2.81                     | 0.43              |
| 32:AJ:23:VAL:HG11  | 32:AJ:37:PHE:CG    | 2.54                     | 0.43              |
| 32:AJ:112:MET:HE2  | 32:AJ:121:GLU:CA   | 2.48                     | 0.43              |
| 34:BA:102:G:C6     | 34:BA:103:C:C5     | 3.07                     | 0.43              |
| 34:BA:113:G:C5     | 34:BA:114:U:C4     | 3.07                     | 0.43              |
| 34:BA:113:G:O4'    | 34:BA:354:G:H5''   | 2.17                     | 0.43              |
| 34:BA:131:C:N4     | 34:BA:232:G:H1     | 2.16                     | 0.43              |
| 34:BA:186(A):C:H4' | 53:BX:85:MET:HG3   | 2.00                     | 0.43              |
| 34:BA:237:C:H5''   | 50:BU:25:ARG:NH2   | 2.31                     | 0.43              |
| 34:BA:258:G:H2'    | 34:BA:259:G:C8     | 2.52                     | 0.43              |
| 34:BA:342:C:C2     | 34:BA:348:G:N2     | 2.86                     | 0.43              |
| 34:BA:483:C:N4     | 34:BA:484:G:N1     | 2.66                     | 0.43              |
| 34:BA:486:U:C2     | 34:BA:487:A:C8     | 3.06                     | 0.43              |
| 34:BA:529:G:N1     | 45:BP:49:ASN:CB    | 2.77                     | 0.43              |
| 34:BA:569:C:C1'    | 34:BA:574:A:C2     | 2.99                     | 0.43              |
| 34:BA:581:G:O6     | 34:BA:758:G:C8     | 2.71                     | 0.43              |
| 34:BA:643:C:N3     | 34:BA:644:G:C8     | 2.86                     | 0.43              |
| 34:BA:712:A:C6     | 34:BA:713:G:C6     | 3.06                     | 0.43              |
| 34:BA:729:A:H62    | 48:BS:51:HIS:CD2   | 2.36                     | 0.43              |
| 34:BA:812:C:O2     | 34:BA:813:U:C5     | 2.67                     | 0.43              |
| 34:BA:830:G:N1     | 34:BA:857:C:C4     | 2.87                     | 0.43              |
| 34:BA:838:G:C2     | 34:BA:849:C:C2     | 3.06                     | 0.43              |
| 34:BA:878:G:O4'    | 41:BL:3:THR:CG2    | 2.66                     | 0.43              |
| 34:BA:938:A:C2'    | 34:BA:939:G:O5'    | 2.66                     | 0.43              |
| 34:BA:977:A:C4'    | 34:BA:982:U:O4     | 2.66                     | 0.43              |
| 34:BA:1025:U:O2    | 34:BA:1026:G:O6    | 2.36                     | 0.43              |
| 34:BA:1220:G:H22   | 52:BW:55:LYS:HG3   | 1.82                     | 0.43              |
| 34:BA:1239:A:H8    | 34:BA:1241:G:H1'   | 1.82                     | 0.43              |
| 34:BA:1338:G:N2    | 56:BE:29:G:N2      | 2.66                     | 0.43              |
| 34:BA:1402:C:H2'   | 34:BA:1403:C:O5'   | 2.18                     | 0.43              |
| 34:BA:1520:G:C2'   | 34:BA:1521:G:C8    | 2.95                     | 0.43              |
| 35:BF:21:ARG:C     | 35:BF:23:ARG:N     | 2.76                     | 0.43              |
| 35:BF:28:PHE:O     | 35:BF:29:ALA:C     | 2.61                     | 0.43              |
| 35:BF:51:LEU:N     | 35:BF:51:LEU:HD23  | 2.32                     | 0.43              |
| 35:BF:77:ALA:O     | 35:BF:80:ILE:HG22  | 2.19                     | 0.43              |
| 35:BF:145:LEU:O    | 35:BF:149:LEU:HB3  | 2.14                     | 0.43              |
| 36:BG:10:PHE:O     | 36:BG:178:LEU:HD22 | 2.17                     | 0.43              |
| 36:BG:15:THR:HG23  | 36:BG:15:THR:O     | 2.18                     | 0.43              |
| 36:BG:23:TYR:CG    | 43:BN:11:PHE:HB2   | 2.53                     | 0.43              |
| 36:BG:82:GLU:O     | 36:BG:83:ARG:C     | 2.61                     | 0.43              |
| 37:BH:13:ARG:N     | 37:BH:32:ALA:HB2   | 2.34                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 37:BH:57:ARG:HH22 | 38:BI:107:ARG:HE   | 1.65                     | 0.43              |
| 37:BH:60:GLU:OE2  | 37:BH:202:LEU:CD1  | 2.67                     | 0.43              |
| 37:BH:75:PHE:O    | 37:BH:76:ARG:C     | 2.61                     | 0.43              |
| 37:BH:80:GLU:O    | 37:BH:83:SER:CB    | 2.66                     | 0.43              |
| 38:BI:127:ASN:OD1 | 38:BI:127:ASN:C    | 2.62                     | 0.43              |
| 39:BJ:16:GLN:O    | 39:BJ:19:LEU:HB3   | 2.17                     | 0.43              |
| 40:BK:129:GLU:HB2 | 40:BK:131:LYS:HE2  | 1.99                     | 0.43              |
| 41:BL:22:GLU:CB   | 41:BL:63:LEU:HD22  | 2.47                     | 0.43              |
| 41:BL:45:ILE:HD12 | 41:BL:61:VAL:CG2   | 2.48                     | 0.43              |
| 42:BM:6:GLY:HA3   | 42:BM:84:ALA:H     | 1.84                     | 0.43              |
| 43:BN:79:ARG:HH11 | 43:BN:79:ARG:HA    | 1.84                     | 0.43              |
| 45:BP:11:VAL:CG2  | 50:BU:32:TYR:HD1   | 2.32                     | 0.43              |
| 45:BP:82:VAL:CG1  | 45:BP:83:VAL:N     | 2.77                     | 0.43              |
| 46:BQ:19:LEU:HD13 | 46:BQ:29:ARG:O     | 2.19                     | 0.43              |
| 46:BQ:101:GLN:C   | 46:BQ:102:ARG:HG2  | 2.42                     | 0.43              |
| 46:BQ:108:ARG:N   | 46:BQ:108:ARG:CD   | 2.74                     | 0.43              |
| 48:BS:29:VAL:HG21 | 48:BS:81:LEU:CD1   | 2.39                     | 0.43              |
| 50:BU:22:LEU:CD1  | 50:BU:41:LYS:HA    | 2.48                     | 0.43              |
| 50:BU:65:ILE:O    | 50:BU:66:SER:HB3   | 2.18                     | 0.43              |
| 51:BV:31:LEU:CD2  | 51:BV:65:ILE:HG13  | 2.48                     | 0.43              |
| 51:BV:73:ALA:O    | 51:BV:74:ARG:C     | 2.61                     | 0.43              |
| 56:BE:22:G:H2'    | 56:BE:23:A:C8      | 2.54                     | 0.43              |
| 57:BZ:73:VAL:HG21 | 57:BZ:88:VAL:CB    | 2.47                     | 0.43              |
| 57:BZ:549:SER:CB  | 57:BZ:550:GLY:CA   | 2.92                     | 0.43              |
| 57:BZ:588:ARG:NE  | 57:BZ:592:LEU:HD21 | 2.33                     | 0.43              |
| 1:AA:60:G:C8      | 1:AA:63:U:C5       | 3.06                     | 0.43              |
| 1:AA:204:A:H4'    | 1:AA:205:G:O5'     | 2.18                     | 0.43              |
| 1:AA:223:A:N6     | 1:AA:374:A:O2'     | 2.51                     | 0.43              |
| 1:AA:224:G:N7     | 1:AA:420:C:H5'     | 2.33                     | 0.43              |
| 1:AA:296:C:O2'    | 1:AA:297:C:H5'     | 2.19                     | 0.43              |
| 1:AA:332:A:C2'    | 1:AA:334:C:OP2     | 2.66                     | 0.43              |
| 1:AA:400:G:H22    | 25:Aa:63:TYR:HH    | 1.57                     | 0.43              |
| 1:AA:451:C:OP1    | 6:AF:50:SER:OG     | 2.36                     | 0.43              |
| 1:AA:498:G:H8     | 1:AA:498:G:P       | 2.41                     | 0.43              |
| 1:AA:529:A:OP1    | 1:AA:529:A:H4'     | 2.16                     | 0.43              |
| 1:AA:531:C:O4'    | 1:AA:532:A:C2      | 2.72                     | 0.43              |
| 1:AA:535:C:C4'    | 16:AR:49:HIS:HB3   | 2.48                     | 0.43              |
| 1:AA:562:U:C5     | 1:AA:2036:C:O4'    | 2.71                     | 0.43              |
| 1:AA:582:G:N2     | 1:AA:1259:G:C4     | 2.87                     | 0.43              |
| 1:AA:602:G:H4'    | 1:AA:603:A:O2'     | 2.18                     | 0.43              |
| 1:AA:610:C:H2'    | 1:AA:611:C:C5      | 2.54                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:649:G:O2'    | 29:Ae:17:THR:CG2   | 2.66                     | 0.43              |
| 1:AA:819:A:OP2    | 1:AA:1187:G:N2     | 2.51                     | 0.43              |
| 1:AA:826:U:OP1    | 1:AA:2428:G:C3'    | 2.63                     | 0.43              |
| 1:AA:849:A:H3'    | 1:AA:850:C:C6      | 2.53                     | 0.43              |
| 1:AA:974:G:H1'    | 1:AA:1186:G:C4     | 2.54                     | 0.43              |
| 1:AA:978:G:N1     | 1:AA:979:G:N1      | 2.67                     | 0.43              |
| 1:AA:1009:A:C2    | 1:AA:1010:A:C2     | 3.07                     | 0.43              |
| 1:AA:1061:U:N3    | 32:AJ:11:GLN:NE2   | 2.64                     | 0.43              |
| 1:AA:1134:G:C4    | 1:AA:1136:G:OP2    | 2.71                     | 0.43              |
| 1:AA:1137:G:C2'   | 1:AA:1138:G:O5'    | 2.67                     | 0.43              |
| 1:AA:1152:C:H4'   | 16:AR:80:ILE:CG2   | 2.49                     | 0.43              |
| 1:AA:1164:G:C4    | 1:AA:1165:U:C6     | 3.07                     | 0.43              |
| 1:AA:1165:U:O2'   | 1:AA:1166:C:C6     | 2.68                     | 0.43              |
| 1:AA:1183:G:P     | 1:AA:1183:G:C3'    | 3.06                     | 0.43              |
| 1:AA:1444(A):A:C8 | 1:AA:1444(A):A:OP2 | 2.71                     | 0.43              |
| 1:AA:1472:A:HO2'  | 1:AA:1473:G:H8     | 1.65                     | 0.43              |
| 1:AA:1568:G:P     | 4:AD:61:LEU:HD12   | 2.58                     | 0.43              |
| 1:AA:1669:A:O3'   | 1:AA:2549:G:H5'    | 2.17                     | 0.43              |
| 1:AA:1718:G:N7    | 1:AA:1725:G:N7     | 2.66                     | 0.43              |
| 1:AA:1746:G:C4    | 1:AA:1747:G:C8     | 3.06                     | 0.43              |
| 1:AA:1818:U:C4    | 4:AD:156:ALA:HB3   | 2.53                     | 0.43              |
| 1:AA:2009:G:H1'   | 13:AO:107:ASP:CA   | 2.46                     | 0.43              |
| 1:AA:2015:A:C8    | 1:AA:2016:U:C5     | 3.07                     | 0.43              |
| 1:AA:2029:G:H2'   | 1:AA:2030:A:O3'    | 2.19                     | 0.43              |
| 1:AA:2052:G:H1'   | 5:AE:150:VAL:CA    | 2.49                     | 0.43              |
| 1:AA:2152:G:P     | 3:AC:2:LYS:C       | 3.01                     | 0.43              |
| 1:AA:2177:C:C6    | 3:AC:213:TYR:CE2   | 3.04                     | 0.43              |
| 1:AA:2180:U:H2'   | 1:AA:2181:G:C8     | 2.52                     | 0.43              |
| 1:AA:2216:G:C2'   | 1:AA:2217:G:H5'    | 2.49                     | 0.43              |
| 1:AA:2226:C:O2    | 4:AD:262:ARG:NE    | 2.51                     | 0.43              |
| 1:AA:2286:A:C8    | 27:Ac:31:PRO:HD2   | 2.53                     | 0.43              |
| 1:AA:2289:G:OP2   | 1:AA:2289:G:C8     | 2.71                     | 0.43              |
| 1:AA:2295:C:OP1   | 14:AP:9:ARG:HD2    | 2.18                     | 0.43              |
| 1:AA:2303:G:N1    | 1:AA:2304:G:C5     | 2.86                     | 0.43              |
| 1:AA:2358:G:C6    | 1:AA:2359:C:C5     | 3.07                     | 0.43              |
| 1:AA:2460:U:H2'   | 1:AA:2461:C:C5     | 2.54                     | 0.43              |
| 1:AA:2603:G:H2'   | 1:AA:2604:U:C5'    | 2.49                     | 0.43              |
| 1:AA:2616:C:C2    | 1:AA:2617:C:C5     | 3.06                     | 0.43              |
| 1:AA:2633:G:C4'   | 1:AA:2812:G:OP1    | 2.64                     | 0.43              |
| 1:AA:2636:U:P     | 5:AE:78:LEU:HD12   | 2.58                     | 0.43              |
| 1:AA:2646:C:N3    | 1:AA:2647:U:C4     | 2.84                     | 0.43              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2668:G:N2     | 1:AA:2669:G:N1    | 2.66                     | 0.43              |
| 1:AA:2690:C:H41    | 13:AO:14:SER:CB   | 2.32                     | 0.43              |
| 1:AA:2729:G:C5     | 1:AA:2730:C:C5    | 3.07                     | 0.43              |
| 1:AA:2765:A:C2'    | 1:AA:2766:G:OP1   | 2.67                     | 0.43              |
| 1:AA:2811:G:C6     | 1:AA:2891:G:C2    | 3.06                     | 0.43              |
| 1:AA:2820:A:O3'    | 13:AO:4:LEU:CD2   | 2.63                     | 0.43              |
| 1:AA:2882:A:C4'    | 13:AO:98:LEU:HD21 | 2.48                     | 0.43              |
| 1:AA:2887:U:O2'    | 1:AA:2888:C:H5'   | 2.17                     | 0.43              |
| 2:AB:44:G:H5''     | 2:AB:45:A:OP1     | 2.18                     | 0.43              |
| 2:AB:76:G:C1'      | 21:AW:75:ASN:ND2  | 2.81                     | 0.43              |
| 2:AB:84:C:O2       | 2:AB:85:G:C8      | 2.72                     | 0.43              |
| 3:AC:54:SER:C      | 3:AC:56:GLN:H     | 2.26                     | 0.43              |
| 3:AC:107:TRP:CZ3   | 3:AC:110:PHE:HE2  | 2.37                     | 0.43              |
| 3:AC:225:ASN:O     | 3:AC:227:HIS:N    | 2.51                     | 0.43              |
| 4:AD:21:PHE:CD2    | 4:AD:21:PHE:N     | 2.84                     | 0.43              |
| 4:AD:37:LEU:CD2    | 4:AD:64:ILE:H     | 2.27                     | 0.43              |
| 4:AD:65:ILE:CD1    | 4:AD:104:TYR:CB   | 2.96                     | 0.43              |
| 4:AD:90:ALA:CB     | 4:AD:159:ALA:HA   | 2.49                     | 0.43              |
| 4:AD:177:LEU:HD23  | 4:AD:181:GLU:C    | 2.43                     | 0.43              |
| 5:AE:144:ARG:O     | 5:AE:144:ARG:CG   | 2.66                     | 0.43              |
| 6:AF:65:TRP:HE1    | 6:AF:73:ALA:CB    | 2.17                     | 0.43              |
| 7:AG:15:VAL:HG21   | 7:AG:176:LEU:HD23 | 1.99                     | 0.43              |
| 7:AG:50:ALA:HA     | 7:AG:70:VAL:HG22  | 1.99                     | 0.43              |
| 7:AG:131:TYR:CE1   | 7:AG:133:LEU:O    | 2.65                     | 0.43              |
| 7:AG:168:GLU:O     | 7:AG:169:ALA:C    | 2.61                     | 0.43              |
| 8:AH:24:VAL:CG2    | 8:AH:35:VAL:HG23  | 2.35                     | 0.43              |
| 8:AH:41:MET:SD     | 8:AH:64:LEU:CD2   | 3.06                     | 0.43              |
| 9:AK:97:ARG:O      | 9:AK:100:GLU:CA   | 2.66                     | 0.43              |
| 10:AL:13:ASN:O     | 10:AL:13:ASN:CG   | 2.60                     | 0.43              |
| 10:AL:114:ILE:HG22 | 10:AL:115:VAL:N   | 2.32                     | 0.43              |
| 11:AM:97:PRO:CD    | 11:AM:102:ARG:NH2 | 2.82                     | 0.43              |
| 11:AM:114:ILE:CB   | 11:AM:130:PHE:HA  | 2.48                     | 0.43              |
| 12:AN:75:THR:HA    | 12:AN:91:GLU:HG2  | 2.01                     | 0.43              |
| 13:AO:18:LEU:HB3   | 13:AO:22:ARG:NH2  | 2.22                     | 0.43              |
| 14:AP:3:ARG:O      | 14:AP:7:TYR:HB2   | 2.18                     | 0.43              |
| 14:AP:57:LYS:HZ2   | 14:AP:65:VAL:N    | 2.15                     | 0.43              |
| 14:AP:79:ALA:C     | 14:AP:81:GLY:N    | 2.75                     | 0.43              |
| 15:AQ:55:ASN:ND2   | 15:AQ:57:PHE:CE2  | 2.78                     | 0.43              |
| 16:AR:39:LEU:HD23  | 16:AR:39:LEU:HA   | 1.54                     | 0.43              |
| 16:AR:66:ASN:C     | 16:AR:70:ARG:NE   | 2.73                     | 0.43              |
| 17:AS:20:LEU:HD22  | 17:AS:68:LYS:NZ   | 2.34                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 17:AS:35:LEU:O    | 17:AS:61:VAL:HG22 | 2.18                     | 0.43              |
| 18:AT:20:VAL:HG21 | 18:AT:47:VAL:HG11 | 2.01                     | 0.43              |
| 18:AT:25:ARG:NH2  | 18:AT:73:ALA:HA   | 2.34                     | 0.43              |
| 18:AT:65:LEU:HB2  | 18:AT:68:ARG:HD3  | 2.00                     | 0.43              |
| 18:AT:70:TYR:OH   | 18:AT:72:LYS:HB2  | 2.18                     | 0.43              |
| 20:AV:2:ARG:HE    | 20:AV:4:LYS:N     | 2.16                     | 0.43              |
| 21:AW:122:ARG:HG2 | 21:AW:170:THR:C   | 2.43                     | 0.43              |
| 22:AX:36:ILE:C    | 22:AX:37:LEU:HD23 | 2.43                     | 0.43              |
| 23:AY:11:LEU:N    | 23:AY:11:LEU:CD1  | 2.81                     | 0.43              |
| 23:AY:50:ARG:C    | 23:AY:54:ARG:CZ   | 2.92                     | 0.43              |
| 24:AZ:45:GLY:O    | 24:AZ:48:GLU:CG   | 2.50                     | 0.43              |
| 25:Aa:6:HIS:CG    | 25:Aa:56:VAL:HA   | 2.53                     | 0.43              |
| 25:Aa:20:ASN:HB3  | 25:Aa:30:GLU:CD   | 2.43                     | 0.43              |
| 25:Aa:59:PHE:CA   | 25:Aa:62:ARG:NH1  | 2.81                     | 0.43              |
| 29:Ae:10:ALA:HA   | 29:Ae:14:VAL:CG1  | 2.49                     | 0.43              |
| 30:Af:19:ARG:HD3  | 30:Af:22:ARG:CB   | 2.48                     | 0.43              |
| 30:Af:19:ARG:HD3  | 30:Af:22:ARG:HB2  | 2.01                     | 0.43              |
| 32:AJ:12:LEU:HD12 | 32:AJ:41:PHE:CZ   | 2.47                     | 0.43              |
| 32:AJ:104:VAL:C   | 32:AJ:127:ILE:CD1 | 2.83                     | 0.43              |
| 34:BA:88:C:O2'    | 34:BA:89:U:O5'    | 2.35                     | 0.43              |
| 34:BA:102:G:C6    | 34:BA:103:C:C4    | 3.06                     | 0.43              |
| 34:BA:104:G:P     | 53:BX:21:LYS:HZ3  | 2.41                     | 0.43              |
| 34:BA:113:G:H4'   | 34:BA:354:G:H5''  | 2.00                     | 0.43              |
| 34:BA:244:U:C6    | 34:BA:894:G:C2    | 3.07                     | 0.43              |
| 34:BA:285:G:C4    | 34:BA:286:G:C8    | 3.07                     | 0.43              |
| 34:BA:362:G:C8    | 45:BP:34:ARG:NH2  | 2.65                     | 0.43              |
| 34:BA:375:U:H2'   | 34:BA:376:G:O5'   | 2.18                     | 0.43              |
| 34:BA:424:G:N3    | 34:BA:425:G:C8    | 2.86                     | 0.43              |
| 34:BA:503:C:C2    | 34:BA:504:C:C6    | 3.07                     | 0.43              |
| 34:BA:513:C:H2'   | 34:BA:514:C:H6    | 1.83                     | 0.43              |
| 34:BA:571:U:H5'   | 34:BA:572:A:OP2   | 2.17                     | 0.43              |
| 34:BA:582:U:OP2   | 34:BA:758:G:N2    | 2.51                     | 0.43              |
| 34:BA:594:G:N1    | 34:BA:646:U:N3    | 2.67                     | 0.43              |
| 34:BA:600:C:C2    | 34:BA:601:C:C6    | 3.06                     | 0.43              |
| 34:BA:655:A:C6    | 34:BA:656:C:C4    | 3.06                     | 0.43              |
| 34:BA:718:G:C4'   | 44:BO:117:ASN:ND2 | 2.81                     | 0.43              |
| 34:BA:779:C:O2'   | 34:BA:780:A:H5'   | 2.18                     | 0.43              |
| 34:BA:780:A:C2    | 34:BA:803:G:N1    | 2.86                     | 0.43              |
| 34:BA:872:A:N1    | 34:BA:874:G:C5    | 2.87                     | 0.43              |
| 34:BA:887:G:O2'   | 34:BA:888:G:H5'   | 2.19                     | 0.43              |
| 34:BA:944:G:N2    | 34:BA:1339:A:N6   | 2.54                     | 0.43              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:986:A:H1'    | 52:BW:55:LYS:HG2   | 1.99                     | 0.43              |
| 34:BA:1063:C:C5    | 34:BA:1064:G:C8    | 3.07                     | 0.43              |
| 34:BA:1315:U:C1'   | 34:BA:1361:G:C5'   | 2.97                     | 0.43              |
| 34:BA:1374:A:C4    | 34:BA:1375:A:C8    | 3.07                     | 0.43              |
| 34:BA:1418:A:H2'   | 34:BA:1419:G:H5'   | 2.00                     | 0.43              |
| 34:BA:1472:U:C2'   | 34:BA:1473:A:H5'   | 2.47                     | 0.43              |
| 34:BA:1499:A:N3    | 34:BA:1519:A:O2'   | 2.41                     | 0.43              |
| 35:BF:15:VAL:C     | 35:BF:16:HIS:ND1   | 2.75                     | 0.43              |
| 35:BF:61:LEU:CA    | 35:BF:64:ARG:HH11  | 2.31                     | 0.43              |
| 35:BF:223:ILE:HA   | 35:BF:226:ARG:NE   | 2.34                     | 0.43              |
| 36:BG:39:ILE:CG2   | 36:BG:40:ARG:N     | 2.72                     | 0.43              |
| 36:BG:42:LEU:O     | 36:BG:45:LYS:HB3   | 2.19                     | 0.43              |
| 36:BG:129:ALA:CB   | 36:BG:132:ARG:HD2  | 2.49                     | 0.43              |
| 37:BH:57:ARG:CB    | 37:BH:206:PHE:HB2  | 2.33                     | 0.43              |
| 37:BH:190:ASP:O    | 37:BH:193:ASP:CG   | 2.61                     | 0.43              |
| 38:BI:39:GLY:O     | 38:BI:68:GLU:OE2   | 2.36                     | 0.43              |
| 38:BI:43:LEU:HB3   | 38:BI:136:MET:HE1  | 1.98                     | 0.43              |
| 38:BI:55:VAL:O     | 38:BI:56:GLN:C     | 2.57                     | 0.43              |
| 38:BI:76:ILE:HD13  | 38:BI:142:LEU:CB   | 2.30                     | 0.43              |
| 38:BI:95:ALA:H     | 38:BI:96:PRO:CD    | 2.31                     | 0.43              |
| 39:BJ:9:VAL:HA     | 39:BJ:10:LEU:HD23  | 2.00                     | 0.43              |
| 39:BJ:14:LEU:O     | 39:BJ:15:ASP:HB3   | 2.17                     | 0.43              |
| 39:BJ:100:ASN:C    | 39:BJ:100:ASN:HD22 | 2.27                     | 0.43              |
| 40:BK:146:GLU:HG2  | 40:BK:149:ARG:HD2  | 1.99                     | 0.43              |
| 41:BL:10:LEU:CD2   | 41:BL:83:ILE:HD11  | 2.48                     | 0.43              |
| 42:BM:114:TYR:O    | 42:BM:116:LYS:NZ   | 2.47                     | 0.43              |
| 42:BM:116:LYS:O    | 42:BM:117:HIS:C    | 2.62                     | 0.43              |
| 44:BO:63:LEU:CA    | 44:BO:66:LEU:HG    | 2.47                     | 0.43              |
| 45:BP:57:LYS:HG2   | 45:BP:67:THR:CG2   | 2.30                     | 0.43              |
| 45:BP:102:ARG:NH1  | 45:BP:110:VAL:HA   | 2.34                     | 0.43              |
| 45:BP:110:VAL:HB   | 45:BP:113:ARG:CG   | 2.48                     | 0.43              |
| 52:BW:25:LYS:HD2   | 52:BW:25:LYS:O     | 2.17                     | 0.43              |
| 53:BX:75:ASN:HB2   | 53:BX:78:ALA:HB3   | 2.00                     | 0.43              |
| 56:BE:19:G:H4'     | 56:BE:20:U:O5'     | 2.19                     | 0.43              |
| 57:BZ:114:LYS:O    | 57:BZ:117:PHE:HB2  | 2.18                     | 0.43              |
| 57:BZ:167:ALA:HB2  | 60:BZ:701:GCP:N2   | 2.33                     | 0.43              |
| 57:BZ:201:LEU:HD23 | 57:BZ:201:LEU:O    | 2.19                     | 0.43              |
| 57:BZ:236:GLN:HA   | 57:BZ:247:ARG:C    | 2.38                     | 0.43              |
| 57:BZ:374:ARG:C    | 57:BZ:582:PRO:HA   | 2.44                     | 0.43              |
| 57:BZ:382:VAL:H    | 57:BZ:578:VAL:N    | 2.16                     | 0.43              |
| 57:BZ:464:LEU:N    | 57:BZ:464:LEU:CD1  | 2.74                     | 0.43              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 57:BZ:496:ALA:H | 57:BZ:515:GLY:C  | 2.20                     | 0.43              |
| 1:AA:7:G:O6     | 1:AA:2896:C:N3   | 2.52                     | 0.43              |
| 1:AA:9:U:O2     | 1:AA:9:U:C2'     | 2.62                     | 0.43              |
| 1:AA:71:A:C2'   | 1:AA:72:U:OP2    | 2.65                     | 0.43              |
| 1:AA:203:C:C6   | 1:AA:204:A:C8    | 3.07                     | 0.43              |
| 1:AA:297:C:H5'' | 20:AV:83:THR:CB  | 2.46                     | 0.43              |
| 1:AA:412:A:C2'  | 1:AA:413:C:H5'   | 2.49                     | 0.43              |
| 1:AA:503:A:C2   | 1:AA:506:G:C2    | 3.06                     | 0.43              |
| 1:AA:563:G:C6   | 1:AA:2018:G:C6   | 3.06                     | 0.43              |
| 1:AA:577:G:O6   | 1:AA:578:A:N6    | 2.51                     | 0.43              |
| 1:AA:631:A:H3'  | 1:AA:631:A:C8    | 2.53                     | 0.43              |
| 1:AA:776:G:N9   | 1:AA:793:A:C2    | 2.86                     | 0.43              |
| 1:AA:828:U:C5   | 1:AA:829:A:N7    | 2.87                     | 0.43              |
| 1:AA:853:G:C2'  | 1:AA:854:G:H8    | 2.12                     | 0.43              |
| 1:AA:864:G:C2'  | 1:AA:865:C:O4'   | 2.64                     | 0.43              |
| 1:AA:1024:G:C5  | 1:AA:1134:G:H1'  | 2.54                     | 0.43              |
| 1:AA:1035:U:H2' | 1:AA:1036:G:C8   | 2.54                     | 0.43              |
| 1:AA:1046:A:O2' | 31:AI:61:LEU:HA  | 2.19                     | 0.43              |
| 1:AA:1213:A:C4  | 1:AA:1214:A:C8   | 3.06                     | 0.43              |
| 1:AA:1238:G:C2' | 1:AA:1239:G:C5'  | 2.94                     | 0.43              |
| 1:AA:1268:A:H2' | 1:AA:1269:A:O4'  | 2.18                     | 0.43              |
| 1:AA:1351:C:O2' | 1:AA:1571:A:N9   | 2.52                     | 0.43              |
| 1:AA:1427:A:H1' | 1:AA:1428:C:C4   | 2.52                     | 0.43              |
| 1:AA:1438:U:O2' | 1:AA:1439:A:H5'  | 2.18                     | 0.43              |
| 1:AA:1466:G:C2' | 1:AA:1547:C:N4   | 2.57                     | 0.43              |
| 1:AA:1475:G:N2  | 1:AA:1477:A:N6   | 2.53                     | 0.43              |
| 1:AA:1568:G:P   | 4:AD:61:LEU:CG   | 3.06                     | 0.43              |
| 1:AA:1679:U:N3  | 1:AA:1764:G:H5'' | 2.29                     | 0.43              |
| 1:AA:1710:C:C2  | 1:AA:1711:C:C5   | 3.07                     | 0.43              |
| 1:AA:1769:G:C6  | 1:AA:1984:G:O6   | 2.71                     | 0.43              |
| 1:AA:1791:A:O4' | 4:AD:209:ALA:CB  | 2.61                     | 0.43              |
| 1:AA:1902:C:C2' | 1:AA:1903:G:C5'  | 2.70                     | 0.43              |
| 1:AA:1951:U:H2' | 1:AA:1951:U:O2   | 2.19                     | 0.43              |
| 1:AA:1988:C:H2' | 1:AA:1989:G:C5'  | 2.49                     | 0.43              |
| 1:AA:2084:C:N3  | 1:AA:2085:C:C5   | 2.87                     | 0.43              |
| 1:AA:2139:C:H2' | 1:AA:2140:C:C6   | 2.53                     | 0.43              |
| 1:AA:2182:G:C4  | 1:AA:2183:C:C6   | 3.07                     | 0.43              |
| 1:AA:2198:A:H2  | 1:AA:2225:A:H62  | 1.64                     | 0.43              |
| 1:AA:2304:G:O6  | 1:AA:2313:C:N4   | 2.52                     | 0.43              |
| 1:AA:2311:A:H2' | 7:AG:43:LEU:CD2  | 2.49                     | 0.43              |
| 1:AA:2320:A:C5' | 1:AA:2321:G:C5   | 2.91                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2432:A:N6    | 25:Aa:32:TYR:CD2  | 2.87                     | 0.43              |
| 1:AA:2518:A:H3'   | 1:AA:2518:A:H8    | 1.84                     | 0.43              |
| 1:AA:2539:C:H1'   | 30:Af:2:LYS:HZ2   | 1.83                     | 0.43              |
| 1:AA:2553:G:O5'   | 1:AA:2554:U:OP2   | 2.36                     | 0.43              |
| 1:AA:2694:G:H8    | 1:AA:2694:G:O5'   | 2.01                     | 0.43              |
| 1:AA:2746:U:C4    | 1:AA:2756:U:C5    | 2.98                     | 0.43              |
| 1:AA:2789:C:H4'   | 1:AA:2789:C:OP1   | 2.19                     | 0.43              |
| 1:AA:2797:U:H4'   | 1:AA:2798:C:O2'   | 2.19                     | 0.43              |
| 1:AA:2804:C:N3    | 1:AA:2805:G:C6    | 2.87                     | 0.43              |
| 1:AA:2825:C:H2'   | 1:AA:2826:A:C8    | 2.53                     | 0.43              |
| 1:AA:2827:C:H2'   | 1:AA:2828:C:H5'   | 2.00                     | 0.43              |
| 1:AA:2887:U:N3    | 1:AA:2888:C:C5    | 2.87                     | 0.43              |
| 2:AB:99:A:N3      | 2:AB:100:G:C8     | 2.87                     | 0.43              |
| 2:AB:116:G:H5'    | 14:AP:53:SER:HA   | 1.99                     | 0.43              |
| 3:AC:89:ALA:HB1   | 3:AC:150:GLY:O    | 2.19                     | 0.43              |
| 3:AC:93:TYR:CE1   | 3:AC:109:ASP:HB3  | 2.54                     | 0.43              |
| 3:AC:103:ILE:HD13 | 3:AC:127:LEU:HD11 | 1.99                     | 0.43              |
| 4:AD:55:GLY:CA    | 4:AD:218:ARG:HD3  | 2.48                     | 0.43              |
| 4:AD:68:LYS:HG2   | 4:AD:70:TRP:HZ2   | 1.82                     | 0.43              |
| 4:AD:78:LYS:O     | 4:AD:95:LEU:CD2   | 2.66                     | 0.43              |
| 4:AD:132:PRO:CD   | 4:AD:190:TYR:CZ   | 3.02                     | 0.43              |
| 5:AE:71:GLY:O     | 5:AE:72:VAL:CG1   | 2.67                     | 0.43              |
| 5:AE:171:GLU:HB2  | 5:AE:185:LYS:NZ   | 2.06                     | 0.43              |
| 6:AF:97:TYR:O     | 6:AF:98:SER:O     | 2.37                     | 0.43              |
| 6:AF:154:VAL:HA   | 6:AF:191:ARG:O    | 2.18                     | 0.43              |
| 7:AG:9:ARG:CG     | 7:AG:13:GLU:OE2   | 2.62                     | 0.43              |
| 7:AG:56:ALA:C     | 7:AG:68:PRO:HG2   | 2.43                     | 0.43              |
| 8:AH:26:VAL:HB    | 8:AH:75:ALA:HB1   | 2.01                     | 0.43              |
| 8:AH:61:HIS:O     | 8:AH:62:LYS:C     | 2.61                     | 0.43              |
| 8:AH:67:LEU:O     | 8:AH:69:ARG:N     | 2.52                     | 0.43              |
| 9:AK:2:LYS:HE2    | 9:AK:2:LYS:HB3    | 1.83                     | 0.43              |
| 9:AK:38:HIS:CE1   | 16:AR:70:ARG:HH22 | 2.37                     | 0.43              |
| 9:AK:51:PHE:HA    | 9:AK:119:ARG:O    | 2.19                     | 0.43              |
| 10:AL:78:ARG:H    | 10:AL:78:ARG:CD   | 2.31                     | 0.43              |
| 10:AL:113:LYS:NZ  | 10:AL:113:LYS:O   | 2.48                     | 0.43              |
| 10:AL:121:VAL:HA  | 15:AQ:70:VAL:CG1  | 2.49                     | 0.43              |
| 11:AM:48:PRO:O    | 11:AM:52:GLU:CD   | 2.62                     | 0.43              |
| 11:AM:55:ARG:NH2  | 11:AM:55:ARG:HA   | 2.33                     | 0.43              |
| 11:AM:57:THR:HG22 | 11:AM:58:THR:N    | 2.34                     | 0.43              |
| 11:AM:81:GLN:CB   | 11:AM:86:LYS:HE3  | 2.48                     | 0.43              |
| 11:AM:94:GLU:CD   | 11:AM:94:GLU:O    | 2.62                     | 0.43              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 11:AM:126:VAL:HB   | 11:AM:146:VAL:CG2 | 2.48                     | 0.43              |
| 11:AM:131:SER:N    | 11:AM:134:ALA:HB2 | 2.34                     | 0.43              |
| 12:AN:8:LYS:NZ     | 12:AN:93:TYR:CD2  | 2.67                     | 0.43              |
| 12:AN:54:MET:HB3   | 12:AN:58:PHE:CE2  | 2.47                     | 0.43              |
| 12:AN:86:GLY:C     | 12:AN:88:GLY:H    | 2.26                     | 0.43              |
| 12:AN:116:GLU:HA   | 12:AN:119:ARG:HD3 | 1.99                     | 0.43              |
| 12:AN:139:GLU:OE1  | 12:AN:140:ALA:O   | 2.36                     | 0.43              |
| 13:AO:87:TYR:O     | 13:AO:88:ARG:C    | 2.60                     | 0.43              |
| 16:AR:33:ARG:O     | 16:AR:36:ARG:N    | 2.51                     | 0.43              |
| 16:AR:41:ALA:O     | 16:AR:43:GLY:N    | 2.52                     | 0.43              |
| 16:AR:70:ARG:O     | 16:AR:72:HIS:N    | 2.51                     | 0.43              |
| 17:AS:6:LYS:HE3    | 17:AS:12:TYR:O    | 2.19                     | 0.43              |
| 17:AS:22:VAL:HG11  | 17:AS:24:LYS:NZ   | 2.33                     | 0.43              |
| 19:AU:29:TRP:HB2   | 19:AU:76:ARG:HH21 | 1.82                     | 0.43              |
| 22:AX:33:ALA:C     | 22:AX:35:ASN:H    | 2.27                     | 0.43              |
| 23:AY:45:ILE:HD12  | 23:AY:45:ILE:C    | 2.43                     | 0.43              |
| 25:Aa:21:VAL:CG1   | 25:Aa:23:GLU:CG   | 2.97                     | 0.43              |
| 34:BA:22:G:N9      | 34:BA:914:A:N6    | 2.67                     | 0.43              |
| 34:BA:132:C:N3     | 34:BA:231:G:N2    | 2.66                     | 0.43              |
| 34:BA:136:C:O4'    | 49:BT:1:MET:CE    | 2.67                     | 0.43              |
| 34:BA:164:U:C2'    | 34:BA:164:U:O2    | 2.64                     | 0.43              |
| 34:BA:183:G:N3     | 34:BA:223:U:O2'   | 2.51                     | 0.43              |
| 34:BA:186(B):C:H4' | 53:BX:89:ARG:HH22 | 1.84                     | 0.43              |
| 34:BA:189:U:C2     | 50:BU:72:ARG:NH2  | 2.85                     | 0.43              |
| 34:BA:193:C:O4'    | 53:BX:60:GLU:CG   | 2.67                     | 0.43              |
| 34:BA:257:G:C5     | 34:BA:258:G:C8    | 3.06                     | 0.43              |
| 34:BA:318:G:O2'    | 34:BA:1469:G:OP1  | 2.36                     | 0.43              |
| 34:BA:401:C:OP2    | 37:BH:73:ARG:NH2  | 2.52                     | 0.43              |
| 34:BA:407:G:O2'    | 34:BA:408:A:H5'   | 2.18                     | 0.43              |
| 34:BA:413:G:H22    | 34:BA:428:G:HO2'  | 1.64                     | 0.43              |
| 34:BA:438:G:C2     | 34:BA:495:A:C8    | 3.07                     | 0.43              |
| 34:BA:451:A:H1'    | 34:BA:452:A:C5    | 2.52                     | 0.43              |
| 34:BA:483:C:C6     | 34:BA:483:C:H3'   | 2.54                     | 0.43              |
| 34:BA:520:A:C8     | 34:BA:521:G:H5''  | 2.48                     | 0.43              |
| 34:BA:528:C:O2'    | 34:BA:535:A:C8    | 2.69                     | 0.43              |
| 34:BA:604:G:C6     | 34:BA:635:G:C6    | 3.06                     | 0.43              |
| 34:BA:770:C:O2'    | 34:BA:771:G:H5'   | 2.18                     | 0.43              |
| 34:BA:864:A:N6     | 34:BA:865:A:N6    | 2.67                     | 0.43              |
| 34:BA:991:U:O2'    | 34:BA:993:G:C8    | 2.69                     | 0.43              |
| 34:BA:1055:A:H2    | 36:BG:156:ARG:HD3 | 1.83                     | 0.43              |
| 34:BA:1100:C:O2'   | 34:BA:1102:A:O5'  | 2.37                     | 0.43              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1107:C:C2'   | 34:BA:1108:G:C5'   | 2.96                     | 0.43              |
| 34:BA:1250:A:H2'   | 34:BA:1251:A:C8    | 2.53                     | 0.43              |
| 34:BA:1291:G:N1    | 34:BA:1292:U:C4    | 2.87                     | 0.43              |
| 34:BA:1376:U:OP1   | 40:BK:98:SER:CB    | 2.66                     | 0.43              |
| 34:BA:1401:G:C6    | 34:BA:1402:C:C2    | 3.07                     | 0.43              |
| 34:BA:1418:A:N1    | 34:BA:1483:A:N1    | 2.66                     | 0.43              |
| 34:BA:1483:A:H2'   | 34:BA:1484:C:O5'   | 2.18                     | 0.43              |
| 34:BA:1486:G:C4    | 34:BA:1487:G:O4'   | 2.45                     | 0.43              |
| 36:BG:12:LEU:HD22  | 47:BR:58:LYS:HB2   | 2.01                     | 0.43              |
| 36:BG:16:ARG:C     | 36:BG:17:ASP:OD1   | 2.62                     | 0.43              |
| 36:BG:39:ILE:O     | 36:BG:41:GLY:N     | 2.52                     | 0.43              |
| 36:BG:50:ALA:CA    | 36:BG:72:LYS:HD2   | 2.49                     | 0.43              |
| 36:BG:64:VAL:HB    | 36:BG:99:VAL:CG1   | 2.49                     | 0.43              |
| 36:BG:191:THR:HB   | 36:BG:193:TYR:CE2  | 2.54                     | 0.43              |
| 37:BH:18:LYS:O     | 37:BH:19:LEU:HD23  | 2.19                     | 0.43              |
| 37:BH:129:ASN:CG   | 37:BH:144:ASP:CG   | 2.87                     | 0.43              |
| 37:BH:170:VAL:HG11 | 37:BH:174:LEU:CD1  | 2.49                     | 0.43              |
| 38:BI:91:LEU:CG    | 38:BI:92:LYS:N     | 2.81                     | 0.43              |
| 38:BI:97:GLY:O     | 38:BI:99:GLY:N     | 2.52                     | 0.43              |
| 39:BJ:57:GLN:N     | 39:BJ:57:GLN:CD    | 2.77                     | 0.43              |
| 41:BL:6:ILE:HD11   | 41:BL:85:ARG:HD3   | 1.98                     | 0.43              |
| 41:BL:14:ARG:HB3   | 41:BL:14:ARG:CZ    | 2.42                     | 0.43              |
| 42:BM:27:THR:HB    | 42:BM:62:TYR:HD1   | 1.76                     | 0.43              |
| 42:BM:65:VAL:CG2   | 42:BM:73:GLN:HB3   | 2.49                     | 0.43              |
| 42:BM:89:ASN:O     | 42:BM:91:ASP:N     | 2.50                     | 0.43              |
| 43:BN:16:LEU:HD12  | 43:BN:70:ARG:HG2   | 2.00                     | 0.43              |
| 43:BN:96:ILE:O     | 43:BN:96:ILE:CG1   | 2.55                     | 0.43              |
| 45:BP:39:VAL:CB    | 45:BP:57:LYS:HB2   | 2.34                     | 0.43              |
| 46:BQ:36:LYS:HE3   | 46:BQ:59:TYR:CG    | 2.53                     | 0.43              |
| 46:BQ:50:GLU:HG3   | 46:BQ:54:VAL:HG23  | 2.00                     | 0.43              |
| 47:BR:16:PHE:CE1   | 52:BW:14:HIS:CE1   | 2.89                     | 0.43              |
| 49:BT:19:ILE:HG22  | 49:BT:36:ILE:O     | 2.18                     | 0.43              |
| 51:BV:17:SER:CB    | 51:BV:54:ARG:HH12  | 2.32                     | 0.43              |
| 53:BX:64:ASP:O     | 53:BX:67:ALA:CA    | 2.66                     | 0.43              |
| 55:BC:31:A:C2      | 55:BC:39:U:O4      | 2.71                     | 0.43              |
| 56:BD:9:A:O2'      | 56:BD:10:G:C8      | 2.72                     | 0.43              |
| 56:BE:8:U:O5'      | 56:BE:8:U:C6       | 2.70                     | 0.43              |
| 57:BZ:2:ILE:HB     | 57:BZ:199:VAL:HG21 | 1.99                     | 0.43              |
| 57:BZ:16:HIS:O     | 60:BZ:701:GCP:O5'  | 2.37                     | 0.43              |
| 57:BZ:119:TYR:HD2  | 57:BZ:121:LEU:HD12 | 1.83                     | 0.43              |
| 57:BZ:169:ASN:HD21 | 57:BZ:183:MET:CB   | 2.26                     | 0.43              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 57:BZ:180:ALA:CA   | 57:BZ:181:GLU:C   | 2.92                     | 0.43              |
| 57:BZ:209:ILE:HG23 | 57:BZ:223:ILE:O   | 2.19                     | 0.43              |
| 57:BZ:209:ILE:CA   | 57:BZ:223:ILE:O   | 2.67                     | 0.43              |
| 57:BZ:233:PRO:HB3  | 57:BZ:234:ASN:CA  | 2.48                     | 0.43              |
| 57:BZ:239:ILE:HB   | 57:BZ:244:GLY:CA  | 2.42                     | 0.43              |
| 57:BZ:253:LYS:NZ   | 57:BZ:269:GLU:CB  | 2.80                     | 0.43              |
| 57:BZ:266:ASP:CG   | 57:BZ:267:LEU:H   | 2.26                     | 0.43              |
| 57:BZ:287:THR:CG2  | 57:BZ:297:LEU:O   | 2.67                     | 0.43              |
| 57:BZ:346:ARG:NH1  | 57:BZ:346:ARG:CG  | 2.74                     | 0.43              |
| 1:AA:82:G:N2       | 1:AA:103:A:OP2    | 2.47                     | 0.43              |
| 1:AA:204:A:H4'     | 1:AA:205:G:H5'    | 2.01                     | 0.43              |
| 1:AA:216:A:C2      | 1:AA:217:G:C6     | 3.07                     | 0.43              |
| 1:AA:233:A:N7      | 1:AA:234:C:C5     | 2.86                     | 0.43              |
| 1:AA:288:C:O5'     | 1:AA:288:C:H6     | 2.01                     | 0.43              |
| 1:AA:301:G:H5''    | 1:AA:335:C:OP1    | 2.18                     | 0.43              |
| 1:AA:363(D):G:C2'  | 1:AA:363(E):U:H5' | 2.49                     | 0.43              |
| 1:AA:411:G:N1      | 1:AA:2407:G:O6    | 2.49                     | 0.43              |
| 1:AA:447:A:C1'     | 1:AA:449:A:N6     | 2.70                     | 0.43              |
| 1:AA:530:G:O2'     | 1:AA:532:A:P      | 2.76                     | 0.43              |
| 1:AA:557:U:O3'     | 9:AK:112:LEU:HD21 | 2.19                     | 0.43              |
| 1:AA:585:G:C6      | 1:AA:1251:C:C6    | 3.07                     | 0.43              |
| 1:AA:586:A:C2      | 1:AA:809:G:C2     | 3.07                     | 0.43              |
| 1:AA:605:C:O2'     | 1:AA:606:U:H5'    | 2.19                     | 0.43              |
| 1:AA:625:G:N1      | 11:AM:100:LEU:HB3 | 2.34                     | 0.43              |
| 1:AA:719:C:O2'     | 1:AA:720:C:H5'    | 2.19                     | 0.43              |
| 1:AA:734:A:C2      | 1:AA:735:A:C8     | 3.07                     | 0.43              |
| 1:AA:761:A:H8      | 1:AA:761:A:O5'    | 2.01                     | 0.43              |
| 1:AA:776:G:HO2'    | 1:AA:777:A:P      | 2.33                     | 0.43              |
| 1:AA:779:U:O4      | 1:AA:780:G:N1     | 2.50                     | 0.43              |
| 1:AA:804:A:O3'     | 1:AA:806:C:N4     | 2.52                     | 0.43              |
| 1:AA:811:U:H6      | 1:AA:811:U:C3'    | 2.29                     | 0.43              |
| 1:AA:823:G:C4      | 1:AA:835:A:C2     | 3.06                     | 0.43              |
| 1:AA:954:G:H1'     | 1:AA:2274:A:H2    | 1.83                     | 0.43              |
| 1:AA:962:G:C2      | 1:AA:963:U:N3     | 2.87                     | 0.43              |
| 1:AA:974:G:HO2'    | 1:AA:1186:G:C1'   | 2.31                     | 0.43              |
| 1:AA:1009:A:H5'    | 16:AR:59:ARG:HH12 | 1.84                     | 0.43              |
| 1:AA:1030:G:C5     | 1:AA:1125:G:N2    | 2.87                     | 0.43              |
| 1:AA:1081:U:H2'    | 1:AA:1082:U:H5'   | 2.00                     | 0.43              |
| 1:AA:1092:C:H6     | 1:AA:1092:C:C3'   | 2.28                     | 0.43              |
| 1:AA:1260:G:N3     | 1:AA:1260:G:H2'   | 2.33                     | 0.43              |
| 1:AA:1292:U:C2     | 1:AA:1293:C:C5    | 3.07                     | 0.43              |

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| Atom-1           | Atom-2          | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-----------------|--------------------------|-------------------|
| 1:AA:1296:G:N3   | 1:AA:1297:C:C5  | 2.87                     | 0.43              |
| 1:AA:1301:A:H2'  | 1:AA:1302:A:O5' | 2.17                     | 0.43              |
| 1:AA:1335:U:P    | 19:AU:65:ARG:NE | 2.92                     | 0.43              |
| 1:AA:1348:G:O6   | 1:AA:1599:C:C4  | 2.72                     | 0.43              |
| 1:AA:1422:G:C2   | 1:AA:1423:G:C4  | 3.07                     | 0.43              |
| 1:AA:1479:G:N2   | 1:AA:1515:C:C4  | 2.87                     | 0.43              |
| 1:AA:1569:A:O3'  | 4:AD:39:LYS:CE  | 2.66                     | 0.43              |
| 1:AA:1576:U:H2'  | 1:AA:1577:C:C5  | 2.54                     | 0.43              |
| 1:AA:1700:A:H2'  | 1:AA:1701:A:C4' | 2.49                     | 0.43              |
| 1:AA:1707:G:C4   | 1:AA:1708:C:C6  | 3.07                     | 0.43              |
| 1:AA:1754:C:C4   | 1:AA:2717:G:H5' | 2.53                     | 0.43              |
| 1:AA:1780:A:P    | 1:AA:1782:C:P   | 3.17                     | 0.43              |
| 1:AA:1785:A:OP2  | 1:AA:1785:A:C8  | 2.63                     | 0.43              |
| 1:AA:1843:C:O2'  | 1:AA:1844:C:H5' | 2.18                     | 0.43              |
| 1:AA:1856:G:N7   | 1:AA:1857:G:N3  | 2.67                     | 0.43              |
| 1:AA:1860:G:N3   | 1:AA:1860:G:H2' | 2.33                     | 0.43              |
| 1:AA:1909:C:O2   | 1:AA:1921:G:N2  | 2.51                     | 0.43              |
| 1:AA:1917:U:H6   | 1:AA:1917:U:H3' | 1.83                     | 0.43              |
| 1:AA:1942:C:C6   | 1:AA:1943:U:C5  | 3.06                     | 0.43              |
| 1:AA:1945:G:C2   | 1:AA:1946:U:C4  | 3.06                     | 0.43              |
| 1:AA:1964:G:C6   | 1:AA:1967:C:C5  | 3.07                     | 0.43              |
| 1:AA:2018:G:C6   | 1:AA:2019:A:C2  | 3.07                     | 0.43              |
| 1:AA:2136:C:C2   | 1:AA:2137:C:C5  | 3.06                     | 0.43              |
| 1:AA:2284:C:H5'' | 27:Ac:9:LEU:HG  | 1.99                     | 0.43              |
| 1:AA:2286:A:N7   | 27:Ac:31:PRO:N  | 2.66                     | 0.43              |
| 1:AA:2311:A:C5'  | 1:AA:2312:U:H5  | 2.32                     | 0.43              |
| 1:AA:2341:G:H22  | 1:AA:2374:C:H4' | 1.84                     | 0.43              |
| 1:AA:2423:U:H1'  | 1:AA:2425:A:N9  | 2.33                     | 0.43              |
| 1:AA:2459:A:OP2  | 1:AA:2460:U:H5  | 2.01                     | 0.43              |
| 1:AA:2515:C:C2'  | 1:AA:2516:G:O5' | 2.67                     | 0.43              |
| 1:AA:2531:A:O2'  | 1:AA:2532:G:C5' | 2.66                     | 0.43              |
| 1:AA:2557:G:C2'  | 1:AA:2558:C:H6  | 2.25                     | 0.43              |
| 1:AA:2630:G:H1'  | 1:AA:2894:G:C5' | 2.48                     | 0.43              |
| 1:AA:2657:A:N6   | 1:AA:2664:G:C1' | 2.81                     | 0.43              |
| 1:AA:2657:A:OP1  | 1:AA:2657:A:O3' | 2.36                     | 0.43              |
| 1:AA:2714:G:N1   | 1:AA:2715:C:C4  | 2.87                     | 0.43              |
| 1:AA:2719:G:C8   | 1:AA:2719:G:O5' | 2.70                     | 0.43              |
| 1:AA:2784:C:H2'  | 1:AA:2785:C:C6  | 2.51                     | 0.43              |
| 1:AA:2818:G:C2   | 1:AA:2819:G:C8  | 3.06                     | 0.43              |
| 2:AB:8:U:O2'     | 2:AB:9:G:O4'    | 2.27                     | 0.43              |
| 2:AB:63:G:H2'    | 2:AB:64:C:C5    | 2.53                     | 0.43              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 2:AB:84:C:H2'      | 2:AB:85:G:C5'     | 2.45                     | 0.43              |
| 3:AC:28:LEU:HA     | 3:AC:31:GLU:OE1   | 2.18                     | 0.43              |
| 3:AC:68:LEU:CD2    | 3:AC:156:ILE:O    | 2.67                     | 0.43              |
| 3:AC:78:ALA:HA     | 3:AC:119:VAL:CG1  | 2.49                     | 0.43              |
| 3:AC:156:ILE:HG23  | 3:AC:160:ARG:HB2  | 2.01                     | 0.43              |
| 4:AD:23:GLU:CB     | 4:AD:205:VAL:H    | 2.32                     | 0.43              |
| 4:AD:118:VAL:O     | 4:AD:119:ALA:CB   | 2.64                     | 0.43              |
| 4:AD:119:ALA:CB    | 4:AD:130:ALA:O    | 2.57                     | 0.43              |
| 4:AD:142:VAL:HB    | 4:AD:191:ALA:HB1  | 2.01                     | 0.43              |
| 4:AD:258:LYS:CG    | 4:AD:259:THR:N    | 2.82                     | 0.43              |
| 5:AE:9:VAL:CG2     | 15:AQ:7:ILE:HG21  | 2.48                     | 0.43              |
| 6:AF:39:TRP:CE2    | 6:AF:106:ARG:NH2  | 2.87                     | 0.43              |
| 7:AG:96:ARG:C      | 7:AG:100:TRP:CE3  | 2.97                     | 0.43              |
| 8:AH:8:PRO:CA      | 8:AH:51:ARG:CZ    | 2.97                     | 0.43              |
| 8:AH:90:LYS:NZ     | 8:AH:163:TYR:CD1  | 2.80                     | 0.43              |
| 8:AH:171:LEU:C     | 8:AH:172:LYS:HZ2  | 2.27                     | 0.43              |
| 9:AK:24:GLY:O      | 9:AK:25:ARG:C     | 2.60                     | 0.43              |
| 10:AL:8:LEU:HD21   | 10:AL:81:ASP:HB3  | 2.00                     | 0.43              |
| 10:AL:34:THR:HB    | 10:AL:37:ASP:OD2  | 2.19                     | 0.43              |
| 10:AL:40:VAL:O     | 10:AL:40:VAL:HG13 | 2.17                     | 0.43              |
| 10:AL:40:VAL:HA    | 10:AL:58:VAL:HG12 | 2.00                     | 0.43              |
| 10:AL:47:ILE:O     | 10:AL:47:ILE:HG12 | 2.16                     | 0.43              |
| 10:AL:77:ILE:HG23  | 15:AQ:65:LYS:HE2  | 1.93                     | 0.43              |
| 10:AL:85:VAL:O     | 10:AL:93:PRO:CG   | 2.67                     | 0.43              |
| 11:AM:29:LYS:O     | 11:AM:30:THR:CG2  | 2.63                     | 0.43              |
| 11:AM:107:LYS:NZ   | 11:AM:111:ARG:N   | 2.67                     | 0.43              |
| 12:AN:12:GLN:C     | 12:AN:12:GLN:CD   | 2.86                     | 0.43              |
| 12:AN:102:VAL:HG13 | 12:AN:104:PHE:CZ  | 2.54                     | 0.43              |
| 13:AO:54:LEU:O     | 13:AO:80:PHE:HE1  | 2.00                     | 0.43              |
| 14:AP:77:ALA:HA    | 14:AP:80:LEU:CB   | 2.48                     | 0.43              |
| 16:AR:83:LEU:HB3   | 16:AR:90:VAL:HG13 | 2.00                     | 0.43              |
| 16:AR:85:LYS:CD    | 16:AR:116:ALA:O   | 2.58                     | 0.43              |
| 16:AR:112:ARG:O    | 16:AR:113:ALA:C   | 2.60                     | 0.43              |
| 17:AS:5:VAL:HG13   | 17:AS:38:LEU:C    | 2.41                     | 0.43              |
| 17:AS:39:LEU:O     | 17:AS:40:LEU:CB   | 2.67                     | 0.43              |
| 17:AS:59:ALA:C     | 17:AS:60:GLU:OE2  | 2.61                     | 0.43              |
| 18:AT:1:MET:N      | 18:AT:4:LYS:HD3   | 2.29                     | 0.43              |
| 18:AT:24:ILE:CD1   | 18:AT:36:LEU:HD13 | 2.44                     | 0.43              |
| 18:AT:41:LYS:NZ    | 18:AT:41:LYS:CB   | 2.72                     | 0.43              |
| 19:AU:4:ALA:HB3    | 23:AY:21:ARG:CZ   | 2.47                     | 0.43              |
| 19:AU:5:TYR:O      | 19:AU:7:VAL:HG12  | 2.19                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 20:AV:65:ALA:O    | 20:AV:66:PRO:C     | 2.62                     | 0.43              |
| 20:AV:107:ASP:HB3 | 20:AV:108:THR:H    | 1.64                     | 0.43              |
| 21:AW:55:HIS:CD2  | 21:AW:124:ILE:HD13 | 2.54                     | 0.43              |
| 21:AW:78:LYS:HE2  | 21:AW:84:GLU:CD    | 2.43                     | 0.43              |
| 22:AX:44:ARG:CD   | 22:AX:45:PHE:CE2   | 3.01                     | 0.43              |
| 22:AX:45:PHE:C    | 22:AX:46:LYS:HD3   | 2.43                     | 0.43              |
| 22:AX:53:MET:HE3  | 22:AX:57:PHE:C     | 2.44                     | 0.43              |
| 23:AY:29:GLU:O    | 23:AY:33:GLN:CD    | 2.62                     | 0.43              |
| 24:AZ:17:LYS:HA   | 24:AZ:20:LYS:CD    | 2.47                     | 0.43              |
| 24:AZ:49:LYS:O    | 24:AZ:50:VAL:C     | 2.61                     | 0.43              |
| 24:AZ:55:ARG:HH21 | 24:AZ:55:ARG:CG    | 2.30                     | 0.43              |
| 25:Aa:5:ILE:CD1   | 25:Aa:10:VAL:N     | 2.81                     | 0.43              |
| 25:Aa:6:HIS:CB    | 25:Aa:7:PRO:HD3    | 2.46                     | 0.43              |
| 27:Ac:16:CYS:HB3  | 27:Ac:49:HIS:CE1   | 2.50                     | 0.43              |
| 27:Ac:45:LYS:O    | 27:Ac:46:HIS:CB    | 2.66                     | 0.43              |
| 29:Ae:20:GLY:O    | 29:Ae:21:LYS:CG    | 2.60                     | 0.43              |
| 29:Ae:26:LYS:HD2  | 29:Ae:45:GLY:H     | 1.84                     | 0.43              |
| 29:Ae:34:TRP:HA   | 29:Ae:36:LYS:HB2   | 2.00                     | 0.43              |
| 29:Ae:34:TRP:CE3  | 29:Ae:36:LYS:HD3   | 2.54                     | 0.43              |
| 32:AJ:22:PRO:C    | 32:AJ:24:GLY:CA    | 2.86                     | 0.43              |
| 32:AJ:98:ARG:C    | 32:AJ:99:ILE:HG13  | 2.43                     | 0.43              |
| 34:BA:37:U:OP1    | 45:BP:123:LYS:HE3  | 2.18                     | 0.43              |
| 34:BA:160:A:C2'   | 34:BA:161:A:H5'    | 2.49                     | 0.43              |
| 34:BA:226:G:O2'   | 34:BA:227:G:H5'    | 2.18                     | 0.43              |
| 34:BA:259:G:C2    | 34:BA:260:G:N3     | 2.87                     | 0.43              |
| 34:BA:282:A:C5    | 34:BA:283:C:C5     | 3.06                     | 0.43              |
| 34:BA:407:G:N1    | 34:BA:436:C:C2     | 2.86                     | 0.43              |
| 34:BA:428:G:O2'   | 34:BA:429:U:O5'    | 2.36                     | 0.43              |
| 34:BA:519:C:H5'   | 45:BP:51:ALA:CB    | 2.49                     | 0.43              |
| 34:BA:580:U:H2'   | 34:BA:580:U:O2     | 2.19                     | 0.43              |
| 34:BA:589:C:C4    | 34:BA:590:C:N4     | 2.87                     | 0.43              |
| 34:BA:617:G:H4'   | 49:BT:44:THR:HG1   | 1.80                     | 0.43              |
| 34:BA:625:G:C4    | 34:BA:626:U:C5     | 3.06                     | 0.43              |
| 34:BA:667:G:C5'   | 48:BS:51:HIS:CE1   | 3.02                     | 0.43              |
| 34:BA:721:G:H1'   | 34:BA:722:A:C6     | 2.53                     | 0.43              |
| 34:BA:767:A:C2'   | 34:BA:768:A:H5'    | 2.49                     | 0.43              |
| 34:BA:795:C:C1'   | 34:BA:1506:U:C2    | 3.02                     | 0.43              |
| 34:BA:826:C:H2'   | 34:BA:827:U:H6     | 1.83                     | 0.43              |
| 34:BA:862:C:N3    | 34:BA:863:U:C5     | 2.87                     | 0.43              |
| 34:BA:890:G:O2'   | 34:BA:891:U:H6     | 1.98                     | 0.43              |
| 34:BA:893:C:H2'   | 34:BA:894:G:H8     | 1.84                     | 0.43              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:918:A:H2'    | 34:BA:919:A:O4'    | 2.19                     | 0.43              |
| 34:BA:975:A:H4'    | 34:BA:976:G:H5'    | 2.00                     | 0.43              |
| 34:BA:1029:G:O4'   | 34:BA:1032(A):G:N2 | 2.51                     | 0.43              |
| 34:BA:1061:G:N3    | 34:BA:1197:G:C2    | 2.87                     | 0.43              |
| 34:BA:1068:G:C8    | 34:BA:1094:G:N7    | 2.87                     | 0.43              |
| 34:BA:1108:G:OP1   | 36:BG:176:HIS:HB2  | 2.18                     | 0.43              |
| 34:BA:1223:C:H6    | 34:BA:1223:C:H3'   | 1.84                     | 0.43              |
| 34:BA:1329:A:O2'   | 46:BQ:70:LEU:HD11  | 2.14                     | 0.43              |
| 34:BA:1340:A:O2'   | 56:BE:31:A:H4'     | 2.18                     | 0.43              |
| 34:BA:1500:A:OP2   | 34:BA:1504:G:O2'   | 2.37                     | 0.43              |
| 35:BF:21:ARG:HE    | 35:BF:21:ARG:H     | 1.63                     | 0.43              |
| 35:BF:82:ARG:N     | 35:BF:92:TYR:HE1   | 2.16                     | 0.43              |
| 35:BF:185:ILE:HG22 | 35:BF:199:TYR:CB   | 2.47                     | 0.43              |
| 36:BG:6:HIS:CD2    | 36:BG:9:GLY:H      | 2.36                     | 0.43              |
| 36:BG:12:LEU:CD2   | 47:BR:57:ARG:CG    | 2.80                     | 0.43              |
| 36:BG:84:ILE:CG1   | 36:BG:101:LEU:HD13 | 2.43                     | 0.43              |
| 36:BG:124:ILE:CD1  | 36:BG:130:VAL:CG1  | 2.97                     | 0.43              |
| 37:BH:19:LEU:N     | 37:BH:33:MET:CE    | 2.77                     | 0.43              |
| 37:BH:47:ARG:O     | 37:BH:47:ARG:HG3   | 2.18                     | 0.43              |
| 37:BH:145:GLU:HB3  | 37:BH:184:LYS:CG   | 2.38                     | 0.43              |
| 37:BH:161:ASN:O    | 37:BH:165:MET:CB   | 2.67                     | 0.43              |
| 39:BJ:2:ARG:HH11   | 39:BJ:69:GLU:HB3   | 1.84                     | 0.43              |
| 39:BJ:8:ILE:HG22   | 39:BJ:87:ARG:O     | 2.19                     | 0.43              |
| 39:BJ:12:PRO:O     | 39:BJ:14:LEU:N     | 2.48                     | 0.43              |
| 40:BK:6:ARG:N      | 40:BK:6:ARG:NH1    | 2.67                     | 0.43              |
| 40:BK:79:ARG:HG2   | 40:BK:84:ASN:HB3   | 2.01                     | 0.43              |
| 41:BL:104:ARG:HB2  | 41:BL:108:GLY:H    | 1.83                     | 0.43              |
| 42:BM:78:LYS:NZ    | 42:BM:101:PHE:CE2  | 2.75                     | 0.43              |
| 43:BN:6:ILE:CD1    | 43:BN:73:ASP:H     | 2.30                     | 0.43              |
| 44:BO:13:GLN:HA    | 44:BO:76:GLY:CA    | 2.48                     | 0.43              |
| 44:BO:18:ARG:HB3   | 44:BO:83:ILE:CD1   | 2.48                     | 0.43              |
| 44:BO:50:TYR:CD1   | 44:BO:55:LYS:HA    | 2.54                     | 0.43              |
| 45:BP:58:VAL:HG12  | 45:BP:59:ARG:C     | 2.44                     | 0.43              |
| 45:BP:126:LYS:HZ3  | 45:BP:128:ALA:N    | 2.16                     | 0.43              |
| 46:BQ:93:ARG:HG2   | 46:BQ:94:ARG:NH2   | 2.33                     | 0.43              |
| 49:BT:16:HIS:C     | 49:BT:17:TYR:CD1   | 2.96                     | 0.43              |
| 51:BV:40:LEU:O     | 51:BV:43:PHE:CD1   | 2.63                     | 0.43              |
| 53:BX:40:ALA:C     | 53:BX:42:GLN:N     | 2.77                     | 0.43              |
| 53:BX:79:ARG:HG3   | 53:BX:79:ARG:NH1   | 2.34                     | 0.43              |
| 53:BX:88:VAL:O     | 53:BX:92:LEU:CG    | 2.66                     | 0.43              |
| 54:BY:13:ILE:HG22  | 54:BY:14:TRP:H     | 1.84                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 55:BC:23:A:C8     | 55:BC:24:G:N7     | 2.87                     | 0.43              |
| 56:BE:42:C:H5'    | 56:BE:42:C:H6     | 1.83                     | 0.43              |
| 56:BE:68:C:H2'    | 56:BE:69:G:O4'    | 2.18                     | 0.43              |
| 57:BZ:236:GLN:CG  | 57:BZ:247:ARG:CA  | 2.74                     | 0.43              |
| 57:BZ:288:VAL:O   | 57:BZ:289:CYS:CB  | 2.66                     | 0.43              |
| 57:BZ:395:ARG:HB2 | 57:BZ:474:ASP:HB2 | 1.81                     | 0.43              |
| 1:AA:28:A:C2      | 1:AA:29:U:C1'     | 3.02                     | 0.43              |
| 1:AA:32:C:H1'     | 1:AA:474:G:N2     | 2.33                     | 0.43              |
| 1:AA:146:G:C5     | 1:AA:147:U:C6     | 3.06                     | 0.43              |
| 1:AA:307:G:C4     | 1:AA:309:G:OP2    | 2.72                     | 0.43              |
| 1:AA:327:G:H2'    | 1:AA:327:G:N3     | 2.34                     | 0.43              |
| 1:AA:363(C):G:C2' | 1:AA:363(D):G:H5' | 2.48                     | 0.43              |
| 1:AA:388:G:OP2    | 25:Aa:23:GLU:CD   | 2.62                     | 0.43              |
| 1:AA:507:A:H5'    | 1:AA:509:C:H1'    | 2.00                     | 0.43              |
| 1:AA:509:C:C2'    | 1:AA:510:C:OP2    | 2.66                     | 0.43              |
| 1:AA:659:C:H4'    | 6:AF:102:PRO:CD   | 2.48                     | 0.43              |
| 1:AA:660:G:C6     | 1:AA:661:C:N4     | 2.86                     | 0.43              |
| 1:AA:678:C:H2'    | 1:AA:679:C:C6     | 2.35                     | 0.43              |
| 1:AA:785:G:O2'    | 1:AA:786:C:P      | 2.77                     | 0.43              |
| 1:AA:838:C:C2     | 1:AA:941:A:N6     | 2.87                     | 0.43              |
| 1:AA:878:A:C3'    | 1:AA:879:G:H5''   | 2.47                     | 0.43              |
| 1:AA:892:G:C4     | 1:AA:893:C:C4     | 3.07                     | 0.43              |
| 1:AA:909:A:C2     | 1:AA:912:C:N1     | 2.87                     | 0.43              |
| 1:AA:973:A:H3'    | 1:AA:973:A:C8     | 2.53                     | 0.43              |
| 1:AA:1002:G:C2'   | 1:AA:1003:G:O5'   | 2.67                     | 0.43              |
| 1:AA:1007:C:H4'   | 9:AK:108:PRO:HG3  | 2.01                     | 0.43              |
| 1:AA:1015:G:C6    | 1:AA:1148:A:C6    | 3.06                     | 0.43              |
| 1:AA:1051:G:H1'   | 1:AA:2752:C:C5'   | 2.22                     | 0.43              |
| 1:AA:1223:C:N3    | 1:AA:1227:A:N1    | 2.67                     | 0.43              |
| 1:AA:1314:C:N4    | 1:AA:1315:C:N4    | 2.67                     | 0.43              |
| 1:AA:1334:G:C5'   | 19:AU:65:ARG:NH1  | 2.73                     | 0.43              |
| 1:AA:1368:G:HO2'  | 1:AA:1369:G:H5'   | 1.80                     | 0.43              |
| 1:AA:1381:G:O6    | 1:AA:1382:G:N1    | 2.51                     | 0.43              |
| 1:AA:1399:C:OP1   | 19:AU:53:LYS:NZ   | 2.52                     | 0.43              |
| 1:AA:1416:G:N2    | 1:AA:1417:C:C4    | 2.87                     | 0.43              |
| 1:AA:1469:A:C8    | 1:AA:1469:A:C3'   | 3.02                     | 0.43              |
| 1:AA:1475:G:O6    | 1:AA:1517:G:C6    | 2.71                     | 0.43              |
| 1:AA:1593:G:H2'   | 1:AA:1594:G:O4'   | 2.18                     | 0.43              |
| 1:AA:1651:G:C2'   | 1:AA:1652:A:C8    | 2.94                     | 0.43              |
| 1:AA:1697:G:O6    | 1:AA:1698:A:C6    | 2.72                     | 0.43              |
| 1:AA:1775:U:N3    | 4:AD:208:LYS:HD2  | 2.34                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1798:U:O5'   | 4:AD:257:LEU:HD12 | 2.19                     | 0.43              |
| 1:AA:1806:C:H2'   | 1:AA:1807:G:O5'   | 2.19                     | 0.43              |
| 1:AA:1816:G:OP2   | 4:AD:43:ARG:CZ    | 2.67                     | 0.43              |
| 1:AA:1827:C:C2    | 1:AA:1828:G:H1'   | 2.53                     | 0.43              |
| 1:AA:1858:G:C5    | 1:AA:1883:G:C2    | 3.07                     | 0.43              |
| 1:AA:1911:U:O5'   | 1:AA:1911:U:C6    | 2.71                     | 0.43              |
| 1:AA:1930:G:O2'   | 1:AA:1931:U:O5'   | 2.34                     | 0.43              |
| 1:AA:2014:A:C2    | 1:AA:2015:A:N1    | 2.87                     | 0.43              |
| 1:AA:2052:G:C4    | 1:AA:2053:G:N7    | 2.87                     | 0.43              |
| 1:AA:2140:C:O2'   | 1:AA:2141:G:H5'   | 2.19                     | 0.43              |
| 1:AA:2212:A:H61   | 1:AA:2215:G:H1'   | 1.84                     | 0.43              |
| 1:AA:2284:C:N3    | 1:AA:2285:C:C4    | 2.87                     | 0.43              |
| 1:AA:2286:A:OP2   | 27:Ac:27:LYS:CE   | 2.67                     | 0.43              |
| 1:AA:2309:A:H5''  | 1:AA:2310:A:H8    | 1.84                     | 0.43              |
| 1:AA:2406:U:C4    | 11:AM:65:ARG:HB3  | 2.54                     | 0.43              |
| 1:AA:2417:C:O2'   | 1:AA:2418:A:H5'   | 2.18                     | 0.43              |
| 1:AA:2444:G:N3    | 1:AA:2444:G:H2'   | 2.34                     | 0.43              |
| 1:AA:2521:C:O2    | 1:AA:2522:U:C1'   | 2.67                     | 0.43              |
| 1:AA:2525:G:C2    | 1:AA:2539:C:C4    | 3.07                     | 0.43              |
| 1:AA:2527:C:H3'   | 1:AA:2527:C:P     | 2.59                     | 0.43              |
| 1:AA:2527:C:H2'   | 1:AA:2528:U:H6    | 1.79                     | 0.43              |
| 1:AA:2553:G:H8    | 1:AA:2582:G:H2'   | 1.84                     | 0.43              |
| 1:AA:2589:A:N3    | 1:AA:2590:A:C8    | 2.86                     | 0.43              |
| 1:AA:2635:C:H5''  | 5:AE:78:LEU:CD1   | 2.49                     | 0.43              |
| 1:AA:2670:A:C6    | 1:AA:2671:A:N6    | 2.87                     | 0.43              |
| 1:AA:2718:G:H2'   | 1:AA:2719:G:O5'   | 2.19                     | 0.43              |
| 1:AA:2847:U:C5'   | 15:AQ:99:LEU:HD12 | 2.48                     | 0.43              |
| 2:AB:21:G:C6      | 2:AB:22:U:C2      | 3.07                     | 0.43              |
| 2:AB:75:G:N2      | 21:AW:85:HIS:CE1  | 2.86                     | 0.43              |
| 3:AC:71:GLN:CG    | 3:AC:72:VAL:HG23  | 2.49                     | 0.43              |
| 3:AC:119:VAL:HG23 | 3:AC:123:VAL:HG23 | 2.01                     | 0.43              |
| 3:AC:194:ARG:O    | 3:AC:195:ALA:C    | 2.62                     | 0.43              |
| 4:AD:61:LEU:O     | 4:AD:62:TYR:CG    | 2.72                     | 0.43              |
| 4:AD:67:PHE:O     | 4:AD:153:ALA:HB2  | 2.18                     | 0.43              |
| 4:AD:70:TRP:O     | 4:AD:73:VAL:HG22  | 2.18                     | 0.43              |
| 4:AD:77:ALA:CB    | 4:AD:95:LEU:HD11  | 2.46                     | 0.43              |
| 4:AD:105:ILE:CG1  | 4:AD:106:ILE:N    | 2.82                     | 0.43              |
| 4:AD:163:ALA:HA   | 4:AD:175:LEU:HD21 | 2.01                     | 0.43              |
| 4:AD:219:PRO:C    | 4:AD:220:HIS:ND1  | 2.77                     | 0.43              |
| 5:AE:8:LYS:HD3    | 5:AE:8:LYS:C      | 2.42                     | 0.43              |
| 5:AE:64:LYS:O     | 5:AE:67:PHE:CB    | 2.67                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 5:AE:94:GLU:C     | 5:AE:96:PHE:N      | 2.77                     | 0.43              |
| 6:AF:6:VAL:CB     | 6:AF:18:ARG:HD2    | 2.41                     | 0.43              |
| 6:AF:41:LEU:C     | 6:AF:44:ARG:CZ     | 2.90                     | 0.43              |
| 6:AF:63:LYS:O     | 6:AF:64:ILE:HG22   | 2.19                     | 0.43              |
| 6:AF:128:ALA:O    | 6:AF:129:PHE:HB2   | 2.18                     | 0.43              |
| 7:AG:19:LEU:HA    | 7:AG:22:ARG:CB     | 2.47                     | 0.43              |
| 7:AG:38:VAL:HG12  | 7:AG:93:THR:HG23   | 2.01                     | 0.43              |
| 7:AG:74:LYS:C     | 7:AG:76:SER:N      | 2.72                     | 0.43              |
| 7:AG:75:LYS:CB    | 7:AG:84:LYS:H      | 2.19                     | 0.43              |
| 7:AG:118:ARG:O    | 7:AG:180:PHE:CZ    | 2.71                     | 0.43              |
| 7:AG:128:ARG:NH1  | 7:AG:162:THR:HA    | 2.28                     | 0.43              |
| 7:AG:174:GLU:C    | 7:AG:179:PRO:HD3   | 2.43                     | 0.43              |
| 9:AK:23:LEU:HD23  | 9:AK:61:ARG:O      | 2.12                     | 0.43              |
| 9:AK:72:TYR:CD2   | 9:AK:72:TYR:O      | 2.71                     | 0.43              |
| 9:AK:107:LEU:HD13 | 9:AK:117:PHE:CG    | 2.53                     | 0.43              |
| 10:AL:21:CYS:CB   | 10:AL:40:VAL:O     | 2.67                     | 0.43              |
| 10:AL:59:LYS:HB3  | 10:AL:86:ILE:H     | 1.83                     | 0.43              |
| 10:AL:92:GLU:OE2  | 10:AL:114:ILE:HG13 | 2.19                     | 0.43              |
| 11:AM:46:LYS:NZ   | 11:AM:50:ARG:HH11  | 2.14                     | 0.43              |
| 11:AM:74:GLU:CB   | 11:AM:107:LYS:HD3  | 2.49                     | 0.43              |
| 11:AM:124:LYS:CD  | 11:AM:142:GLY:O    | 2.66                     | 0.43              |
| 12:AN:59:ARG:NH2  | 21:AW:177:PRO:CB   | 2.78                     | 0.43              |
| 12:AN:68:ILE:HG21 | 12:AN:95:ALA:HB2   | 2.00                     | 0.43              |
| 12:AN:122:GLY:CA  | 12:AN:125:LEU:HG   | 2.41                     | 0.43              |
| 13:AO:79:LEU:CD2  | 13:AO:80:PHE:HA    | 2.48                     | 0.43              |
| 14:AP:73:LEU:HA   | 14:AP:76:LYS:HB3   | 2.01                     | 0.43              |
| 15:AQ:30:VAL:CG2  | 15:AQ:32:TYR:OH    | 2.64                     | 0.43              |
| 15:AQ:37:GLY:HA3  | 15:AQ:42:ILE:O     | 2.18                     | 0.43              |
| 15:AQ:53:ARG:HH22 | 15:AQ:101:PHE:CA   | 2.31                     | 0.43              |
| 15:AQ:62:THR:HG22 | 15:AQ:79:HIS:N     | 2.28                     | 0.43              |
| 15:AQ:70:VAL:C    | 15:AQ:74:ARG:NH1   | 2.77                     | 0.43              |
| 15:AQ:91:ARG:C    | 15:AQ:93:ARG:NH2   | 2.75                     | 0.43              |
| 16:AR:40:PHE:HD1  | 16:AR:40:PHE:H     | 1.66                     | 0.43              |
| 17:AS:76:LYS:HA   | 17:AS:86:GLY:HA3   | 2.01                     | 0.43              |
| 20:AV:67:LEU:HD12 | 20:AV:71:LYS:NZ    | 2.34                     | 0.43              |
| 20:AV:72:VAL:O    | 20:AV:77:PRO:O     | 2.36                     | 0.43              |
| 20:AV:96:ILE:HD12 | 20:AV:103:GLY:HA2  | 2.00                     | 0.43              |
| 21:AW:60:GLU:CD   | 21:AW:60:GLU:H     | 2.26                     | 0.43              |
| 22:AX:33:ALA:HA   | 22:AX:61:ALA:C     | 2.43                     | 0.43              |
| 23:AY:33:GLN:HB3  | 23:AY:41:GLN:CD    | 2.44                     | 0.43              |
| 27:Ac:19:ARG:HH22 | 27:Ac:41:PRO:CD    | 2.32                     | 0.43              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 29:Ae:3:LYS:HE2    | 29:Ae:59:LYS:HE2   | 1.97                     | 0.43              |
| 34:BA:112:G:N3     | 34:BA:112:G:H2'    | 2.32                     | 0.43              |
| 34:BA:128:G:C5'    | 50:BU:2:PRO:HA     | 2.40                     | 0.43              |
| 34:BA:186(A):C:O2' | 34:BA:186(B):C:H5' | 2.19                     | 0.43              |
| 34:BA:250:A:O2'    | 34:BA:251:G:P      | 2.76                     | 0.43              |
| 34:BA:273:A:C1'    | 50:BU:16:GLN:OE1   | 2.66                     | 0.43              |
| 34:BA:383:A:C2'    | 34:BA:384:G:H5'    | 2.49                     | 0.43              |
| 34:BA:513:C:O5'    | 34:BA:513:C:H6     | 2.02                     | 0.43              |
| 34:BA:524:G:O2'    | 34:BA:525:C:C5'    | 2.64                     | 0.43              |
| 34:BA:619:U:O2     | 34:BA:619:U:C2'    | 2.67                     | 0.43              |
| 34:BA:685:G:O5'    | 34:BA:685:G:H8     | 2.01                     | 0.43              |
| 34:BA:781:A:H2'    | 34:BA:782:A:C4'    | 2.48                     | 0.43              |
| 34:BA:848:C:O2'    | 34:BA:849:C:C5'    | 2.66                     | 0.43              |
| 34:BA:926:G:C6     | 34:BA:1505:G:N1    | 2.87                     | 0.43              |
| 34:BA:934:C:C5     | 34:BA:1344:C:C2    | 3.07                     | 0.43              |
| 34:BA:947:G:O2'    | 34:BA:948:C:C5'    | 2.61                     | 0.43              |
| 34:BA:951:G:C2     | 34:BA:952:U:C2     | 3.06                     | 0.43              |
| 34:BA:1004:A:C5'   | 34:BA:1025:U:C5    | 3.02                     | 0.43              |
| 34:BA:1018:C:O2'   | 34:BA:1019:C:H5'   | 2.19                     | 0.43              |
| 34:BA:1095:U:N3    | 34:BA:1096:C:C4    | 2.87                     | 0.43              |
| 34:BA:1099:G:H2'   | 34:BA:1100:C:O5'   | 2.19                     | 0.43              |
| 34:BA:1109:C:C2'   | 34:BA:1110:A:C5'   | 2.97                     | 0.43              |
| 34:BA:1161:C:H2'   | 34:BA:1162:C:H6    | 1.83                     | 0.43              |
| 34:BA:1231:G:OP2   | 42:BM:127:LYS:HE2  | 2.19                     | 0.43              |
| 34:BA:1239:A:C8    | 34:BA:1241:G:H1'   | 2.53                     | 0.43              |
| 34:BA:1298:C:N1    | 40:BK:114:ARG:NH1  | 2.66                     | 0.43              |
| 34:BA:1301:U:O4    | 34:BA:1303:C:H1'   | 2.18                     | 0.43              |
| 34:BA:1320:C:C3'   | 52:BW:73:GLU:HB3   | 2.48                     | 0.43              |
| 34:BA:1325:C:H2'   | 34:BA:1326:C:C6    | 2.54                     | 0.43              |
| 34:BA:1331:G:C2'   | 34:BA:1332:A:OP2   | 2.66                     | 0.43              |
| 34:BA:1402:C:O2'   | 34:BA:1403:C:H5'   | 2.18                     | 0.43              |
| 34:BA:1405:G:O2'   | 34:BA:1519:A:H5'   | 2.19                     | 0.43              |
| 34:BA:1470:G:C2    | 34:BA:1471:G:C4    | 3.07                     | 0.43              |
| 34:BA:1516:G:C2    | 34:BA:1518:A:P     | 3.12                     | 0.43              |
| 35:BF:84:GLU:CD    | 35:BF:219:VAL:HG21 | 2.43                     | 0.43              |
| 35:BF:113:HIS:ND1  | 35:BF:116:GLU:OE1  | 2.51                     | 0.43              |
| 35:BF:118:LEU:HD22 | 35:BF:119:GLU:N    | 2.34                     | 0.43              |
| 35:BF:119:GLU:OE1  | 35:BF:142:LEU:HD21 | 2.18                     | 0.43              |
| 35:BF:135:GLN:O    | 35:BF:139:LYS:HB3  | 2.19                     | 0.43              |
| 35:BF:181:PHE:CE1  | 41:BL:71:GLY:HA3   | 2.52                     | 0.43              |
| 36:BG:112:SER:OG   | 36:BG:115:LEU:CG   | 2.67                     | 0.43              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 36:BG:128:PHE:O    | 36:BG:130:VAL:N   | 2.52                     | 0.43              |
| 37:BH:63:LYS:H     | 37:BH:63:LYS:CD   | 2.31                     | 0.43              |
| 37:BH:165:MET:CG   | 37:BH:166:LYS:N   | 2.81                     | 0.43              |
| 38:BI:25:ARG:HD3   | 38:BI:25:ARG:N    | 2.33                     | 0.43              |
| 38:BI:76:ILE:CG2   | 38:BI:77:PRO:HD2  | 2.48                     | 0.43              |
| 38:BI:109:ILE:CG2  | 38:BI:110:LEU:H   | 2.32                     | 0.43              |
| 39:BJ:14:LEU:HD11  | 39:BJ:18:GLN:HB3  | 1.99                     | 0.43              |
| 40:BK:11:GLN:NE2   | 40:BK:12:LEU:HD12 | 2.33                     | 0.43              |
| 40:BK:31:MET:C     | 40:BK:32:ARG:HG2  | 2.42                     | 0.43              |
| 40:BK:94:ARG:HH11  | 40:BK:94:ARG:CG   | 2.27                     | 0.43              |
| 41:BL:100:ILE:CG2  | 41:BL:121:ASP:HA  | 2.48                     | 0.43              |
| 41:BL:121:ASP:HB3  | 41:BL:122:ARG:H   | 1.39                     | 0.43              |
| 42:BM:4:TYR:CE1    | 42:BM:59:PHE:HE2  | 2.14                     | 0.43              |
| 42:BM:72:GLY:HA2   | 42:BM:75:ASP:OD2  | 2.18                     | 0.43              |
| 42:BM:113:LYS:NZ   | 42:BM:119:ALA:CB  | 2.72                     | 0.43              |
| 43:BN:7:LYS:HZ2    | 43:BN:71:LEU:HD11 | 1.84                     | 0.43              |
| 43:BN:48:THR:OG1   | 43:BN:62:HIS:HB3  | 2.19                     | 0.43              |
| 44:BO:69:ALA:O     | 44:BO:72:ALA:CB   | 2.65                     | 0.43              |
| 46:BQ:36:LYS:C     | 46:BQ:38:GLY:N    | 2.76                     | 0.43              |
| 48:BS:69:TYR:CZ    | 48:BS:73:GLU:HG3  | 2.54                     | 0.43              |
| 49:BT:21:VAL:CG2   | 49:BT:59:TRP:HE1  | 2.21                     | 0.43              |
| 50:BU:3:LYS:C      | 50:BU:4:LYS:O     | 2.62                     | 0.43              |
| 50:BU:75:ARG:NH1   | 50:BU:76:LEU:C    | 2.77                     | 0.43              |
| 50:BU:95:TYR:C     | 50:BU:97:SER:N    | 2.77                     | 0.43              |
| 52:BW:9:VAL:HG21   | 52:BW:42:PRO:CB   | 2.15                     | 0.43              |
| 52:BW:46:GLY:C     | 52:BW:47:HIS:CG   | 2.97                     | 0.43              |
| 53:BX:12:ALA:O     | 53:BX:13:LEU:C    | 2.62                     | 0.43              |
| 56:BD:49:C:O2      | 56:BD:50:U:C5     | 2.72                     | 0.43              |
| 56:BE:3:C:C2       | 56:BE:4:C:N4      | 2.86                     | 0.43              |
| 56:BE:28:G:H1      | 56:BE:42:C:H42    | 1.67                     | 0.43              |
| 57:BZ:27:GLN:HG3   | 57:BZ:28:GLN:CG   | 2.49                     | 0.43              |
| 57:BZ:153:ALA:HB3  | 57:BZ:156:GLU:N   | 2.34                     | 0.43              |
| 57:BZ:407:VAL:HG22 | 57:BZ:436:ARG:HB3 | 1.99                     | 0.43              |
| 57:BZ:549:SER:HB3  | 57:BZ:550:GLY:HA2 | 1.98                     | 0.43              |
| 1:AA:55:G:C2       | 1:AA:56:A:C5      | 3.07                     | 0.43              |
| 1:AA:281:G:N2      | 1:AA:283:A:H4'    | 2.34                     | 0.43              |
| 1:AA:379:G:C6      | 1:AA:396:G:C6     | 3.07                     | 0.43              |
| 1:AA:397:G:OP2     | 25:Aa:59:PHE:CZ   | 2.67                     | 0.43              |
| 1:AA:399:G:N1      | 1:AA:400:G:H1'    | 2.34                     | 0.43              |
| 1:AA:410:G:C6      | 1:AA:418:G:C2     | 3.07                     | 0.43              |
| 1:AA:431:U:H2'     | 1:AA:431:U:O2     | 2.18                     | 0.43              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 1:AA:583:G:O2'    | 1:AA:584:C:C5'   | 2.66                     | 0.43              |
| 1:AA:661:C:C5'    | 11:AM:15:ARG:NH1 | 2.79                     | 0.43              |
| 1:AA:693:C:C2'    | 1:AA:694:U:O5'   | 2.66                     | 0.43              |
| 1:AA:770:G:N2     | 1:AA:771:G:H1'   | 2.34                     | 0.43              |
| 1:AA:771:G:C6     | 1:AA:772:C:C4    | 3.06                     | 0.43              |
| 1:AA:806:C:H2'    | 1:AA:807:U:C5    | 2.51                     | 0.43              |
| 1:AA:815:C:H2'    | 1:AA:816:C:C6    | 2.54                     | 0.43              |
| 1:AA:826:U:H3'    | 1:AA:828:U:C4    | 2.54                     | 0.43              |
| 1:AA:922:U:O2     | 1:AA:923:C:C5    | 2.72                     | 0.43              |
| 1:AA:945:A:C2'    | 1:AA:946:G:H5''  | 2.49                     | 0.43              |
| 1:AA:956:G:H2'    | 1:AA:957:A:C8    | 2.54                     | 0.43              |
| 1:AA:986:C:C6     | 1:AA:986:C:C3'   | 3.02                     | 0.43              |
| 1:AA:993:G:N7     | 1:AA:994:C:N4    | 2.65                     | 0.43              |
| 1:AA:996:A:C4     | 1:AA:997:G:N7    | 2.86                     | 0.43              |
| 1:AA:997:G:O3'    | 16:AR:92:ARG:NH1 | 2.50                     | 0.43              |
| 1:AA:1029:A:O5'   | 1:AA:1029:A:C8   | 2.61                     | 0.43              |
| 1:AA:1049:C:O2    | 1:AA:1113:U:H4'  | 2.19                     | 0.43              |
| 1:AA:1055:G:N3    | 1:AA:1084:A:N3   | 2.64                     | 0.43              |
| 1:AA:1069:A:C4'   | 1:AA:1070:A:H5'' | 2.45                     | 0.43              |
| 1:AA:1134:G:N3    | 1:AA:1134:G:H2'  | 2.34                     | 0.43              |
| 1:AA:1197:G:C6    | 1:AA:1198:U:C6   | 3.06                     | 0.43              |
| 1:AA:1334:G:H2'   | 1:AA:1335:U:C6   | 2.54                     | 0.43              |
| 1:AA:1341:U:C4    | 1:AA:1398:C:H5'  | 2.53                     | 0.43              |
| 1:AA:1392:A:C5    | 1:AA:1393:A:N6   | 2.87                     | 0.43              |
| 1:AA:1414:G:C2    | 1:AA:1415:U:C2   | 3.07                     | 0.43              |
| 1:AA:1420:U:O2'   | 1:AA:1421:G:C8   | 2.63                     | 0.43              |
| 1:AA:1444:G:C2    | 1:AA:1445:C:O2   | 2.72                     | 0.43              |
| 1:AA:1449(A):G:C4 | 1:AA:1450:C:C5   | 3.07                     | 0.43              |
| 1:AA:1527:G:H2'   | 1:AA:1528:A:O5'  | 2.19                     | 0.43              |
| 1:AA:1543:A:C8    | 1:AA:1544:C:H1'  | 2.54                     | 0.43              |
| 1:AA:1565:C:H5    | 4:AD:84:TYR:HH   | 1.66                     | 0.43              |
| 1:AA:1591:G:N1    | 1:AA:1592:C:C4   | 2.86                     | 0.43              |
| 1:AA:1615:C:N4    | 1:AA:1617:C:C2   | 2.87                     | 0.43              |
| 1:AA:1657:C:N3    | 1:AA:1658:C:C5   | 2.87                     | 0.43              |
| 1:AA:1672:C:H41   | 1:AA:1673:U:H5   | 1.66                     | 0.43              |
| 1:AA:1775:U:C2'   | 1:AA:1776:G:O4'  | 2.60                     | 0.43              |
| 1:AA:1936:A:C2    | 1:AA:1940:U:O2   | 2.72                     | 0.43              |
| 1:AA:2067:G:N1    | 1:AA:2069:G:C5   | 2.87                     | 0.43              |
| 1:AA:2142:C:N4    | 1:AA:2143:C:N4   | 2.66                     | 0.43              |
| 1:AA:2281:C:O2'   | 1:AA:2282:G:C5'  | 2.67                     | 0.43              |
| 1:AA:2298:A:N1    | 1:AA:2321:G:O6   | 2.52                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2460:U:C2'   | 1:AA:2461:C:C6    | 3.02                     | 0.43              |
| 1:AA:2509:G:C6    | 1:AA:2580:U:N3    | 2.87                     | 0.43              |
| 1:AA:2536:G:C5    | 1:AA:2537:U:C5    | 3.07                     | 0.43              |
| 1:AA:2571:C:C2'   | 1:AA:2572:A:OP1   | 2.67                     | 0.43              |
| 1:AA:2660:A:C8    | 1:AA:2660:A:O5'   | 2.72                     | 0.43              |
| 1:AA:2706:G:H5'   | 1:AA:2852:G:OP1   | 2.19                     | 0.43              |
| 1:AA:2717:G:H2'   | 1:AA:2718:G:H8    | 1.83                     | 0.43              |
| 1:AA:2812:G:N1    | 1:AA:2813:A:C6    | 2.87                     | 0.43              |
| 1:AA:2816:C:C2'   | 1:AA:2817:G:H5'   | 2.49                     | 0.43              |
| 1:AA:2894:G:N3    | 1:AA:2894:G:H2'   | 2.34                     | 0.43              |
| 2:AB:1:U:O4       | 2:AB:2:C:N4       | 2.52                     | 0.43              |
| 2:AB:4:C:N4       | 2:AB:117:G:N1     | 2.67                     | 0.43              |
| 2:AB:29:A:C2      | 2:AB:56:G:C2      | 3.06                     | 0.43              |
| 2:AB:48:A:H4'     | 14:AP:95:HIS:CE1  | 2.54                     | 0.43              |
| 2:AB:78:A:H2'     | 2:AB:79:C:C5'     | 2.44                     | 0.43              |
| 2:AB:82:G:C2'     | 2:AB:83:G:H8      | 2.26                     | 0.43              |
| 2:AB:83:G:N2      | 2:AB:84:C:C1'     | 2.81                     | 0.43              |
| 3:AC:10:LEU:HD22  | 3:AC:32:LEU:O     | 2.18                     | 0.43              |
| 3:AC:77:ILE:HG23  | 3:AC:96:GLY:O     | 2.19                     | 0.43              |
| 3:AC:99:ILE:O     | 3:AC:103:ILE:HG13 | 2.19                     | 0.43              |
| 3:AC:102:LYS:HE3  | 3:AC:107:TRP:HB3  | 2.01                     | 0.43              |
| 4:AD:134:ARG:HA   | 4:AD:168:ARG:NH2  | 2.34                     | 0.43              |
| 4:AD:176:ARG:CA   | 4:AD:182:LEU:CD2  | 2.96                     | 0.43              |
| 4:AD:183:ARG:CG   | 4:AD:268:ARG:HD2  | 2.49                     | 0.43              |
| 5:AE:37:ARG:H     | 5:AE:40:GLU:HB2   | 1.83                     | 0.43              |
| 5:AE:101:ARG:NH2  | 5:AE:171:GLU:CG   | 2.79                     | 0.43              |
| 5:AE:101:ARG:O    | 5:AE:202:LYS:NZ   | 2.52                     | 0.43              |
| 5:AE:115:GLY:C    | 5:AE:117:MET:H    | 2.25                     | 0.43              |
| 6:AF:7:TYR:N      | 6:AF:20:LEU:HD22  | 2.28                     | 0.43              |
| 6:AF:53:THR:C     | 6:AF:55:GLY:N     | 2.77                     | 0.43              |
| 6:AF:61:GLY:O     | 6:AF:62:ARG:C     | 2.62                     | 0.43              |
| 6:AF:93:LYS:CE    | 6:AF:95:ARG:HG2   | 2.43                     | 0.43              |
| 7:AG:105:LYS:CA   | 7:AG:109:VAL:HG13 | 2.49                     | 0.43              |
| 7:AG:125:PHE:HB2  | 7:AG:131:TYR:C    | 2.43                     | 0.43              |
| 7:AG:163:ALA:O    | 7:AG:169:ALA:HB2  | 2.19                     | 0.43              |
| 8:AH:97:ARG:O     | 8:AH:104:GLU:HG2  | 2.19                     | 0.43              |
| 8:AH:99:VAL:O     | 8:AH:99:VAL:HG12  | 2.18                     | 0.43              |
| 8:AH:118:PRO:HG2  | 8:AH:121:ILE:HG21 | 2.00                     | 0.43              |
| 8:AH:155:SER:HB2  | 8:AH:159:GLU:HA   | 2.01                     | 0.43              |
| 10:AL:73:ASP:HB3  | 15:AQ:79:HIS:NE2  | 2.34                     | 0.43              |
| 10:AL:89:ASN:HD21 | 10:AL:91:LEU:HB2  | 1.74                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 10:AL:110:GLY:O   | 10:AL:111:PHE:HB3  | 2.19                     | 0.43              |
| 11:AM:56:SER:HB3  | 29:Ae:13:ARG:HH21  | 1.79                     | 0.43              |
| 11:AM:97:PRO:HA   | 11:AM:102:ARG:CZ   | 2.46                     | 0.43              |
| 12:AN:16:ARG:HH21 | 12:AN:73:PRO:HG3   | 1.84                     | 0.43              |
| 12:AN:82:ARG:HD2  | 22:AX:5:LYS:HD3    | 2.01                     | 0.43              |
| 12:AN:128:LYS:C   | 12:AN:129:THR:HG23 | 2.44                     | 0.43              |
| 13:AO:63:ARG:HH12 | 13:AO:80:PHE:HB3   | 1.82                     | 0.43              |
| 13:AO:105:ARG:NE  | 13:AO:105:ARG:CA   | 2.79                     | 0.43              |
| 15:AQ:39:ARG:O    | 15:AQ:40:THR:C     | 2.62                     | 0.43              |
| 15:AQ:78:LEU:HD23 | 15:AQ:79:HIS:H     | 1.83                     | 0.43              |
| 16:AR:98:LEU:HD13 | 16:AR:101:ARG:CG   | 2.49                     | 0.43              |
| 17:AS:56:SER:C    | 17:AS:57:VAL:HG23  | 2.44                     | 0.43              |
| 18:AT:8:ARG:HA    | 18:AT:102:HIS:CD2  | 2.54                     | 0.43              |
| 18:AT:20:VAL:O    | 18:AT:24:ILE:HG12  | 2.18                     | 0.43              |
| 18:AT:40:ASN:OD1  | 18:AT:40:ASN:C     | 2.61                     | 0.43              |
| 19:AU:17:ALA:CB   | 19:AU:27:THR:OG1   | 2.59                     | 0.43              |
| 19:AU:25:LYS:HG2  | 19:AU:82:GLN:HB2   | 2.01                     | 0.43              |
| 19:AU:28:PHE:CD2  | 19:AU:28:PHE:N     | 2.83                     | 0.43              |
| 20:AV:12:THR:C    | 20:AV:73:ARG:NH1   | 2.76                     | 0.43              |
| 21:AW:27:VAL:HG22 | 21:AW:85:HIS:CE1   | 2.35                     | 0.43              |
| 21:AW:105:VAL:O   | 21:AW:140:ASP:OD2  | 2.37                     | 0.43              |
| 22:AX:39:ARG:NH1  | 22:AX:58:THR:OG1   | 2.48                     | 0.43              |
| 23:AY:23:LYS:HD3  | 23:AY:55:LEU:HD21  | 2.01                     | 0.43              |
| 23:AY:35:SER:CA   | 23:AY:38:GLN:OE1   | 2.66                     | 0.43              |
| 27:Ac:33:LYS:HE2  | 27:Ac:33:LYS:C     | 2.41                     | 0.43              |
| 29:Ae:10:ALA:HB1  | 29:Ae:64:TYR:CG    | 2.54                     | 0.43              |
| 29:Ae:12:LYS:O    | 29:Ae:14:VAL:HG23  | 2.19                     | 0.43              |
| 30:Af:13:LYS:NZ   | 30:Af:13:LYS:CB    | 2.82                     | 0.43              |
| 31:AI:131:MET:C   | 31:AI:133:GLU:N    | 2.76                     | 0.43              |
| 33:Ag:307:UNK:O   | 33:Ag:308:UNK:O    | 2.37                     | 0.43              |
| 34:BA:44:G:C2     | 34:BA:45:U:C1'     | 3.02                     | 0.43              |
| 34:BA:61:G:N7     | 34:BA:62:U:C4      | 2.87                     | 0.43              |
| 34:BA:107:G:H2'   | 34:BA:108:G:O4'    | 2.19                     | 0.43              |
| 34:BA:113:G:O4'   | 34:BA:354:G:C5'    | 2.67                     | 0.43              |
| 34:BA:149:A:C2    | 34:BA:150:C:C2     | 3.07                     | 0.43              |
| 34:BA:196:A:O2'   | 34:BA:222:U:O4'    | 2.36                     | 0.43              |
| 34:BA:333:G:C2    | 34:BA:334:C:C4     | 3.07                     | 0.43              |
| 34:BA:494:U:O2    | 34:BA:495:A:O4'    | 2.37                     | 0.43              |
| 34:BA:597:G:C2'   | 34:BA:598:U:C5'    | 2.95                     | 0.43              |
| 34:BA:609:A:H2'   | 34:BA:610:G:H8     | 1.84                     | 0.43              |
| 34:BA:632:A:O2'   | 34:BA:633:G:H5'    | 2.19                     | 0.43              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:643:C:C4     | 34:BA:644:G:N7     | 2.87                     | 0.43              |
| 34:BA:646:U:HO2'   | 34:BA:647:C:H5'    | 1.83                     | 0.43              |
| 34:BA:718:G:H4'    | 44:BO:117:ASN:ND2  | 2.25                     | 0.43              |
| 34:BA:721:G:OP1    | 34:BA:721:G:H8     | 2.02                     | 0.43              |
| 34:BA:738:C:N3     | 34:BA:739:C:C5     | 2.87                     | 0.43              |
| 34:BA:895:G:C2     | 34:BA:896:C:C4     | 3.07                     | 0.43              |
| 34:BA:899:C:C4     | 34:BA:900:A:C6     | 3.07                     | 0.43              |
| 34:BA:907:A:N3     | 34:BA:908:A:C8     | 2.86                     | 0.43              |
| 34:BA:912:C:OP1    | 45:BP:94:PRO:HG3   | 2.19                     | 0.43              |
| 34:BA:922:G:C2'    | 34:BA:923:A:H5'    | 2.48                     | 0.43              |
| 34:BA:956:U:C6     | 34:BA:956:U:OP2    | 2.72                     | 0.43              |
| 34:BA:980:C:C5     | 34:BA:981:U:N3     | 2.87                     | 0.43              |
| 34:BA:1187:G:C4    | 34:BA:1188:A:C8    | 3.07                     | 0.43              |
| 34:BA:1202:G:C4    | 47:BR:42:ILE:CD1   | 2.94                     | 0.43              |
| 34:BA:1251:A:N1    | 34:BA:1285:A:H2    | 2.16                     | 0.43              |
| 34:BA:1287:A:H1'   | 34:BA:1353:G:O2'   | 2.18                     | 0.43              |
| 34:BA:1313:U:O4    | 34:BA:1325:C:C2    | 2.70                     | 0.43              |
| 34:BA:1317:C:OP1   | 34:BA:1317:C:C6    | 2.72                     | 0.43              |
| 34:BA:1321:C:H2'   | 34:BA:1322:C:C5    | 2.54                     | 0.43              |
| 34:BA:1416:G:C6    | 34:BA:1485:U:C2    | 3.07                     | 0.43              |
| 34:BA:1487:G:C2    | 34:BA:1488:G:N7    | 2.87                     | 0.43              |
| 35:BF:88:ALA:O     | 35:BF:222:ILE:HD13 | 2.19                     | 0.43              |
| 36:BG:29:TYR:CB    | 47:BR:36:PHE:HE1   | 2.30                     | 0.43              |
| 37:BH:32:ALA:N     | 37:BH:34:GLU:O     | 2.52                     | 0.43              |
| 37:BH:97:LEU:O     | 37:BH:103:ASN:ND2  | 2.49                     | 0.43              |
| 37:BH:121:VAL:HA   | 37:BH:126:ILE:CD1  | 2.36                     | 0.43              |
| 37:BH:165:MET:O    | 37:BH:167:GLY:N    | 2.52                     | 0.43              |
| 38:BI:65:ASN:HD21  | 38:BI:136:MET:CE   | 2.32                     | 0.43              |
| 38:BI:137:GLU:O    | 38:BI:138:ALA:C    | 2.62                     | 0.43              |
| 38:BI:151:LEU:HD23 | 38:BI:151:LEU:HA   | 1.60                     | 0.43              |
| 39:BJ:21:LEU:HD12  | 39:BJ:24:GLU:OE1   | 2.19                     | 0.43              |
| 39:BJ:52:ILE:C     | 39:BJ:54:LYS:N     | 2.77                     | 0.43              |
| 40:BK:76:ARG:O     | 40:BK:156:TRP:CZ2  | 2.72                     | 0.43              |
| 40:BK:135:VAL:O    | 40:BK:138:LYS:CB   | 2.56                     | 0.43              |
| 41:BL:7:ALA:HB2    | 41:BL:85:ARG:HH11  | 1.83                     | 0.43              |
| 41:BL:64:LYS:C     | 41:BL:65:TYR:CD1   | 2.97                     | 0.43              |
| 43:BN:69:ASN:O     | 43:BN:70:ARG:NH1   | 2.51                     | 0.43              |
| 44:BO:59:TYR:CD1   | 44:BO:62:GLN:NE2   | 2.87                     | 0.43              |
| 44:BO:62:GLN:CD    | 44:BO:63:LEU:N     | 2.77                     | 0.43              |
| 44:BO:98:LEU:O     | 44:BO:99:GLN:C     | 2.61                     | 0.43              |
| 44:BO:123:LYS:O    | 44:BO:124:LYS:C    | 2.61                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 45:BP:27:LEU:CD2  | 45:BP:62:SER:OG   | 2.66                     | 0.43              |
| 45:BP:53:ARG:NH2  | 45:BP:92:ASP:HB3  | 2.34                     | 0.43              |
| 45:BP:102:ARG:NE  | 45:BP:109:GLY:HA2 | 2.33                     | 0.43              |
| 45:BP:126:LYS:HZ2 | 45:BP:128:ALA:H   | 1.59                     | 0.43              |
| 46:BQ:29:ARG:CD   | 46:BQ:64:TRP:HH2  | 2.12                     | 0.43              |
| 46:BQ:100:GLY:CA  | 46:BQ:101:GLN:CG  | 2.86                     | 0.43              |
| 47:BR:45:ARG:HH11 | 47:BR:45:ARG:C    | 2.26                     | 0.43              |
| 47:BR:46:GLU:O    | 47:BR:49:HIS:CB   | 2.64                     | 0.43              |
| 49:BT:26:ARG:NE   | 49:BT:31:LYS:HZ3  | 2.17                     | 0.43              |
| 50:BU:22:LEU:CD1  | 50:BU:40:LYS:C    | 2.92                     | 0.43              |
| 50:BU:96:GLN:O    | 50:BU:96:GLN:OE1  | 2.36                     | 0.43              |
| 51:BV:45:SER:OG   | 51:BV:49:LYS:HE3  | 2.19                     | 0.43              |
| 51:BV:52:PRO:O    | 51:BV:53:ARG:C    | 2.61                     | 0.43              |
| 51:BV:78:LEU:C    | 51:BV:79:LEU:CD1  | 2.82                     | 0.43              |
| 53:BX:25:ARG:CZ   | 53:BX:25:ARG:HB2  | 2.49                     | 0.43              |
| 53:BX:50:GLU:CA   | 53:BX:99:LEU:HD12 | 2.49                     | 0.43              |
| 56:BE:13:C:H2'    | 56:BE:14:A:O5'    | 2.19                     | 0.43              |
| 56:BE:21:A:H61    | 56:BE:46:G:C1'    | 2.32                     | 0.43              |
| 57:BZ:55:THR:CA   | 57:BZ:56:ILE:HD12 | 2.42                     | 0.43              |
| 57:BZ:81:PHE:CD1  | 57:BZ:81:PHE:N    | 2.85                     | 0.43              |
| 57:BZ:176:HIS:HA  | 57:BZ:177:GLU:HA  | 1.51                     | 0.43              |
| 57:BZ:217:TYR:O   | 57:BZ:219:GLY:N   | 2.50                     | 0.43              |
| 57:BZ:300:LEU:N   | 57:BZ:301:SER:HA  | 2.34                     | 0.43              |
| 57:BZ:491:ASN:CG  | 57:BZ:536:ASN:CG  | 2.81                     | 0.43              |
| 57:BZ:564:THR:HB  | 57:BZ:566:GLU:HG3 | 1.98                     | 0.43              |
| 1:AA:35:G:H5'     | 1:AA:455:C:N3     | 2.34                     | 0.42              |
| 1:AA:55:G:C2      | 1:AA:56:A:C8      | 3.06                     | 0.42              |
| 1:AA:95:G:C6      | 1:AA:96:G:C8      | 3.07                     | 0.42              |
| 1:AA:104:U:O2'    | 1:AA:105:C:H5'    | 2.19                     | 0.42              |
| 1:AA:111:A:C2'    | 1:AA:112:U:C6     | 2.94                     | 0.42              |
| 1:AA:241:A:H3'    | 1:AA:241:A:N3     | 2.34                     | 0.42              |
| 1:AA:317:G:O2'    | 1:AA:318:C:H5'    | 2.19                     | 0.42              |
| 1:AA:333:G:C6     | 1:AA:334:C:C5     | 3.06                     | 0.42              |
| 1:AA:374:A:H2'    | 1:AA:374:A:N3     | 2.34                     | 0.42              |
| 1:AA:413:C:H42    | 1:AA:2410:G:H1    | 1.66                     | 0.42              |
| 1:AA:447:A:C6     | 1:AA:473:G:H1'    | 2.54                     | 0.42              |
| 1:AA:454:A:O2'    | 1:AA:455:C:C2     | 2.68                     | 0.42              |
| 1:AA:465:G:C2     | 1:AA:683:C:O2'    | 2.65                     | 0.42              |
| 1:AA:491:G:H2'    | 1:AA:492:A:O4'    | 2.19                     | 0.42              |
| 1:AA:543:C:O2     | 1:AA:544:C:C5     | 2.71                     | 0.42              |
| 1:AA:568:U:C2'    | 1:AA:570:G:N7     | 2.80                     | 0.42              |

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| Atom-1          | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-------------------|--------------------------|-------------------|
| 1:AA:622:G:O2'  | 1:AA:623:G:H5'    | 2.18                     | 0.42              |
| 1:AA:636:G:OP1  | 11:AM:132:LYS:HG3 | 2.19                     | 0.42              |
| 1:AA:670:A:C2'  | 11:AM:41:ARG:CZ   | 2.87                     | 0.42              |
| 1:AA:685:A:C2   | 1:AA:774:A:C2     | 3.07                     | 0.42              |
| 1:AA:852:G:C6   | 1:AA:853:G:C5     | 3.07                     | 0.42              |
| 1:AA:881:G:C4   | 1:AA:896:A:N1     | 2.87                     | 0.42              |
| 1:AA:933:A:H2'  | 1:AA:934:G:O5'    | 2.19                     | 0.42              |
| 1:AA:1051:G:O4' | 1:AA:2752:C:O5'   | 2.05                     | 0.42              |
| 1:AA:1052:C:C4  | 1:AA:1108:U:O2    | 2.68                     | 0.42              |
| 1:AA:1065:U:H6  | 1:AA:1065:U:O5'   | 2.02                     | 0.42              |
| 1:AA:1225:C:C4' | 17:AS:87:HIS:CE1  | 3.02                     | 0.42              |
| 1:AA:1346:G:C6  | 1:AA:1347:G:C6    | 3.08                     | 0.42              |
| 1:AA:1419:A:H3' | 1:AA:1420:U:O4'   | 2.18                     | 0.42              |
| 1:AA:1460:A:N6  | 1:AA:1732:A:C2    | 2.87                     | 0.42              |
| 1:AA:1492:G:O2' | 1:AA:1493:C:C5    | 2.72                     | 0.42              |
| 1:AA:1549:C:O2' | 1:AA:1550:C:H5'   | 2.19                     | 0.42              |
| 1:AA:1568:G:O2' | 1:AA:1569:A:P     | 2.75                     | 0.42              |
| 1:AA:1569:A:N1  | 1:AA:1570:A:C6    | 2.87                     | 0.42              |
| 1:AA:1620:G:C2' | 1:AA:1621:U:O5'   | 2.67                     | 0.42              |
| 1:AA:1675:C:H2' | 1:AA:1676:A:O4'   | 2.19                     | 0.42              |
| 1:AA:1689:A:N6  | 1:AA:1700:A:N3    | 2.66                     | 0.42              |
| 1:AA:1699:G:H2' | 1:AA:1763:G:N2    | 2.34                     | 0.42              |
| 1:AA:1742:C:C3' | 1:AA:1743:G:H5''  | 2.38                     | 0.42              |
| 1:AA:1891:G:C6  | 1:AA:1892:C:C4    | 3.07                     | 0.42              |
| 1:AA:1892:C:C4  | 1:AA:1893:C:C5    | 3.07                     | 0.42              |
| 1:AA:1957:C:O2  | 1:AA:1958:C:C6    | 2.72                     | 0.42              |
| 1:AA:1997:G:H2' | 1:AA:1998:G:C8    | 2.54                     | 0.42              |
| 1:AA:1998:G:C6  | 1:AA:1999:C:N4    | 2.86                     | 0.42              |
| 1:AA:2044:C:C5  | 1:AA:2625:G:C2    | 3.07                     | 0.42              |
| 1:AA:2048:G:C2  | 1:AA:2049:G:N9    | 2.86                     | 0.42              |
| 1:AA:2125:G:OP1 | 3:AC:71:GLN:CB    | 2.61                     | 0.42              |
| 1:AA:2135:A:C2' | 1:AA:2136:C:OP2   | 2.66                     | 0.42              |
| 1:AA:2154:G:H2' | 1:AA:2155:G:O4'   | 2.19                     | 0.42              |
| 1:AA:2175:C:O4' | 3:AC:220:PRO:HG3  | 2.19                     | 0.42              |
| 1:AA:2306:C:OP1 | 7:AG:136:ARG:CZ   | 2.67                     | 0.42              |
| 1:AA:2313:C:C2  | 1:AA:2314:C:C5    | 3.07                     | 0.42              |
| 1:AA:2331:G:N7  | 1:AA:2332:U:C4    | 2.87                     | 0.42              |
| 1:AA:2334:G:H2' | 1:AA:2335:A:OP1   | 2.19                     | 0.42              |
| 1:AA:2348:U:O2' | 1:AA:2349:G:H5'   | 2.19                     | 0.42              |
| 1:AA:2435:A:C2  | 1:AA:2436:G:C4    | 3.07                     | 0.42              |
| 1:AA:2479:G:H2' | 1:AA:2480:C:O4'   | 2.19                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2491:U:C5    | 1:AA:2492:U:P     | 3.12                     | 0.42              |
| 1:AA:2582:G:C3'   | 1:AA:2583:G:H5'   | 2.49                     | 0.42              |
| 1:AA:2607:G:H2'   | 1:AA:2608:G:C5'   | 2.34                     | 0.42              |
| 1:AA:2631:G:OP2   | 1:AA:2894:G:H1'   | 2.18                     | 0.42              |
| 1:AA:2660:A:C4    | 57:BZ:456:MET:C   | 2.93                     | 0.42              |
| 1:AA:2662:A:H2'   | 1:AA:2663:G:O5'   | 2.19                     | 0.42              |
| 1:AA:2739:U:O2'   | 1:AA:2740:A:H5'   | 2.18                     | 0.42              |
| 1:AA:2758:A:C5    | 1:AA:2759:G:N7    | 2.87                     | 0.42              |
| 1:AA:2804:C:H5''  | 1:AA:2804:C:H6    | 1.83                     | 0.42              |
| 1:AA:2808:U:O2    | 1:AA:2891:G:N2    | 2.51                     | 0.42              |
| 1:AA:2823:A:OP2   | 5:AE:113:PHE:CZ   | 2.71                     | 0.42              |
| 1:AA:2857:G:C2    | 1:AA:2861:G:C2    | 3.07                     | 0.42              |
| 2:AB:9:G:N2       | 2:AB:10:C:C4      | 2.87                     | 0.42              |
| 2:AB:30:C:C2      | 2:AB:31:C:O4'     | 2.72                     | 0.42              |
| 2:AB:31:C:C2'     | 2:AB:32:C:OP1     | 2.67                     | 0.42              |
| 2:AB:109:G:C2     | 2:AB:110:G:C5     | 3.07                     | 0.42              |
| 4:AD:54:ARG:CA    | 4:AD:219:PRO:CG   | 2.90                     | 0.42              |
| 4:AD:117:VAL:HG12 | 4:AD:118:VAL:N    | 2.34                     | 0.42              |
| 4:AD:182:LEU:CG   | 4:AD:270:ILE:HD11 | 2.49                     | 0.42              |
| 4:AD:209:ALA:O    | 4:AD:213:ARG:CG   | 2.67                     | 0.42              |
| 6:AF:9:ILE:CG2    | 6:AF:124:LEU:O    | 2.67                     | 0.42              |
| 6:AF:168:ARG:O    | 6:AF:169:ASN:O    | 2.36                     | 0.42              |
| 7:AG:1:MET:O      | 7:AG:3:LEU:N      | 2.52                     | 0.42              |
| 7:AG:4:ASP:OD1    | 7:AG:7:LEU:HD12   | 2.19                     | 0.42              |
| 7:AG:110:ALA:CB   | 7:AG:139:LEU:CG   | 2.90                     | 0.42              |
| 7:AG:134:GLY:HA3  | 7:AG:156:ASP:CB   | 2.49                     | 0.42              |
| 8:AH:105:LEU:O    | 8:AH:113:VAL:CG2  | 2.67                     | 0.42              |
| 8:AH:149:ARG:HE   | 8:AH:149:ARG:HB2  | 1.53                     | 0.42              |
| 8:AH:151:ILE:O    | 8:AH:151:ILE:HG23 | 2.19                     | 0.42              |
| 9:AK:78:TYR:C     | 9:AK:80:GLY:N     | 2.75                     | 0.42              |
| 9:AK:136:GLU:O    | 9:AK:137:LYS:CG   | 2.66                     | 0.42              |
| 10:AL:3:GLN:NE2   | 10:AL:33:ALA:CB   | 2.41                     | 0.42              |
| 10:AL:6:THR:CG2   | 10:AL:21:CYS:HB3  | 2.48                     | 0.42              |
| 10:AL:8:LEU:HD11  | 10:AL:82:ASN:CA   | 2.43                     | 0.42              |
| 10:AL:53:LYS:HG3  | 10:AL:55:GLY:N    | 2.34                     | 0.42              |
| 10:AL:59:LYS:CG   | 10:AL:84:ALA:O    | 2.66                     | 0.42              |
| 10:AL:64:ARG:HH11 | 10:AL:67:LYS:HE2  | 1.83                     | 0.42              |
| 10:AL:100:GLY:HA2 | 10:AL:118:ALA:O   | 2.19                     | 0.42              |
| 10:AL:111:PHE:CD1 | 10:AL:111:PHE:C   | 2.96                     | 0.42              |
| 11:AM:56:SER:OG   | 29:Ae:27:THR:HG21 | 2.18                     | 0.42              |
| 11:AM:78:PRO:CG   | 11:AM:115:LEU:O   | 2.67                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 11:AM:80:TYR:OH    | 11:AM:100:LEU:HD21 | 2.19                     | 0.42              |
| 13:AO:35:THR:CG2   | 13:AO:113:LEU:HD23 | 2.49                     | 0.42              |
| 13:AO:55:ALA:HA    | 13:AO:80:PHE:CE1   | 2.54                     | 0.42              |
| 14:AP:70:GLY:C     | 14:AP:104:GLY:HA3  | 2.43                     | 0.42              |
| 15:AQ:4:GLY:C      | 15:AQ:8:LYS:HE3    | 2.44                     | 0.42              |
| 15:AQ:34:VAL:CG1   | 15:AQ:78:LEU:CD1   | 2.94                     | 0.42              |
| 16:AR:81:HIS:HD1   | 16:AR:81:HIS:HA    | 1.77                     | 0.42              |
| 16:AR:105:VAL:HG12 | 16:AR:106:PHE:H    | 1.84                     | 0.42              |
| 16:AR:112:ARG:HH22 | 17:AS:49:THR:CG2   | 2.22                     | 0.42              |
| 17:AS:22:VAL:C     | 17:AS:93:GLU:HB3   | 2.44                     | 0.42              |
| 19:AU:30:VAL:O     | 19:AU:31:HIS:C     | 2.62                     | 0.42              |
| 19:AU:85:PRO:HB2   | 19:AU:87:GLN:NE2   | 2.33                     | 0.42              |
| 20:AV:45:VAL:HG12  | 20:AV:57:GLN:CD    | 2.44                     | 0.42              |
| 20:AV:82:PRO:HG2   | 20:AV:95:LYS:O     | 2.19                     | 0.42              |
| 21:AW:118:GLN:NE2  | 21:AW:172:ALA:HB1  | 2.33                     | 0.42              |
| 22:AX:27:GLU:N     | 22:AX:69:PHE:CE1   | 2.86                     | 0.42              |
| 22:AX:47:PRO:CG    | 22:AX:53:MET:HB2   | 2.44                     | 0.42              |
| 23:AY:30:LEU:CD1   | 23:AY:45:ILE:HA    | 2.49                     | 0.42              |
| 23:AY:58:VAL:C     | 23:AY:60:ASN:N     | 2.76                     | 0.42              |
| 24:AZ:27:GLY:O     | 24:AZ:28:LEU:O     | 2.37                     | 0.42              |
| 27:Ac:13:CYS:HA    | 27:Ac:23:THR:O     | 2.18                     | 0.42              |
| 27:Ac:39:TYR:O     | 27:Ac:39:TYR:CG    | 2.70                     | 0.42              |
| 32:AJ:10:LEU:H     | 32:AJ:56:GLU:HG2   | 1.78                     | 0.42              |
| 32:AJ:44:ALA:HB3   | 32:AJ:66:THR:CG2   | 2.49                     | 0.42              |
| 32:AJ:64:SER:CA    | 32:AJ:65:PHE:CB    | 2.97                     | 0.42              |
| 32:AJ:122:ALA:CA   | 32:AJ:126:MET:HB2  | 2.33                     | 0.42              |
| 34:BA:44:G:C2      | 34:BA:45:U:H1'     | 2.54                     | 0.42              |
| 34:BA:85:U:H2'     | 34:BA:86:U:H5'     | 2.01                     | 0.42              |
| 34:BA:134:A:C8     | 34:BA:134:A:O5'    | 2.72                     | 0.42              |
| 34:BA:182:U:O2     | 34:BA:182:U:C2'    | 2.67                     | 0.42              |
| 34:BA:188:U:C2'    | 34:BA:189:U:O5'    | 2.68                     | 0.42              |
| 34:BA:191(C):G:O2' | 34:BA:191(D):U:H5' | 2.18                     | 0.42              |
| 34:BA:253:U:H2'    | 34:BA:254:G:C8     | 2.54                     | 0.42              |
| 34:BA:293:G:N3     | 34:BA:294:U:C6     | 2.87                     | 0.42              |
| 34:BA:518:C:C5     | 34:BA:530:G:C8     | 3.07                     | 0.42              |
| 34:BA:548:G:O2'    | 34:BA:549:C:H5'    | 2.18                     | 0.42              |
| 34:BA:558:G:O5'    | 34:BA:559:A:O3'    | 2.37                     | 0.42              |
| 34:BA:645:C:O2'    | 34:BA:646:U:H5'    | 2.18                     | 0.42              |
| 34:BA:701:C:H5''   | 34:BA:702:A:C3'    | 2.49                     | 0.42              |
| 34:BA:843:U:H3'    | 34:BA:848:C:O4'    | 2.19                     | 0.42              |
| 34:BA:953:G:O2'    | 34:BA:954:G:C5'    | 2.67                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:965:A:P      | 34:BA:1198:G:H5''  | 2.59                     | 0.42              |
| 34:BA:969:A:C2'    | 43:BN:55:LYS:HZ1   | 2.30                     | 0.42              |
| 34:BA:978:A:H3'    | 34:BA:980:C:H41    | 1.83                     | 0.42              |
| 34:BA:979:C:O2     | 47:BR:19:ARG:NE    | 2.52                     | 0.42              |
| 34:BA:994:A:C4     | 47:BR:5:ALA:HA     | 2.54                     | 0.42              |
| 34:BA:1049:U:O2'   | 34:BA:1050:G:OP2   | 2.32                     | 0.42              |
| 34:BA:1095:U:C2    | 34:BA:1096:C:C5    | 3.07                     | 0.42              |
| 34:BA:1130:A:H5''  | 34:BA:1131:G:OP2   | 2.19                     | 0.42              |
| 34:BA:1231:G:H2'   | 34:BA:1232:U:H6    | 1.84                     | 0.42              |
| 34:BA:1262:C:O5'   | 34:BA:1262:C:H6    | 2.02                     | 0.42              |
| 34:BA:1326:C:O2'   | 34:BA:1327:C:C5'   | 2.67                     | 0.42              |
| 34:BA:1365:G:C6    | 34:BA:1366:C:N4    | 2.87                     | 0.42              |
| 34:BA:1382:C:C4    | 34:BA:1383:C:N4    | 2.83                     | 0.42              |
| 35:BF:171:ALA:N    | 35:BF:174:VAL:HG23 | 2.32                     | 0.42              |
| 35:BF:204:ASN:HD22 | 35:BF:205:ASP:N    | 2.17                     | 0.42              |
| 36:BG:11:ARG:NE    | 36:BG:11:ARG:CA    | 2.82                     | 0.42              |
| 36:BG:95:THR:HB    | 36:BG:97:LYS:HE2   | 2.01                     | 0.42              |
| 36:BG:100:ALA:O    | 36:BG:102:ASN:CG   | 2.62                     | 0.42              |
| 36:BG:113:ALA:HB3  | 36:BG:114:PRO:HD3  | 2.01                     | 0.42              |
| 36:BG:159:GLY:O    | 36:BG:160:ALA:O    | 2.36                     | 0.42              |
| 38:BI:28:PHE:CE1   | 38:BI:49:PRO:C     | 2.93                     | 0.42              |
| 38:BI:39:GLY:C     | 38:BI:68:GLU:CD    | 2.87                     | 0.42              |
| 38:BI:50:GLU:CB    | 38:BI:53:LEU:HD23  | 2.48                     | 0.42              |
| 38:BI:61:TYR:O     | 38:BI:65:ASN:N     | 2.38                     | 0.42              |
| 38:BI:109:ILE:HD11 | 38:BI:136:MET:SD   | 2.59                     | 0.42              |
| 38:BI:141:GLN:O    | 38:BI:142:LEU:CG   | 2.67                     | 0.42              |
| 39:BJ:7:ASN:O      | 39:BJ:8:ILE:HG12   | 2.19                     | 0.42              |
| 39:BJ:15:ASP:OD1   | 39:BJ:15:ASP:C     | 2.61                     | 0.42              |
| 39:BJ:50:TYR:N     | 39:BJ:50:TYR:CD2   | 2.87                     | 0.42              |
| 40:BK:27:ILE:CG1   | 40:BK:43:PHE:CD1   | 2.99                     | 0.42              |
| 40:BK:84:ASN:O     | 40:BK:84:ASN:CG    | 2.61                     | 0.42              |
| 41:BL:33:GLU:O     | 41:BL:34:GLU:C     | 2.61                     | 0.42              |
| 41:BL:111:ILE:CG2  | 41:BL:118:VAL:CG1  | 2.97                     | 0.42              |
| 41:BL:117:GLY:O    | 41:BL:119:LEU:CD2  | 2.67                     | 0.42              |
| 42:BM:31:GLN:HB3   | 42:BM:35:GLU:CD    | 2.43                     | 0.42              |
| 42:BM:50:LEU:CD1   | 42:BM:56:LEU:HG    | 2.41                     | 0.42              |
| 42:BM:72:GLY:O     | 42:BM:75:ASP:OD2   | 2.37                     | 0.42              |
| 42:BM:83:ARG:HA    | 42:BM:86:VAL:HG23  | 2.01                     | 0.42              |
| 42:BM:96:LEU:C     | 42:BM:100:GLY:HA3  | 2.43                     | 0.42              |
| 43:BN:24:VAL:HG13  | 43:BN:34:VAL:HB    | 2.01                     | 0.42              |
| 44:BO:50:TYR:CE1   | 44:BO:60:ALA:HB2   | 2.54                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 45:BP:30:ALA:HB1  | 45:BP:31:PRO:CD   | 2.49                     | 0.42              |
| 47:BR:24:CYS:HA   | 47:BR:39:LEU:HA   | 2.01                     | 0.42              |
| 47:BR:39:LEU:HB2  | 47:BR:44:LEU:HB2  | 2.01                     | 0.42              |
| 48:BS:21:ASP:O    | 48:BS:21:ASP:CG   | 2.62                     | 0.42              |
| 50:BU:60:ILE:HG12 | 50:BU:61:GLU:N    | 2.34                     | 0.42              |
| 57:BZ:40:GLU:CD   | 57:BZ:41:ARG:HB2  | 2.43                     | 0.42              |
| 57:BZ:83:GLY:HA2  | 57:BZ:111:PHE:HE2 | 1.84                     | 0.42              |
| 57:BZ:212:LEU:HG  | 57:BZ:213:ASP:N   | 2.34                     | 0.42              |
| 1:AA:7:G:C2       | 1:AA:8:A:C4       | 3.07                     | 0.42              |
| 1:AA:76:C:H5'     | 23:AY:54:ARG:HH22 | 1.84                     | 0.42              |
| 1:AA:117:G:C6     | 1:AA:119:A:N6     | 2.87                     | 0.42              |
| 1:AA:120:U:O2'    | 1:AA:149:A:O4'    | 2.37                     | 0.42              |
| 1:AA:154:G:C2     | 1:AA:155:C:C4     | 3.07                     | 0.42              |
| 1:AA:243:U:H2'    | 1:AA:244:A:C5'    | 2.49                     | 0.42              |
| 1:AA:379:G:C6     | 1:AA:380:U:C4     | 3.08                     | 0.42              |
| 1:AA:418:G:C2     | 1:AA:419:C:C6     | 3.08                     | 0.42              |
| 1:AA:523:C:C4     | 1:AA:524:U:C5     | 3.06                     | 0.42              |
| 1:AA:593:G:C6     | 1:AA:594:U:C5     | 3.07                     | 0.42              |
| 1:AA:608:A:C2'    | 1:AA:609:A:H5'    | 2.49                     | 0.42              |
| 1:AA:666:G:H2'    | 1:AA:667:U:H6     | 1.79                     | 0.42              |
| 1:AA:703:U:H2'    | 1:AA:704:G:O4'    | 2.19                     | 0.42              |
| 1:AA:738:G:N7     | 1:AA:739:G:C2     | 2.87                     | 0.42              |
| 1:AA:800:A:N7     | 1:AA:802:A:O4'    | 2.52                     | 0.42              |
| 1:AA:850:C:H4'    | 24:AZ:18:ASP:HB2  | 2.01                     | 0.42              |
| 1:AA:854:G:N2     | 1:AA:855:G:C4     | 2.87                     | 0.42              |
| 1:AA:855:G:N2     | 22:AX:27:GLU:HB3  | 2.31                     | 0.42              |
| 1:AA:864:G:C2'    | 1:AA:865:C:H1'    | 2.43                     | 0.42              |
| 1:AA:878:A:N1     | 1:AA:897:C:C2     | 2.85                     | 0.42              |
| 1:AA:930:U:O2     | 1:AA:932:G:N2     | 2.52                     | 0.42              |
| 1:AA:947:G:N2     | 1:AA:971:C:C2     | 2.88                     | 0.42              |
| 1:AA:957:A:OP1    | 12:AN:76:LYS:HA   | 2.19                     | 0.42              |
| 1:AA:1025:G:C8    | 1:AA:1134:G:O4'   | 2.72                     | 0.42              |
| 1:AA:1034:G:C6    | 1:AA:1122:G:N7    | 2.86                     | 0.42              |
| 1:AA:1067:A:C5'   | 32:AJ:21:PRO:CB   | 2.95                     | 0.42              |
| 1:AA:1101:U:OP1   | 1:AA:1101:U:C6    | 2.61                     | 0.42              |
| 1:AA:1139:G:C2'   | 1:AA:1140:C:H5''  | 2.39                     | 0.42              |
| 1:AA:1153:C:N4    | 1:AA:1154:G:O6    | 2.52                     | 0.42              |
| 1:AA:1160:G:H8    | 1:AA:1160:G:OP2   | 2.02                     | 0.42              |
| 1:AA:1210:A:H4'   | 1:AA:1211:U:C5'   | 2.49                     | 0.42              |
| 1:AA:1213:A:N1    | 1:AA:1237:A:H1'   | 2.34                     | 0.42              |
| 1:AA:1223:C:N4    | 17:AS:88:ARG:HH22 | 2.17                     | 0.42              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:1242:A:H5'' | 1:AA:1243:G:OP2   | 2.19                     | 0.42              |
| 1:AA:1300:U:C6   | 1:AA:1300:U:P     | 3.12                     | 0.42              |
| 1:AA:1302:A:H3'  | 1:AA:1303:G:H5'   | 2.00                     | 0.42              |
| 1:AA:1324:G:C2   | 1:AA:1328:G:N1    | 2.87                     | 0.42              |
| 1:AA:1343:G:C6   | 1:AA:1344:G:C8    | 3.07                     | 0.42              |
| 1:AA:1518:C:C2   | 1:AA:1519:G:O4'   | 2.72                     | 0.42              |
| 1:AA:1689:A:N6   | 1:AA:1700:A:C4    | 2.86                     | 0.42              |
| 1:AA:1830:C:C2   | 1:AA:1831:G:N7    | 2.87                     | 0.42              |
| 1:AA:1945:G:H5'  | 1:AA:1945:G:H8    | 1.84                     | 0.42              |
| 1:AA:2082:A:H2'  | 1:AA:2083:G:C8    | 2.55                     | 0.42              |
| 1:AA:2088:G:H2'  | 1:AA:2089:U:O4'   | 2.19                     | 0.42              |
| 1:AA:2123:G:C2'  | 3:AC:215:THR:HG23 | 2.42                     | 0.42              |
| 1:AA:2128:C:N4   | 1:AA:2129:C:C5    | 2.87                     | 0.42              |
| 1:AA:2264:C:C2'  | 1:AA:2265:U:O5'   | 2.66                     | 0.42              |
| 1:AA:2289:G:H5'  | 1:AA:2384:G:O2'   | 2.19                     | 0.42              |
| 1:AA:2306:C:C5   | 1:AA:2311:A:N6    | 2.80                     | 0.42              |
| 1:AA:2319:G:C4'  | 1:AA:2320:A:OP1   | 2.44                     | 0.42              |
| 1:AA:2335:A:C2'  | 1:AA:2337:G:C8    | 3.03                     | 0.42              |
| 1:AA:2347:C:C4   | 1:AA:2348:U:O4    | 2.72                     | 0.42              |
| 1:AA:2459:A:C2   | 1:AA:2492:U:C4    | 3.02                     | 0.42              |
| 1:AA:2576:G:H3'  | 1:AA:2576:G:N3    | 2.35                     | 0.42              |
| 1:AA:2593:U:O4   | 4:AD:239:ARG:CZ   | 2.65                     | 0.42              |
| 1:AA:2615:U:H5'  | 1:AA:2615:U:H6    | 1.84                     | 0.42              |
| 1:AA:2649:U:OP2  | 1:AA:2649:U:H5    | 2.02                     | 0.42              |
| 1:AA:2781:A:H2'  | 1:AA:2782:G:C3'   | 2.49                     | 0.42              |
| 1:AA:2787:C:C5'  | 5:AE:64:LYS:HB2   | 2.46                     | 0.42              |
| 1:AA:2842:G:N2   | 1:AA:2843:G:H1'   | 2.34                     | 0.42              |
| 2:AB:48:A:O3'    | 14:AP:95:HIS:NE2  | 2.52                     | 0.42              |
| 2:AB:73:A:C5     | 2:AB:104:A:C4     | 3.06                     | 0.42              |
| 2:AB:79:C:H2'    | 2:AB:80:U:H5'     | 2.01                     | 0.42              |
| 3:AC:4:GLY:O     | 3:AC:5:LYS:NZ     | 2.39                     | 0.42              |
| 3:AC:73:ARG:CB   | 3:AC:93:TYR:HE2   | 2.32                     | 0.42              |
| 3:AC:103:ILE:CG2 | 3:AC:108:MET:SD   | 3.08                     | 0.42              |
| 4:AD:42:GLY:HA3  | 4:AD:60:ARG:HH22  | 1.80                     | 0.42              |
| 4:AD:63:ARG:HB3  | 4:AD:88:ARG:HH21  | 1.85                     | 0.42              |
| 4:AD:161:THR:N   | 4:AD:196:VAL:CG2  | 2.83                     | 0.42              |
| 5:AE:49:LEU:CD2  | 5:AE:76:ARG:O     | 2.66                     | 0.42              |
| 6:AF:170:LEU:HB3 | 6:AF:171:PRO:CD   | 2.49                     | 0.42              |
| 7:AG:12:TYR:CE2  | 7:AG:13:GLU:OE2   | 2.72                     | 0.42              |
| 7:AG:150:ASP:O   | 7:AG:152:LEU:N    | 2.52                     | 0.42              |
| 8:AH:149:ARG:CG  | 8:AH:153:LYS:CD   | 2.97                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 9:AK:8:GLN:O      | 9:AK:10:GLU:N      | 2.53                     | 0.42              |
| 9:AK:55:VAL:HG11  | 9:AK:127:ASP:HA    | 2.01                     | 0.42              |
| 9:AK:57:ALA:HB1   | 9:AK:99:LEU:HD23   | 2.02                     | 0.42              |
| 9:AK:135:PRO:C    | 9:AK:136:GLU:O     | 2.62                     | 0.42              |
| 10:AL:22:ILE:HB   | 10:AL:23:ARG:H     | 1.62                     | 0.42              |
| 10:AL:62:VAL:C    | 10:AL:82:ASN:O     | 2.61                     | 0.42              |
| 10:AL:70:LYS:HE2  | 10:AL:103:ALA:HB3  | 2.00                     | 0.42              |
| 11:AM:72:PRO:CB   | 11:AM:110:TYR:O    | 2.67                     | 0.42              |
| 11:AM:99:LEU:HD22 | 11:AM:101:VAL:CG1  | 2.45                     | 0.42              |
| 11:AM:99:LEU:CD2  | 11:AM:101:VAL:HG22 | 2.46                     | 0.42              |
| 12:AN:27:VAL:HG22 | 12:AN:28:ALA:O     | 2.18                     | 0.42              |
| 12:AN:63:LYS:NZ   | 12:AN:64:ILE:HG13  | 2.29                     | 0.42              |
| 12:AN:132:VAL:HB  | 12:AN:133:ARG:CZ   | 2.49                     | 0.42              |
| 13:AO:41:ALA:CB   | 13:AO:97:VAL:HG13  | 2.36                     | 0.42              |
| 13:AO:75:LEU:CA   | 13:AO:78:LYS:HB3   | 2.46                     | 0.42              |
| 13:AO:117:VAL:O   | 13:AO:117:VAL:HG22 | 2.18                     | 0.42              |
| 14:AP:29:PHE:C    | 14:AP:30:ARG:CG    | 2.93                     | 0.42              |
| 15:AQ:15:VAL:HG11 | 15:AQ:18:ASP:OD1   | 2.20                     | 0.42              |
| 15:AQ:33:LYS:HE3  | 15:AQ:45:PHE:CE2   | 2.54                     | 0.42              |
| 15:AQ:61:PHE:HD1  | 15:AQ:81:PRO:CD    | 2.24                     | 0.42              |
| 15:AQ:67:SER:HA   | 15:AQ:75:ILE:HA    | 2.01                     | 0.42              |
| 16:AR:65:ILE:HG23 | 16:AR:96:ALA:CA    | 2.49                     | 0.42              |
| 18:AT:25:ARG:NE   | 18:AT:75:TYR:CE2   | 2.86                     | 0.42              |
| 18:AT:98:LYS:NZ   | 18:AT:98:LYS:CB    | 2.82                     | 0.42              |
| 19:AU:12:VAL:HA   | 19:AU:29:TRP:CD1   | 2.54                     | 0.42              |
| 19:AU:18:TYR:OH   | 19:AU:96:ILE:CD1   | 2.67                     | 0.42              |
| 19:AU:21:PHE:CD2  | 19:AU:26:TYR:HA    | 2.53                     | 0.42              |
| 19:AU:47:PHE:C    | 19:AU:49:VAL:HG13  | 2.44                     | 0.42              |
| 19:AU:52:VAL:O    | 19:AU:53:LYS:O     | 2.37                     | 0.42              |
| 20:AV:35:TYR:CD1  | 20:AV:35:TYR:N     | 2.87                     | 0.42              |
| 20:AV:97:ARG:O    | 20:AV:98:VAL:CG2   | 2.66                     | 0.42              |
| 21:AW:127:LYS:CD  | 21:AW:165:VAL:HG23 | 2.42                     | 0.42              |
| 21:AW:137:ILE:C   | 21:AW:138:GLU:CG   | 2.92                     | 0.42              |
| 21:AW:153:SER:OG  | 21:AW:154:ASP:N    | 2.52                     | 0.42              |
| 22:AX:46:LYS:HA   | 22:AX:47:PRO:HD3   | 1.77                     | 0.42              |
| 25:Aa:40:HIS:HB3  | 25:Aa:41:PRO:HD3   | 1.97                     | 0.42              |
| 25:Aa:59:PHE:O    | 25:Aa:61:ARG:N     | 2.49                     | 0.42              |
| 26:Ab:36:CYS:H    | 26:Ab:49:CYS:HB3   | 1.84                     | 0.42              |
| 26:Ab:41:PRO:HG2  | 26:Ab:44:THR:OG1   | 2.20                     | 0.42              |
| 28:Ad:31:LEU:HA   | 28:Ad:31:LEU:HD23  | 1.79                     | 0.42              |
| 28:Ad:34:ARG:NH2  | 28:Ad:42:LEU:HG    | 2.34                     | 0.42              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 30:Af:9:ARG:NH2   | 30:Af:16:VAL:HB  | 2.33                     | 0.42              |
| 30:Af:15:LYS:O    | 30:Af:25:VAL:HA  | 2.20                     | 0.42              |
| 34:BA:44:G:C6     | 34:BA:399:G:N1   | 2.87                     | 0.42              |
| 34:BA:67:C:C1'    | 34:BA:172:A:H1'  | 2.49                     | 0.42              |
| 34:BA:85:U:H2'    | 34:BA:86:U:O4'   | 2.19                     | 0.42              |
| 34:BA:128:G:C5    | 34:BA:129:U:C4   | 3.07                     | 0.42              |
| 34:BA:242:C:H2'   | 34:BA:243:A:O5'  | 2.19                     | 0.42              |
| 34:BA:269:C:O2'   | 34:BA:270:A:O5'  | 2.35                     | 0.42              |
| 34:BA:270:A:C6    | 34:BA:271:C:C4   | 3.07                     | 0.42              |
| 34:BA:274:A:O3'   | 34:BA:275:G:O4'  | 2.38                     | 0.42              |
| 34:BA:443:C:N1    | 34:BA:492:G:N2   | 2.67                     | 0.42              |
| 34:BA:498:A:H61   | 34:BA:547:A:C5'  | 2.32                     | 0.42              |
| 34:BA:584:G:C2    | 34:BA:585:G:C8   | 3.07                     | 0.42              |
| 34:BA:586:C:P     | 50:BU:34:LYS:HZ2 | 2.42                     | 0.42              |
| 34:BA:594:G:C5    | 34:BA:595:G:N2   | 2.80                     | 0.42              |
| 34:BA:707:C:C2'   | 34:BA:708:C:O5'  | 2.67                     | 0.42              |
| 34:BA:755:G:OP2   | 48:BS:65:ARG:HD2 | 2.19                     | 0.42              |
| 34:BA:781:A:C2    | 34:BA:782:A:H1'  | 2.54                     | 0.42              |
| 34:BA:829:G:N2    | 34:BA:858:G:HO2' | 2.17                     | 0.42              |
| 34:BA:832:C:H2'   | 34:BA:833:U:C5   | 2.53                     | 0.42              |
| 34:BA:843:U:C3'   | 34:BA:848:C:C5'  | 2.97                     | 0.42              |
| 34:BA:901:A:H2'   | 34:BA:902:G:O4'  | 2.19                     | 0.42              |
| 34:BA:924:C:H2'   | 34:BA:925:G:H8   | 1.83                     | 0.42              |
| 34:BA:962:C:C4    | 34:BA:963:G:C5   | 3.07                     | 0.42              |
| 34:BA:991:U:OP2   | 34:BA:991:U:H6   | 2.02                     | 0.42              |
| 34:BA:1051:C:H2'  | 34:BA:1052:U:O4' | 2.19                     | 0.42              |
| 34:BA:1103:C:C2   | 34:BA:1104:G:C8  | 3.07                     | 0.42              |
| 34:BA:1110:A:C5   | 34:BA:1111:A:C8  | 3.06                     | 0.42              |
| 34:BA:1141:C:C2   | 34:BA:1142:G:C8  | 3.07                     | 0.42              |
| 34:BA:1158:C:O2   | 34:BA:1158:C:H3' | 2.18                     | 0.42              |
| 34:BA:1223:C:H3'  | 34:BA:1223:C:C6  | 2.53                     | 0.42              |
| 34:BA:1234:C:N4   | 34:BA:1235:U:C4  | 2.86                     | 0.42              |
| 34:BA:1243:C:N3   | 34:BA:1244:C:C5  | 2.87                     | 0.42              |
| 34:BA:1312:G:N3   | 34:BA:1326:C:N1  | 2.66                     | 0.42              |
| 34:BA:1344:C:O2'  | 34:BA:1349:A:H5' | 2.18                     | 0.42              |
| 34:BA:1352:C:N3   | 34:BA:1371:G:C6  | 2.87                     | 0.42              |
| 34:BA:1371:G:H5'' | 42:BM:68:GLY:C   | 2.45                     | 0.42              |
| 34:BA:1375:A:C2   | 34:BA:1376:U:O2  | 2.71                     | 0.42              |
| 34:BA:1377:A:H5'' | 34:BA:1378:C:C5  | 2.54                     | 0.42              |
| 34:BA:1412:C:C2   | 34:BA:1413:A:N7  | 2.87                     | 0.42              |
| 34:BA:1496:C:C6   | 34:BA:1496:C:C3' | 3.02                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1504:G:HO2' | 34:BA:1505:G:P     | 2.30                     | 0.42              |
| 35:BF:23:ARG:H    | 35:BF:23:ARG:HG3   | 1.46                     | 0.42              |
| 35:BF:42:ILE:CD1  | 35:BF:47:THR:OG1   | 2.68                     | 0.42              |
| 35:BF:69:LEU:HD22 | 35:BF:91:PRO:HB3   | 1.99                     | 0.42              |
| 35:BF:93:VAL:HG12 | 35:BF:95:GLN:H     | 1.83                     | 0.42              |
| 35:BF:95:GLN:OE1  | 35:BF:95:GLN:HA    | 2.19                     | 0.42              |
| 36:BG:22:TRP:CZ3  | 36:BG:32:LEU:HD13  | 2.53                     | 0.42              |
| 36:BG:33:LEU:HD23 | 36:BG:36:ASP:HB3   | 2.01                     | 0.42              |
| 36:BG:142:MET:CG  | 36:BG:170:GLN:CD   | 2.92                     | 0.42              |
| 37:BH:31:CYS:C    | 37:BH:33:MET:HG2   | 2.42                     | 0.42              |
| 37:BH:60:GLU:O    | 37:BH:61:LYS:C     | 2.62                     | 0.42              |
| 38:BI:33:VAL:HG22 | 38:BI:43:LEU:CD1   | 2.36                     | 0.42              |
| 38:BI:50:GLU:HB2  | 38:BI:53:LEU:HG    | 2.01                     | 0.42              |
| 38:BI:71:LEU:CG   | 38:BI:72:GLN:N     | 2.82                     | 0.42              |
| 38:BI:84:PHE:CG   | 38:BI:134:ALA:CA   | 3.00                     | 0.42              |
| 38:BI:124:GLY:O   | 38:BI:126:ARG:N    | 2.52                     | 0.42              |
| 39:BJ:76:ALA:CB   | 39:BJ:80:ARG:NH1   | 2.72                     | 0.42              |
| 39:BJ:82:ARG:C    | 39:BJ:83:ASP:CG    | 2.87                     | 0.42              |
| 40:BK:37:ASN:C    | 40:BK:39:ALA:N     | 2.77                     | 0.42              |
| 40:BK:50:ILE:CD1  | 40:BK:58:PRO:CB    | 2.96                     | 0.42              |
| 40:BK:68:ASN:HD21 | 40:BK:128:ALA:C    | 2.26                     | 0.42              |
| 40:BK:88:PRO:HD2  | 40:BK:152:ALA:CA   | 2.49                     | 0.42              |
| 41:BL:83:ILE:HG23 | 41:BL:83:ILE:O     | 2.19                     | 0.42              |
| 42:BM:80:GLY:O    | 42:BM:81:ILE:C     | 2.61                     | 0.42              |
| 42:BM:97:LYS:CE   | 42:BM:102:LEU:HD13 | 2.48                     | 0.42              |
| 42:BM:121:ARG:HG2 | 42:BM:121:ARG:NH1  | 2.32                     | 0.42              |
| 43:BN:60:ARG:NH1  | 43:BN:60:ARG:C     | 2.77                     | 0.42              |
| 43:BN:81:THR:O    | 43:BN:85:LEU:CD1   | 2.67                     | 0.42              |
| 44:BO:50:TYR:HD1  | 44:BO:55:LYS:HA    | 1.83                     | 0.42              |
| 44:BO:57:THR:C    | 44:BO:59:TYR:H     | 2.26                     | 0.42              |
| 44:BO:110:ASP:HA  | 51:BV:88:LYS:HD3   | 2.01                     | 0.42              |
| 44:BO:123:LYS:N   | 44:BO:126:ARG:HG3  | 2.34                     | 0.42              |
| 45:BP:14:GLY:O    | 45:BP:15:ARG:HG3   | 2.19                     | 0.42              |
| 48:BS:76:GLU:C    | 48:BS:78:TYR:N     | 2.72                     | 0.42              |
| 50:BU:27:PHE:O    | 50:BU:27:PHE:CD2   | 2.72                     | 0.42              |
| 51:BV:58:LEU:HD13 | 51:BV:66:LEU:CD2   | 2.49                     | 0.42              |
| 52:BW:22:LEU:CA   | 52:BW:25:LYS:NZ    | 2.83                     | 0.42              |
| 52:BW:30:LEU:HB2  | 52:BW:48:THR:HG22  | 2.00                     | 0.42              |
| 52:BW:63:THR:HG22 | 52:BW:64:GLU:N     | 2.33                     | 0.42              |
| 53:BX:53:LEU:HD12 | 53:BX:100:ILE:HG13 | 2.00                     | 0.42              |
| 56:BD:51:U:O4     | 56:BD:63:G:N1      | 2.52                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 56:BE:4:C:O2      | 56:BE:6:G:H8       | 2.00                     | 0.42              |
| 57:BZ:17:GLY:HA3  | 57:BZ:20:THR:HG21  | 1.93                     | 0.42              |
| 57:BZ:275:ALA:O   | 57:BZ:278:GLY:N    | 2.36                     | 0.42              |
| 57:BZ:400:TYR:HD1 | 57:BZ:443:ILE:O    | 1.95                     | 0.42              |
| 57:BZ:406:ASP:OD1 | 57:BZ:407:VAL:HG22 | 2.19                     | 0.42              |
| 57:BZ:537:CYS:O   | 57:BZ:538:LEU:HD13 | 2.19                     | 0.42              |
| 1:AA:6:A:N1       | 1:AA:2897:U:C6     | 2.87                     | 0.42              |
| 1:AA:61:G:C6      | 1:AA:62:C:N3       | 2.87                     | 0.42              |
| 1:AA:70:G:C3'     | 1:AA:71:A:H5'      | 2.48                     | 0.42              |
| 1:AA:270(L):U:O2  | 1:AA:270(M):U:C5   | 2.72                     | 0.42              |
| 1:AA:287:C:C2'    | 1:AA:287:C:O2      | 2.65                     | 0.42              |
| 1:AA:295:G:N9     | 1:AA:345:A:C2      | 2.87                     | 0.42              |
| 1:AA:307:G:O2'    | 1:AA:309:G:N7      | 2.35                     | 0.42              |
| 1:AA:408:G:H2'    | 1:AA:409:C:H6      | 1.83                     | 0.42              |
| 1:AA:438:G:H2'    | 1:AA:439:G:O5'     | 2.19                     | 0.42              |
| 1:AA:449:A:O2'    | 1:AA:450:G:C5'     | 2.62                     | 0.42              |
| 1:AA:636:G:H2'    | 11:AM:113:LYS:NZ   | 2.29                     | 0.42              |
| 1:AA:668:G:H5'    | 1:AA:669:G:OP2     | 2.19                     | 0.42              |
| 1:AA:702:G:H2'    | 1:AA:703:U:O5'     | 2.20                     | 0.42              |
| 1:AA:704:G:HO2'   | 1:AA:705:A:P       | 2.37                     | 0.42              |
| 1:AA:763:G:H1'    | 1:AA:765:G:O4'     | 2.20                     | 0.42              |
| 1:AA:769:G:C6     | 1:AA:770:G:N7      | 2.88                     | 0.42              |
| 1:AA:805:G:C6     | 1:AA:2068:U:OP1    | 2.72                     | 0.42              |
| 1:AA:821:A:C8     | 1:AA:946:G:C4      | 3.08                     | 0.42              |
| 1:AA:850:C:C5'    | 24:AZ:18:ASP:HB2   | 2.50                     | 0.42              |
| 1:AA:874:G:C6     | 1:AA:875:G:O6      | 2.73                     | 0.42              |
| 1:AA:884:C:O2     | 1:AA:885:C:H5'     | 2.18                     | 0.42              |
| 1:AA:889:C:O2     | 1:AA:889:C:H3'     | 2.19                     | 0.42              |
| 1:AA:919:G:C4     | 1:AA:920:G:N7      | 2.86                     | 0.42              |
| 1:AA:974:G:N3     | 1:AA:1186:G:C5     | 2.87                     | 0.42              |
| 1:AA:977:G:C8     | 1:AA:987:G:N2      | 2.87                     | 0.42              |
| 1:AA:1051:G:C8    | 1:AA:2752:C:OP1    | 2.73                     | 0.42              |
| 1:AA:1067:A:C4    | 1:AA:1068:G:O6     | 2.72                     | 0.42              |
| 1:AA:1068:G:O4'   | 1:AA:1096:A:H4'    | 2.19                     | 0.42              |
| 1:AA:1103:A:H2'   | 1:AA:1104:C:OP1    | 2.19                     | 0.42              |
| 1:AA:1148:A:N1    | 1:AA:1149:G:C6     | 2.87                     | 0.42              |
| 1:AA:1267:U:HO2'  | 1:AA:1268:A:P      | 2.41                     | 0.42              |
| 1:AA:1298:C:C4    | 1:AA:1299:G:C6     | 3.08                     | 0.42              |
| 1:AA:1343:G:H3'   | 1:AA:1344:G:H5''   | 2.00                     | 0.42              |
| 1:AA:1459:G:O6    | 1:AA:1461:G:C5     | 2.72                     | 0.42              |
| 1:AA:1561:G:H8    | 1:AA:1561:G:O5'    | 2.02                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1613:G:OP1   | 28:Ad:5:TRP:HD1   | 2.02                     | 0.42              |
| 1:AA:1674:G:H21   | 1:AA:1676:A:H61   | 1.67                     | 0.42              |
| 1:AA:1704:G:C6    | 1:AA:1705:G:C5    | 3.08                     | 0.42              |
| 1:AA:1826:G:N2    | 1:AA:1827:C:C1'   | 2.82                     | 0.42              |
| 1:AA:1850:G:H2'   | 1:AA:1851:U:O4'   | 2.19                     | 0.42              |
| 1:AA:1863:G:C5    | 1:AA:1864:U:C4    | 3.07                     | 0.42              |
| 1:AA:1945:G:C2'   | 1:AA:1946:U:O5'   | 2.68                     | 0.42              |
| 1:AA:2056:G:N2    | 1:AA:2057:A:C4    | 2.88                     | 0.42              |
| 1:AA:2115:G:C2    | 1:AA:2117:A:C8    | 3.07                     | 0.42              |
| 1:AA:2199:A:C2    | 1:AA:2205:C:C6    | 3.07                     | 0.42              |
| 1:AA:2210:G:O2'   | 1:AA:2211:G:OP2   | 2.33                     | 0.42              |
| 1:AA:2447:G:H3'   | 1:AA:2499:C:OP2   | 2.10                     | 0.42              |
| 1:AA:2476:A:H2'   | 1:AA:2477:C:O4'   | 2.19                     | 0.42              |
| 1:AA:2509:G:N1    | 1:AA:2580:U:C2    | 2.87                     | 0.42              |
| 1:AA:2548:G:O6    | 1:AA:2561:A:N6    | 2.53                     | 0.42              |
| 1:AA:2564:A:C5    | 1:AA:2565:A:N7    | 2.88                     | 0.42              |
| 1:AA:2598:A:OP1   | 4:AD:234:GLY:CA   | 2.51                     | 0.42              |
| 1:AA:2666:C:C3'   | 1:AA:2666:C:C6    | 3.02                     | 0.42              |
| 1:AA:2675:A:OP1   | 10:AL:32:TYR:CE2  | 2.71                     | 0.42              |
| 1:AA:2704:C:H2'   | 1:AA:2705:A:C1'   | 2.49                     | 0.42              |
| 1:AA:2756:U:O2'   | 1:AA:2757:A:OP2   | 2.37                     | 0.42              |
| 1:AA:2790:A:H4'   | 1:AA:2791:C:OP1   | 2.19                     | 0.42              |
| 1:AA:2807:G:C5    | 1:AA:2808:U:O4    | 2.72                     | 0.42              |
| 1:AA:2813:A:H2'   | 1:AA:2814:C:H6    | 1.84                     | 0.42              |
| 1:AA:2817:G:C2    | 1:AA:2830:G:C2    | 3.07                     | 0.42              |
| 1:AA:2848:G:O2'   | 1:AA:2849:U:O5'   | 2.34                     | 0.42              |
| 2:AB:15:A:H4'     | 2:AB:16:G:OP2     | 2.19                     | 0.42              |
| 2:AB:71:C:C3'     | 2:AB:72:G:C5'     | 2.95                     | 0.42              |
| 3:AC:21:THR:HG22  | 3:AC:225:ASN:HD21 | 1.83                     | 0.42              |
| 3:AC:53:ARG:C     | 3:AC:55:ASP:N     | 2.75                     | 0.42              |
| 3:AC:75:LEU:HD22  | 3:AC:110:PHE:CE1  | 2.51                     | 0.42              |
| 3:AC:148:ASN:HD22 | 3:AC:151:GLU:HB2  | 1.84                     | 0.42              |
| 4:AD:39:LYS:CA    | 4:AD:62:TYR:HB2   | 2.31                     | 0.42              |
| 4:AD:75:ILE:O     | 4:AD:75:ILE:HG22  | 2.19                     | 0.42              |
| 4:AD:108:PRO:C    | 4:AD:196:VAL:O    | 2.63                     | 0.42              |
| 4:AD:160:GLY:O    | 4:AD:162:SER:N    | 2.52                     | 0.42              |
| 5:AE:115:GLY:O    | 5:AE:117:MET:C    | 2.62                     | 0.42              |
| 5:AE:119:ARG:HD2  | 5:AE:156:MET:N    | 2.29                     | 0.42              |
| 5:AE:186:GLY:O    | 5:AE:188:VAL:N    | 2.49                     | 0.42              |
| 6:AF:11:VAL:HG12  | 6:AF:13:SER:H     | 1.83                     | 0.42              |
| 6:AF:29:ASN:ND2   | 6:AF:30:PRO:N     | 2.67                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:AG:34:LEU:CD2   | 7:AG:172:LEU:HD11 | 2.48                     | 0.42              |
| 7:AG:108:ASN:OD1  | 7:AG:177:GLY:HA2  | 2.19                     | 0.42              |
| 7:AG:141:PHE:O    | 7:AG:143:GLU:N    | 2.52                     | 0.42              |
| 7:AG:162:THR:O    | 7:AG:164:GLU:HG2  | 2.19                     | 0.42              |
| 9:AK:7:LYS:CD     | 9:AK:39:ARG:NH2   | 2.82                     | 0.42              |
| 9:AK:39:ARG:HB2   | 9:AK:48:MET:SD    | 2.60                     | 0.42              |
| 9:AK:39:ARG:O     | 9:AK:42:TRP:HB3   | 2.19                     | 0.42              |
| 9:AK:74:ARG:CD    | 9:AK:82:LEU:CD1   | 2.96                     | 0.42              |
| 9:AK:87:LEU:HD21  | 9:AK:88:GLU:OE1   | 2.18                     | 0.42              |
| 12:AN:36:ALA:O    | 12:AN:37:LEU:CD2  | 2.67                     | 0.42              |
| 13:AO:54:LEU:HA   | 13:AO:57:ARG:HB2  | 2.01                     | 0.42              |
| 13:AO:103:ARG:HB2 | 13:AO:108:GLY:O   | 2.14                     | 0.42              |
| 14:AP:9:ARG:HA    | 14:AP:12:PHE:HE2  | 1.80                     | 0.42              |
| 14:AP:19:LYS:C    | 14:AP:20:ARG:O    | 2.62                     | 0.42              |
| 14:AP:23:ARG:HA   | 14:AP:23:ARG:HD2  | 1.25                     | 0.42              |
| 14:AP:33:LYS:CD   | 14:AP:54:LEU:HD21 | 2.49                     | 0.42              |
| 14:AP:70:GLY:CA   | 14:AP:73:LEU:HD22 | 2.43                     | 0.42              |
| 16:AR:45:TYR:O    | 16:AR:47:TYR:N    | 2.52                     | 0.42              |
| 16:AR:74:LEU:HB3  | 16:AR:78:THR:HB   | 1.99                     | 0.42              |
| 16:AR:88:ILE:N    | 17:AS:52:VAL:CG2  | 2.71                     | 0.42              |
| 16:AR:93:LYS:N    | 16:AR:93:LYS:HZ3  | 2.18                     | 0.42              |
| 16:AR:94:ASN:O    | 16:AR:96:ALA:N    | 2.52                     | 0.42              |
| 16:AR:98:LEU:HA   | 16:AR:101:ARG:CG  | 2.45                     | 0.42              |
| 16:AR:111:GLU:O   | 16:AR:112:ARG:C   | 2.62                     | 0.42              |
| 17:AS:28:GLU:CD   | 17:AS:94:LEU:HB2  | 2.45                     | 0.42              |
| 18:AT:31:GLU:CD   | 18:AT:31:GLU:H    | 2.18                     | 0.42              |
| 19:AU:14:SER:O    | 19:AU:17:ALA:HB3  | 2.19                     | 0.42              |
| 19:AU:57:LEU:C    | 19:AU:58:HIS:HD1  | 2.28                     | 0.42              |
| 19:AU:89:ILE:O    | 19:AU:92:LEU:HB2  | 2.18                     | 0.42              |
| 21:AW:30:ASN:HA   | 21:AW:89:PHE:CD2  | 2.54                     | 0.42              |
| 21:AW:77:ASP:O    | 21:AW:78:LYS:O    | 2.37                     | 0.42              |
| 22:AX:50:ASN:HB2  | 22:AX:81:VAL:HG23 | 1.99                     | 0.42              |
| 24:AZ:45:GLY:HA2  | 24:AZ:48:GLU:CG   | 2.46                     | 0.42              |
| 24:AZ:48:GLU:O    | 24:AZ:49:LYS:C    | 2.62                     | 0.42              |
| 28:Ad:8:ASN:OD1   | 28:Ad:10:ARG:HB2  | 2.19                     | 0.42              |
| 28:Ad:17:GLY:C    | 28:Ad:21:ARG:HH22 | 2.27                     | 0.42              |
| 30:Af:7:VAL:CG1   | 30:Af:34:GLN:OE1  | 2.63                     | 0.42              |
| 34:BA:20:U:N3     | 34:BA:21:G:C5     | 2.88                     | 0.42              |
| 34:BA:60:A:OP2    | 34:BA:387:U:H4'   | 2.19                     | 0.42              |
| 34:BA:91:C:N3     | 34:BA:92:G:N7     | 2.67                     | 0.42              |
| 34:BA:141:A:O2'   | 34:BA:182:U:C6    | 2.58                     | 0.42              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BA:144:G:C4     | 34:BA:179:A:C2    | 3.07                     | 0.42              |
| 34:BA:151:A:N6     | 34:BA:171:A:C6    | 2.87                     | 0.42              |
| 34:BA:186(B):C:H4' | 53:BX:89:ARG:NH2  | 2.33                     | 0.42              |
| 34:BA:244:U:H2'    | 34:BA:245:C:OP2   | 2.18                     | 0.42              |
| 34:BA:283:C:C2     | 34:BA:284:G:C8    | 3.07                     | 0.42              |
| 34:BA:363:A:H5''   | 45:BP:105:TYR:OH  | 2.19                     | 0.42              |
| 34:BA:538:G:C3'    | 45:BP:114:LYS:HD3 | 2.48                     | 0.42              |
| 34:BA:556:C:H2'    | 34:BA:557:G:O4'   | 2.19                     | 0.42              |
| 34:BA:563:A:O2'    | 34:BA:564:C:OP2   | 2.35                     | 0.42              |
| 34:BA:686:U:O4     | 34:BA:703:G:O2'   | 2.37                     | 0.42              |
| 34:BA:774:G:C6     | 34:BA:775:G:C5    | 3.07                     | 0.42              |
| 34:BA:812:C:O4'    | 34:BA:813:U:C6    | 2.73                     | 0.42              |
| 34:BA:828:A:H8     | 34:BA:829:G:C8    | 2.36                     | 0.42              |
| 34:BA:872:A:C2     | 34:BA:874:G:N7    | 2.87                     | 0.42              |
| 34:BA:874:G:H2'    | 34:BA:875:C:H5'   | 2.01                     | 0.42              |
| 34:BA:924:C:H2'    | 34:BA:925:G:O5'   | 2.19                     | 0.42              |
| 34:BA:1080:A:N7    | 34:BA:1081:G:C1'  | 2.82                     | 0.42              |
| 34:BA:1088:G:N2    | 34:BA:1089:G:H1'  | 2.34                     | 0.42              |
| 34:BA:1091:U:O2    | 34:BA:1093:A:C8   | 2.72                     | 0.42              |
| 34:BA:1272:G:H2'   | 34:BA:1273:G:C8   | 2.49                     | 0.42              |
| 34:BA:1316:G:N2    | 34:BA:1319:A:C5   | 2.84                     | 0.42              |
| 34:BA:1319:A:C4'   | 52:BW:37:ARG:CB   | 2.97                     | 0.42              |
| 34:BA:1348:U:P     | 42:BM:109:VAL:HA  | 2.60                     | 0.42              |
| 34:BA:1358:U:C5    | 34:BA:1359:C:C5   | 3.06                     | 0.42              |
| 34:BA:1360:A:N1    | 34:BA:1361:G:N1   | 2.67                     | 0.42              |
| 34:BA:1442:G:N3    | 34:BA:1442:G:H2'  | 2.33                     | 0.42              |
| 34:BA:1499:A:C2'   | 34:BA:1500:A:C5'  | 2.87                     | 0.42              |
| 35:BF:163:PHE:CD1  | 35:BF:185:ILE:O   | 2.72                     | 0.42              |
| 35:BF:171:ALA:O    | 35:BF:174:VAL:CB  | 2.63                     | 0.42              |
| 35:BF:221:LEU:HD13 | 35:BF:221:LEU:O   | 2.19                     | 0.42              |
| 36:BG:40:ARG:O     | 36:BG:44:GLU:HG3  | 2.19                     | 0.42              |
| 36:BG:66:VAL:O     | 36:BG:102:ASN:HB2 | 2.19                     | 0.42              |
| 37:BH:26:CYS:CA    | 37:BH:31:CYS:HB3  | 2.40                     | 0.42              |
| 37:BH:100:ARG:O    | 37:BH:101:LEU:C   | 2.61                     | 0.42              |
| 37:BH:126:ILE:H    | 37:BH:132:ARG:HD2 | 1.84                     | 0.42              |
| 37:BH:143:GLY:HA2  | 37:BH:185:PHE:CD1 | 2.53                     | 0.42              |
| 39:BJ:97:PHE:CE2   | 51:BV:65:ILE:HD11 | 2.54                     | 0.42              |
| 40:BK:50:ILE:C     | 40:BK:54:THR:HG23 | 2.39                     | 0.42              |
| 40:BK:74:GLU:HA    | 40:BK:145:ALA:HB3 | 1.98                     | 0.42              |
| 41:BL:35:ILE:HD13  | 41:BL:35:ILE:N    | 2.34                     | 0.42              |
| 42:BM:99:LEU:CD2   | 42:BM:99:LEU:H    | 2.31                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 43:BN:13:HIS:ND1  | 43:BN:13:HIS:O     | 2.52                     | 0.42              |
| 43:BN:30:SER:OG   | 43:BN:81:THR:HA    | 2.19                     | 0.42              |
| 43:BN:49:VAL:CG1  | 47:BR:41:ARG:HB2   | 2.49                     | 0.42              |
| 44:BO:22:HIS:ND1  | 44:BO:29:ILE:CD1   | 2.80                     | 0.42              |
| 44:BO:99:GLN:O    | 44:BO:105:VAL:CG2  | 2.67                     | 0.42              |
| 44:BO:99:GLN:HA   | 44:BO:105:VAL:HG22 | 2.00                     | 0.42              |
| 45:BP:105:TYR:C   | 57:BZ:329:ARG:NH1  | 2.77                     | 0.42              |
| 46:BQ:52:GLU:HA   | 46:BQ:55:ARG:HD3   | 2.01                     | 0.42              |
| 48:BS:12:ILE:HG12 | 48:BS:27:VAL:HG13  | 2.01                     | 0.42              |
| 48:BS:15:PHE:CD2  | 48:BS:84:LYS:NZ    | 2.87                     | 0.42              |
| 48:BS:62:GLN:CA   | 48:BS:65:ARG:NH1   | 2.81                     | 0.42              |
| 49:BT:46:PRO:CD   | 49:BT:47:ASP:H     | 2.32                     | 0.42              |
| 49:BT:57:ARG:O    | 49:BT:60:LEU:N     | 2.52                     | 0.42              |
| 50:BU:58:GLU:OE1  | 50:BU:75:ARG:N     | 2.52                     | 0.42              |
| 51:BV:43:PHE:HD2  | 51:BV:56:THR:HG22  | 1.84                     | 0.42              |
| 54:BY:3:LYS:HZ2   | 54:BY:13:ILE:HG21  | 1.82                     | 0.42              |
| 55:BC:16:U:C4     | 55:BC:19:G:OP2     | 2.70                     | 0.42              |
| 56:BD:63:G:C2'    | 56:BD:64:A:H5'     | 2.49                     | 0.42              |
| 57:BZ:184:THR:N   | 57:BZ:185:PRO:CD   | 2.74                     | 0.42              |
| 57:BZ:205:PHE:CE1 | 57:BZ:229:GLY:O    | 2.60                     | 0.42              |
| 57:BZ:234:ASN:CG  | 57:BZ:248:ASN:O    | 2.61                     | 0.42              |
| 57:BZ:267:LEU:O   | 57:BZ:268:ALA:HB3  | 2.19                     | 0.42              |
| 57:BZ:300:LEU:HB2 | 57:BZ:301:SER:C    | 2.44                     | 0.42              |
| 57:BZ:325:PHE:HB3 | 57:BZ:330:GLN:HB3  | 2.01                     | 0.42              |
| 57:BZ:411:HIS:HD2 | 57:BZ:459:THR:HG23 | 1.84                     | 0.42              |
| 1:AA:107:C:O2'    | 1:AA:108:U:O5'     | 2.37                     | 0.42              |
| 1:AA:126:A:H5''   | 28:Ad:18:PHE:CE1   | 2.54                     | 0.42              |
| 1:AA:137(A):G:N1  | 1:AA:138:G:O6      | 2.52                     | 0.42              |
| 1:AA:138:G:H21    | 1:AA:140:A:H62     | 1.64                     | 0.42              |
| 1:AA:164:U:O2     | 1:AA:164:U:H3'     | 2.20                     | 0.42              |
| 1:AA:174:C:H6     | 1:AA:174:C:H5''    | 1.84                     | 0.42              |
| 1:AA:271(C):U:O2' | 1:AA:271:G:H4'     | 2.20                     | 0.42              |
| 1:AA:301:G:C6     | 1:AA:317:G:C6      | 3.08                     | 0.42              |
| 1:AA:374:A:C4     | 1:AA:375:C:C6      | 3.08                     | 0.42              |
| 1:AA:449:A:P      | 6:AF:85:GLY:HA2    | 2.59                     | 0.42              |
| 1:AA:503:A:O2'    | 1:AA:506:G:OP2     | 2.37                     | 0.42              |
| 1:AA:586:A:OP1    | 6:AF:89:VAL:HG21   | 2.17                     | 0.42              |
| 1:AA:598:G:O2'    | 11:AM:14:LYS:CE    | 2.67                     | 0.42              |
| 1:AA:627:A:H5''   | 11:AM:75:ILE:CG2   | 2.49                     | 0.42              |
| 1:AA:631:A:C8     | 1:AA:631:A:OP1     | 2.73                     | 0.42              |
| 1:AA:662:G:OP1    | 11:AM:19:VAL:CG1   | 2.68                     | 0.42              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:AA:734:A:N3   | 1:AA:735:A:C8    | 2.87                     | 0.42              |
| 1:AA:820:A:C8   | 1:AA:973:A:N6    | 2.87                     | 0.42              |
| 1:AA:824:A:C3'  | 1:AA:825:C:C6    | 3.02                     | 0.42              |
| 1:AA:837:C:C2'  | 1:AA:838:C:O5'   | 2.67                     | 0.42              |
| 1:AA:904:C:H2'  | 1:AA:905:U:H5'   | 2.00                     | 0.42              |
| 1:AA:906:G:H5'  | 1:AA:907:U:OP2   | 2.19                     | 0.42              |
| 1:AA:969:U:H2'  | 1:AA:970:C:C5'   | 2.50                     | 0.42              |
| 1:AA:1022:G:N7  | 1:AA:1139:G:C6   | 2.87                     | 0.42              |
| 1:AA:1052:C:H5' | 1:AA:1052:C:H6   | 1.84                     | 0.42              |
| 1:AA:1068:G:P   | 32:AJ:21:PRO:HG2 | 2.59                     | 0.42              |
| 1:AA:1120:G:O2' | 1:AA:1121:C:H5'  | 2.19                     | 0.42              |
| 1:AA:1387:C:C2' | 1:AA:1388:G:H8   | 2.25                     | 0.42              |
| 1:AA:1391:U:C2  | 1:AA:1394:U:H5   | 2.37                     | 0.42              |
| 1:AA:1422:G:N2  | 1:AA:1423:G:C4   | 2.87                     | 0.42              |
| 1:AA:1423:G:C2  | 1:AA:1424:G:C8   | 3.08                     | 0.42              |
| 1:AA:1467:C:OP1 | 1:AA:1467:C:H4'  | 2.20                     | 0.42              |
| 1:AA:1483:G:N2  | 1:AA:1507:A:O2'  | 2.53                     | 0.42              |
| 1:AA:1560:G:C5  | 1:AA:1561:G:C5   | 3.07                     | 0.42              |
| 1:AA:1588:C:C2  | 1:AA:1589:C:C5   | 3.07                     | 0.42              |
| 1:AA:1613:G:P   | 28:Ad:5:TRP:CD1  | 3.09                     | 0.42              |
| 1:AA:1675:C:C4  | 5:AE:128:SER:CB  | 3.02                     | 0.42              |
| 1:AA:1732:A:OP1 | 1:AA:1733:G:C4   | 2.72                     | 0.42              |
| 1:AA:1806:C:H2' | 1:AA:1807:G:H5'  | 2.01                     | 0.42              |
| 1:AA:1818:U:H3  | 4:AD:155:LEU:H   | 1.67                     | 0.42              |
| 1:AA:1902:C:C4  | 1:AA:1903:G:C4   | 3.07                     | 0.42              |
| 1:AA:1971:A:C2  | 4:AD:239:ARG:CB  | 3.02                     | 0.42              |
| 1:AA:1971:A:C2  | 4:AD:240:ALA:N   | 2.85                     | 0.42              |
| 1:AA:1996:C:O2  | 1:AA:1997:G:C4'  | 2.65                     | 0.42              |
| 1:AA:2115:G:C4  | 1:AA:2117:A:N7   | 2.87                     | 0.42              |
| 1:AA:2132:U:C5' | 1:AA:2133:G:H5'  | 2.42                     | 0.42              |
| 1:AA:2149:G:N2  | 1:AA:2150:U:H1'  | 2.34                     | 0.42              |
| 1:AA:2175:C:C2  | 1:AA:2176:A:C8   | 3.08                     | 0.42              |
| 1:AA:2239:G:N3  | 1:AA:2240:C:C6   | 2.87                     | 0.42              |
| 1:AA:2286:A:C5' | 1:AA:2287:A:H1'  | 2.49                     | 0.42              |
| 1:AA:2353:G:N1  | 1:AA:2365:G:C2   | 2.87                     | 0.42              |
| 1:AA:2357:U:H2' | 1:AA:2358:G:O5'  | 2.18                     | 0.42              |
| 1:AA:2418:A:C4  | 1:AA:2419:U:C6   | 3.07                     | 0.42              |
| 1:AA:2434:A:O4' | 1:AA:2434:A:OP2  | 2.38                     | 0.42              |
| 1:AA:2530:A:C3' | 1:AA:2531:A:C5'  | 2.90                     | 0.42              |
| 1:AA:2532:G:O5' | 1:AA:2532:G:H8   | 2.02                     | 0.42              |
| 1:AA:2617:C:C2' | 1:AA:2618:G:O5'  | 2.66                     | 0.42              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2685:G:O3'    | 10:AL:66:LYS:NZ   | 2.49                     | 0.42              |
| 1:AA:2782:G:O4'    | 1:AA:2782:G:P     | 2.77                     | 0.42              |
| 1:AA:2785:C:C2     | 1:AA:2786:U:C5    | 3.08                     | 0.42              |
| 1:AA:2833:G:N3     | 1:AA:2833:G:C2'   | 2.79                     | 0.42              |
| 1:AA:2872:G:N2     | 1:AA:2873:A:C6    | 2.88                     | 0.42              |
| 1:AA:2899:G:H2'    | 1:AA:2900:A:H8    | 1.84                     | 0.42              |
| 2:AB:38:C:C6       | 2:AB:38:C:O5'     | 2.72                     | 0.42              |
| 2:AB:44:G:C2       | 2:AB:48:A:H1'     | 2.51                     | 0.42              |
| 2:AB:71:C:C2'      | 2:AB:71:C:O2      | 2.63                     | 0.42              |
| 3:AC:43:VAL:HG12   | 3:AC:213:TYR:C    | 2.25                     | 0.42              |
| 3:AC:103:ILE:HD13  | 3:AC:110:PHE:HZ   | 1.83                     | 0.42              |
| 4:AD:28:GLU:N      | 4:AD:28:GLU:CD    | 2.78                     | 0.42              |
| 4:AD:90:ALA:HB3    | 4:AD:159:ALA:HA   | 2.00                     | 0.42              |
| 4:AD:101:GLU:OE1   | 4:AD:102:LYS:N    | 2.52                     | 0.42              |
| 4:AD:155:LEU:O     | 4:AD:155:LEU:CG   | 2.66                     | 0.42              |
| 4:AD:265:PRO:O     | 4:AD:267:SER:N    | 2.53                     | 0.42              |
| 5:AE:131:ALA:C     | 5:AE:133:LYS:N    | 2.77                     | 0.42              |
| 5:AE:176:ILE:HA    | 5:AE:177:PRO:HD2  | 1.76                     | 0.42              |
| 5:AE:185:LYS:O     | 5:AE:185:LYS:HG2  | 2.19                     | 0.42              |
| 7:AG:33:ARG:HH21   | 7:AG:33:ARG:CB    | 2.32                     | 0.42              |
| 7:AG:39:ILE:CG1    | 7:AG:157:ILE:CD1  | 2.93                     | 0.42              |
| 7:AG:165:THR:O     | 7:AG:168:GLU:HB2  | 2.19                     | 0.42              |
| 8:AH:103:LEU:O     | 8:AH:113:VAL:HG12 | 2.19                     | 0.42              |
| 9:AK:13:TRP:C      | 9:AK:14:VAL:HG23  | 2.44                     | 0.42              |
| 9:AK:70:LYS:CD     | 9:AK:86:PRO:HA    | 2.50                     | 0.42              |
| 10:AL:13:ASN:N     | 10:AL:94:ARG:CB   | 2.82                     | 0.42              |
| 10:AL:22:ILE:HB    | 10:AL:40:VAL:HG11 | 2.01                     | 0.42              |
| 10:AL:106:LEU:HD12 | 10:AL:107:ARG:HA  | 2.00                     | 0.42              |
| 10:AL:112:MET:O    | 10:AL:115:VAL:CA  | 2.67                     | 0.42              |
| 12:AN:6:ARG:HG2    | 12:AN:70:PRO:CG   | 2.49                     | 0.42              |
| 12:AN:34:LEU:O     | 12:AN:103:MET:O   | 2.37                     | 0.42              |
| 12:AN:89:ASN:N     | 12:AN:89:ASN:ND2  | 2.56                     | 0.42              |
| 12:AN:89:ASN:HB3   | 12:AN:91:GLU:OE1  | 2.19                     | 0.42              |
| 13:AO:5:LYS:NZ     | 13:AO:6:SER:CA    | 2.82                     | 0.42              |
| 13:AO:20:LEU:HD13  | 13:AO:21:TYR:CA   | 2.49                     | 0.42              |
| 13:AO:53:HIS:CD2   | 13:AO:56:LYS:HZ1  | 2.37                     | 0.42              |
| 13:AO:54:LEU:HG    | 13:AO:57:ARG:HD3  | 2.01                     | 0.42              |
| 14:AP:10:ARG:O     | 14:AP:11:LYS:C    | 2.60                     | 0.42              |
| 14:AP:17:ARG:O     | 14:AP:20:ARG:HG2  | 2.19                     | 0.42              |
| 14:AP:18:ILE:HD12  | 14:AP:18:ILE:N    | 2.35                     | 0.42              |
| 14:AP:19:LYS:O     | 14:AP:20:ARG:O    | 2.37                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:AQ:64:ARG:O    | 15:AQ:65:LYS:O    | 2.37                     | 0.42              |
| 16:AR:17:ILE:HG12 | 16:AR:17:ILE:H    | 1.60                     | 0.42              |
| 16:AR:28:ARG:HA   | 16:AR:31:SER:OG   | 2.19                     | 0.42              |
| 16:AR:86:ALA:O    | 16:AR:90:VAL:CG2  | 2.68                     | 0.42              |
| 17:AS:33:VAL:HG12 | 17:AS:34:GLU:H    | 1.81                     | 0.42              |
| 19:AU:15:GLU:N    | 19:AU:16:LYS:HE2  | 2.35                     | 0.42              |
| 19:AU:64:LYS:C    | 19:AU:70:LEU:HG   | 2.42                     | 0.42              |
| 19:AU:66:LEU:HG   | 19:AU:70:LEU:HA   | 2.01                     | 0.42              |
| 20:AV:74:PRO:CG   | 20:AV:100:ALA:HB3 | 2.45                     | 0.42              |
| 21:AW:4:ARG:HD3   | 21:AW:38:TYR:CA   | 2.49                     | 0.42              |
| 26:Ab:25:LEU:O    | 26:Ab:25:LEU:CG   | 2.57                     | 0.42              |
| 29:Ae:8:LYS:HZ3   | 29:Ae:11:LYS:NZ   | 2.18                     | 0.42              |
| 30:Af:17:ILE:CG1  | 30:Af:26:ILE:HB   | 2.46                     | 0.42              |
| 32:AJ:58:THR:C    | 32:AJ:59:ILE:CD1  | 2.89                     | 0.42              |
| 32:AJ:62:ASP:CB   | 32:AJ:63:ARG:HA   | 2.50                     | 0.42              |
| 34:BA:50:A:H2     | 34:BA:360:A:C2'   | 2.33                     | 0.42              |
| 34:BA:61:G:C6     | 34:BA:107:G:O6    | 2.72                     | 0.42              |
| 34:BA:61:G:C6     | 34:BA:62:U:N3     | 2.88                     | 0.42              |
| 34:BA:145:G:C6    | 34:BA:178:C:N4    | 2.88                     | 0.42              |
| 34:BA:151:A:C6    | 34:BA:152:A:N3    | 2.87                     | 0.42              |
| 34:BA:390:C:H2'   | 34:BA:391:G:O5'   | 2.19                     | 0.42              |
| 34:BA:408:A:C4    | 34:BA:409:G:N7    | 2.88                     | 0.42              |
| 34:BA:448:A:C4    | 34:BA:487:A:C2    | 3.08                     | 0.42              |
| 34:BA:452:A:C6    | 34:BA:453:A:N6    | 2.88                     | 0.42              |
| 34:BA:509:A:N7    | 34:BA:510:A:N6    | 2.68                     | 0.42              |
| 34:BA:683:G:N3    | 44:BO:38:ASN:ND2  | 2.68                     | 0.42              |
| 34:BA:780:A:C2    | 34:BA:803:G:C6    | 3.04                     | 0.42              |
| 34:BA:783:C:H2'   | 34:BA:784:C:H6    | 1.85                     | 0.42              |
| 34:BA:823:G:C6    | 34:BA:878:G:C6    | 3.07                     | 0.42              |
| 34:BA:958:A:O2'   | 34:BA:959:A:H5'   | 2.20                     | 0.42              |
| 34:BA:979:C:OP2   | 34:BA:981:U:N3    | 2.52                     | 0.42              |
| 34:BA:1057:G:OP1  | 36:BG:155:GLY:HA2 | 2.20                     | 0.42              |
| 34:BA:1152:A:C2'  | 34:BA:1153:C:C5'  | 2.96                     | 0.42              |
| 34:BA:1170:A:H3'  | 34:BA:1170:A:H8   | 1.83                     | 0.42              |
| 34:BA:1193:G:C2'  | 34:BA:1194:U:O5'  | 2.67                     | 0.42              |
| 34:BA:1194:U:C4   | 34:BA:1195:C:C4   | 3.08                     | 0.42              |
| 34:BA:1219:U:C1'  | 52:BW:34:TRP:HZ2  | 2.25                     | 0.42              |
| 34:BA:1251:A:O2'  | 34:BA:1369:C:O2'  | 2.09                     | 0.42              |
| 34:BA:1256:A:H61  | 34:BA:1278:U:C2'  | 2.32                     | 0.42              |
| 34:BA:1291:G:C6   | 34:BA:1292:U:C4   | 3.07                     | 0.42              |
| 34:BA:1298:C:C6   | 40:BK:114:ARG:HD3 | 2.53                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1316:G:O3'  | 47:BR:17:LYS:HD2   | 2.19                     | 0.42              |
| 34:BA:1328:C:H2'  | 34:BA:1329:A:H8    | 1.84                     | 0.42              |
| 34:BA:1347:G:H3'  | 42:BM:107:ARG:HB3  | 2.02                     | 0.42              |
| 34:BA:1376:U:H2'  | 34:BA:1377:A:H8    | 1.75                     | 0.42              |
| 34:BA:1393:U:C2'  | 34:BA:1394:A:OP2   | 2.68                     | 0.42              |
| 34:BA:1411:C:C2   | 34:BA:1412:C:C6    | 3.08                     | 0.42              |
| 35:BF:47:THR:HB   | 35:BF:48:MET:SD    | 2.59                     | 0.42              |
| 35:BF:55:PHE:HD2  | 35:BF:221:LEU:HB2  | 1.85                     | 0.42              |
| 35:BF:95:GLN:C    | 35:BF:97:TRP:N     | 2.77                     | 0.42              |
| 35:BF:112:VAL:O   | 35:BF:116:GLU:OE2  | 2.38                     | 0.42              |
| 36:BG:59:ARG:NE   | 36:BG:64:VAL:CA    | 2.64                     | 0.42              |
| 36:BG:147:LYS:HE3 | 36:BG:147:LYS:HA   | 2.02                     | 0.42              |
| 37:BH:128:VAL:CG2 | 37:BH:133:VAL:N    | 2.82                     | 0.42              |
| 37:BH:197:PRO:O   | 37:BH:198:VAL:CG1  | 2.60                     | 0.42              |
| 38:BI:89:ILE:HD11 | 38:BI:122:GLU:OE2  | 2.19                     | 0.42              |
| 38:BI:99:GLY:C    | 38:BI:101:ILE:CD1  | 2.92                     | 0.42              |
| 38:BI:110:LEU:O   | 38:BI:111:GLU:C    | 2.59                     | 0.42              |
| 39:BJ:78:GLU:HA   | 39:BJ:81:ILE:HD12  | 2.02                     | 0.42              |
| 40:BK:69:VAL:O    | 40:BK:138:LYS:HD2  | 2.19                     | 0.42              |
| 40:BK:111:ARG:NH1 | 40:BK:122:HIS:ND1  | 2.67                     | 0.42              |
| 42:BM:33:PHE:HE1  | 42:BM:47:LEU:HB2   | 1.84                     | 0.42              |
| 43:BN:81:THR:O    | 43:BN:83:GLU:N     | 2.52                     | 0.42              |
| 44:BO:21:ILE:O    | 44:BO:21:ILE:HG13  | 2.19                     | 0.42              |
| 44:BO:41:THR:HB   | 44:BO:71:LYS:CD    | 2.50                     | 0.42              |
| 44:BO:44:SER:O    | 44:BO:47:VAL:HB    | 2.20                     | 0.42              |
| 45:BP:100:ILE:O   | 45:BP:101:VAL:HG22 | 2.19                     | 0.42              |
| 46:BQ:50:GLU:HG3  | 46:BQ:54:VAL:CG2   | 2.50                     | 0.42              |
| 48:BS:3:ILE:HA    | 48:BS:38:ARG:HH12  | 1.84                     | 0.42              |
| 49:BT:40:ASP:O    | 49:BT:40:ASP:OD1   | 2.36                     | 0.42              |
| 51:BV:62:GLU:HB3  | 51:BV:66:LEU:HD23  | 2.00                     | 0.42              |
| 52:BW:3:ARG:NH2   | 52:BW:3:ARG:CG     | 2.82                     | 0.42              |
| 52:BW:33:THR:HG21 | 52:BW:49:ILE:CD1   | 2.43                     | 0.42              |
| 53:BX:49:ALA:HB3  | 53:BX:99:LEU:CG    | 2.49                     | 0.42              |
| 53:BX:82:SER:OG   | 53:BX:83:ARG:N     | 2.52                     | 0.42              |
| 55:BC:26:A:C5     | 55:BC:27:G:C5      | 3.07                     | 0.42              |
| 56:BE:15:G:C2     | 56:BE:16:U:O4      | 2.71                     | 0.42              |
| 57:BZ:136:ARG:NH1 | 57:BZ:139:TRP:CZ2  | 2.88                     | 0.42              |
| 57:BZ:164:TYR:CE2 | 57:BZ:175:ASP:CG   | 2.89                     | 0.42              |
| 57:BZ:211:GLN:HB3 | 57:BZ:223:ILE:HG21 | 2.01                     | 0.42              |
| 57:BZ:239:ILE:CG2 | 57:BZ:240:ILE:N    | 2.81                     | 0.42              |
| 57:BZ:293:ASN:CA  | 57:BZ:294:VAL:HB   | 2.49                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:BZ:305:PRO:HB3  | 57:BZ:361:ARG:HE   | 1.83                     | 0.42              |
| 57:BZ:400:TYR:H    | 57:BZ:470:SER:N    | 2.17                     | 0.42              |
| 57:BZ:404:THR:HG22 | 57:BZ:439:LEU:HB2  | 1.71                     | 0.42              |
| 57:BZ:480:VAL:O    | 57:BZ:480:VAL:HG13 | 2.19                     | 0.42              |
| 57:BZ:543:LEU:HB3  | 57:BZ:544:THR:CB   | 2.49                     | 0.42              |
| 1:AA:13:A:C2       | 1:AA:526:A:N7      | 2.88                     | 0.42              |
| 1:AA:73:A:H2'      | 1:AA:74:A:OP2      | 2.19                     | 0.42              |
| 1:AA:197:A:C4      | 1:AA:198:C:C6      | 3.08                     | 0.42              |
| 1:AA:215:G:H1'     | 1:AA:216:A:C5'     | 2.49                     | 0.42              |
| 1:AA:242:G:H2'     | 1:AA:254:G:H1      | 1.85                     | 0.42              |
| 1:AA:310:A:C5      | 1:AA:312:G:C4      | 3.08                     | 0.42              |
| 1:AA:316:C:H2'     | 1:AA:317:G:H8      | 1.85                     | 0.42              |
| 1:AA:410:G:H5''    | 1:AA:411:G:P       | 2.60                     | 0.42              |
| 1:AA:416:C:N3      | 1:AA:2407:G:O6     | 2.52                     | 0.42              |
| 1:AA:483:A:C2      | 1:AA:484:C:C1'     | 3.03                     | 0.42              |
| 1:AA:491:G:H2'     | 1:AA:492:A:C1'     | 2.49                     | 0.42              |
| 1:AA:491:G:C2      | 1:AA:492:A:N3      | 2.88                     | 0.42              |
| 1:AA:619:G:O6      | 6:AF:103:LYS:NZ    | 2.22                     | 0.42              |
| 1:AA:627:A:H61     | 1:AA:638:G:C1'     | 2.15                     | 0.42              |
| 1:AA:652:C:O5'     | 1:AA:652:C:C6      | 2.63                     | 0.42              |
| 1:AA:707:G:C6      | 1:AA:708:C:C4      | 3.08                     | 0.42              |
| 1:AA:774:A:C8      | 1:AA:775:G:N7      | 2.88                     | 0.42              |
| 1:AA:825:C:O2'     | 1:AA:826:U:C5'     | 2.65                     | 0.42              |
| 1:AA:860:U:H5      | 1:AA:2267:A:C4'    | 2.31                     | 0.42              |
| 1:AA:863:A:C2      | 1:AA:864:G:C6      | 3.08                     | 0.42              |
| 1:AA:978:G:N2      | 1:AA:979:G:C2      | 2.88                     | 0.42              |
| 1:AA:985:C:C6      | 1:AA:985:C:O5'     | 2.72                     | 0.42              |
| 1:AA:1069:A:N7     | 1:AA:1073:A:C8     | 2.87                     | 0.42              |
| 1:AA:1152:C:OP1    | 16:AR:81:HIS:CE1   | 2.73                     | 0.42              |
| 1:AA:1197:G:N3     | 1:AA:1197:G:H2'    | 2.34                     | 0.42              |
| 1:AA:1224:G:C3'    | 17:AS:87:HIS:CE1   | 3.02                     | 0.42              |
| 1:AA:1268:A:OP1    | 1:AA:2006:C:OP1    | 2.36                     | 0.42              |
| 1:AA:1358:G:H2'    | 1:AA:1371:G:N2     | 2.34                     | 0.42              |
| 1:AA:1358:G:O2'    | 1:AA:1373:A:N6     | 2.40                     | 0.42              |
| 1:AA:1385:G:O2'    | 1:AA:1386:C:C5'    | 2.68                     | 0.42              |
| 1:AA:1426:G:C3'    | 1:AA:1427:A:H5''   | 2.50                     | 0.42              |
| 1:AA:1496:A:C5     | 1:AA:1577:C:O2'    | 2.72                     | 0.42              |
| 1:AA:1619:G:N2     | 28:Ad:3:ARG:NH1    | 2.68                     | 0.42              |
| 1:AA:1655:A:O3'    | 5:AE:114:ALA:HA    | 2.18                     | 0.42              |
| 1:AA:1657:C:C2'    | 1:AA:1658:C:H6     | 2.21                     | 0.42              |
| 1:AA:1726:G:C5     | 1:AA:1727:U:C4     | 3.08                     | 0.42              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:1767:C:N3   | 1:AA:1768:U:C5    | 2.88                     | 0.42              |
| 1:AA:1811:G:C2'  | 1:AA:1812:A:O4'   | 2.68                     | 0.42              |
| 1:AA:1817:G:H2'  | 1:AA:1818:U:C5'   | 2.49                     | 0.42              |
| 1:AA:1843:C:O2   | 1:AA:1844:C:C6    | 2.73                     | 0.42              |
| 1:AA:1864:U:C2'  | 1:AA:1869:G:C5'   | 2.90                     | 0.42              |
| 1:AA:1935:G:C5   | 1:AA:1962:C:C5    | 3.08                     | 0.42              |
| 1:AA:1949:G:N2   | 1:AA:1958:C:N3    | 2.66                     | 0.42              |
| 1:AA:1964:G:OP1  | 1:AA:1964:G:H8    | 2.02                     | 0.42              |
| 1:AA:1967:C:H2'  | 1:AA:1968:G:H5'   | 2.00                     | 0.42              |
| 1:AA:2083:G:N3   | 1:AA:2084:C:C6    | 2.88                     | 0.42              |
| 1:AA:2096:U:C2   | 1:AA:2097:C:H5    | 2.37                     | 0.42              |
| 1:AA:2115:G:O2'  | 1:AA:2171:A:N6    | 2.52                     | 0.42              |
| 1:AA:2123:G:H1'  | 3:AC:44:HIS:CG    | 2.55                     | 0.42              |
| 1:AA:2312:U:HO2' | 7:AG:40:ASN:ND2   | 2.17                     | 0.42              |
| 1:AA:2353:G:C6   | 1:AA:2365:G:C2    | 3.08                     | 0.42              |
| 1:AA:2395:C:N4   | 1:AA:2396:G:N7    | 2.67                     | 0.42              |
| 1:AA:2440:C:C2'  | 1:AA:2441:C:O5'   | 2.67                     | 0.42              |
| 1:AA:2518:A:H5'' | 1:AA:2519:U:OP2   | 2.19                     | 0.42              |
| 1:AA:2544:G:H2'  | 1:AA:2545:G:C4'   | 2.48                     | 0.42              |
| 1:AA:2545:G:HO2' | 1:AA:2565:A:N6    | 2.17                     | 0.42              |
| 1:AA:2588:G:N2   | 1:AA:2607:G:C5    | 2.87                     | 0.42              |
| 1:AA:2737:G:C4   | 1:AA:2738:A:N7    | 2.87                     | 0.42              |
| 1:AA:2740:A:C2'  | 1:AA:2741:A:H8    | 2.27                     | 0.42              |
| 1:AA:2812:G:C6   | 1:AA:2813:A:C6    | 3.08                     | 0.42              |
| 1:AA:2826:A:H2'  | 1:AA:2827:C:H5'   | 2.01                     | 0.42              |
| 1:AA:2845:G:C4   | 1:AA:2846:G:C8    | 3.08                     | 0.42              |
| 1:AA:2869:G:C2   | 1:AA:2870:C:C2    | 3.08                     | 0.42              |
| 2:AB:99:A:C2'    | 2:AB:100:G:H5'    | 2.49                     | 0.42              |
| 3:AC:10:LEU:CD1  | 3:AC:32:LEU:O     | 2.64                     | 0.42              |
| 3:AC:71:GLN:CG   | 3:AC:174:PRO:HD3  | 2.49                     | 0.42              |
| 3:AC:86:ALA:HB2  | 3:AC:149:ILE:HG12 | 2.00                     | 0.42              |
| 3:AC:163:PHE:O   | 3:AC:164:ARG:HB2  | 2.18                     | 0.42              |
| 4:AD:5:LYS:C     | 4:AD:29:PRO:HD3   | 2.44                     | 0.42              |
| 4:AD:8:PRO:CG    | 4:AD:26:LYS:HG3   | 2.46                     | 0.42              |
| 4:AD:37:LEU:CD1  | 4:AD:64:ILE:N     | 2.79                     | 0.42              |
| 4:AD:78:LYS:CD   | 4:AD:114:GLY:O    | 2.67                     | 0.42              |
| 4:AD:147:LEU:CD2 | 4:AD:154:LYS:HG3  | 2.49                     | 0.42              |
| 4:AD:156:ALA:C   | 4:AD:158:ALA:N    | 2.77                     | 0.42              |
| 4:AD:169:GLU:O   | 4:AD:170:GLY:C    | 2.62                     | 0.42              |
| 4:AD:208:LYS:O   | 4:AD:209:ALA:C    | 2.63                     | 0.42              |
| 5:AE:133:LYS:CE  | 5:AE:137:HIS:CB   | 2.97                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 5:AE:201:THR:C    | 5:AE:202:LYS:CD   | 2.85                     | 0.42              |
| 6:AF:5:ALA:O      | 6:AF:7:TYR:CD1    | 2.73                     | 0.42              |
| 6:AF:153:SER:N    | 6:AF:190:GLU:HG3  | 2.30                     | 0.42              |
| 6:AF:156:LEU:HA   | 6:AF:193:VAL:O    | 2.20                     | 0.42              |
| 7:AG:50:ALA:HA    | 7:AG:70:VAL:HG13  | 2.01                     | 0.42              |
| 7:AG:53:LEU:HA    | 7:AG:72:ARG:HH21  | 1.84                     | 0.42              |
| 7:AG:57:ALA:HB1   | 7:AG:67:LYS:HG3   | 2.00                     | 0.42              |
| 8:AH:6:ARG:H      | 8:AH:7:LEU:HD23   | 1.84                     | 0.42              |
| 8:AH:25:LYS:NZ    | 8:AH:27:LYS:NZ    | 2.67                     | 0.42              |
| 8:AH:85:LYS:CD    | 8:AH:145:ALA:CB   | 2.93                     | 0.42              |
| 8:AH:89:ILE:O     | 8:AH:89:ILE:HG23  | 2.18                     | 0.42              |
| 9:AK:25:ARG:O     | 9:AK:29:LYS:HG3   | 2.20                     | 0.42              |
| 9:AK:77:GLY:O     | 9:AK:78:TYR:O     | 2.37                     | 0.42              |
| 9:AK:95:PRO:CA    | 9:AK:98:VAL:HG23  | 2.46                     | 0.42              |
| 10:AL:17:ARG:NH2  | 10:AL:98:VAL:O    | 2.52                     | 0.42              |
| 10:AL:63:VAL:HB   | 10:AL:78:ARG:CD   | 2.48                     | 0.42              |
| 10:AL:90:GLN:CD   | 10:AL:110:GLY:O   | 2.62                     | 0.42              |
| 10:AL:98:VAL:O    | 10:AL:98:VAL:CG2  | 2.66                     | 0.42              |
| 10:AL:99:PHE:C    | 10:AL:118:ALA:HB1 | 2.43                     | 0.42              |
| 11:AM:49:ARG:NH2  | 11:AM:49:ARG:CG   | 2.81                     | 0.42              |
| 11:AM:77:ARG:CZ   | 11:AM:79:ARG:HB3  | 2.50                     | 0.42              |
| 12:AN:35:VAL:O    | 12:AN:35:VAL:CG1  | 2.66                     | 0.42              |
| 12:AN:37:LEU:HB2  | 12:AN:129:THR:HA  | 2.01                     | 0.42              |
| 12:AN:43:THR:HG23 | 12:AN:46:GLN:NE2  | 2.34                     | 0.42              |
| 13:AO:20:LEU:C    | 13:AO:22:ARG:N    | 2.76                     | 0.42              |
| 13:AO:57:ARG:CZ   | 13:AO:62:ALA:HB2  | 2.44                     | 0.42              |
| 13:AO:57:ARG:CG   | 13:AO:57:ARG:HH11 | 2.31                     | 0.42              |
| 13:AO:109:ALA:O   | 13:AO:111:LEU:HG  | 2.20                     | 0.42              |
| 14:AP:14:VAL:HG12 | 14:AP:15:ARG:H    | 1.81                     | 0.42              |
| 14:AP:34:HIS:O    | 14:AP:35:ILE:O    | 2.37                     | 0.42              |
| 14:AP:57:LYS:CE   | 14:AP:58:LEU:HB3  | 2.49                     | 0.42              |
| 15:AQ:6:LEU:CG    | 15:AQ:7:ILE:N     | 2.82                     | 0.42              |
| 15:AQ:8:LYS:CA    | 15:AQ:11:GLU:OE1  | 2.67                     | 0.42              |
| 15:AQ:20:PRO:HA   | 15:AQ:22:PHE:CE1  | 2.54                     | 0.42              |
| 15:AQ:24:PRO:C    | 15:AQ:25:GLY:O    | 2.63                     | 0.42              |
| 16:AR:25:TRP:CE3  | 16:AR:25:TRP:C    | 2.96                     | 0.42              |
| 18:AT:33:ARG:HH11 | 18:AT:36:LEU:CB   | 2.26                     | 0.42              |
| 19:AU:73:ARG:HH11 | 19:AU:73:ARG:CB   | 2.12                     | 0.42              |
| 19:AU:89:ILE:O    | 19:AU:90:GLU:C    | 2.61                     | 0.42              |
| 21:AW:60:GLU:CD   | 21:AW:67:LEU:O    | 2.62                     | 0.42              |
| 21:AW:103:ARG:O   | 21:AW:138:GLU:HA  | 2.20                     | 0.42              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 21:AW:122:ARG:HB2  | 21:AW:171:ILE:HA  | 2.01                     | 0.42              |
| 21:AW:175:VAL:HG22 | 21:AW:176:PRO:CD  | 2.37                     | 0.42              |
| 22:AX:38:VAL:CG1   | 22:AX:45:PHE:CE1  | 3.03                     | 0.42              |
| 23:AY:19:LEU:HD13  | 23:AY:20:VAL:CA   | 2.49                     | 0.42              |
| 23:AY:50:ARG:CB    | 23:AY:54:ARG:HH12 | 2.31                     | 0.42              |
| 27:Ac:35:GLU:O     | 27:Ac:36:LEU:O    | 2.38                     | 0.42              |
| 28:Ad:21:ARG:C     | 28:Ad:31:LEU:HD11 | 2.44                     | 0.42              |
| 28:Ad:21:ARG:O     | 28:Ad:28:ARG:N    | 2.52                     | 0.42              |
| 28:Ad:35:ARG:O     | 28:Ad:36:GLN:NE2  | 2.52                     | 0.42              |
| 32:AJ:90:LYS:CE    | 32:AJ:90:LYS:HA   | 2.41                     | 0.42              |
| 34:BA:78:G:C6      | 34:BA:79:G:N7     | 2.88                     | 0.42              |
| 34:BA:254:G:N2     | 50:BU:16:GLN:OE1  | 2.53                     | 0.42              |
| 34:BA:265:G:C8     | 34:BA:267:C:C4    | 3.08                     | 0.42              |
| 34:BA:317:G:C2     | 34:BA:318:G:C8    | 3.08                     | 0.42              |
| 34:BA:377:G:H2'    | 34:BA:378:G:H8    | 1.84                     | 0.42              |
| 34:BA:440:A:C2'    | 34:BA:442:C:H6    | 2.31                     | 0.42              |
| 34:BA:450:G:N7     | 34:BA:481:G:C5    | 2.86                     | 0.42              |
| 34:BA:513:C:N4     | 34:BA:514:C:N4    | 2.68                     | 0.42              |
| 34:BA:519:C:C5     | 34:BA:520:A:C2    | 3.07                     | 0.42              |
| 34:BA:608:A:N3     | 34:BA:608:A:C2'   | 2.81                     | 0.42              |
| 34:BA:854:G:OP2    | 34:BA:871:U:O2    | 2.38                     | 0.42              |
| 34:BA:865:A:C5     | 34:BA:866:C:O2    | 2.73                     | 0.42              |
| 34:BA:880:C:OP2    | 45:BP:9:GLN:NE2   | 2.52                     | 0.42              |
| 34:BA:921:U:H2'    | 34:BA:922:G:H8    | 1.83                     | 0.42              |
| 34:BA:961:U:C2'    | 34:BA:962:C:O4'   | 2.65                     | 0.42              |
| 34:BA:971:G:H2'    | 34:BA:1365:G:O2'  | 2.19                     | 0.42              |
| 34:BA:979:C:C5     | 34:BA:980:C:C5    | 3.08                     | 0.42              |
| 34:BA:1044:A:C6    | 34:BA:1045:C:H1'  | 2.55                     | 0.42              |
| 34:BA:1076:C:O2'   | 34:BA:1077:G:H5'  | 2.19                     | 0.42              |
| 34:BA:1109:C:H2'   | 34:BA:1110:A:C5'  | 2.49                     | 0.42              |
| 34:BA:1160:G:O6    | 34:BA:1181:G:N1   | 2.52                     | 0.42              |
| 34:BA:1161:C:C2    | 34:BA:1162:C:N4   | 2.87                     | 0.42              |
| 34:BA:1194:U:H5'   | 38:BI:22:GLY:O    | 2.19                     | 0.42              |
| 34:BA:1250:A:H2'   | 34:BA:1251:A:O4'  | 2.19                     | 0.42              |
| 34:BA:1261:A:C2    | 34:BA:1262:C:N3   | 2.88                     | 0.42              |
| 34:BA:1317:C:C5    | 34:BA:1318:A:C4   | 2.86                     | 0.42              |
| 34:BA:1333:A:H2'   | 34:BA:1334:G:H8   | 1.80                     | 0.42              |
| 34:BA:1348:U:C2    | 34:BA:1349:A:C8   | 3.08                     | 0.42              |
| 34:BA:1433:A:N1    | 34:BA:1434:A:N3   | 2.67                     | 0.42              |
| 34:BA:1486:G:H3'   | 34:BA:1487:G:H5'' | 2.02                     | 0.42              |
| 35:BF:8:LYS:HB3    | 35:BF:9:GLU:H     | 1.61                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BF:59:GLU:O     | 35:BF:60:ASP:C     | 2.62                     | 0.42              |
| 35:BF:73:THR:O     | 35:BF:78:GLN:HB2   | 2.19                     | 0.42              |
| 35:BF:92:TYR:N     | 35:BF:92:TYR:CD2   | 2.87                     | 0.42              |
| 35:BF:105:PHE:O    | 35:BF:109:SER:CB   | 2.67                     | 0.42              |
| 35:BF:115:LEU:O    | 35:BF:118:LEU:HD13 | 2.19                     | 0.42              |
| 35:BF:163:PHE:CZ   | 35:BF:186:ALA:CA   | 3.02                     | 0.42              |
| 35:BF:193:ASP:OD1  | 35:BF:193:ASP:N    | 2.41                     | 0.42              |
| 36:BG:6:HIS:CB     | 47:BR:49:HIS:CE1   | 3.01                     | 0.42              |
| 36:BG:34:LEU:O     | 36:BG:38:ARG:HG2   | 2.19                     | 0.42              |
| 36:BG:43:LEU:CD1   | 36:BG:55:VAL:HG21  | 2.49                     | 0.42              |
| 36:BG:134:ILE:O    | 36:BG:135:LYS:C    | 2.62                     | 0.42              |
| 36:BG:180:ALA:O    | 36:BG:182:ILE:HG13 | 2.20                     | 0.42              |
| 36:BG:182:ILE:HG22 | 36:BG:183:ASP:H    | 1.83                     | 0.42              |
| 36:BG:194:GLY:O    | 36:BG:196:LEU:CD2  | 2.68                     | 0.42              |
| 38:BI:78:HIS:HB3   | 41:BL:104:ARG:HD3  | 1.98                     | 0.42              |
| 38:BI:107:ARG:HB3  | 38:BI:107:ARG:HH11 | 1.84                     | 0.42              |
| 39:BJ:90:VAL:HG13  | 39:BJ:90:VAL:O     | 2.18                     | 0.42              |
| 40:BK:41:ARG:CZ    | 40:BK:41:ARG:HB3   | 2.49                     | 0.42              |
| 40:BK:71:PRO:CD    | 40:BK:96:GLN:HG3   | 2.50                     | 0.42              |
| 40:BK:72:ARG:HH11  | 40:BK:72:ARG:CG    | 2.32                     | 0.42              |
| 40:BK:79:ARG:HD3   | 40:BK:84:ASN:HB3   | 2.01                     | 0.42              |
| 40:BK:121:ALA:HB1  | 40:BK:125:MET:HE3  | 2.00                     | 0.42              |
| 41:BL:26:VAL:HG22  | 41:BL:27:PRO:HD3   | 1.98                     | 0.42              |
| 42:BM:5:TYR:OH     | 42:BM:16:ARG:CG    | 2.67                     | 0.42              |
| 42:BM:33:PHE:CZ    | 42:BM:46:ALA:HB3   | 2.54                     | 0.42              |
| 42:BM:116:LYS:HB3  | 42:BM:122:ALA:N    | 2.34                     | 0.42              |
| 45:BP:46:LYS:HE3   | 45:BP:47:LYS:HZ3   | 1.83                     | 0.42              |
| 46:BQ:27:LYS:HB2   | 54:BY:7:ARG:HH12   | 1.75                     | 0.42              |
| 46:BQ:84:ILE:C     | 46:BQ:86:CYS:N     | 2.77                     | 0.42              |
| 46:BQ:91:ARG:O     | 46:BQ:96:LEU:HD21  | 2.19                     | 0.42              |
| 48:BS:54:ARG:CA    | 48:BS:57:LEU:HD13  | 2.49                     | 0.42              |
| 50:BU:62:SER:HB3   | 50:BU:72:ARG:CD    | 2.48                     | 0.42              |
| 51:BV:71:LYS:O     | 51:BV:75:ILE:HG13  | 2.19                     | 0.42              |
| 52:BW:30:LEU:HD23  | 52:BW:32:LYS:H     | 1.84                     | 0.42              |
| 53:BX:61:SER:O     | 53:BX:65:LYS:HG2   | 2.18                     | 0.42              |
| 55:BC:42:C:H2'     | 55:BC:43:C:H6      | 1.85                     | 0.42              |
| 56:BD:52:G:O6      | 56:BD:63:G:C6      | 2.73                     | 0.42              |
| 56:BD:70:G:O5'     | 56:BD:70:G:C8      | 2.71                     | 0.42              |
| 57:BZ:59:LYS:NZ    | 57:BZ:66:TRP:HZ2   | 2.17                     | 0.42              |
| 57:BZ:171:ILE:O    | 57:BZ:172:ALA:HB3  | 2.20                     | 0.42              |
| 57:BZ:204:PRO:O    | 57:BZ:228:ARG:HB3  | 2.19                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:BZ:274:VAL:C   | 57:BZ:276:ILE:N   | 2.78                     | 0.42              |
| 57:BZ:311:PHE:O   | 57:BZ:355:ALA:N   | 2.46                     | 0.42              |
| 57:BZ:462:THR:O   | 57:BZ:462:THR:OG1 | 2.33                     | 0.42              |
| 1:AA:97:C:C4      | 1:AA:98:G:C8      | 3.08                     | 0.42              |
| 1:AA:199:A:C2     | 1:AA:2433:A:C4    | 3.07                     | 0.42              |
| 1:AA:216:A:O2'    | 1:AA:217:G:O4'    | 2.36                     | 0.42              |
| 1:AA:270(C):C:OP1 | 1:AA:365:C:C2'    | 2.67                     | 0.42              |
| 1:AA:281:G:O2'    | 1:AA:282:A:H5''   | 2.19                     | 0.42              |
| 1:AA:479:A:O2'    | 1:AA:480:A:C8     | 2.69                     | 0.42              |
| 1:AA:482:A:N6     | 1:AA:506:G:C6     | 2.87                     | 0.42              |
| 1:AA:519:U:O5'    | 18:AT:75:TYR:HD1  | 2.02                     | 0.42              |
| 1:AA:520:G:P      | 18:AT:25:ARG:HH12 | 2.41                     | 0.42              |
| 1:AA:533:G:C5     | 1:AA:534:U:C4     | 3.08                     | 0.42              |
| 1:AA:545:G:O3'    | 1:AA:546:C:C5     | 2.72                     | 0.42              |
| 1:AA:565:C:H1'    | 1:AA:577:G:N2     | 2.34                     | 0.42              |
| 1:AA:576:U:OP1    | 1:AA:2503:A:OP1   | 2.38                     | 0.42              |
| 1:AA:617:G:C8     | 1:AA:617:G:H3'    | 2.54                     | 0.42              |
| 1:AA:633:A:H5''   | 1:AA:634:C:OP2    | 2.19                     | 0.42              |
| 1:AA:659:C:C4'    | 6:AF:102:PRO:CD   | 2.97                     | 0.42              |
| 1:AA:667:U:H2'    | 1:AA:668:G:C1'    | 2.50                     | 0.42              |
| 1:AA:685:A:C2'    | 1:AA:686:G:OP2    | 2.67                     | 0.42              |
| 1:AA:693:C:N4     | 1:AA:770:G:O6     | 2.52                     | 0.42              |
| 1:AA:723:G:C2     | 1:AA:724:U:C1'    | 3.02                     | 0.42              |
| 1:AA:728:G:H4'    | 1:AA:729:G:C8     | 2.55                     | 0.42              |
| 1:AA:794:G:C4     | 1:AA:795:C:C5     | 3.08                     | 0.42              |
| 1:AA:860:U:H6     | 1:AA:2267:A:C5'   | 2.33                     | 0.42              |
| 1:AA:895:U:H5''   | 1:AA:896:A:H5''   | 2.00                     | 0.42              |
| 1:AA:909:A:C2     | 1:AA:912:C:C6     | 3.08                     | 0.42              |
| 1:AA:910:A:C6     | 1:AA:911:A:N6     | 2.88                     | 0.42              |
| 1:AA:945:A:C2'    | 1:AA:946:G:C5'    | 2.98                     | 0.42              |
| 1:AA:957:A:C5     | 1:AA:959:A:N7     | 2.87                     | 0.42              |
| 1:AA:1080:C:H5''  | 32:AJ:128:ALA:HB1 | 0.46                     | 0.42              |
| 1:AA:1179:C:C2'   | 1:AA:1180:C:C6    | 3.00                     | 0.42              |
| 1:AA:1388:G:C4    | 1:AA:1400:G:N2    | 2.87                     | 0.42              |
| 1:AA:1529:A:C8    | 1:AA:1530:G:C4    | 3.08                     | 0.42              |
| 1:AA:1571:A:H2'   | 1:AA:1571:A:N3    | 2.35                     | 0.42              |
| 1:AA:1603:A:N3    | 1:AA:1603:A:H2'   | 2.33                     | 0.42              |
| 1:AA:1659:U:H2'   | 1:AA:1660:C:H6    | 1.84                     | 0.42              |
| 1:AA:1727:U:C2'   | 1:AA:1728:G:OP1   | 2.68                     | 0.42              |
| 1:AA:1731:G:N3    | 1:AA:1731:G:C3'   | 2.83                     | 0.42              |
| 1:AA:1741:C:O2'   | 1:AA:1742:C:O4'   | 2.38                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1753:G:N1    | 1:AA:1756:G:C2    | 2.87                     | 0.42              |
| 1:AA:1796:U:H2'   | 1:AA:1797:C:C6    | 2.55                     | 0.42              |
| 1:AA:1842:G:C6    | 1:AA:1901:A:C6    | 3.07                     | 0.42              |
| 1:AA:1887:C:H2'   | 1:AA:1888:G:O4'   | 2.20                     | 0.42              |
| 1:AA:1921:G:C6    | 58:AA:3001:NMY:N6 | 2.88                     | 0.42              |
| 1:AA:1992:G:N2    | 1:AA:1995:U:C5    | 2.83                     | 0.42              |
| 1:AA:2026:C:H2'   | 1:AA:2027:G:O4'   | 2.20                     | 0.42              |
| 1:AA:2033:A:C6    | 1:AA:2036:C:N3    | 2.88                     | 0.42              |
| 1:AA:2129:C:H4'   | 3:AC:6:ARG:HG2    | 0.45                     | 0.42              |
| 1:AA:2132:U:C2    | 1:AA:2133:G:H5''  | 2.54                     | 0.42              |
| 1:AA:2210:G:O6    | 4:AD:70:TRP:CH2   | 2.72                     | 0.42              |
| 1:AA:2253:G:N1    | 59:AA:3003:8AN:C5 | 2.82                     | 0.42              |
| 1:AA:2285:C:C6    | 27:Ac:27:LYS:HE2  | 2.55                     | 0.42              |
| 1:AA:2289:G:H5'   | 1:AA:2384:G:C1'   | 2.39                     | 0.42              |
| 1:AA:2310:A:N1    | 7:AG:80:PHE:CD2   | 2.87                     | 0.42              |
| 1:AA:2338:G:C6    | 1:AA:2339:G:N7    | 2.88                     | 0.42              |
| 1:AA:2373:G:N3    | 1:AA:2374:C:C5    | 2.88                     | 0.42              |
| 1:AA:2389:G:H5''  | 1:AA:2390:U:H6    | 1.84                     | 0.42              |
| 1:AA:2391:G:O6    | 1:AA:2425:A:H5''  | 2.19                     | 0.42              |
| 1:AA:2542:A:O4'   | 1:AA:2542:A:OP1   | 2.38                     | 0.42              |
| 1:AA:2638:G:O2'   | 1:AA:2639:A:H8    | 2.01                     | 0.42              |
| 1:AA:2655:G:N3    | 1:AA:2655:G:H2'   | 2.33                     | 0.42              |
| 1:AA:2699:C:H2'   | 1:AA:2700:C:C5'   | 2.49                     | 0.42              |
| 1:AA:2760:C:O2'   | 1:AA:2761:G:H5'   | 2.19                     | 0.42              |
| 1:AA:2784:C:O2'   | 5:AE:36:ARG:NH2   | 2.53                     | 0.42              |
| 1:AA:2899:G:C4    | 1:AA:2900:A:C8    | 3.08                     | 0.42              |
| 2:AB:59:A:C3'     | 2:AB:60:C:H5'     | 2.49                     | 0.42              |
| 2:AB:73:A:C5      | 2:AB:104:A:N3     | 2.88                     | 0.42              |
| 2:AB:78:A:C4      | 2:AB:99:A:N6      | 2.86                     | 0.42              |
| 3:AC:18:LYS:HG2   | 3:AC:20:TYR:N     | 2.20                     | 0.42              |
| 3:AC:81:GLU:OE2   | 3:AC:82:LYS:CD    | 2.67                     | 0.42              |
| 3:AC:87:GLU:OE2   | 3:AC:94:VAL:CG1   | 2.68                     | 0.42              |
| 3:AC:211:SER:HB2  | 3:AC:213:TYR:OH   | 2.19                     | 0.42              |
| 4:AD:73:VAL:HG12  | 4:AD:120:GLY:HA2  | 2.00                     | 0.42              |
| 4:AD:208:LYS:HB3  | 4:AD:211:ARG:CG   | 2.50                     | 0.42              |
| 5:AE:13:ARG:NE    | 5:AE:21:VAL:N     | 2.68                     | 0.42              |
| 5:AE:38:THR:O     | 5:AE:42:ASP:N     | 2.53                     | 0.42              |
| 5:AE:49:LEU:CG    | 5:AE:76:ARG:O     | 2.67                     | 0.42              |
| 5:AE:104:VAL:HG22 | 5:AE:198:VAL:CA   | 2.49                     | 0.42              |
| 5:AE:119:ARG:CZ   | 5:AE:155:LYS:CG   | 2.98                     | 0.42              |
| 5:AE:152:LYS:CD   | 5:AE:152:LYS:C    | 2.92                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 6:AF:202:PHE:CZ   | 6:AF:205:ARG:NH1   | 2.87                     | 0.42              |
| 7:AG:55:LYS:CE    | 7:AG:152:LEU:HD11  | 2.50                     | 0.42              |
| 7:AG:80:PHE:O     | 7:AG:82:LEU:N      | 2.47                     | 0.42              |
| 7:AG:101:ILE:O    | 7:AG:101:ILE:CD1   | 2.52                     | 0.42              |
| 7:AG:115:ARG:C    | 7:AG:117:PHE:N     | 2.78                     | 0.42              |
| 7:AG:167:GLU:OE1  | 7:AG:167:GLU:N     | 2.45                     | 0.42              |
| 9:AK:15:LEU:CD2   | 9:AK:137:LYS:HB3   | 2.50                     | 0.42              |
| 9:AK:103:VAL:HG22 | 9:AK:104:LYS:CE    | 2.49                     | 0.42              |
| 10:AL:86:ILE:CD1  | 10:AL:90:GLN:HG3   | 2.49                     | 0.42              |
| 11:AM:46:LYS:CA   | 11:AM:49:ARG:NH1   | 2.82                     | 0.42              |
| 11:AM:74:GLU:HB2  | 11:AM:107:LYS:HD3  | 2.01                     | 0.42              |
| 12:AN:125:LEU:H   | 12:AN:125:LEU:CD2  | 2.31                     | 0.42              |
| 13:AO:53:HIS:CE1  | 13:AO:56:LYS:HE2   | 2.54                     | 0.42              |
| 13:AO:90:ARG:CB   | 13:AO:94:TYR:HE2   | 2.33                     | 0.42              |
| 14:AP:11:LYS:CA   | 14:AP:14:VAL:HB    | 2.49                     | 0.42              |
| 15:AQ:3:ARG:HA    | 15:AQ:6:LEU:CD2    | 2.50                     | 0.42              |
| 15:AQ:30:VAL:CG2  | 15:AQ:31:SER:H     | 2.33                     | 0.42              |
| 15:AQ:72:VAL:O    | 15:AQ:74:ARG:HD2   | 2.20                     | 0.42              |
| 16:AR:17:ILE:HG21 | 16:AR:36:ARG:HD3   | 2.02                     | 0.42              |
| 16:AR:66:ASN:HB3  | 16:AR:70:ARG:HD3   | 2.01                     | 0.42              |
| 17:AS:10:LYS:C    | 17:AS:12:TYR:N     | 2.78                     | 0.42              |
| 17:AS:20:LEU:HD13 | 17:AS:95:LEU:HD13  | 2.01                     | 0.42              |
| 17:AS:40:LEU:HD11 | 17:AS:55:ALA:CA    | 2.40                     | 0.42              |
| 18:AT:3:ALA:HB2   | 18:AT:58:ALA:HB2   | 2.01                     | 0.42              |
| 18:AT:19:LEU:HD23 | 26:Ab:25:LEU:HD22  | 2.02                     | 0.42              |
| 18:AT:28:SER:N    | 18:AT:31:GLU:OE2   | 2.30                     | 0.42              |
| 18:AT:39:THR:CG2  | 26:Ab:28:PRO:HB3   | 2.43                     | 0.42              |
| 19:AU:47:PHE:O    | 19:AU:49:VAL:HG13  | 2.19                     | 0.42              |
| 20:AV:15:VAL:O    | 20:AV:16:ALA:C     | 2.61                     | 0.42              |
| 20:AV:46:LYS:HZ3  | 20:AV:47:LYS:HG3   | 1.84                     | 0.42              |
| 21:AW:48:PHE:CA   | 21:AW:54:HIS:HE1   | 2.32                     | 0.42              |
| 21:AW:104:PHE:CE1 | 21:AW:171:ILE:HG13 | 2.55                     | 0.42              |
| 23:AY:28:MET:HB3  | 23:AY:32:PHE:CE1   | 2.54                     | 0.42              |
| 24:AZ:41:PRO:CA   | 24:AZ:44:ARG:NH1   | 2.80                     | 0.42              |
| 24:AZ:41:PRO:CA   | 24:AZ:44:ARG:HH11  | 2.17                     | 0.42              |
| 26:Ab:44:THR:CA   | 26:Ab:52:TYR:OH    | 2.67                     | 0.42              |
| 27:Ac:25:LYS:HG2  | 27:Ac:26:ASN:N     | 2.34                     | 0.42              |
| 27:Ac:33:LYS:CE   | 27:Ac:34:LEU:HD23  | 2.50                     | 0.42              |
| 28:Ad:31:LEU:O    | 28:Ad:35:ARG:CG    | 2.66                     | 0.42              |
| 31:AI:66:LEU:O    | 31:AI:70:GLU:CA    | 2.66                     | 0.42              |
| 32:AJ:56:GLU:HG2  | 32:AJ:57:ILE:H     | 1.84                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:19:C:OP1    | 38:BI:86:ALA:HB1   | 2.20                     | 0.42              |
| 34:BA:50:A:C2     | 34:BA:360:A:H2'    | 2.54                     | 0.42              |
| 34:BA:86:U:C2'    | 34:BA:87:A:H5'     | 2.47                     | 0.42              |
| 34:BA:170:U:O2    | 34:BA:170:U:H2'    | 2.20                     | 0.42              |
| 34:BA:248:C:H4'   | 34:BA:283:C:H1'    | 2.01                     | 0.42              |
| 34:BA:254:G:N3    | 34:BA:255:G:C8     | 2.88                     | 0.42              |
| 34:BA:280:C:C1'   | 50:BU:38:ARG:CZ    | 2.98                     | 0.42              |
| 34:BA:302:G:O6    | 34:BA:303:A:C6     | 2.72                     | 0.42              |
| 34:BA:315:A:N1    | 34:BA:330:C:N1     | 2.67                     | 0.42              |
| 34:BA:425:G:H2'   | 34:BA:426:G:H5'    | 2.01                     | 0.42              |
| 34:BA:427:U:N1    | 34:BA:428:G:N7     | 2.66                     | 0.42              |
| 34:BA:519:C:C2'   | 34:BA:520:A:C5'    | 2.90                     | 0.42              |
| 34:BA:540:G:C6    | 34:BA:541:G:C6     | 3.07                     | 0.42              |
| 34:BA:555:C:H2'   | 34:BA:555:C:O2     | 2.18                     | 0.42              |
| 34:BA:573:A:C2'   | 34:BA:574:A:C8     | 2.92                     | 0.42              |
| 34:BA:611:A:N6    | 34:BA:629:G:C6     | 2.74                     | 0.42              |
| 34:BA:687:A:C2    | 34:BA:704:A:C5     | 3.07                     | 0.42              |
| 34:BA:728:A:C8    | 48:BS:54:ARG:NH1   | 2.88                     | 0.42              |
| 34:BA:738:C:C4    | 34:BA:739:C:N4     | 2.88                     | 0.42              |
| 34:BA:740:U:OP2   | 48:BS:2:PRO:HB3    | 2.20                     | 0.42              |
| 34:BA:755:G:H2'   | 34:BA:756:C:H6     | 1.83                     | 0.42              |
| 34:BA:766:A:C2'   | 34:BA:767:A:C8     | 2.99                     | 0.42              |
| 34:BA:797:C:HO2'  | 34:BA:798:G:H5'    | 1.77                     | 0.42              |
| 34:BA:900:A:C4    | 34:BA:901:A:N7     | 2.87                     | 0.42              |
| 34:BA:906:G:H5'   | 34:BA:907:A:OP2    | 2.20                     | 0.42              |
| 34:BA:972:C:OP2   | 43:BN:57:LYS:NZ    | 2.52                     | 0.42              |
| 34:BA:1001:G:H3'  | 34:BA:1001:G:C8    | 2.55                     | 0.42              |
| 34:BA:1068:G:O6   | 34:BA:1108:G:N3    | 2.53                     | 0.42              |
| 34:BA:1087:G:H2'  | 34:BA:1088:G:H8    | 1.84                     | 0.42              |
| 34:BA:1191:A:H5'' | 36:BG:4:LYS:CE     | 2.50                     | 0.42              |
| 34:BA:1287:A:H61  | 34:BA:1371:G:H5'   | 1.85                     | 0.42              |
| 34:BA:1305:G:O4'  | 34:BA:1305:G:OP2   | 2.38                     | 0.42              |
| 34:BA:1331:G:O2'  | 34:BA:1332:A:P     | 2.78                     | 0.42              |
| 34:BA:1414:U:O4   | 34:BA:1487:G:C6    | 2.63                     | 0.42              |
| 34:BA:1537:U:C4   | 34:BA:1538:C:C5    | 3.07                     | 0.42              |
| 35:BF:44:LEU:HB2  | 35:BF:45:GLN:H     | 1.62                     | 0.42              |
| 35:BF:55:PHE:HA   | 35:BF:58:ILE:HG13  | 2.01                     | 0.42              |
| 35:BF:84:GLU:OE2  | 35:BF:84:GLU:CA    | 2.68                     | 0.42              |
| 35:BF:92:TYR:O    | 35:BF:152:PHE:CA   | 2.67                     | 0.42              |
| 35:BF:177:ALA:CB  | 35:BF:184:VAL:HG22 | 2.49                     | 0.42              |
| 36:BG:28:GLN:CA   | 36:BG:30:ARG:CZ    | 2.95                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 36:BG:54:ARG:O     | 36:BG:68:VAL:HG13  | 2.19                     | 0.42              |
| 36:BG:97:LYS:O     | 36:BG:98:ASN:O     | 2.37                     | 0.42              |
| 36:BG:175:LEU:O    | 36:BG:176:HIS:O    | 2.37                     | 0.42              |
| 37:BH:76:ARG:HG3   | 37:BH:207:TYR:CD2  | 2.54                     | 0.42              |
| 37:BH:78:LEU:O     | 37:BH:81:GLU:HB3   | 2.19                     | 0.42              |
| 37:BH:101:LEU:HD21 | 37:BH:121:VAL:CG1  | 2.50                     | 0.42              |
| 37:BH:151:LYS:CD   | 37:BH:151:LYS:N    | 2.78                     | 0.42              |
| 37:BH:193:ASP:OD2  | 37:BH:194:LEU:CD2  | 2.67                     | 0.42              |
| 38:BI:105:VAL:HG12 | 38:BI:106:PRO:HD3  | 1.99                     | 0.42              |
| 38:BI:137:GLU:CD   | 38:BI:140:ARG:HH12 | 2.23                     | 0.42              |
| 38:BI:152:ARG:O    | 38:BI:152:ARG:HD3  | 2.19                     | 0.42              |
| 39:BJ:9:VAL:HG22   | 39:BJ:60:PHE:CD2   | 2.53                     | 0.42              |
| 40:BK:10:ARG:HH11  | 40:BK:10:ARG:CB    | 2.33                     | 0.42              |
| 40:BK:110:GLN:O    | 40:BK:111:ARG:C    | 2.63                     | 0.42              |
| 41:BL:75:ARG:CG    | 41:BL:75:ARG:HH11  | 2.32                     | 0.42              |
| 42:BM:8:GLY:O      | 42:BM:15:ALA:O     | 2.37                     | 0.42              |
| 42:BM:33:PHE:CE2   | 42:BM:43:ALA:O     | 2.73                     | 0.42              |
| 42:BM:71:SER:O     | 42:BM:72:GLY:C     | 2.63                     | 0.42              |
| 44:BO:66:LEU:O     | 44:BO:67:ASP:C     | 2.61                     | 0.42              |
| 45:BP:119:LYS:HB2  | 45:BP:119:LYS:HE3  | 1.67                     | 0.42              |
| 46:BQ:64:TRP:C     | 46:BQ:65:LYS:CD    | 2.88                     | 0.42              |
| 48:BS:8:LYS:HE2    | 48:BS:9:GLN:NE2    | 2.35                     | 0.42              |
| 48:BS:18:PHE:CE1   | 48:BS:21:ASP:HB2   | 2.53                     | 0.42              |
| 48:BS:39:LEU:HD22  | 48:BS:56:LEU:CD2   | 2.42                     | 0.42              |
| 49:BT:19:ILE:O     | 49:BT:36:ILE:O     | 2.37                     | 0.42              |
| 51:BV:70:ILE:O     | 51:BV:74:ARG:CD    | 2.59                     | 0.42              |
| 52:BW:40:ILE:CB    | 52:BW:67:VAL:O     | 2.65                     | 0.42              |
| 52:BW:53:ASN:HD21  | 52:BW:56:GLN:CB    | 2.13                     | 0.42              |
| 53:BX:41:ILE:O     | 53:BX:91:LEU:CD1   | 2.68                     | 0.42              |
| 53:BX:99:LEU:HD23  | 53:BX:99:LEU:N     | 2.33                     | 0.42              |
| 54:BY:18:TYR:HA    | 54:BY:22:ARG:HB3   | 2.02                     | 0.42              |
| 56:BD:52:G:C2      | 56:BD:63:G:C2      | 3.07                     | 0.42              |
| 57:BZ:9:ALA:CB     | 57:BZ:88:VAL:HG11  | 2.49                     | 0.42              |
| 57:BZ:52:ARG:NH1   | 57:BZ:54:ILE:HG12  | 2.34                     | 0.42              |
| 57:BZ:128:ASN:O    | 57:BZ:129:LYS:HB2  | 2.20                     | 0.42              |
| 57:BZ:148:PHE:C    | 57:BZ:150:ASN:N    | 2.78                     | 0.42              |
| 57:BZ:158:LEU:N    | 57:BZ:159:ASP:HB3  | 2.34                     | 0.42              |
| 57:BZ:206:GLN:HE21 | 57:BZ:227:LYS:CB   | 2.31                     | 0.42              |
| 57:BZ:214:TYR:CE2  | 57:BZ:219:GLY:HA2  | 2.54                     | 0.42              |
| 57:BZ:382:VAL:HA   | 57:BZ:383:SER:O    | 2.19                     | 0.42              |
| 57:BZ:404:THR:HG21 | 57:BZ:437:VAL:O    | 2.20                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:BZ:564:THR:CG2 | 57:BZ:566:GLU:CG  | 2.83                     | 0.42              |
| 1:AA:26:G:N2      | 1:AA:27:G:C2      | 2.87                     | 0.42              |
| 1:AA:28:A:N3      | 1:AA:29:U:H4'     | 2.34                     | 0.42              |
| 1:AA:120:U:C5     | 1:AA:150:C:H5     | 2.37                     | 0.42              |
| 1:AA:154:G:C2     | 1:AA:155:C:C2     | 3.07                     | 0.42              |
| 1:AA:247:G:C6     | 29:Ae:11:LYS:NZ   | 2.87                     | 0.42              |
| 1:AA:270:A:O2'    | 1:AA:270(A):A:OP1 | 2.32                     | 0.42              |
| 1:AA:276:A:N3     | 1:AA:276:A:C2'    | 2.82                     | 0.42              |
| 1:AA:402:A:N1     | 1:AA:403:U:C6     | 2.88                     | 0.42              |
| 1:AA:471:A:C5     | 1:AA:472:A:N7     | 2.87                     | 0.42              |
| 1:AA:515:A:N7     | 1:AA:516:C:C5     | 2.87                     | 0.42              |
| 1:AA:564:C:H1'    | 16:AR:37:GLU:OE2  | 2.17                     | 0.42              |
| 1:AA:601:C:O2'    | 1:AA:604:G:OP1    | 2.37                     | 0.42              |
| 1:AA:659:C:C2     | 1:AA:660:G:C8     | 3.07                     | 0.42              |
| 1:AA:669:G:C5     | 1:AA:801:G:N1     | 2.88                     | 0.42              |
| 1:AA:684:G:C2     | 1:AA:794:G:N2     | 2.87                     | 0.42              |
| 1:AA:724:U:O2     | 1:AA:725:G:O4'    | 2.38                     | 0.42              |
| 1:AA:740:U:O5'    | 1:AA:1784:A:C6    | 2.72                     | 0.42              |
| 1:AA:756:C:C4     | 1:AA:757:U:C5     | 3.08                     | 0.42              |
| 1:AA:757:U:H2'    | 1:AA:758:C:O5'    | 2.20                     | 0.42              |
| 1:AA:771:G:N3     | 1:AA:772:C:C5     | 2.88                     | 0.42              |
| 1:AA:866:A:H2'    | 1:AA:867:C:O5'    | 2.20                     | 0.42              |
| 1:AA:883:G:O6     | 1:AA:884:C:H5     | 2.01                     | 0.42              |
| 1:AA:928:G:O2'    | 24:AZ:43:ILE:CD1  | 2.67                     | 0.42              |
| 1:AA:958:U:HO2'   | 1:AA:959:A:P      | 2.43                     | 0.42              |
| 1:AA:973:A:C1'    | 1:AA:1188:U:C5    | 3.02                     | 0.42              |
| 1:AA:1031:G:N1    | 1:AA:1032:A:C5    | 2.87                     | 0.42              |
| 1:AA:1031:G:C4    | 1:AA:1032:A:N7    | 2.88                     | 0.42              |
| 1:AA:1036:G:C4    | 1:AA:1120:G:N1    | 2.87                     | 0.42              |
| 1:AA:1069:A:C2    | 1:AA:1073:A:OP2   | 2.73                     | 0.42              |
| 1:AA:1069:A:C5'   | 1:AA:1070:A:N7    | 2.82                     | 0.42              |
| 1:AA:1080:C:C6    | 1:AA:1080:C:C3'   | 3.02                     | 0.42              |
| 1:AA:1179:C:OP2   | 1:AA:1179:C:H3'   | 2.19                     | 0.42              |
| 1:AA:1212:G:C6    | 1:AA:1236:G:C6    | 3.08                     | 0.42              |
| 1:AA:1305:C:O2'   | 1:AA:1306:C:H5'   | 2.19                     | 0.42              |
| 1:AA:1313:U:C2'   | 1:AA:1314:C:H5'   | 2.49                     | 0.42              |
| 1:AA:1314:C:N3    | 1:AA:1315:C:C4    | 2.88                     | 0.42              |
| 1:AA:1389:G:C2    | 1:AA:1390:U:C4    | 3.07                     | 0.42              |
| 1:AA:1426:G:H3'   | 1:AA:1427:A:H8    | 1.84                     | 0.42              |
| 1:AA:1519:G:H3'   | 1:AA:1520:U:O4'   | 2.18                     | 0.42              |
| 1:AA:1535:U:O2    | 1:AA:1536:A:H1'   | 2.19                     | 0.42              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:1545:A:H3'  | 1:AA:1545(A):A:C8 | 2.54                     | 0.42              |
| 1:AA:1608:A:H2'  | 1:AA:1611:C:H41   | 1.84                     | 0.42              |
| 1:AA:1631:A:C6   | 1:AA:1632:A:C2    | 3.08                     | 0.42              |
| 1:AA:1668:A:H2   | 1:AA:1994:C:C6    | 2.38                     | 0.42              |
| 1:AA:1769:G:C5   | 1:AA:1984:G:C6    | 3.08                     | 0.42              |
| 1:AA:1835:G:C2   | 1:AA:1836:C:C6    | 3.08                     | 0.42              |
| 1:AA:1855:G:C5   | 1:AA:1856:G:N7    | 2.88                     | 0.42              |
| 1:AA:1964:G:C6   | 1:AA:1967:C:H5    | 2.38                     | 0.42              |
| 1:AA:1988:C:C2   | 1:AA:1989:G:C8    | 3.08                     | 0.42              |
| 1:AA:1997:G:N2   | 1:AA:1998:G:C4    | 2.87                     | 0.42              |
| 1:AA:2019:A:C3'  | 1:AA:2020:A:C5'   | 2.91                     | 0.42              |
| 1:AA:2042:A:H2'  | 1:AA:2043:C:OP2   | 2.19                     | 0.42              |
| 1:AA:2088:G:C6   | 1:AA:2089:U:N3    | 2.87                     | 0.42              |
| 1:AA:2093:G:O2'  | 1:AA:2094:G:H5'   | 2.19                     | 0.42              |
| 1:AA:2133:G:O6   | 1:AA:2157:G:H1'   | 2.19                     | 0.42              |
| 1:AA:2284:C:C2   | 1:AA:2285:C:C5    | 3.07                     | 0.42              |
| 1:AA:2346:A:C2   | 1:AA:2383:G:C2    | 3.07                     | 0.42              |
| 1:AA:2390:U:O2'  | 1:AA:2391:G:C5'   | 2.58                     | 0.42              |
| 1:AA:2423:U:O4'  | 1:AA:2425:A:C8    | 2.72                     | 0.42              |
| 1:AA:2433:A:N3   | 1:AA:2433:A:C2'   | 2.76                     | 0.42              |
| 1:AA:2472:G:C4   | 1:AA:2475:C:N3    | 2.88                     | 0.42              |
| 1:AA:2493:U:H6   | 1:AA:2493:U:C3'   | 2.19                     | 0.42              |
| 1:AA:2532:G:C2'  | 1:AA:2664:G:HO2'  | 2.32                     | 0.42              |
| 1:AA:2570:G:N3   | 1:AA:2570:G:C2'   | 2.82                     | 0.42              |
| 1:AA:2661:G:O6   | 8:AH:175:LYS:HE2  | 2.05                     | 0.42              |
| 1:AA:2671:A:H2'  | 1:AA:2672:G:H8    | 1.75                     | 0.42              |
| 1:AA:2678:C:H2'  | 1:AA:2679:A:H8    | 1.85                     | 0.42              |
| 1:AA:2685:G:H4'  | 10:AL:66:LYS:NZ   | 2.34                     | 0.42              |
| 1:AA:2756:U:O2'  | 1:AA:2757:A:P     | 2.78                     | 0.42              |
| 1:AA:2772:C:N3   | 1:AA:2773:C:C5    | 2.88                     | 0.42              |
| 1:AA:2808:U:O2   | 1:AA:2810:A:C8    | 2.72                     | 0.42              |
| 2:AB:19:G:N2     | 2:AB:20:C:C2      | 2.88                     | 0.42              |
| 2:AB:117:G:N3    | 2:AB:117:G:C2'    | 2.81                     | 0.42              |
| 3:AC:65:PRO:CD   | 3:AC:187:ASP:OD1  | 2.51                     | 0.42              |
| 3:AC:65:PRO:O    | 3:AC:66:HIS:CB    | 2.68                     | 0.42              |
| 3:AC:163:PHE:HA  | 3:AC:171:ILE:CD1  | 2.47                     | 0.42              |
| 3:AC:180:PHE:HB3 | 3:AC:182:PRO:HA   | 1.98                     | 0.42              |
| 4:AD:37:LEU:HA   | 4:AD:37:LEU:HD13  | 1.69                     | 0.42              |
| 4:AD:49:ILE:HD12 | 4:AD:49:ILE:H     | 1.84                     | 0.42              |
| 4:AD:131:LEU:HA  | 4:AD:131:LEU:HD12 | 1.68                     | 0.42              |
| 4:AD:181:GLU:C   | 4:AD:182:LEU:HG   | 2.44                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 5:AE:21:VAL:HA     | 5:AE:22:PRO:HD3    | 1.90                     | 0.42              |
| 5:AE:156:MET:O     | 5:AE:157:ALA:O     | 2.38                     | 0.42              |
| 6:AF:78:ILE:HD13   | 6:AF:83:PHE:HZ     | 1.85                     | 0.42              |
| 6:AF:111:ALA:O     | 6:AF:112:MET:C     | 2.62                     | 0.42              |
| 6:AF:149:ASP:C     | 6:AF:172:TRP:NE1   | 2.78                     | 0.42              |
| 7:AG:53:LEU:N      | 7:AG:53:LEU:HD12   | 2.35                     | 0.42              |
| 7:AG:63:ILE:HD12   | 7:AG:63:ILE:HA     | 1.93                     | 0.42              |
| 9:AK:33:LEU:HD11   | 9:AK:52:VAL:CB     | 2.49                     | 0.42              |
| 10:AL:77:ILE:CA    | 10:AL:78:ARG:NH1   | 2.82                     | 0.42              |
| 11:AM:70:GLN:O     | 11:AM:71:VAL:HG23  | 2.19                     | 0.42              |
| 11:AM:128:HIS:HA   | 11:AM:147:LEU:HD22 | 1.96                     | 0.42              |
| 12:AN:88:GLY:O     | 12:AN:89:ASN:HB2   | 2.20                     | 0.42              |
| 13:AO:84:ALA:N     | 13:AO:85:PRO:CD    | 2.81                     | 0.42              |
| 14:AP:49:VAL:HG11  | 14:AP:77:ALA:HA    | 2.02                     | 0.42              |
| 16:AR:31:SER:O     | 16:AR:35:ALA:N     | 2.39                     | 0.42              |
| 16:AR:67:ALA:CB    | 16:AR:71:GLN:HE22  | 2.21                     | 0.42              |
| 16:AR:88:ILE:HB    | 17:AS:52:VAL:HA    | 2.01                     | 0.42              |
| 16:AR:111:GLU:C    | 16:AR:114:LYS:HE3  | 2.45                     | 0.42              |
| 17:AS:71:LEU:HA    | 17:AS:71:LEU:HD23  | 1.84                     | 0.42              |
| 18:AT:3:ALA:HB3    | 18:AT:107:LEU:CB   | 2.42                     | 0.42              |
| 18:AT:13:SER:CB    | 18:AT:14:PRO:HD2   | 2.34                     | 0.42              |
| 18:AT:56:ALA:O     | 18:AT:57:ASN:C     | 2.62                     | 0.42              |
| 18:AT:58:ALA:HB1   | 18:AT:69:LEU:HD21  | 2.01                     | 0.42              |
| 19:AU:15:GLU:O     | 19:AU:18:TYR:HB2   | 2.19                     | 0.42              |
| 20:AV:9:LYS:H      | 20:AV:9:LYS:HG3    | 1.53                     | 0.42              |
| 20:AV:104:GLY:O    | 20:AV:105:ALA:C    | 2.62                     | 0.42              |
| 21:AW:19:ARG:HH21  | 21:AW:84:GLU:CA    | 2.32                     | 0.42              |
| 21:AW:20:ARG:NH1   | 21:AW:20:ARG:CG    | 2.82                     | 0.42              |
| 21:AW:41:LEU:H     | 21:AW:41:LEU:HG    | 1.62                     | 0.42              |
| 21:AW:98:MET:HE2   | 21:AW:100:VAL:HG12 | 2.02                     | 0.42              |
| 21:AW:116:VAL:HG12 | 21:AW:176:PRO:CA   | 2.49                     | 0.42              |
| 21:AW:162:GLU:OE1  | 21:AW:162:GLU:HA   | 2.19                     | 0.42              |
| 22:AX:27:GLU:OE1   | 22:AX:27:GLU:CA    | 2.68                     | 0.42              |
| 23:AY:26:GLU:HA    | 23:AY:29:GLU:CG    | 2.50                     | 0.42              |
| 23:AY:27:LEU:O     | 23:AY:28:MET:C     | 2.62                     | 0.42              |
| 24:AZ:7:LYS:HE2    | 24:AZ:32:GLN:HA    | 2.02                     | 0.42              |
| 25:Aa:12:ALA:HB1   | 25:Aa:13:ARG:H     | 1.59                     | 0.42              |
| 28:Ad:18:PHE:HB3   | 28:Ad:22:MET:HE2   | 2.02                     | 0.42              |
| 29:Ae:6:THR:C      | 29:Ae:8:LYS:N      | 2.74                     | 0.42              |
| 29:Ae:62:LEU:N     | 29:Ae:63:PRO:CD    | 2.81                     | 0.42              |
| 30:Af:7:VAL:CG2    | 30:Af:36:GLN:NE2   | 2.77                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 30:Af:14:CYS:SG    | 30:Af:32:HIS:CD2   | 3.13                     | 0.42              |
| 30:Af:19:ARG:HD2   | 30:Af:24:TYR:CD2   | 2.55                     | 0.42              |
| 32:AJ:36:GLU:O     | 32:AJ:36:GLU:HG3   | 2.19                     | 0.42              |
| 32:AJ:51:ALA:O     | 32:AJ:52:ILE:HB    | 2.19                     | 0.42              |
| 34:BA:24:U:O2'     | 34:BA:25:C:H5'     | 2.20                     | 0.42              |
| 34:BA:32:A:OP1     | 34:BA:398:C:H1'    | 2.20                     | 0.42              |
| 34:BA:46:G:C4      | 34:BA:396:G:N1     | 2.88                     | 0.42              |
| 34:BA:147:G:C6     | 34:BA:148:G:C5     | 3.08                     | 0.42              |
| 34:BA:194:C:H4'    | 53:BX:68:LYS:HE2   | 2.00                     | 0.42              |
| 34:BA:293:G:C2     | 34:BA:294:U:C6     | 3.07                     | 0.42              |
| 34:BA:390:C:C2     | 34:BA:391:G:N7     | 2.88                     | 0.42              |
| 34:BA:579:G:O5'    | 34:BA:579:G:C8     | 2.68                     | 0.42              |
| 34:BA:667:G:C6     | 34:BA:740:U:C4     | 3.08                     | 0.42              |
| 34:BA:748:C:O2'    | 34:BA:749:C:O4'    | 2.38                     | 0.42              |
| 34:BA:760:G:N1     | 50:BU:105:ALA:OXT  | 2.40                     | 0.42              |
| 34:BA:766:A:C8     | 34:BA:814:A:N1     | 2.87                     | 0.42              |
| 34:BA:855:G:H2'    | 34:BA:856:C:C5'    | 2.49                     | 0.42              |
| 34:BA:994:A:N7     | 34:BA:1216:G:C4'   | 2.69                     | 0.42              |
| 34:BA:1003:G:OP2   | 34:BA:1004:A:C2    | 2.73                     | 0.42              |
| 34:BA:1030:C:H2'   | 34:BA:1031:G:C8    | 2.55                     | 0.42              |
| 34:BA:1067:A:N3    | 34:BA:1068:G:C1'   | 2.83                     | 0.42              |
| 34:BA:1073:U:C2    | 34:BA:1074:G:C8    | 3.08                     | 0.42              |
| 34:BA:1107:C:C3'   | 34:BA:1108:G:H5'   | 2.49                     | 0.42              |
| 34:BA:1202:G:O2'   | 34:BA:1203:C:O5'   | 2.38                     | 0.42              |
| 34:BA:1276:G:HO2'  | 34:BA:1282:C:H4'   | 1.85                     | 0.42              |
| 34:BA:1297:C:H5'   | 34:BA:1298:C:OP1   | 2.19                     | 0.42              |
| 34:BA:1324:A:C2    | 34:BA:1325:C:C6    | 3.07                     | 0.42              |
| 34:BA:1438:G:C5    | 34:BA:1439:C:C4    | 3.07                     | 0.42              |
| 35:BF:114:ARG:O    | 35:BF:118:LEU:CB   | 2.68                     | 0.42              |
| 35:BF:126:GLU:O    | 35:BF:127:ILE:O    | 2.37                     | 0.42              |
| 35:BF:157:ARG:CA   | 35:BF:158:LEU:HD23 | 2.50                     | 0.42              |
| 35:BF:228:GLY:O    | 35:BF:230:VAL:HG23 | 2.19                     | 0.42              |
| 36:BG:16:ARG:O     | 36:BG:17:ASP:CG    | 2.63                     | 0.42              |
| 36:BG:33:LEU:HD11  | 47:BR:54:PRO:CD    | 2.29                     | 0.42              |
| 36:BG:34:LEU:HD23  | 36:BG:34:LEU:C     | 2.44                     | 0.42              |
| 36:BG:66:VAL:O     | 36:BG:102:ASN:ND2  | 2.53                     | 0.42              |
| 36:BG:131:ARG:HH22 | 38:BI:51:VAL:HG23  | 1.85                     | 0.42              |
| 36:BG:182:ILE:HD11 | 36:BG:203:PHE:CE1  | 2.54                     | 0.42              |
| 37:BH:6:GLY:O      | 37:BH:8:VAL:N      | 2.52                     | 0.42              |
| 37:BH:32:ALA:HA    | 37:BH:37:PRO:HA    | 2.02                     | 0.42              |
| 37:BH:126:ILE:O    | 37:BH:132:ARG:HB2  | 2.20                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 37:BH:145:GLU:CG   | 37:BH:184:LYS:HE2  | 2.44                     | 0.42              |
| 39:BJ:46:ARG:NH2   | 51:BV:37:VAL:HG21  | 2.35                     | 0.42              |
| 39:BJ:74:ASP:O     | 39:BJ:75:LEU:C     | 2.60                     | 0.42              |
| 40:BK:34:GLY:O     | 40:BK:35:LYS:C     | 2.63                     | 0.42              |
| 40:BK:72:ARG:HH12  | 40:BK:138:LYS:HZ1  | 1.68                     | 0.42              |
| 41:BL:28:ALA:HB3   | 41:BL:57:PRO:O     | 2.20                     | 0.42              |
| 41:BL:87:SER:HB3   | 41:BL:93:VAL:N     | 2.30                     | 0.42              |
| 41:BL:101:PRO:O    | 41:BL:102:ARG:CG   | 2.67                     | 0.42              |
| 41:BL:101:PRO:HG2  | 41:BL:102:ARG:N    | 2.32                     | 0.42              |
| 41:BL:102:ARG:CG   | 41:BL:102:ARG:HH11 | 2.32                     | 0.42              |
| 41:BL:104:ARG:HD3  | 41:BL:107:LEU:HD11 | 2.01                     | 0.42              |
| 43:BN:48:THR:OG1   | 43:BN:62:HIS:CD2   | 2.72                     | 0.42              |
| 43:BN:79:ARG:NH2   | 43:BN:82:ILE:CG2   | 2.82                     | 0.42              |
| 44:BO:122:LYS:O    | 44:BO:124:LYS:N    | 2.53                     | 0.42              |
| 45:BP:33:ARG:C     | 45:BP:84:LEU:HD12  | 2.44                     | 0.42              |
| 45:BP:43:VAL:HG12  | 45:BP:44:THR:N     | 2.33                     | 0.42              |
| 48:BS:5:LYS:HG3    | 48:BS:6:GLU:OE2    | 2.19                     | 0.42              |
| 49:BT:8:ARG:NH1    | 49:BT:11:SER:O     | 2.51                     | 0.42              |
| 49:BT:20:VAL:HG11  | 49:BT:32:TYR:CG    | 2.54                     | 0.42              |
| 49:BT:35:LYS:NZ    | 49:BT:37:GLY:CA    | 2.83                     | 0.42              |
| 49:BT:55:ARG:HH21  | 49:BT:58:TYR:CB    | 2.32                     | 0.42              |
| 50:BU:68:ARG:N     | 50:BU:70:ARG:CZ    | 2.83                     | 0.42              |
| 51:BV:18:ARG:HH21  | 51:BV:21:LYS:CG    | 2.33                     | 0.42              |
| 52:BW:18:LYS:HE2   | 52:BW:22:LEU:CB    | 2.48                     | 0.42              |
| 52:BW:48:THR:HG23  | 52:BW:60:VAL:O     | 2.20                     | 0.42              |
| 53:BX:57:ARG:C     | 53:BX:59:ALA:H     | 2.28                     | 0.42              |
| 56:BD:7:A:C6       | 56:BD:66:U:C2      | 3.07                     | 0.42              |
| 56:BD:48:C:C2'     | 56:BD:59:U:O4'     | 2.67                     | 0.42              |
| 56:BE:39:U:O2'     | 56:BE:40:C:H5'     | 2.20                     | 0.42              |
| 56:BE:44:G:O2'     | 56:BE:45:U:H5'     | 2.20                     | 0.42              |
| 57:BZ:240:ILE:HG12 | 57:BZ:297:LEU:HD21 | 2.01                     | 0.42              |
| 57:BZ:246:THR:OG1  | 57:BZ:247:ARG:N    | 2.49                     | 0.42              |
| 57:BZ:364:LEU:HA   | 57:BZ:364:LEU:HD23 | 1.78                     | 0.42              |
| 57:BZ:408:GLU:O    | 57:BZ:410:GLN:N    | 2.51                     | 0.42              |
| 57:BZ:515:GLY:O    | 57:BZ:516:ALA:O    | 2.38                     | 0.42              |
| 57:BZ:572:ILE:O    | 57:BZ:573:ASP:HB2  | 2.19                     | 0.42              |
| 1:AA:73:A:C2'      | 1:AA:74:A:OP2      | 2.67                     | 0.42              |
| 1:AA:74:A:C2       | 23:AY:46:ARG:NE    | 2.88                     | 0.42              |
| 1:AA:126:A:C5'     | 28:Ad:18:PHE:HD1   | 2.32                     | 0.42              |
| 1:AA:141:A:C2      | 1:AA:1596:A:C2'    | 3.01                     | 0.42              |
| 1:AA:194:G:O5'     | 1:AA:194:G:H8      | 2.03                     | 0.42              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:AA:247:G:N1   | 29:Ae:11:LYS:NZ  | 2.68                     | 0.42              |
| 1:AA:262:A:C4   | 1:AA:263:C:C6    | 3.08                     | 0.42              |
| 1:AA:303:U:C2'  | 1:AA:304:G:C5'   | 2.97                     | 0.42              |
| 1:AA:360:G:C8   | 1:AA:361:G:C8    | 3.07                     | 0.42              |
| 1:AA:477:A:C4   | 1:AA:478:A:N7    | 2.88                     | 0.42              |
| 1:AA:527:C:C5   | 1:AA:2779:U:H3'  | 2.54                     | 0.42              |
| 1:AA:559:G:C8   | 1:AA:559:G:C5'   | 2.98                     | 0.42              |
| 1:AA:647:G:C2   | 1:AA:648:G:C5    | 3.07                     | 0.42              |
| 1:AA:671:C:C4   | 1:AA:672:C:N4    | 2.87                     | 0.42              |
| 1:AA:814:C:P    | 17:AS:85:LYS:HB2 | 2.59                     | 0.42              |
| 1:AA:849:A:H2'  | 1:AA:850:C:H6    | 1.84                     | 0.42              |
| 1:AA:892:G:HO2' | 1:AA:893:C:C1'   | 2.22                     | 0.42              |
| 1:AA:899:A:H2   | 1:AA:900:A:H2    | 1.53                     | 0.42              |
| 1:AA:901:A:C2   | 1:AA:902:C:N1    | 2.88                     | 0.42              |
| 1:AA:932:G:C2'  | 1:AA:933:A:C8    | 2.87                     | 0.42              |
| 1:AA:960:A:C5   | 1:AA:962:G:C8    | 3.08                     | 0.42              |
| 1:AA:1072:C:O2' | 1:AA:1093:G:C5   | 2.71                     | 0.42              |
| 1:AA:1100:C:H2' | 1:AA:1101:U:OP1  | 2.20                     | 0.42              |
| 1:AA:1102:C:C2  | 1:AA:1103:A:N7   | 2.88                     | 0.42              |
| 1:AA:1212:G:N7  | 1:AA:1235:G:N1   | 2.67                     | 0.42              |
| 1:AA:1223:C:O2  | 1:AA:1225:C:C5'  | 2.66                     | 0.42              |
| 1:AA:1225:C:N3  | 1:AA:1226:G:C2   | 2.88                     | 0.42              |
| 1:AA:1275:A:C2' | 1:AA:1276:A:O5'  | 2.67                     | 0.42              |
| 1:AA:1312:U:O3' | 19:AU:63:LYS:CD  | 2.67                     | 0.42              |
| 1:AA:1372:U:C6  | 1:AA:1372:U:H3'  | 2.54                     | 0.42              |
| 1:AA:1455:G:C6  | 1:AA:1456:G:C8   | 3.07                     | 0.42              |
| 1:AA:1460:A:N1  | 1:AA:1732:A:C2   | 2.87                     | 0.42              |
| 1:AA:1471:A:O2' | 1:AA:1472:A:H5'  | 2.20                     | 0.42              |
| 1:AA:1487:G:C5  | 1:AA:1488:G:N7   | 2.88                     | 0.42              |
| 1:AA:1517:G:N2  | 1:AA:1518:C:O2   | 2.53                     | 0.42              |
| 1:AA:1520:U:C3' | 1:AA:1521:G:C5'  | 2.98                     | 0.42              |
| 1:AA:1522:G:C8  | 1:AA:1522:G:C3'  | 3.01                     | 0.42              |
| 1:AA:1532:C:OP2 | 1:AA:1532:C:C6   | 2.72                     | 0.42              |
| 1:AA:1535:U:N3  | 1:AA:1536:A:C4   | 2.88                     | 0.42              |
| 1:AA:1552:G:N3  | 1:AA:1552:G:H2'  | 2.33                     | 0.42              |
| 1:AA:1673:U:O2' | 1:AA:1674:G:OP1  | 2.37                     | 0.42              |
| 1:AA:1772:G:O2' | 1:AA:1773:A:H4'  | 2.19                     | 0.42              |
| 1:AA:1792:G:N3  | 1:AA:1792:G:C2'  | 2.79                     | 0.42              |
| 1:AA:1808:U:C2  | 1:AA:1810:A:H2   | 2.38                     | 0.42              |
| 1:AA:1816:G:P   | 4:AD:43:ARG:NH2  | 2.93                     | 0.42              |
| 1:AA:1854:A:H2' | 1:AA:1855:G:O4'  | 2.20                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1924:C:O2'   | 1:AA:1925:C:H5'   | 2.20                     | 0.42              |
| 1:AA:1992:G:C6    | 1:AA:1997:G:N3    | 2.88                     | 0.42              |
| 1:AA:2041:U:OP2   | 1:AA:2041:U:H6    | 2.03                     | 0.42              |
| 1:AA:2121:G:C4'   | 3:AC:167:LYS:NZ   | 2.83                     | 0.42              |
| 1:AA:2293:C:N3    | 1:AA:2294:C:C5    | 2.88                     | 0.42              |
| 1:AA:2331:G:N2    | 1:AA:2385:C:C5    | 2.88                     | 0.42              |
| 1:AA:2352:A:O2'   | 1:AA:2353:G:H5'   | 2.20                     | 0.42              |
| 1:AA:2354:G:O2'   | 1:AA:2355:C:H5'   | 2.20                     | 0.42              |
| 1:AA:2391:G:C2'   | 1:AA:2392:A:OP2   | 2.68                     | 0.42              |
| 1:AA:2423:U:H1'   | 1:AA:2425:A:N3    | 2.35                     | 0.42              |
| 1:AA:2512:C:O4'   | 5:AE:139:GLY:HA3  | 2.20                     | 0.42              |
| 1:AA:2543:G:C6    | 1:AA:2544:G:N1    | 2.88                     | 0.42              |
| 1:AA:2544:G:C2'   | 1:AA:2545:G:C5'   | 2.98                     | 0.42              |
| 1:AA:2553:G:N7    | 1:AA:2583:G:C4'   | 2.67                     | 0.42              |
| 1:AA:2580:U:H2'   | 1:AA:2581:G:C8    | 2.54                     | 0.42              |
| 1:AA:2589:A:OP1   | 4:AD:226:MET:SD   | 2.77                     | 0.42              |
| 1:AA:2626:C:C6    | 1:AA:2626:C:C3'   | 3.02                     | 0.42              |
| 1:AA:2639:A:C2'   | 1:AA:2640:G:O5'   | 2.66                     | 0.42              |
| 1:AA:2644:G:N1    | 1:AA:2645:G:C2    | 2.88                     | 0.42              |
| 1:AA:2683:C:C5    | 1:AA:2684:U:C5    | 3.08                     | 0.42              |
| 1:AA:2748:A:N3    | 8:AH:67:LEU:CD1   | 2.82                     | 0.42              |
| 1:AA:2749:A:N7    | 1:AA:2750:A:N7    | 2.66                     | 0.42              |
| 1:AA:2853:C:C2    | 1:AA:2854:G:C8    | 3.08                     | 0.42              |
| 2:AB:45:A:N6      | 2:AB:46:A:C2      | 2.88                     | 0.42              |
| 2:AB:103:U:H4'    | 21:AW:97:GLU:OE2  | 2.20                     | 0.42              |
| 3:AC:8:ARG:HA     | 3:AC:8:ARG:HD2    | 1.68                     | 0.42              |
| 3:AC:46:LYS:CD    | 3:AC:211:SER:HB3  | 2.34                     | 0.42              |
| 3:AC:138:PRO:HB3  | 3:AC:145:VAL:HG22 | 2.02                     | 0.42              |
| 3:AC:162:GLU:CG   | 3:AC:163:PHE:N    | 2.67                     | 0.42              |
| 4:AD:145:VAL:HG13 | 4:AD:191:ALA:CB   | 2.39                     | 0.42              |
| 4:AD:145:VAL:HG22 | 4:AD:191:ALA:HB1  | 2.02                     | 0.42              |
| 4:AD:160:GLY:N    | 4:AD:196:VAL:HG21 | 2.32                     | 0.42              |
| 4:AD:172:TYR:HA   | 4:AD:186:HIS:HA   | 2.00                     | 0.42              |
| 4:AD:177:LEU:HB2  | 4:AD:178:PRO:CD   | 2.30                     | 0.42              |
| 4:AD:177:LEU:CD2  | 4:AD:181:GLU:O    | 2.60                     | 0.42              |
| 4:AD:248:SER:O    | 4:AD:248:SER:OG   | 2.38                     | 0.42              |
| 5:AE:22:PRO:HA    | 5:AE:185:LYS:N    | 2.34                     | 0.42              |
| 5:AE:49:LEU:HD12  | 5:AE:50:GLY:N     | 2.34                     | 0.42              |
| 5:AE:104:VAL:HG13 | 5:AE:198:VAL:CA   | 2.45                     | 0.42              |
| 5:AE:179:GLU:N    | 5:AE:179:GLU:CD   | 2.77                     | 0.42              |
| 6:AF:8:GLN:O      | 6:AF:9:ILE:HD12   | 2.19                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:AF:51:THR:O     | 6:AF:52:LYS:CG    | 2.64                     | 0.42              |
| 6:AF:71:GLY:C     | 6:AF:73:ALA:N     | 2.75                     | 0.42              |
| 6:AF:132:VAL:HG22 | 6:AF:135:LYS:HB3  | 2.02                     | 0.42              |
| 6:AF:195:ASP:C    | 6:AF:197:ASP:N    | 2.77                     | 0.42              |
| 7:AG:36:LYS:HB2   | 7:AG:95:ARG:O     | 2.20                     | 0.42              |
| 7:AG:125:PHE:HD2  | 7:AG:129:GLY:CA   | 2.33                     | 0.42              |
| 8:AH:163:TYR:O    | 8:AH:164:TYR:C    | 2.63                     | 0.42              |
| 9:AK:33:LEU:O     | 9:AK:35:ARG:CG    | 2.66                     | 0.42              |
| 10:AL:24:VAL:HG21 | 10:AL:26:LYS:CG   | 2.47                     | 0.42              |
| 10:AL:42:SER:CA   | 10:AL:55:GLY:O    | 2.66                     | 0.42              |
| 10:AL:63:VAL:HG21 | 10:AL:80:ASP:C    | 2.45                     | 0.42              |
| 11:AM:27:HIS:HB3  | 11:AM:28:GLY:H    | 1.63                     | 0.42              |
| 11:AM:50:ARG:O    | 11:AM:51:PHE:C    | 2.62                     | 0.42              |
| 11:AM:74:GLU:N    | 11:AM:107:LYS:CE  | 2.83                     | 0.42              |
| 11:AM:74:GLU:CD   | 11:AM:101:VAL:O   | 2.62                     | 0.42              |
| 11:AM:80:TYR:CZ   | 11:AM:100:LEU:HG  | 2.55                     | 0.42              |
| 11:AM:97:PRO:C    | 11:AM:99:LEU:N    | 2.74                     | 0.42              |
| 11:AM:122:PRO:HD3 | 11:AM:137:LYS:HB3 | 2.01                     | 0.42              |
| 11:AM:124:LYS:HG2 | 11:AM:143:GLY:HA3 | 2.01                     | 0.42              |
| 12:AN:76:LYS:NZ   | 12:AN:78:PRO:O    | 2.51                     | 0.42              |
| 14:AP:42:ASP:C    | 14:AP:42:ASP:OD2  | 2.62                     | 0.42              |
| 14:AP:57:LYS:HD3  | 14:AP:58:LEU:N    | 2.34                     | 0.42              |
| 14:AP:81:GLY:O    | 14:AP:82:ILE:C    | 2.61                     | 0.42              |
| 14:AP:100:ALA:C   | 14:AP:102:ALA:N   | 2.77                     | 0.42              |
| 15:AQ:67:SER:CB   | 15:AQ:75:ILE:CG2  | 2.98                     | 0.42              |
| 15:AQ:86:ILE:HG22 | 15:AQ:87:ASP:H    | 1.84                     | 0.42              |
| 15:AQ:95:ARG:CZ   | 15:AQ:96:ARG:NH2  | 2.83                     | 0.42              |
| 16:AR:32:PHE:O    | 16:AR:33:ARG:C    | 2.62                     | 0.42              |
| 16:AR:64:ARG:O    | 16:AR:67:ALA:CB   | 2.49                     | 0.42              |
| 17:AS:3:ALA:CB    | 17:AS:44:LYS:CE   | 2.97                     | 0.42              |
| 17:AS:67:GLY:HA2  | 17:AS:94:LEU:CA   | 2.49                     | 0.42              |
| 18:AT:14:PRO:CA   | 18:AT:16:LYS:HZ1  | 2.33                     | 0.42              |
| 18:AT:55:ALA:C    | 18:AT:58:ALA:HB3  | 2.43                     | 0.42              |
| 22:AX:56:ASP:O    | 22:AX:57:PHE:CB   | 2.64                     | 0.42              |
| 23:AY:16:LEU:HD21 | 23:AY:59:LEU:HB2  | 2.01                     | 0.42              |
| 24:AZ:7:LYS:CE    | 24:AZ:32:GLN:HA   | 2.50                     | 0.42              |
| 25:Aa:17:GLY:CA   | 25:Aa:33:VAL:HG12 | 2.50                     | 0.42              |
| 26:Ab:15:ARG:O    | 26:Ab:18:ALA:HB3  | 2.20                     | 0.42              |
| 26:Ab:54:GLY:O    | 26:Ab:55:ARG:C    | 2.61                     | 0.42              |
| 27:Ac:29:ASN:O    | 27:Ac:30:THR:C    | 2.63                     | 0.42              |
| 27:Ac:54:ILE:OXT  | 27:Ac:54:ILE:HG23 | 2.19                     | 0.42              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 28:Ad:25:PRO:HA   | 28:Ad:28:ARG:CZ  | 2.50                     | 0.42              |
| 30:Af:19:ARG:O    | 30:Af:19:ARG:CG  | 2.68                     | 0.42              |
| 31:AI:49:ALA:O    | 31:AI:90:ALA:HB2 | 2.19                     | 0.42              |
| 32:AJ:10:LEU:H    | 32:AJ:56:GLU:CD  | 2.27                     | 0.42              |
| 32:AJ:78:ILE:HD13 | 32:AJ:126:MET:C  | 2.44                     | 0.42              |
| 34:BA:22:G:C2'    | 34:BA:23:C:C6    | 2.82                     | 0.42              |
| 34:BA:22:G:O2'    | 34:BA:23:C:O4'   | 2.34                     | 0.42              |
| 34:BA:30:U:H2'    | 34:BA:31:G:OP1   | 2.19                     | 0.42              |
| 34:BA:38:G:N3     | 34:BA:397:A:C6   | 2.86                     | 0.42              |
| 34:BA:60:A:N1     | 34:BA:107:G:O2'  | 2.50                     | 0.42              |
| 34:BA:66:G:H2'    | 34:BA:67:C:O5'   | 2.20                     | 0.42              |
| 34:BA:66:G:P      | 34:BA:66:G:H8    | 2.42                     | 0.42              |
| 34:BA:68:G:C5'    | 34:BA:171:A:H1'  | 2.50                     | 0.42              |
| 34:BA:193:C:N3    | 34:BA:194:C:N4   | 2.67                     | 0.42              |
| 34:BA:278:G:N2    | 34:BA:279:A:N6   | 2.67                     | 0.42              |
| 34:BA:373:A:C5    | 34:BA:482:A:N7   | 2.88                     | 0.42              |
| 34:BA:418:C:O2'   | 34:BA:419:C:H5'  | 2.20                     | 0.42              |
| 34:BA:421:U:O2    | 36:BG:127:ARG:CZ | 2.68                     | 0.42              |
| 34:BA:450:G:H3'   | 34:BA:481:G:H1   | 1.84                     | 0.42              |
| 34:BA:568:G:H21   | 34:BA:883:C:H1'  | 1.85                     | 0.42              |
| 34:BA:584:G:C6    | 34:BA:585:G:N7   | 2.88                     | 0.42              |
| 34:BA:594:G:N2    | 34:BA:596:C:H41  | 2.18                     | 0.42              |
| 34:BA:627:G:C2'   | 34:BA:628:G:O5'  | 2.68                     | 0.42              |
| 34:BA:658:G:C2    | 34:BA:659:U:C2   | 3.07                     | 0.42              |
| 34:BA:680:C:C2    | 34:BA:711:G:C2   | 3.08                     | 0.42              |
| 34:BA:696:A:C4    | 34:BA:697:U:O4'  | 2.72                     | 0.42              |
| 34:BA:696:A:N1    | 34:BA:697:U:H1'  | 2.34                     | 0.42              |
| 34:BA:821:G:C6    | 34:BA:880:C:N3   | 2.88                     | 0.42              |
| 34:BA:856:C:H2'   | 34:BA:856:C:O2   | 2.19                     | 0.42              |
| 34:BA:897:C:H2'   | 34:BA:898:G:O5'  | 2.20                     | 0.42              |
| 34:BA:1009:G:C2   | 34:BA:1010:G:C8  | 3.08                     | 0.42              |
| 34:BA:1014:A:C2   | 34:BA:1219:U:H1' | 2.54                     | 0.42              |
| 34:BA:1174:G:H8   | 34:BA:1174:G:H5' | 1.84                     | 0.42              |
| 34:BA:1200:C:C5'  | 34:BA:1201:A:O3' | 2.63                     | 0.42              |
| 34:BA:1201:A:H2'  | 34:BA:1202:G:OP2 | 2.19                     | 0.42              |
| 34:BA:1234:C:C4'  | 34:BA:1364:U:O2' | 2.68                     | 0.42              |
| 34:BA:1314:C:H2'  | 34:BA:1315:U:H5  | 1.77                     | 0.42              |
| 34:BA:1336:C:O2'  | 34:BA:1337:G:OP2 | 2.37                     | 0.42              |
| 34:BA:1338:G:H2'  | 34:BA:1339:A:N7  | 2.32                     | 0.42              |
| 34:BA:1368:G:H2'  | 34:BA:1369:C:H6  | 1.84                     | 0.42              |
| 34:BA:1407:C:C2'  | 34:BA:1408:A:C5' | 2.86                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1454:G:C5    | 34:BA:1455:G:C5    | 3.08                     | 0.42              |
| 35:BF:49:GLU:H     | 35:BF:49:GLU:CD    | 2.28                     | 0.42              |
| 36:BG:12:LEU:O     | 36:BG:17:ASP:CG    | 2.62                     | 0.42              |
| 36:BG:23:TYR:CD1   | 43:BN:11:PHE:HB2   | 2.54                     | 0.42              |
| 36:BG:33:LEU:O     | 36:BG:36:ASP:N     | 2.52                     | 0.42              |
| 36:BG:33:LEU:HD21  | 47:BR:52:GLN:O     | 2.20                     | 0.42              |
| 36:BG:70:VAL:HG12  | 36:BG:71:ALA:N     | 2.31                     | 0.42              |
| 37:BH:3:ARG:HG3    | 37:BH:118:ARG:CZ   | 2.49                     | 0.42              |
| 37:BH:11:LEU:O     | 37:BH:14:ARG:HB3   | 2.19                     | 0.42              |
| 37:BH:51:PRO:O     | 37:BH:51:PRO:HG2   | 2.19                     | 0.42              |
| 37:BH:106:TYR:CZ   | 37:BH:112:VAL:C    | 2.98                     | 0.42              |
| 37:BH:140:VAL:O    | 37:BH:141:ARG:C    | 2.62                     | 0.42              |
| 37:BH:153:ARG:O    | 37:BH:154:ASN:CB   | 2.66                     | 0.42              |
| 38:BI:53:LEU:O     | 38:BI:57:LYS:CB    | 2.68                     | 0.42              |
| 38:BI:59:GLY:C     | 38:BI:63:ARG:NH2   | 2.70                     | 0.42              |
| 38:BI:87:SER:HB3   | 38:BI:131:ILE:CG1  | 2.48                     | 0.42              |
| 39:BJ:34:GLY:O     | 39:BJ:68:PRO:HD3   | 2.19                     | 0.42              |
| 39:BJ:50:TYR:CE1   | 39:BJ:52:ILE:HD11  | 2.55                     | 0.42              |
| 39:BJ:59:TYR:C     | 39:BJ:60:PHE:HD1   | 2.27                     | 0.42              |
| 40:BK:12:LEU:HD21  | 40:BK:25:ALA:HB2   | 2.02                     | 0.42              |
| 40:BK:72:ARG:NH2   | 40:BK:138:LYS:NZ   | 2.63                     | 0.42              |
| 41:BL:1:MET:CG     | 41:BL:2:LEU:N      | 2.82                     | 0.42              |
| 41:BL:25:ASP:OD1   | 41:BL:25:ASP:N     | 2.53                     | 0.42              |
| 41:BL:65:TYR:HB3   | 41:BL:76:PRO:HB2   | 2.02                     | 0.42              |
| 41:BL:65:TYR:CD2   | 41:BL:78:GLN:HA    | 2.55                     | 0.42              |
| 41:BL:97:VAL:CG1   | 41:BL:98:LYS:NZ    | 2.81                     | 0.42              |
| 42:BM:19:LEU:HD22  | 42:BM:20:ARG:N     | 2.33                     | 0.42              |
| 43:BN:12:ASP:O     | 43:BN:15:THR:CG2   | 2.67                     | 0.42              |
| 44:BO:31:THR:CG2   | 44:BO:32:ILE:N     | 2.81                     | 0.42              |
| 45:BP:46:LYS:CE    | 45:BP:47:LYS:HZ1   | 2.32                     | 0.42              |
| 45:BP:59:ARG:HE    | 45:BP:65:GLU:HG2   | 1.84                     | 0.42              |
| 45:BP:102:ARG:HH11 | 45:BP:110:VAL:HG13 | 1.85                     | 0.42              |
| 46:BQ:22:ILE:CG1   | 46:BQ:25:ILE:CD1   | 2.82                     | 0.42              |
| 46:BQ:55:ARG:H     | 46:BQ:55:ARG:HG3   | 1.63                     | 0.42              |
| 46:BQ:86:CYS:C     | 52:BW:74:PHE:HA    | 2.45                     | 0.42              |
| 49:BT:71:ARG:HH11  | 49:BT:71:ARG:HB3   | 1.85                     | 0.42              |
| 52:BW:80:TYR:CD1   | 52:BW:81:ARG:N     | 2.74                     | 0.42              |
| 55:BC:66:U:O2'     | 55:BC:67:C:H5'     | 2.20                     | 0.42              |
| 56:BD:66:U:O2'     | 56:BD:67:C:C2      | 2.70                     | 0.42              |
| 57:BZ:18:LYS:HD3   | 57:BZ:49:GLU:O     | 2.20                     | 0.42              |
| 57:BZ:19:THR:CG2   | 57:BZ:22:VAL:HG13  | 2.49                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:BZ:79:ALA:CA   | 57:BZ:80:ASP:C     | 2.92                     | 0.42              |
| 57:BZ:99:VAL:CG1  | 57:BZ:100:ASP:N    | 2.81                     | 0.42              |
| 57:BZ:148:PHE:O   | 57:BZ:151:LEU:N    | 2.50                     | 0.42              |
| 57:BZ:163:VAL:C   | 57:BZ:164:TYR:CD1  | 2.98                     | 0.42              |
| 57:BZ:237:VAL:O   | 57:BZ:245:LYS:N    | 2.45                     | 0.42              |
| 57:BZ:311:PHE:CZ  | 57:BZ:358:VAL:HG21 | 2.54                     | 0.42              |
| 57:BZ:417:GLN:NE2 | 57:BZ:418:ALA:N    | 2.68                     | 0.42              |
| 57:BZ:449:ILE:C   | 57:BZ:451:PHE:N    | 2.74                     | 0.42              |
| 57:BZ:484:GLN:C   | 57:BZ:485:ASN:CG   | 2.88                     | 0.42              |
| 57:BZ:564:THR:CB  | 57:BZ:567:GLN:HB2  | 2.49                     | 0.42              |
| 1:AA:18:C:C2      | 1:AA:19:C:C6       | 3.08                     | 0.42              |
| 1:AA:28:A:C8      | 1:AA:513:A:N6      | 2.88                     | 0.42              |
| 1:AA:140:A:C5     | 1:AA:141:A:C8      | 3.08                     | 0.42              |
| 1:AA:142:G:H4'    | 19:AU:37:THR:OG1   | 2.19                     | 0.42              |
| 1:AA:250:G:O2'    | 1:AA:251:A:O5'     | 2.36                     | 0.42              |
| 1:AA:292:C:C3'    | 1:AA:293:U:C2      | 3.02                     | 0.42              |
| 1:AA:292:C:H41    | 1:AA:346:A:H62     | 1.68                     | 0.42              |
| 1:AA:329:G:OP2    | 20:AV:66:PRO:HG3   | 2.19                     | 0.42              |
| 1:AA:363(F):A:N3  | 1:AA:363(F):A:H2'  | 2.34                     | 0.42              |
| 1:AA:443:A:C1'    | 1:AA:1201:C:O4'    | 2.68                     | 0.42              |
| 1:AA:449:A:N3     | 1:AA:450:G:C8      | 2.88                     | 0.42              |
| 1:AA:458:G:C2'    | 28:Ad:40:TRP:NE1   | 2.83                     | 0.42              |
| 1:AA:465:G:N2     | 1:AA:683:C:C2'     | 2.83                     | 0.42              |
| 1:AA:475:U:O2     | 1:AA:475:U:H2'     | 2.19                     | 0.42              |
| 1:AA:491:G:C4     | 1:AA:492:A:C8      | 3.08                     | 0.42              |
| 1:AA:491:G:H3'    | 1:AA:492:A:H8      | 1.85                     | 0.42              |
| 1:AA:511:U:C5     | 1:AA:512:G:H1'     | 2.55                     | 0.42              |
| 1:AA:531:C:H42    | 16:AR:38:THR:HG22  | 1.84                     | 0.42              |
| 1:AA:612:G:C2     | 1:AA:615:G:N2      | 2.88                     | 0.42              |
| 1:AA:623:G:N7     | 1:AA:624:C:C4      | 2.88                     | 0.42              |
| 1:AA:626:U:H4'    | 1:AA:653:A:C2      | 2.55                     | 0.42              |
| 1:AA:733:G:C8     | 1:AA:761:A:C6      | 3.08                     | 0.42              |
| 1:AA:784:A:OP1    | 1:AA:2587:A:O2'    | 2.36                     | 0.42              |
| 1:AA:813:U:C5     | 11:AM:25:SER:CB    | 3.03                     | 0.42              |
| 1:AA:832:G:C5     | 1:AA:833:U:O4      | 2.73                     | 0.42              |
| 1:AA:861:A:N6     | 1:AA:917:A:N3      | 2.68                     | 0.42              |
| 1:AA:863:A:N1     | 1:AA:864:G:C6      | 2.88                     | 0.42              |
| 1:AA:873:G:N1     | 1:AA:905:U:C2      | 2.87                     | 0.42              |
| 1:AA:880:G:N3     | 1:AA:881:G:O2'     | 2.53                     | 0.42              |
| 1:AA:969:U:OP1    | 24:AZ:20:LYS:NZ    | 2.53                     | 0.42              |
| 1:AA:971:C:H2'    | 1:AA:972:G:O4'     | 2.20                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:974(A):C:H1' | 1:AA:1186:G:N2    | 2.35                     | 0.42              |
| 1:AA:994:C:C5'    | 1:AA:995:C:OP1    | 2.68                     | 0.42              |
| 1:AA:1009:A:C4'   | 16:AR:62:ILE:HG21 | 2.46                     | 0.42              |
| 1:AA:1024:G:C3'   | 1:AA:1025:G:C5'   | 2.96                     | 0.42              |
| 1:AA:1080:C:O4'   | 32:AJ:128:ALA:HB3 | 2.01                     | 0.42              |
| 1:AA:1161:C:O2'   | 17:AS:22:VAL:CG1  | 2.68                     | 0.42              |
| 1:AA:1222:C:C2'   | 1:AA:1223:C:C5'   | 2.96                     | 0.42              |
| 1:AA:1266:G:OP1   | 26:Ab:19:ARG:NE   | 2.51                     | 0.42              |
| 1:AA:1271:G:OP2   | 1:AA:1272:A:OP1   | 2.38                     | 0.42              |
| 1:AA:1292:U:N3    | 1:AA:1293:C:C5    | 2.88                     | 0.42              |
| 1:AA:1324:G:C2'   | 1:AA:1325:G:OP1   | 2.68                     | 0.42              |
| 1:AA:1344:G:C6    | 1:AA:1404:C:C4    | 3.08                     | 0.42              |
| 1:AA:1406:U:O2    | 1:AA:1407:C:C6    | 2.72                     | 0.42              |
| 1:AA:1516:U:C6    | 1:AA:1517:G:N7    | 2.88                     | 0.42              |
| 1:AA:1589:C:C2    | 1:AA:1590:U:C6    | 3.07                     | 0.42              |
| 1:AA:1661:G:N1    | 1:AA:2000:G:C4    | 2.88                     | 0.42              |
| 1:AA:1679:U:O4    | 1:AA:1764:G:H5''  | 2.20                     | 0.42              |
| 1:AA:1684:C:N3    | 1:AA:1705:G:C2    | 2.88                     | 0.42              |
| 1:AA:1767:C:N4    | 1:AA:1768:U:C4    | 2.87                     | 0.42              |
| 1:AA:1809:A:H2'   | 1:AA:1810:A:C5'   | 2.35                     | 0.42              |
| 1:AA:1820:U:O2'   | 1:AA:1821:A:P     | 2.78                     | 0.42              |
| 1:AA:1832:C:C5    | 1:AA:1833:U:C5    | 3.07                     | 0.42              |
| 1:AA:1858:G:C6    | 1:AA:1883:G:N1    | 2.87                     | 0.42              |
| 1:AA:1941:C:C6    | 1:AA:1965:C:C2    | 3.07                     | 0.42              |
| 1:AA:1952:A:H1'   | 1:AA:2560:C:O2'   | 2.20                     | 0.42              |
| 1:AA:1967:C:O2    | 1:AA:1968:G:O4'   | 2.38                     | 0.42              |
| 1:AA:1980:G:O2'   | 1:AA:1981:A:C5'   | 2.66                     | 0.42              |
| 1:AA:1993:U:C5    | 1:AA:1994:C:H5    | 2.34                     | 0.42              |
| 1:AA:1993:U:C4    | 1:AA:1994:C:N4    | 2.67                     | 0.42              |
| 1:AA:2010:G:OP2   | 18:AT:41:LYS:HE2  | 2.20                     | 0.42              |
| 1:AA:2053:G:H4'   | 5:AE:145:LYS:NZ   | 2.34                     | 0.42              |
| 1:AA:2094:G:N7    | 1:AA:2095:C:C5    | 2.88                     | 0.42              |
| 1:AA:2160:G:N2    | 1:AA:2161:C:O2    | 2.52                     | 0.42              |
| 1:AA:2239:G:C3'   | 1:AA:2240:C:C5'   | 2.87                     | 0.42              |
| 1:AA:2253:G:H2'   | 1:AA:2254:C:O5'   | 2.20                     | 0.42              |
| 1:AA:2261:C:N4    | 22:AX:15:ASP:O    | 2.53                     | 0.42              |
| 1:AA:2263:C:H2'   | 1:AA:2263:C:O2    | 2.18                     | 0.42              |
| 1:AA:2309:A:N3    | 1:AA:2309:A:C3'   | 2.83                     | 0.42              |
| 1:AA:2415:G:P     | 11:AM:61:ARG:HD2  | 2.58                     | 0.42              |
| 1:AA:2507:C:N1    | 1:AA:2583:G:N2    | 2.68                     | 0.42              |
| 1:AA:2510:C:N4    | 1:AA:2575:C:N3    | 2.68                     | 0.42              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 1:AA:2511:U:C4    | 1:AA:2512:C:C4   | 3.07                     | 0.42              |
| 1:AA:2521:C:O2    | 1:AA:2522:U:O4'  | 2.38                     | 0.42              |
| 1:AA:2556:C:C2'   | 1:AA:2557:G:C5'  | 2.97                     | 0.42              |
| 1:AA:2557:G:C4    | 1:AA:2558:C:C5   | 3.08                     | 0.42              |
| 1:AA:2559:C:C2    | 1:AA:2560:C:C5   | 3.07                     | 0.42              |
| 1:AA:2583:G:C4    | 1:AA:2584:U:N3   | 2.83                     | 0.42              |
| 1:AA:2596:U:O2'   | 4:AD:242:ARG:HD3 | 2.19                     | 0.42              |
| 1:AA:2616:C:H3'   | 1:AA:2617:C:C5   | 2.54                     | 0.42              |
| 1:AA:2644:G:C6    | 1:AA:2645:G:C2   | 3.07                     | 0.42              |
| 1:AA:2666:C:C4    | 1:AA:2667:C:C5   | 2.99                     | 0.42              |
| 1:AA:2674:G:HO2'  | 10:AL:29:ASN:HB3 | 1.84                     | 0.42              |
| 1:AA:2705:A:HO2'  | 1:AA:2706:G:P    | 2.43                     | 0.42              |
| 1:AA:2707:G:O2'   | 13:AO:68:ARG:HG3 | 2.20                     | 0.42              |
| 1:AA:2723:C:O3'   | 13:AO:2:ARG:N    | 2.53                     | 0.42              |
| 1:AA:2748:A:O2'   | 8:AH:66:GLY:CA   | 2.62                     | 0.42              |
| 1:AA:2857:G:C8    | 1:AA:2857:G:C3'  | 3.03                     | 0.42              |
| 2:AB:28:C:H2'     | 2:AB:29:A:C8     | 2.55                     | 0.42              |
| 2:AB:57:A:N3      | 7:AG:29:TRP:CD1  | 2.87                     | 0.42              |
| 2:AB:69:G:C4      | 2:AB:70:C:C5     | 3.08                     | 0.42              |
| 3:AC:120:MET:HE3  | 3:AC:120:MET:HA  | 2.01                     | 0.42              |
| 3:AC:137:LEU:HD23 | 3:AC:138:PRO:CD  | 2.49                     | 0.42              |
| 3:AC:181:PRO:HB2  | 3:AC:184:LYS:HG3 | 2.02                     | 0.42              |
| 4:AD:10:THR:N     | 4:AD:11:PRO:HD2  | 2.34                     | 0.42              |
| 4:AD:59:LYS:O     | 4:AD:62:TYR:OH   | 2.38                     | 0.42              |
| 4:AD:90:ALA:HB2   | 4:AD:159:ALA:HB2 | 2.01                     | 0.42              |
| 4:AD:141:VAL:O    | 4:AD:194:GLY:N   | 2.47                     | 0.42              |
| 5:AE:38:THR:CG2   | 5:AE:39:PRO:HD3  | 2.50                     | 0.42              |
| 5:AE:105:THR:HG22 | 5:AE:199:ARG:CZ  | 2.50                     | 0.42              |
| 5:AE:119:ARG:NE   | 5:AE:119:ARG:C   | 2.78                     | 0.42              |
| 5:AE:176:ILE:HG23 | 5:AE:181:LEU:H   | 1.85                     | 0.42              |
| 6:AF:37:VAL:O     | 6:AF:184:TYR:CE1 | 2.72                     | 0.42              |
| 6:AF:182:ASN:OD1  | 6:AF:185:ASP:N   | 2.52                     | 0.42              |
| 7:AG:96:ARG:HB2   | 7:AG:96:ARG:HH11 | 1.84                     | 0.42              |
| 7:AG:113:ARG:HH21 | 7:AG:139:LEU:CD2 | 2.33                     | 0.42              |
| 7:AG:124:SER:OG   | 7:AG:132:ASN:O   | 2.32                     | 0.42              |
| 8:AH:25:LYS:CE    | 8:AH:32:GLU:HB2  | 2.49                     | 0.42              |
| 9:AK:17:ASP:O     | 9:AK:18:ALA:CB   | 2.64                     | 0.42              |
| 9:AK:34:LEU:HA    | 9:AK:49:GLY:CA   | 2.50                     | 0.42              |
| 9:AK:34:LEU:HD21  | 9:AK:52:VAL:CG1  | 2.44                     | 0.42              |
| 9:AK:39:ARG:HG2   | 9:AK:40:PRO:HD2  | 2.02                     | 0.42              |
| 9:AK:100:GLU:OE2  | 9:AK:100:GLU:CA  | 2.55                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 10:AL:10:VAL:N    | 10:AL:17:ARG:CG    | 2.75                     | 0.42              |
| 11:AM:89:ALA:O    | 11:AM:124:LYS:O    | 2.38                     | 0.42              |
| 12:AN:38:GLU:N    | 12:AN:39:PRO:CD    | 2.76                     | 0.42              |
| 12:AN:67:ARG:HD3  | 12:AN:103:MET:SD   | 2.60                     | 0.42              |
| 12:AN:77:LYS:HB2  | 12:AN:78:PRO:HD3   | 1.95                     | 0.42              |
| 12:AN:102:VAL:O   | 12:AN:103:MET:HE2  | 2.20                     | 0.42              |
| 12:AN:118:LEU:HB3 | 12:AN:131:ILE:HD13 | 2.01                     | 0.42              |
| 12:AN:125:LEU:HB3 | 12:AN:126:PRO:CD   | 2.50                     | 0.42              |
| 13:AO:62:ALA:O    | 13:AO:63:ARG:C     | 2.62                     | 0.42              |
| 16:AR:2:PRO:HB2   | 16:AR:3:ARG:H      | 1.56                     | 0.42              |
| 16:AR:16:LYS:HD2  | 16:AR:17:ILE:HD13  | 2.02                     | 0.42              |
| 17:AS:68:LYS:HG2  | 17:AS:95:LEU:CD1   | 2.47                     | 0.42              |
| 19:AU:54:VAL:C    | 19:AU:55:ASN:ND2   | 2.74                     | 0.42              |
| 20:AV:1:MET:HE2   | 20:AV:67:LEU:CD2   | 2.47                     | 0.42              |
| 20:AV:12:THR:HA   | 20:AV:73:ARG:NH2   | 2.33                     | 0.42              |
| 20:AV:84:ARG:CG   | 20:AV:85:VAL:N     | 2.82                     | 0.42              |
| 20:AV:86:ARG:HA   | 20:AV:91:GLU:O     | 2.19                     | 0.42              |
| 21:AW:30:ASN:HA   | 21:AW:89:PHE:CE2   | 2.55                     | 0.42              |
| 21:AW:42:VAL:C    | 21:AW:46:LYS:HZ2   | 2.27                     | 0.42              |
| 23:AY:6:GLU:OE1   | 23:AY:6:GLU:HA     | 2.20                     | 0.42              |
| 23:AY:27:LEU:CD1  | 23:AY:48:LEU:HD23  | 2.50                     | 0.42              |
| 25:Aa:21:VAL:HG13 | 25:Aa:23:GLU:CG    | 2.50                     | 0.42              |
| 25:Aa:57:GLU:CA   | 25:Aa:61:ARG:NH1   | 2.81                     | 0.42              |
| 27:Ac:21:TYR:CD2  | 27:Ac:21:TYR:C     | 2.96                     | 0.42              |
| 27:Ac:49:HIS:HB3  | 27:Ac:50:ARG:H     | 1.61                     | 0.42              |
| 28:Ad:42:LEU:HD22 | 28:Ad:44:PRO:CG    | 2.50                     | 0.42              |
| 32:AJ:24:GLY:O    | 32:AJ:26:ALA:N     | 2.53                     | 0.42              |
| 34:BA:20:U:O4'    | 34:BA:572:A:C2     | 2.72                     | 0.42              |
| 34:BA:44:G:C2     | 34:BA:399:G:C2     | 3.08                     | 0.42              |
| 34:BA:60:A:N6     | 34:BA:107:G:O2'    | 2.48                     | 0.42              |
| 34:BA:103:C:C1'   | 34:BA:151:A:C2     | 3.01                     | 0.42              |
| 34:BA:129(A):G:C2 | 34:BA:191(A):G:C8  | 3.07                     | 0.42              |
| 34:BA:130:A:C2    | 34:BA:264:U:H6     | 2.38                     | 0.42              |
| 34:BA:136:C:C1'   | 49:BT:1:MET:HE1    | 2.50                     | 0.42              |
| 34:BA:174:C:OP1   | 34:BA:197:A:H2     | 2.03                     | 0.42              |
| 34:BA:236:G:C2'   | 34:BA:237:C:H6     | 2.33                     | 0.42              |
| 34:BA:297:G:N2    | 34:BA:299:G:H3'    | 2.35                     | 0.42              |
| 34:BA:307:C:C6    | 34:BA:307:C:O5'    | 2.72                     | 0.42              |
| 34:BA:336:C:O2'   | 34:BA:337:C:H5'    | 2.20                     | 0.42              |
| 34:BA:354:G:C2    | 34:BA:355:C:C4     | 3.08                     | 0.42              |
| 34:BA:380:G:H2'   | 34:BA:382:A:OP2    | 2.20                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:455:C:C6     | 34:BA:455:C:O5'    | 2.73                     | 0.42              |
| 34:BA:552:U:H2'    | 34:BA:553:A:O4'    | 2.20                     | 0.42              |
| 34:BA:594:G:C3'    | 34:BA:595:G:O4'    | 2.65                     | 0.42              |
| 34:BA:720:C:H4'    | 51:BV:50:ILE:CG2   | 2.49                     | 0.42              |
| 34:BA:763:G:N2     | 34:BA:764:C:C2     | 2.88                     | 0.42              |
| 34:BA:828:A:C2'    | 34:BA:829:G:O4'    | 2.57                     | 0.42              |
| 34:BA:873:A:H4'    | 34:BA:874:G:OP2    | 2.20                     | 0.42              |
| 34:BA:892:A:C2     | 34:BA:907:A:C4     | 3.07                     | 0.42              |
| 34:BA:894:G:C5     | 34:BA:895:G:C8     | 3.07                     | 0.42              |
| 34:BA:970:C:C5'    | 34:BA:972:C:C6     | 3.03                     | 0.42              |
| 34:BA:993:G:C2     | 34:BA:1046:A:C2    | 3.08                     | 0.42              |
| 34:BA:1180:A:C2'   | 34:BA:1181:G:C5'   | 2.86                     | 0.42              |
| 34:BA:1285:A:O2'   | 34:BA:1286:A:P     | 2.77                     | 0.42              |
| 34:BA:1290:G:C6    | 34:BA:1291:G:N7    | 2.88                     | 0.42              |
| 34:BA:1298:C:N4    | 40:BK:114:ARG:CB   | 2.82                     | 0.42              |
| 34:BA:1331:G:HO2'  | 34:BA:1332:A:P     | 2.43                     | 0.42              |
| 34:BA:1339:A:C3'   | 34:BA:1340:A:H5'   | 2.48                     | 0.42              |
| 34:BA:1347:G:H3'   | 42:BM:107:ARG:O    | 2.20                     | 0.42              |
| 34:BA:1404:C:C2    | 34:BA:1405:G:C8    | 3.08                     | 0.42              |
| 34:BA:1433:A:H8    | 34:BA:1433:A:O5'   | 2.02                     | 0.42              |
| 34:BA:1453:G:C2'   | 34:BA:1454:G:C5'   | 2.98                     | 0.42              |
| 34:BA:1481:U:H2'   | 34:BA:1482:G:H8    | 1.78                     | 0.42              |
| 34:BA:1509:C:O2'   | 34:BA:1510:U:C5'   | 2.56                     | 0.42              |
| 35:BF:17:PHE:CD1   | 35:BF:17:PHE:C     | 2.98                     | 0.42              |
| 35:BF:25:ASN:HD21  | 35:BF:27:LYS:HB2   | 1.85                     | 0.42              |
| 35:BF:60:ASP:O     | 35:BF:63:MET:N     | 2.52                     | 0.42              |
| 35:BF:144:ARG:O    | 35:BF:145:LEU:C    | 2.60                     | 0.42              |
| 35:BF:221:LEU:C    | 35:BF:221:LEU:HD22 | 2.44                     | 0.42              |
| 36:BG:10:PHE:CD1   | 36:BG:178:LEU:CD2  | 3.00                     | 0.42              |
| 36:BG:12:LEU:HD11  | 36:BG:18:TRP:CZ2   | 2.55                     | 0.42              |
| 36:BG:29:TYR:HA    | 36:BG:32:LEU:HD12  | 2.02                     | 0.42              |
| 36:BG:59:ARG:HH11  | 36:BG:59:ARG:HG2   | 1.85                     | 0.42              |
| 36:BG:73:PRO:C     | 36:BG:76:VAL:HB    | 2.44                     | 0.42              |
| 36:BG:138:VAL:HG12 | 36:BG:149:ALA:HB3  | 2.01                     | 0.42              |
| 36:BG:147:LYS:HB2  | 36:BG:203:PHE:HD2  | 1.83                     | 0.42              |
| 37:BH:4:TYR:CZ     | 37:BH:5:ILE:O      | 2.73                     | 0.42              |
| 37:BH:107:ARG:HD2  | 37:BH:173:TRP:CH2  | 2.55                     | 0.42              |
| 37:BH:150:GLU:C    | 37:BH:152:SER:N    | 2.76                     | 0.42              |
| 37:BH:160:GLN:OE1  | 37:BH:160:GLN:HA   | 2.20                     | 0.42              |
| 37:BH:165:MET:HE2  | 37:BH:178:VAL:HG22 | 2.02                     | 0.42              |
| 37:BH:169:LYS:HG2  | 37:BH:176:LEU:CD2  | 2.47                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 38:BI:19:MET:CE   | 38:BI:20:GLN:N    | 2.83                     | 0.42              |
| 38:BI:83:GLU:HG2  | 38:BI:88:LYS:HE2  | 2.02                     | 0.42              |
| 38:BI:84:PHE:HZ   | 38:BI:133:TYR:HB3 | 1.68                     | 0.42              |
| 39:BJ:14:LEU:HD21 | 39:BJ:18:GLN:HG2  | 2.00                     | 0.42              |
| 39:BJ:35:ALA:O    | 39:BJ:36:ARG:CG   | 2.62                     | 0.42              |
| 39:BJ:80:ARG:O    | 39:BJ:81:ILE:O    | 2.37                     | 0.42              |
| 40:BK:88:PRO:HD2  | 40:BK:152:ALA:HA  | 2.01                     | 0.42              |
| 40:BK:93:PRO:O    | 40:BK:96:GLN:N    | 2.53                     | 0.42              |
| 41:BL:45:ILE:HG13 | 41:BL:47:GLY:C    | 2.45                     | 0.42              |
| 41:BL:108:GLY:HA2 | 41:BL:138:TRP:CB  | 2.49                     | 0.42              |
| 42:BM:17:VAL:HG11 | 42:BM:81:ILE:HG12 | 2.02                     | 0.42              |
| 43:BN:16:LEU:CD2  | 43:BN:16:LEU:H    | 2.33                     | 0.42              |
| 43:BN:47:PHE:HZ   | 43:BN:65:LEU:CB   | 2.33                     | 0.42              |
| 43:BN:48:THR:O    | 43:BN:49:VAL:HG23 | 2.19                     | 0.42              |
| 47:BR:24:CYS:HA   | 47:BR:38:GLY:O    | 2.19                     | 0.42              |
| 48:BS:62:GLN:CD   | 48:BS:65:ARG:HH21 | 2.27                     | 0.42              |
| 48:BS:67:LEU:O    | 48:BS:68:ARG:C    | 2.63                     | 0.42              |
| 48:BS:71:GLN:CA   | 48:BS:78:TYR:CD1  | 3.03                     | 0.42              |
| 49:BT:9:PHE:CD2   | 49:BT:9:PHE:N     | 2.88                     | 0.42              |
| 49:BT:75:ARG:HG3  | 49:BT:80:PHE:CG   | 2.55                     | 0.42              |
| 50:BU:14:LYS:O    | 50:BU:15:MET:C    | 2.63                     | 0.42              |
| 50:BU:18:THR:CG2  | 50:BU:43:LEU:HD21 | 2.30                     | 0.42              |
| 51:BV:62:GLU:C    | 51:BV:66:LEU:CD2  | 2.93                     | 0.42              |
| 53:BX:74:LYS:H    | 53:BX:74:LYS:HD3  | 1.85                     | 0.42              |
| 55:BC:8:U:C5      | 55:BC:13:C:C4     | 3.08                     | 0.42              |
| 56:BD:1:G:O6      | 56:BD:72:C:C5     | 2.60                     | 0.42              |
| 56:BE:15:G:C3'    | 56:BE:16:U:C5'    | 2.97                     | 0.42              |
| 57:BZ:6:ARG:CA    | 57:BZ:69:ARG:CB   | 2.96                     | 0.42              |
| 57:BZ:41:ARG:CB   | 57:BZ:42:VAL:HG13 | 2.49                     | 0.42              |
| 57:BZ:58:ALA:HB1  | 57:BZ:60:ASN:OD1  | 2.20                     | 0.42              |
| 57:BZ:114:LYS:C   | 57:BZ:116:ALA:N   | 2.75                     | 0.42              |
| 57:BZ:313:VAL:CG1 | 57:BZ:326:VAL:O   | 2.66                     | 0.42              |
| 57:BZ:401:GLU:HB3 | 57:BZ:467:SER:CA  | 2.50                     | 0.42              |
| 57:BZ:483:ARG:HG3 | 57:BZ:483:ARG:H   | 1.75                     | 0.42              |
| 57:BZ:509:LYS:HG3 | 57:BZ:510:LEU:H   | 1.85                     | 0.42              |
| 1:AA:1:G:H2'      | 1:AA:2:G:H8       | 1.84                     | 0.42              |
| 1:AA:36:G:H2'     | 1:AA:37:C:O4'     | 2.20                     | 0.42              |
| 1:AA:37:C:H2'     | 1:AA:38:A:C8      | 2.54                     | 0.42              |
| 1:AA:52:A:C5      | 1:AA:118:A:C2     | 3.08                     | 0.42              |
| 1:AA:104:U:OP2    | 1:AA:105:C:C5     | 2.73                     | 0.42              |
| 1:AA:142:G:H2'    | 1:AA:143:C:H6     | 1.82                     | 0.42              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:AA:174:C:H2'  | 1:AA:175:G:C5'   | 2.43                     | 0.42              |
| 1:AA:189:G:N2   | 1:AA:206:U:C5    | 2.88                     | 0.42              |
| 1:AA:217:G:H2'  | 1:AA:218:A:C5'   | 2.50                     | 0.42              |
| 1:AA:241:A:H8   | 1:AA:243:U:C2    | 2.37                     | 0.42              |
| 1:AA:262:A:O2'  | 1:AA:263:C:C5'   | 2.66                     | 0.42              |
| 1:AA:284:U:OP2  | 1:AA:284:U:O4'   | 2.37                     | 0.42              |
| 1:AA:349:G:H2'  | 1:AA:349:G:N3    | 2.35                     | 0.42              |
| 1:AA:357:A:C5   | 1:AA:358:U:C5    | 3.08                     | 0.42              |
| 1:AA:414:C:C1'  | 1:AA:1864:U:O2'  | 2.67                     | 0.42              |
| 1:AA:449:A:O3'  | 6:AF:52:LYS:HD3  | 2.20                     | 0.42              |
| 1:AA:450:G:O6   | 1:AA:453:C:O5'   | 2.37                     | 0.42              |
| 1:AA:535:C:O2'  | 16:AR:53:ARG:CG  | 2.66                     | 0.42              |
| 1:AA:558:G:OP1  | 9:AK:109:LYS:CG  | 2.67                     | 0.42              |
| 1:AA:580:C:N3   | 1:AA:581:C:C5    | 2.87                     | 0.42              |
| 1:AA:650:C:N3   | 1:AA:651:G:N3    | 2.68                     | 0.42              |
| 1:AA:659:C:C4'  | 6:AF:102:PRO:HD3 | 2.50                     | 0.42              |
| 1:AA:696:G:C2   | 1:AA:697:C:C5    | 3.08                     | 0.42              |
| 1:AA:710:G:H2'  | 1:AA:711:G:H8    | 1.85                     | 0.42              |
| 1:AA:733:G:C6   | 1:AA:761:A:C5    | 3.08                     | 0.42              |
| 1:AA:800:A:O2'  | 1:AA:801:G:OP2   | 2.34                     | 0.42              |
| 1:AA:816:C:C4   | 1:AA:1192:G:N1   | 2.88                     | 0.42              |
| 1:AA:826:U:C4   | 1:AA:828:U:H6    | 2.38                     | 0.42              |
| 1:AA:851:U:C1'  | 24:AZ:46:ASN:HB2 | 2.50                     | 0.42              |
| 1:AA:864:G:C2'  | 1:AA:865:C:C1'   | 2.91                     | 0.42              |
| 1:AA:876:C:N3   | 1:AA:902:C:C2    | 2.88                     | 0.42              |
| 1:AA:878:A:N3   | 1:AA:878:A:C2'   | 2.82                     | 0.42              |
| 1:AA:944:G:O6   | 11:AM:35:HIS:NE2 | 2.53                     | 0.42              |
| 1:AA:954:G:C6   | 1:AA:964:C:N3    | 2.87                     | 0.42              |
| 1:AA:971:C:H4'  | 1:AA:983:A:O2'   | 2.19                     | 0.42              |
| 1:AA:1014:U:H2' | 1:AA:1015:G:C5'  | 2.49                     | 0.42              |
| 1:AA:1028:A:O2' | 1:AA:1029:A:H5'  | 2.19                     | 0.42              |
| 1:AA:1067:A:C5  | 1:AA:1068:G:O6   | 2.73                     | 0.42              |
| 1:AA:1083:U:C1' | 1:AA:1085:A:N6   | 2.81                     | 0.42              |
| 1:AA:1131:G:N3  | 9:AK:74:ARG:HD2  | 2.35                     | 0.42              |
| 1:AA:1170:G:N3  | 1:AA:1170:G:C2'  | 2.68                     | 0.42              |
| 1:AA:1268:A:OP2 | 1:AA:2005:A:H5'' | 2.19                     | 0.42              |
| 1:AA:1270:C:H1' | 1:AA:1325:G:C6   | 2.55                     | 0.42              |
| 1:AA:1423:G:H5' | 1:AA:1493:C:H1'  | 2.02                     | 0.42              |
| 1:AA:1491:G:H2' | 1:AA:1492:G:C3'  | 2.50                     | 0.42              |
| 1:AA:1585:C:C5' | 1:AA:1586:A:OP1  | 2.57                     | 0.42              |
| 1:AA:1806:C:H6  | 1:AA:1806:C:O5'  | 2.03                     | 0.42              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 1:AA:1839:G:C1'   | 1:AA:1927:A:H5'  | 2.50                     | 0.42              |
| 1:AA:1861:G:N2    | 1:AA:1862:G:C1'  | 2.82                     | 0.42              |
| 1:AA:1955:U:C2'   | 1:AA:1955:U:O2   | 2.65                     | 0.42              |
| 1:AA:2027:G:C4    | 1:AA:2037:G:N1   | 2.88                     | 0.42              |
| 1:AA:2087:G:H5''  | 1:AA:2087:G:H8   | 1.83                     | 0.42              |
| 1:AA:2125:G:C4'   | 3:AC:40:THR:HG21 | 2.39                     | 0.42              |
| 1:AA:2128:C:O5'   | 3:AC:35:ALA:CB   | 2.61                     | 0.42              |
| 1:AA:2160:G:O2'   | 1:AA:2161:C:C5'  | 2.68                     | 0.42              |
| 1:AA:2210:G:C6    | 4:AD:70:TRP:CD2  | 3.08                     | 0.42              |
| 1:AA:2289:G:N7    | 1:AA:2289:G:OP2  | 2.52                     | 0.42              |
| 1:AA:2292:C:H2'   | 1:AA:2293:C:C6   | 2.54                     | 0.42              |
| 1:AA:2310:A:H2'   | 1:AA:2311:A:OP2  | 2.20                     | 0.42              |
| 1:AA:2336:A:H2    | 22:AX:57:PHE:CZ  | 2.38                     | 0.42              |
| 1:AA:2349:G:C6    | 1:AA:2369:A:C6   | 3.08                     | 0.42              |
| 1:AA:2495:G:H2'   | 1:AA:2496:C:O4'  | 2.19                     | 0.42              |
| 1:AA:2554:U:C5    | 1:AA:2556:C:N3   | 2.86                     | 0.42              |
| 1:AA:2563:U:H2'   | 1:AA:2565:A:OP2  | 2.19                     | 0.42              |
| 1:AA:2586:C:C6    | 1:AA:2586:C:C3'  | 3.02                     | 0.42              |
| 1:AA:2640:G:C4'   | 9:AK:75:TYR:OH   | 2.63                     | 0.42              |
| 1:AA:2690:C:N4    | 13:AO:14:SER:OG  | 2.52                     | 0.42              |
| 1:AA:2722:G:C6    | 1:AA:2723:C:C4   | 3.08                     | 0.42              |
| 1:AA:2744:G:C2    | 1:AA:2761:G:C4   | 3.08                     | 0.42              |
| 1:AA:2826:A:O2'   | 1:AA:2827:C:H5'  | 2.19                     | 0.42              |
| 1:AA:2843:G:C2    | 1:AA:2844:G:C8   | 3.08                     | 0.42              |
| 2:AB:7:G:O2'      | 2:AB:8:U:P       | 2.78                     | 0.42              |
| 2:AB:16:G:C6      | 2:AB:17:C:C4     | 3.07                     | 0.42              |
| 2:AB:25:A:C2      | 2:AB:26:A:H1'    | 2.55                     | 0.42              |
| 2:AB:110:G:N3     | 2:AB:111:U:H1'   | 2.35                     | 0.42              |
| 3:AC:7:TYR:HE2    | 3:AC:11:LEU:HD22 | 1.85                     | 0.42              |
| 3:AC:13:LYS:HB2   | 3:AC:32:LEU:HD23 | 2.01                     | 0.42              |
| 3:AC:25:ALA:O     | 3:AC:29:VAL:HG12 | 2.19                     | 0.42              |
| 3:AC:64:LEU:HD12  | 3:AC:161:ILE:CG2 | 2.44                     | 0.42              |
| 3:AC:114:VAL:HG12 | 3:AC:144:THR:HA  | 2.01                     | 0.42              |
| 4:AD:7:LYS:HD3    | 4:AD:9:TYR:CE1   | 2.55                     | 0.42              |
| 4:AD:55:GLY:HA3   | 4:AD:217:ARG:NH2 | 2.34                     | 0.42              |
| 4:AD:101:GLU:CD   | 4:AD:102:LYS:O   | 2.63                     | 0.42              |
| 4:AD:105:ILE:HG13 | 4:AD:106:ILE:CD1 | 2.49                     | 0.42              |
| 4:AD:244:ARG:HB3  | 4:AD:252:TRP:HD1 | 1.85                     | 0.42              |
| 4:AD:269:PHE:O    | 4:AD:270:ILE:CG1 | 2.67                     | 0.42              |
| 5:AE:27:LEU:O     | 5:AE:180:ASN:HB3 | 2.20                     | 0.42              |
| 5:AE:174:ASP:CG   | 5:AE:175:VAL:N   | 2.78                     | 0.42              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 6:AF:34:TRP:HA     | 6:AF:34:TRP:HE3   | 1.77                     | 0.42              |
| 7:AG:80:PHE:CG     | 7:AG:81:LYS:N     | 2.87                     | 0.42              |
| 8:AH:11:VAL:N      | 8:AH:50:VAL:CG2   | 2.83                     | 0.42              |
| 8:AH:105:LEU:O     | 8:AH:113:VAL:HG21 | 2.20                     | 0.42              |
| 9:AK:16:ILE:O      | 9:AK:54:VAL:CG2   | 2.64                     | 0.42              |
| 10:AL:4:PRO:C      | 10:AL:22:ILE:O    | 2.62                     | 0.42              |
| 10:AL:24:VAL:HG13  | 10:AL:30:ALA:CB   | 2.39                     | 0.42              |
| 10:AL:72:PRO:HB2   | 15:AQ:84:GLN:HE21 | 1.84                     | 0.42              |
| 10:AL:86:ILE:HD13  | 10:AL:90:GLN:CG   | 2.50                     | 0.42              |
| 10:AL:106:LEU:O    | 10:AL:109:LYS:HG3 | 2.20                     | 0.42              |
| 11:AM:45:LEU:HB3   | 11:AM:46:LYS:HE3  | 2.01                     | 0.42              |
| 11:AM:81:GLN:CA    | 11:AM:86:LYS:HG2  | 2.48                     | 0.42              |
| 11:AM:81:GLN:O     | 11:AM:86:LYS:CG   | 2.68                     | 0.42              |
| 11:AM:117:GLU:O    | 11:AM:121:LYS:CG  | 2.58                     | 0.42              |
| 12:AN:6:ARG:HH21   | 12:AN:8:LYS:N     | 2.17                     | 0.42              |
| 12:AN:50:ALA:O     | 12:AN:54:MET:HG2  | 2.20                     | 0.42              |
| 13:AO:102:GLU:OE2  | 13:AO:102:GLU:CA  | 2.68                     | 0.42              |
| 14:AP:47:THR:O     | 14:AP:48:LEU:O    | 2.37                     | 0.42              |
| 14:AP:70:GLY:O     | 14:AP:73:LEU:N    | 2.53                     | 0.42              |
| 16:AR:34:LYS:O     | 16:AR:35:ALA:C    | 2.61                     | 0.42              |
| 16:AR:110:VAL:HG12 | 16:AR:114:LYS:NZ  | 2.35                     | 0.42              |
| 17:AS:25:LEU:HG    | 17:AS:28:GLU:OE1  | 2.20                     | 0.42              |
| 20:AV:13:VAL:HA    | 20:AV:73:ARG:HH11 | 1.83                     | 0.42              |
| 21:AW:45:ASP:C     | 21:AW:47:VAL:N    | 2.74                     | 0.42              |
| 21:AW:55:HIS:ND1   | 21:AW:55:HIS:N    | 2.67                     | 0.42              |
| 23:AY:39:LEU:N     | 23:AY:39:LEU:HD23 | 2.34                     | 0.42              |
| 24:AZ:3:ARG:NH2    | 24:AZ:59:VAL:CG1  | 2.75                     | 0.42              |
| 24:AZ:30:ARG:O     | 24:AZ:31:LEU:C    | 2.63                     | 0.42              |
| 25:Aa:23:GLU:HB2   | 25:Aa:24:THR:H    | 1.51                     | 0.42              |
| 25:Aa:58:ARG:HH11  | 25:Aa:58:ARG:HG3  | 1.85                     | 0.42              |
| 26:Ab:4:HIS:ND1    | 26:Ab:5:PRO:HD3   | 2.35                     | 0.42              |
| 27:Ac:17:LYS:CE    | 27:Ac:50:ARG:HB2  | 2.50                     | 0.42              |
| 32:AJ:33:ASN:HB2   | 32:AJ:60:TYR:O    | 2.19                     | 0.42              |
| 32:AJ:129:GLY:O    | 32:AJ:132:ARG:HB2 | 2.20                     | 0.42              |
| 34:BA:25:C:H4'     | 34:BA:524:G:C2    | 2.54                     | 0.42              |
| 34:BA:35:G:C5      | 34:BA:36:C:C5     | 3.08                     | 0.42              |
| 34:BA:48:C:H2'     | 34:BA:49:U:OP1    | 2.20                     | 0.42              |
| 34:BA:50:A:H61     | 34:BA:361:G:C5'   | 2.33                     | 0.42              |
| 34:BA:51:A:H4'     | 34:BA:52:G:H5''   | 2.01                     | 0.42              |
| 34:BA:51:A:N1      | 34:BA:353:A:N1    | 2.67                     | 0.42              |
| 34:BA:307:C:N3     | 34:BA:308:C:H5    | 2.14                     | 0.42              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BA:464:G:O5'    | 34:BA:464:G:H8    | 2.03                     | 0.42              |
| 34:BA:642:A:C5     | 41:BL:115:SER:HA  | 2.54                     | 0.42              |
| 34:BA:671:G:C2'    | 34:BA:672:U:O4'   | 2.67                     | 0.42              |
| 34:BA:684:A:O4'    | 44:BO:38:ASN:ND2  | 2.51                     | 0.42              |
| 34:BA:721:G:O2'    | 34:BA:722:A:C2    | 2.63                     | 0.42              |
| 34:BA:730:G:C2'    | 34:BA:731:G:H5'   | 2.49                     | 0.42              |
| 34:BA:753:A:O2'    | 34:BA:754:C:OP2   | 2.34                     | 0.42              |
| 34:BA:1056:U:H5'   | 36:BG:163:ALA:CB  | 2.50                     | 0.42              |
| 34:BA:1102:A:N6    | 34:BA:1103:C:N4   | 2.68                     | 0.42              |
| 34:BA:1185:G:H8    | 34:BA:1185:G:O5'  | 2.03                     | 0.42              |
| 34:BA:1307:U:C2    | 34:BA:1308:U:C6   | 3.07                     | 0.42              |
| 34:BA:1333:A:C2'   | 34:BA:1334:G:O4'  | 2.67                     | 0.42              |
| 34:BA:1410:G:N2    | 34:BA:1411:C:C2   | 2.88                     | 0.42              |
| 34:BA:1422:G:N3    | 34:BA:1423:G:C8   | 2.88                     | 0.42              |
| 34:BA:1439:C:O5'   | 34:BA:1439:C:H6   | 2.02                     | 0.42              |
| 34:BA:1447:G:O2'   | 34:BA:1448:C:H5'  | 2.20                     | 0.42              |
| 34:BA:1499:A:H8    | 34:BA:1500:A:N7   | 2.09                     | 0.42              |
| 34:BA:1536:C:C2    | 34:BA:1537:U:C5   | 3.08                     | 0.42              |
| 34:BA:1537:U:C2    | 34:BA:1538:C:C5   | 3.08                     | 0.42              |
| 35:BF:22:LYS:HE2   | 35:BF:22:LYS:HB2  | 1.82                     | 0.42              |
| 35:BF:44:LEU:H     | 35:BF:44:LEU:CD2  | 2.22                     | 0.42              |
| 35:BF:53:ARG:O     | 35:BF:56:ARG:NH1  | 2.53                     | 0.42              |
| 35:BF:96:ARG:O     | 35:BF:98:LEU:N    | 2.53                     | 0.42              |
| 35:BF:102:LEU:HD23 | 35:BF:176:GLU:HB3 | 1.95                     | 0.42              |
| 35:BF:158:LEU:O    | 35:BF:160:ASP:OD2 | 2.38                     | 0.42              |
| 36:BG:18:TRP:O     | 36:BG:21:ARG:HG2  | 2.20                     | 0.42              |
| 36:BG:33:LEU:HD23  | 36:BG:36:ASP:CB   | 2.50                     | 0.42              |
| 36:BG:36:ASP:O     | 36:BG:36:ASP:OD2  | 2.36                     | 0.42              |
| 36:BG:38:ARG:HB2   | 36:BG:94:LEU:CG   | 2.50                     | 0.42              |
| 36:BG:40:ARG:HE    | 47:BR:52:GLN:NE2  | 2.18                     | 0.42              |
| 36:BG:142:MET:HG3  | 36:BG:143:GLU:N   | 2.35                     | 0.42              |
| 39:BJ:11:ASN:ND2   | 39:BJ:86:ARG:NH2  | 2.60                     | 0.42              |
| 39:BJ:41:GLU:CB    | 39:BJ:62:TRP:HE3  | 2.26                     | 0.42              |
| 39:BJ:48:LEU:N     | 39:BJ:48:LEU:CD2  | 2.65                     | 0.42              |
| 39:BJ:59:TYR:CE2   | 39:BJ:61:LEU:HD21 | 2.55                     | 0.42              |
| 39:BJ:62:TRP:CD1   | 51:BV:35:ARG:NH2  | 2.88                     | 0.42              |
| 40:BK:126:ASP:CB   | 40:BK:131:LYS:HG3 | 2.50                     | 0.42              |
| 41:BL:6:ILE:CD1    | 41:BL:85:ARG:NE   | 2.83                     | 0.42              |
| 41:BL:18:ARG:NE    | 41:BL:18:ARG:H    | 2.18                     | 0.42              |
| 41:BL:40:ALA:HB2   | 41:BL:45:ILE:CG2  | 2.49                     | 0.42              |
| 41:BL:75:ARG:HH11  | 41:BL:75:ARG:HG3  | 1.85                     | 0.42              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 41:BL:111:ILE:HD12 | 41:BL:111:ILE:H   | 1.76                     | 0.42              |
| 42:BM:3:GLN:HG3    | 42:BM:20:ARG:HD3  | 2.02                     | 0.42              |
| 42:BM:19:LEU:CD2   | 42:BM:59:PHE:HD2  | 2.26                     | 0.42              |
| 43:BN:56:HIS:C     | 43:BN:58:ASP:N    | 2.78                     | 0.42              |
| 44:BO:87:THR:HG22  | 44:BO:91:ARG:CZ   | 2.49                     | 0.42              |
| 44:BO:104:GLN:HE22 | 44:BO:106:LYS:CB  | 2.33                     | 0.42              |
| 46:BQ:15:VAL:CG2   | 46:BQ:39:ILE:CB   | 2.89                     | 0.42              |
| 47:BR:48:ALA:N     | 47:BR:53:LEU:HD12 | 2.35                     | 0.42              |
| 49:BT:2:VAL:O      | 49:BT:2:VAL:HG12  | 2.20                     | 0.42              |
| 49:BT:66:PRO:O     | 49:BT:67:THR:C    | 2.63                     | 0.42              |
| 49:BT:80:PHE:O     | 49:BT:80:PHE:CD2  | 2.72                     | 0.42              |
| 50:BU:10:VAL:HB    | 50:BU:54:GLY:H    | 1.85                     | 0.42              |
| 52:BW:13:ASP:HA    | 52:BW:16:LEU:HB3  | 2.01                     | 0.42              |
| 52:BW:41:VAL:O     | 52:BW:44:MET:HB2  | 2.19                     | 0.42              |
| 53:BX:32:ALA:O     | 53:BX:33:ILE:C    | 2.62                     | 0.42              |
| 55:BC:57:G:H21     | 55:BC:58:A:H4'    | 1.85                     | 0.42              |
| 56:BD:6:G:C2       | 56:BD:67:C:N3     | 2.88                     | 0.42              |
| 56:BD:43:C:C2'     | 56:BD:44:G:H5'    | 2.50                     | 0.42              |
| 57:BZ:57:LEU:CD2   | 57:BZ:71:ASN:CG   | 2.86                     | 0.42              |
| 57:BZ:59:LYS:NZ    | 57:BZ:66:TRP:CZ2  | 2.88                     | 0.42              |
| 57:BZ:117:PHE:HE1  | 57:BZ:148:PHE:HD2 | 1.67                     | 0.42              |
| 57:BZ:206:GLN:CG   | 57:BZ:227:LYS:CB  | 2.27                     | 0.42              |
| 57:BZ:253:LYS:HD2  | 57:BZ:262:ARG:CD  | 2.49                     | 0.42              |
| 57:BZ:436:ARG:HG2  | 57:BZ:436:ARG:NH1 | 2.35                     | 0.42              |
| 1:AA:104:U:OP2     | 1:AA:104:U:C6     | 2.73                     | 0.41              |
| 1:AA:105:C:H2'     | 1:AA:106:C:H6     | 1.83                     | 0.41              |
| 1:AA:185:U:O2'     | 1:AA:186:G:O4'    | 2.27                     | 0.41              |
| 1:AA:270(B):A:H4'  | 1:AA:270(C):C:C6  | 2.56                     | 0.41              |
| 1:AA:342:G:C2      | 1:AA:343:C:C2     | 3.08                     | 0.41              |
| 1:AA:431:U:H6      | 1:AA:431:U:O5'    | 2.03                     | 0.41              |
| 1:AA:531:C:O2      | 1:AA:531:C:C2'    | 2.68                     | 0.41              |
| 1:AA:545:G:C1'     | 1:AA:549:G:N2     | 2.66                     | 0.41              |
| 1:AA:558:G:O2'     | 1:AA:559:G:H5'    | 2.20                     | 0.41              |
| 1:AA:629:G:H5'     | 1:AA:649:G:C2     | 2.55                     | 0.41              |
| 1:AA:636:G:P       | 11:AM:132:LYS:HG3 | 2.60                     | 0.41              |
| 1:AA:677:A:C4      | 1:AA:678:C:C5     | 3.08                     | 0.41              |
| 1:AA:708:C:H2'     | 1:AA:709:U:C6     | 2.55                     | 0.41              |
| 1:AA:726:G:H5''    | 1:AA:727:A:OP1    | 2.20                     | 0.41              |
| 1:AA:738:G:C6      | 1:AA:759:G:O6     | 2.73                     | 0.41              |
| 1:AA:764:A:H3'     | 1:AA:765:G:C5'    | 2.49                     | 0.41              |
| 1:AA:833:U:C2'     | 1:AA:834:C:O5'    | 2.68                     | 0.41              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:AA:861:A:C5   | 1:AA:862:G:C8    | 3.07                     | 0.41              |
| 1:AA:861:A:P    | 1:AA:862:G:OP2   | 2.78                     | 0.41              |
| 1:AA:876:C:C2   | 1:AA:902:C:C2    | 3.08                     | 0.41              |
| 1:AA:893:C:C5   | 1:AA:894:C:C4    | 3.06                     | 0.41              |
| 1:AA:909:A:C2   | 1:AA:912:C:H1'   | 2.54                     | 0.41              |
| 1:AA:983:A:H2'  | 1:AA:984:A:N7    | 2.34                     | 0.41              |
| 1:AA:1103:A:C2' | 1:AA:1104:C:OP1  | 2.67                     | 0.41              |
| 1:AA:1122:G:N2  | 1:AA:1123:C:C2   | 2.88                     | 0.41              |
| 1:AA:1154:G:OP1 | 16:AR:62:ILE:CD1 | 2.57                     | 0.41              |
| 1:AA:1193:G:H2' | 1:AA:1194:A:O4'  | 2.19                     | 0.41              |
| 1:AA:1196:C:H2' | 1:AA:1197:G:N9   | 2.35                     | 0.41              |
| 1:AA:1257:C:H1' | 6:AF:83:PHE:HB2  | 2.02                     | 0.41              |
| 1:AA:1287:A:N3  | 1:AA:1287:A:C2'  | 2.82                     | 0.41              |
| 1:AA:1416:G:C2  | 1:AA:1417:C:N4   | 2.87                     | 0.41              |
| 1:AA:1657:C:C2  | 1:AA:1658:C:C5   | 3.08                     | 0.41              |
| 1:AA:1684:C:C2  | 1:AA:1705:G:N2   | 2.88                     | 0.41              |
| 1:AA:1689:A:C6  | 1:AA:1700:A:C4   | 3.08                     | 0.41              |
| 1:AA:1841:U:C2  | 1:AA:1842:G:C8   | 3.08                     | 0.41              |
| 1:AA:1914:C:C4  | 1:AA:1915:U:C4   | 3.08                     | 0.41              |
| 1:AA:1920:C:C2  | 1:AA:1921:G:C8   | 3.08                     | 0.41              |
| 1:AA:1977:A:C2  | 1:AA:1978:A:H1'  | 2.54                     | 0.41              |
| 1:AA:2027:G:O2' | 1:AA:2028:U:C5'  | 2.64                     | 0.41              |
| 1:AA:2074:U:O2  | 1:AA:2075:U:C6   | 2.72                     | 0.41              |
| 1:AA:2124:G:O2' | 3:AC:40:THR:O    | 2.38                     | 0.41              |
| 1:AA:2169:A:N1  | 1:AA:2170:A:C6   | 2.88                     | 0.41              |
| 1:AA:2213:U:C4' | 1:AA:2215:G:N7   | 2.83                     | 0.41              |
| 1:AA:2236:C:C5  | 1:AA:2237:G:C5   | 3.08                     | 0.41              |
| 1:AA:2285:C:C4' | 1:AA:2288:A:N6   | 2.83                     | 0.41              |
| 1:AA:2298:A:C2  | 1:AA:2321:G:N1   | 2.88                     | 0.41              |
| 1:AA:2318:G:C2' | 1:AA:2319:G:OP2  | 2.68                     | 0.41              |
| 1:AA:2367:G:C2  | 1:AA:2368:C:C5   | 3.08                     | 0.41              |
| 1:AA:2371:G:N2  | 1:AA:2372:G:C2   | 2.88                     | 0.41              |
| 1:AA:2372:G:H2' | 1:AA:2372:G:N3   | 2.34                     | 0.41              |
| 1:AA:2532:G:H4' | 1:AA:2657:A:C4   | 2.53                     | 0.41              |
| 1:AA:2585:U:H2' | 1:AA:2586:C:OP2  | 2.19                     | 0.41              |
| 1:AA:2706:G:C2  | 1:AA:2707:G:C4   | 3.08                     | 0.41              |
| 1:AA:2786:U:C2  | 1:AA:2787:C:C5   | 3.08                     | 0.41              |
| 1:AA:2789:C:H2' | 1:AA:2893:G:H21  | 1.81                     | 0.41              |
| 1:AA:2797:U:C3' | 1:AA:2797:U:C6   | 3.03                     | 0.41              |
| 1:AA:2850:A:C4  | 1:AA:2851:A:C8   | 3.08                     | 0.41              |
| 1:AA:2887:U:N3  | 1:AA:2888:C:C4   | 2.88                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:AB:43:C:H2'     | 2:AB:44:G:C5'     | 2.50                     | 0.41              |
| 2:AB:46:A:O2'     | 2:AB:47:C:C5'     | 2.68                     | 0.41              |
| 2:AB:58:A:O5'     | 2:AB:58:A:C8      | 2.60                     | 0.41              |
| 2:AB:83:G:O2'     | 2:AB:84:C:C5'     | 2.61                     | 0.41              |
| 2:AB:85:G:C2      | 2:AB:86:G:C5      | 3.07                     | 0.41              |
| 3:AC:87:GLU:CG    | 3:AC:94:VAL:HG11  | 2.50                     | 0.41              |
| 3:AC:223:ARG:CB   | 3:AC:223:ARG:HH11 | 2.33                     | 0.41              |
| 4:AD:37:LEU:CG    | 4:AD:63:ARG:HA    | 2.49                     | 0.41              |
| 4:AD:66:ASP:OD2   | 4:AD:103:ARG:NH1  | 2.45                     | 0.41              |
| 4:AD:85:ASP:OD2   | 4:AD:87:ASN:ND2   | 2.53                     | 0.41              |
| 4:AD:94:LEU:HD12  | 4:AD:94:LEU:C     | 2.44                     | 0.41              |
| 4:AD:122:ASP:O    | 4:AD:123:ALA:O    | 2.37                     | 0.41              |
| 4:AD:173:VAL:O    | 4:AD:184:LYS:HG3  | 2.20                     | 0.41              |
| 4:AD:182:LEU:HG   | 4:AD:270:ILE:HD11 | 2.02                     | 0.41              |
| 4:AD:201:HIS:HB3  | 4:AD:202:LYS:HD2  | 2.02                     | 0.41              |
| 4:AD:212:SER:O    | 4:AD:215:LEU:HB2  | 2.20                     | 0.41              |
| 4:AD:244:ARG:CA   | 4:AD:252:TRP:CD1  | 3.02                     | 0.41              |
| 4:AD:268:ARG:O    | 4:AD:269:PHE:CG   | 2.73                     | 0.41              |
| 6:AF:38:ARG:O     | 6:AF:42:ALA:CB    | 2.68                     | 0.41              |
| 6:AF:52:LYS:C     | 6:AF:53:THR:HG23  | 2.44                     | 0.41              |
| 6:AF:116:ASP:O    | 6:AF:119:ARG:CD   | 2.68                     | 0.41              |
| 7:AG:41:GLN:NE2   | 7:AG:155:MET:CA   | 2.75                     | 0.41              |
| 7:AG:152:LEU:HB2  | 7:AG:155:MET:CE   | 2.50                     | 0.41              |
| 8:AH:10:PRO:C     | 8:AH:12:PRO:HD2   | 2.45                     | 0.41              |
| 8:AH:96:ALA:HB3   | 8:AH:128:PRO:HB2  | 2.00                     | 0.41              |
| 8:AH:142:GLY:O    | 8:AH:145:ALA:HB3  | 2.20                     | 0.41              |
| 9:AK:21:LYS:CB    | 9:AK:26:LEU:HD22  | 2.50                     | 0.41              |
| 9:AK:39:ARG:CG    | 9:AK:40:PRO:HD2   | 2.50                     | 0.41              |
| 10:AL:8:LEU:CD2   | 10:AL:81:ASP:C    | 2.94                     | 0.41              |
| 10:AL:11:ALA:HA   | 10:AL:14:THR:HG21 | 2.02                     | 0.41              |
| 10:AL:13:ASN:O    | 10:AL:14:THR:C    | 2.62                     | 0.41              |
| 14:AP:40:ILE:CG2  | 14:AP:41:ASP:H    | 2.33                     | 0.41              |
| 14:AP:69:VAL:HG12 | 14:AP:73:LEU:CD2  | 2.50                     | 0.41              |
| 15:AQ:12:SER:O    | 15:AQ:13:ARG:C    | 2.63                     | 0.41              |
| 16:AR:65:ILE:HB   | 16:AR:76:TYR:OH   | 2.19                     | 0.41              |
| 16:AR:89:GLU:HB3  | 17:AS:51:VAL:CA   | 2.49                     | 0.41              |
| 17:AS:5:VAL:HG13  | 17:AS:39:LEU:CA   | 2.48                     | 0.41              |
| 17:AS:35:LEU:O    | 17:AS:61:VAL:CG1  | 2.63                     | 0.41              |
| 18:AT:24:ILE:HG22 | 18:AT:32:ALA:CA   | 2.49                     | 0.41              |
| 18:AT:98:LYS:NZ   | 18:AT:98:LYS:C    | 2.71                     | 0.41              |
| 19:AU:8:ILE:H     | 19:AU:9:LEU:CD1   | 2.34                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 19:AU:39:ILE:CG2  | 19:AU:54:VAL:CG1  | 2.96                     | 0.41              |
| 20:AV:82:PRO:CG   | 20:AV:97:ARG:N    | 2.66                     | 0.41              |
| 21:AW:17:ALA:O    | 21:AW:20:ARG:CB   | 2.68                     | 0.41              |
| 21:AW:24:LEU:HD12 | 21:AW:41:LEU:CD2  | 2.50                     | 0.41              |
| 21:AW:48:PHE:HZ   | 21:AW:86:VAL:HG11 | 1.73                     | 0.41              |
| 21:AW:152:ALA:O   | 21:AW:155:LEU:CD2 | 2.60                     | 0.41              |
| 23:AY:24:LYS:HA   | 23:AY:52:ILE:HD13 | 2.02                     | 0.41              |
| 24:AZ:40:THR:HG22 | 24:AZ:42:ALA:CB   | 2.50                     | 0.41              |
| 25:Aa:5:ILE:CD1   | 25:Aa:60:GLN:HE22 | 2.21                     | 0.41              |
| 25:Aa:6:HIS:CB    | 25:Aa:56:VAL:HG13 | 2.48                     | 0.41              |
| 25:Aa:59:PHE:HA   | 25:Aa:62:ARG:CZ   | 2.49                     | 0.41              |
| 26:Ab:34:PRO:HD3  | 26:Ab:40:LYS:NZ   | 2.35                     | 0.41              |
| 29:Ae:15:LYS:O    | 29:Ae:22:VAL:CB   | 2.68                     | 0.41              |
| 29:Ae:39:LYS:HB3  | 29:Ae:39:LYS:NZ   | 2.15                     | 0.41              |
| 34:BA:40:C:H2'    | 34:BA:41:G:O5'    | 2.20                     | 0.41              |
| 34:BA:41:G:C5     | 34:BA:42:G:N7     | 2.88                     | 0.41              |
| 34:BA:46:G:N2     | 34:BA:366:C:C1'   | 2.83                     | 0.41              |
| 34:BA:63:C:N3     | 34:BA:105:G:C6    | 2.88                     | 0.41              |
| 34:BA:66:G:O4'    | 34:BA:173:U:C4    | 2.72                     | 0.41              |
| 34:BA:101:A:N3    | 34:BA:102:G:C8    | 2.88                     | 0.41              |
| 34:BA:120:A:C6    | 34:BA:122:G:C2    | 3.07                     | 0.41              |
| 34:BA:148:G:H1    | 34:BA:174:C:N4    | 2.09                     | 0.41              |
| 34:BA:255:G:OP1   | 50:BU:69:LYS:CE   | 2.67                     | 0.41              |
| 34:BA:468:A:H3'   | 34:BA:474:G:H8    | 1.85                     | 0.41              |
| 34:BA:498:A:H4'   | 34:BA:500:G:C5'   | 2.47                     | 0.41              |
| 34:BA:587:G:N3    | 34:BA:755:G:C6    | 2.88                     | 0.41              |
| 34:BA:589:C:H1'   | 34:BA:653:A:N6    | 2.35                     | 0.41              |
| 34:BA:606:G:C2    | 34:BA:631:G:C2    | 3.08                     | 0.41              |
| 34:BA:673:G:O2'   | 34:BA:674:G:C8    | 2.73                     | 0.41              |
| 34:BA:698:G:C2    | 34:BA:699:C:C2    | 3.08                     | 0.41              |
| 34:BA:747:C:H2'   | 34:BA:748:C:C1'   | 2.49                     | 0.41              |
| 34:BA:761:G:H2'   | 34:BA:762:C:H6    | 1.84                     | 0.41              |
| 34:BA:765:G:OP1   | 48:BS:50:HIS:CD2  | 2.72                     | 0.41              |
| 34:BA:776:G:N2    | 34:BA:802:A:OP2   | 2.53                     | 0.41              |
| 34:BA:811:C:C5    | 34:BA:812:C:O2    | 2.73                     | 0.41              |
| 34:BA:874:G:C6    | 34:BA:875:C:C4    | 3.08                     | 0.41              |
| 34:BA:923:A:H5''  | 38:BI:21:ALA:HB2  | 2.02                     | 0.41              |
| 34:BA:953:G:N1    | 34:BA:1229:A:C6   | 2.88                     | 0.41              |
| 34:BA:1106:G:N2   | 34:BA:1107:C:C2   | 2.88                     | 0.41              |
| 34:BA:1127:G:N2   | 34:BA:1147:C:N4   | 2.67                     | 0.41              |
| 34:BA:1130:A:C6   | 34:BA:1146:A:N1   | 2.88                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1191:A:N3   | 34:BA:1191:A:C2'   | 2.79                     | 0.41              |
| 34:BA:1291:G:C2   | 34:BA:1292:U:C2    | 3.07                     | 0.41              |
| 34:BA:1318:A:C8   | 52:BW:37:ARG:HB3   | 2.54                     | 0.41              |
| 34:BA:1424:C:H2'  | 34:BA:1425:U:H6    | 1.85                     | 0.41              |
| 34:BA:1431:C:H2'  | 34:BA:1432:G:C5'   | 2.49                     | 0.41              |
| 34:BA:1455:G:H4'  | 53:BX:31:SER:HG    | 1.83                     | 0.41              |
| 34:BA:1485:U:C2'  | 34:BA:1486:G:H8    | 2.32                     | 0.41              |
| 35:BF:15:VAL:HG23 | 35:BF:16:HIS:HD1   | 1.82                     | 0.41              |
| 35:BF:99:GLY:C    | 35:BF:101:MET:H    | 2.26                     | 0.41              |
| 35:BF:118:LEU:CD2 | 35:BF:142:LEU:HD12 | 2.49                     | 0.41              |
| 35:BF:131:PRO:C   | 35:BF:134:GLU:H    | 2.27                     | 0.41              |
| 35:BF:199:TYR:C   | 35:BF:201:ILE:HD12 | 2.44                     | 0.41              |
| 36:BG:30:ARG:O    | 36:BG:31:HIS:C     | 2.64                     | 0.41              |
| 37:BH:88:VAL:O    | 37:BH:92:VAL:HG23  | 2.20                     | 0.41              |
| 37:BH:98:GLU:OE1  | 37:BH:107:ARG:HG3  | 2.18                     | 0.41              |
| 37:BH:144:ASP:C   | 37:BH:184:LYS:CD   | 2.90                     | 0.41              |
| 38:BI:14:ARG:O    | 38:BI:14:ARG:HG3   | 2.20                     | 0.41              |
| 38:BI:37:ARG:C    | 38:BI:38:GLN:HG3   | 2.45                     | 0.41              |
| 38:BI:111:GLU:HG3 | 38:BI:111:GLU:H    | 1.56                     | 0.41              |
| 38:BI:129:ILE:O   | 38:BI:132:ALA:N    | 2.53                     | 0.41              |
| 38:BI:132:ALA:O   | 38:BI:135:THR:CB   | 2.68                     | 0.41              |
| 38:BI:152:ARG:CD  | 38:BI:152:ARG:C    | 2.92                     | 0.41              |
| 39:BJ:23:LYS:HE3  | 39:BJ:61:LEU:HD11  | 2.02                     | 0.41              |
| 40:BK:12:LEU:HD11 | 40:BK:21:VAL:HB    | 2.02                     | 0.41              |
| 40:BK:69:VAL:HG13 | 40:BK:135:VAL:HG22 | 2.02                     | 0.41              |
| 40:BK:75:VAL:HG13 | 40:BK:87:VAL:N     | 2.35                     | 0.41              |
| 40:BK:77:SER:OG   | 40:BK:86:GLN:OE1   | 2.37                     | 0.41              |
| 40:BK:152:ALA:C   | 40:BK:154:TYR:N    | 2.77                     | 0.41              |
| 41:BL:12:ARG:HB2  | 41:BL:26:VAL:HG21  | 2.01                     | 0.41              |
| 41:BL:46:LYS:NZ   | 41:BL:65:TYR:H     | 2.11                     | 0.41              |
| 41:BL:120:THR:O   | 41:BL:123:GLU:OE1  | 2.38                     | 0.41              |
| 42:BM:9:ARG:HA    | 42:BM:76:ALA:HB1   | 2.01                     | 0.41              |
| 43:BN:46:ARG:NE   | 43:BN:64:GLU:OE2   | 2.53                     | 0.41              |
| 44:BO:15:ALA:HA   | 44:BO:78:GLN:NE2   | 2.35                     | 0.41              |
| 45:BP:57:LYS:HE2  | 45:BP:67:THR:CG2   | 2.50                     | 0.41              |
| 45:BP:82:VAL:HG12 | 45:BP:105:TYR:CD1  | 2.55                     | 0.41              |
| 45:BP:100:ILE:C   | 45:BP:101:VAL:CG2  | 2.83                     | 0.41              |
| 46:BQ:14:ARG:O    | 46:BQ:45:VAL:HG21  | 2.20                     | 0.41              |
| 47:BR:3:ARG:O     | 47:BR:3:ARG:CG     | 2.68                     | 0.41              |
| 47:BR:4:LYS:O     | 47:BR:6:LEU:N      | 2.53                     | 0.41              |
| 48:BS:13:GLN:O    | 48:BS:15:PHE:N     | 2.53                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 48:BS:29:VAL:HG22 | 48:BS:67:LEU:HD21 | 2.01                     | 0.41              |
| 52:BW:77:THR:HG23 | 52:BW:78:ARG:HG2  | 2.01                     | 0.41              |
| 53:BX:40:ALA:O    | 53:BX:42:GLN:N    | 2.53                     | 0.41              |
| 53:BX:76:ALA:C    | 53:BX:78:ALA:N    | 2.74                     | 0.41              |
| 54:BY:5:ASP:O     | 54:BY:6:ARG:HG2   | 2.20                     | 0.41              |
| 55:BC:66:U:H2'    | 55:BC:67:C:C6     | 2.55                     | 0.41              |
| 56:BE:4:C:H5''    | 56:BE:4:C:H6      | 1.85                     | 0.41              |
| 57:BZ:8:ILE:C     | 57:BZ:72:ILE:HG22 | 2.41                     | 0.41              |
| 57:BZ:18:LYS:C    | 57:BZ:19:THR:HG23 | 2.43                     | 0.41              |
| 57:BZ:19:THR:HA   | 57:BZ:20:THR:CB   | 2.50                     | 0.41              |
| 57:BZ:196:ALA:O   | 57:BZ:197:PRO:C   | 2.63                     | 0.41              |
| 57:BZ:276:ILE:HA  | 57:BZ:277:THR:HA  | 1.61                     | 0.41              |
| 57:BZ:374:ARG:CB  | 57:BZ:582:PRO:HA  | 2.50                     | 0.41              |
| 57:BZ:509:LYS:HZ2 | 57:BZ:561:ILE:CG1 | 2.30                     | 0.41              |
| 57:BZ:551:ALA:HA  | 57:BZ:552:ASP:CG  | 2.45                     | 0.41              |
| 1:AA:21:A:H2'     | 1:AA:22:C:O4'     | 2.20                     | 0.41              |
| 1:AA:55:G:O2'     | 1:AA:127:A:N1     | 2.50                     | 0.41              |
| 1:AA:58:G:OP1     | 19:AU:75:ASP:N    | 2.53                     | 0.41              |
| 1:AA:60:G:N7      | 1:AA:63:U:O4      | 2.53                     | 0.41              |
| 1:AA:70:G:C4'     | 1:AA:71:A:C5'     | 2.88                     | 0.41              |
| 1:AA:95:G:O2'     | 23:AY:42:ASN:CB   | 2.64                     | 0.41              |
| 1:AA:194:G:C6     | 1:AA:195:A:C6     | 3.09                     | 0.41              |
| 1:AA:203:C:C5     | 1:AA:204:A:N7     | 2.88                     | 0.41              |
| 1:AA:227:A:H62    | 1:AA:2407:G:H8    | 1.68                     | 0.41              |
| 1:AA:270(S):G:H2' | 1:AA:270(T):G:H8  | 1.86                     | 0.41              |
| 1:AA:270(T):G:C6  | 1:AA:270(U):C:C4  | 3.08                     | 0.41              |
| 1:AA:328:U:O2'    | 20:AV:67:LEU:N    | 2.51                     | 0.41              |
| 1:AA:330:A:H1'    | 1:AA:1210:A:C5    | 2.55                     | 0.41              |
| 1:AA:373:U:C2'    | 1:AA:374:A:OP2    | 2.68                     | 0.41              |
| 1:AA:412:A:H2'    | 1:AA:413:C:H5'    | 2.01                     | 0.41              |
| 1:AA:447:A:OP1    | 16:AR:5:LYS:NZ    | 2.53                     | 0.41              |
| 1:AA:451:C:H2'    | 1:AA:453:C:H5     | 1.84                     | 0.41              |
| 1:AA:463:G:H3'    | 1:AA:463:G:C8     | 2.55                     | 0.41              |
| 1:AA:480:A:H2'    | 1:AA:481:G:OP1    | 2.20                     | 0.41              |
| 1:AA:570:G:N2     | 1:AA:2498:C:O2'   | 2.52                     | 0.41              |
| 1:AA:592:G:C6     | 1:AA:593:G:C5     | 3.08                     | 0.41              |
| 1:AA:596:G:H3'    | 1:AA:597:U:H6     | 1.85                     | 0.41              |
| 1:AA:617:G:C8     | 1:AA:617:G:C3'    | 3.01                     | 0.41              |
| 1:AA:677:A:O2'    | 1:AA:2071:A:H5'   | 2.20                     | 0.41              |
| 1:AA:819:A:H2'    | 1:AA:820:A:C1'    | 2.49                     | 0.41              |
| 1:AA:843:G:C2     | 1:AA:936:C:N3     | 2.88                     | 0.41              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 1:AA:849:A:H3'   | 1:AA:850:C:H6      | 1.85                     | 0.41              |
| 1:AA:858:U:OP1   | 22:AX:44:ARG:CZ    | 2.68                     | 0.41              |
| 1:AA:873:G:N2    | 1:AA:874:G:H1'     | 2.35                     | 0.41              |
| 1:AA:991:C:H5'   | 1:AA:1185:C:H2'    | 2.02                     | 0.41              |
| 1:AA:1058:G:C2'  | 1:AA:1059:G:H5''   | 2.50                     | 0.41              |
| 1:AA:1135:C:O2'  | 1:AA:1136:G:C5'    | 2.67                     | 0.41              |
| 1:AA:1138:G:N2   | 1:AA:1139:G:C1'    | 2.72                     | 0.41              |
| 1:AA:1183:G:H4'  | 1:AA:1184:G:O4'    | 2.20                     | 0.41              |
| 1:AA:1238:G:N1   | 1:AA:1239:G:C4     | 2.89                     | 0.41              |
| 1:AA:1241:A:O2'  | 1:AA:1242:A:OP1    | 2.38                     | 0.41              |
| 1:AA:1272:A:C6   | 1:AA:1618:A:N3     | 2.88                     | 0.41              |
| 1:AA:1278:A:O3'  | 13:AO:34:ILE:HG23  | 2.20                     | 0.41              |
| 1:AA:1304:C:H2'  | 1:AA:1305:C:O5'    | 2.20                     | 0.41              |
| 1:AA:1385:G:C5   | 1:AA:1386:C:C5     | 3.08                     | 0.41              |
| 1:AA:1449:A:C8   | 1:AA:1529:A:C2     | 3.07                     | 0.41              |
| 1:AA:1567:A:OP2  | 4:AD:86:PRO:HA     | 2.20                     | 0.41              |
| 1:AA:1579:A:H3'  | 1:AA:1580:A:O4'    | 2.19                     | 0.41              |
| 1:AA:1817:G:C2'  | 1:AA:1818:U:C5'    | 2.95                     | 0.41              |
| 1:AA:1820:U:C1'  | 4:AD:202:LYS:CG    | 2.97                     | 0.41              |
| 1:AA:1908:C:N4   | 58:AA:3001:NMY:H82 | 2.35                     | 0.41              |
| 1:AA:1923:U:H6   | 1:AA:1923:U:H5''   | 1.84                     | 0.41              |
| 1:AA:1961:C:H5'  | 34:BA:1484:C:O2'   | 2.20                     | 0.41              |
| 1:AA:2083:G:C2   | 1:AA:2084:C:N3     | 2.88                     | 0.41              |
| 1:AA:2107:C:H5'' | 1:AA:2108:C:O5'    | 2.19                     | 0.41              |
| 1:AA:2186:G:C2   | 1:AA:2187:G:C6     | 3.08                     | 0.41              |
| 1:AA:2256:G:C6   | 1:AA:2257:U:C4     | 3.08                     | 0.41              |
| 1:AA:2345:G:N3   | 1:AA:2381:C:H2'    | 2.34                     | 0.41              |
| 1:AA:2350:C:H2'  | 1:AA:2351:G:O5'    | 2.20                     | 0.41              |
| 1:AA:2462:U:N3   | 1:AA:2463:C:C4     | 2.88                     | 0.41              |
| 1:AA:2468:G:C3'  | 1:AA:2476:A:C2     | 2.94                     | 0.41              |
| 1:AA:2507:C:O2'  | 59:AA:3002:8AN:N3  | 2.52                     | 0.41              |
| 1:AA:2556:C:H2'  | 1:AA:2557:G:C4'    | 2.50                     | 0.41              |
| 1:AA:2605:U:H2'  | 1:AA:2606:C:H5'    | 2.01                     | 0.41              |
| 1:AA:2612:C:O2   | 26:Ab:4:HIS:HB2    | 2.20                     | 0.41              |
| 1:AA:2621:A:O2'  | 1:AA:2622:C:H5'    | 2.20                     | 0.41              |
| 1:AA:2642:G:H2'  | 1:AA:2643:G:C8     | 2.50                     | 0.41              |
| 1:AA:2721:A:C2   | 1:AA:2873:A:N1     | 2.88                     | 0.41              |
| 1:AA:2770:G:O5'  | 1:AA:2770:G:C8     | 2.67                     | 0.41              |
| 1:AA:2810:A:H62  | 1:AA:2891:G:H21    | 1.68                     | 0.41              |
| 2:AB:6:C:N3      | 2:AB:115:G:N2      | 2.69                     | 0.41              |
| 2:AB:29:A:P      | 14:AP:34:HIS:ND1   | 2.93                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 2:AB:85:G:C4      | 2:AB:86:G:C8       | 3.08                     | 0.41              |
| 3:AC:10:LEU:HD21  | 3:AC:33:ALA:HB2    | 2.02                     | 0.41              |
| 3:AC:77:ILE:C     | 3:AC:119:VAL:HG21  | 2.45                     | 0.41              |
| 3:AC:156:ILE:O    | 3:AC:159:GLY:CA    | 2.68                     | 0.41              |
| 4:AD:22:SER:HA    | 4:AD:205:VAL:O     | 2.20                     | 0.41              |
| 4:AD:131:LEU:C    | 4:AD:190:TYR:CD2   | 2.98                     | 0.41              |
| 4:AD:148:GLU:CG   | 4:AD:154:LYS:HZ2   | 2.32                     | 0.41              |
| 4:AD:208:LYS:HB3  | 4:AD:211:ARG:HG3   | 2.02                     | 0.41              |
| 4:AD:238:GLY:C    | 4:AD:239:ARG:HD2   | 2.44                     | 0.41              |
| 5:AE:49:LEU:HD11  | 5:AE:76:ARG:H      | 1.85                     | 0.41              |
| 5:AE:61:ARG:CB    | 5:AE:62:PRO:CD     | 2.99                     | 0.41              |
| 5:AE:64:LYS:HG2   | 5:AE:67:PHE:CD1    | 2.55                     | 0.41              |
| 5:AE:149:ARG:HB2  | 5:AE:150:VAL:H     | 1.48                     | 0.41              |
| 5:AE:161:GLY:C    | 5:AE:163:GLU:OE1   | 2.63                     | 0.41              |
| 7:AG:35:GLU:OE2   | 7:AG:160:VAL:CG1   | 2.68                     | 0.41              |
| 7:AG:149:VAL:CG1  | 7:AG:150:ASP:H     | 2.32                     | 0.41              |
| 8:AH:7:LEU:HB3    | 8:AH:65:HIS:CD2    | 2.55                     | 0.41              |
| 8:AH:24:VAL:HG23  | 8:AH:35:VAL:CG2    | 2.36                     | 0.41              |
| 8:AH:25:LYS:HG3   | 8:AH:27:LYS:HG3    | 2.02                     | 0.41              |
| 8:AH:76:VAL:C     | 8:AH:78:GLY:N      | 2.79                     | 0.41              |
| 9:AK:16:ILE:HG22  | 9:AK:21:LYS:HZ2    | 1.85                     | 0.41              |
| 9:AK:71:ILE:HG22  | 9:AK:72:TYR:H      | 1.85                     | 0.41              |
| 10:AL:53:LYS:HG3  | 10:AL:54:GLU:N     | 2.34                     | 0.41              |
| 11:AM:46:LYS:NZ   | 11:AM:50:ARG:CZ    | 2.83                     | 0.41              |
| 12:AN:137:TYR:O   | 12:AN:138:ASP:OD2  | 2.33                     | 0.41              |
| 13:AO:75:LEU:CD2  | 13:AO:78:LYS:HB3   | 2.51                     | 0.41              |
| 14:AP:36:TYR:CD1  | 14:AP:37:ALA:N     | 2.89                     | 0.41              |
| 14:AP:49:VAL:CB   | 14:AP:76:LYS:HZ1   | 2.33                     | 0.41              |
| 14:AP:75:GLU:O    | 14:AP:78:LEU:CB    | 2.66                     | 0.41              |
| 15:AQ:3:ARG:C     | 15:AQ:7:ILE:HG12   | 2.44                     | 0.41              |
| 15:AQ:16:ARG:HG3  | 15:AQ:16:ARG:HH11  | 1.86                     | 0.41              |
| 15:AQ:27:THR:CG2  | 15:AQ:28:VAL:H     | 2.23                     | 0.41              |
| 17:AS:70:ILE:HG22 | 17:AS:89:GLN:O     | 2.20                     | 0.41              |
| 18:AT:72:LYS:O    | 18:AT:106:ILE:HG23 | 2.18                     | 0.41              |
| 20:AV:2:ARG:HD2   | 20:AV:3:VAL:CA     | 2.49                     | 0.41              |
| 21:AW:51:ALA:O    | 21:AW:52:SER:C     | 2.62                     | 0.41              |
| 21:AW:151:HIS:CG  | 21:AW:168:GLU:CG   | 3.03                     | 0.41              |
| 21:AW:179:ASP:OD1 | 21:AW:180:VAL:N    | 2.46                     | 0.41              |
| 23:AY:3:LYS:HA    | 23:AY:3:LYS:HD3    | 1.82                     | 0.41              |
| 23:AY:10:LYS:HD3  | 23:AY:10:LYS:N     | 2.35                     | 0.41              |
| 23:AY:25:ARG:O    | 23:AY:28:MET:CB    | 2.61                     | 0.41              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 25:Aa:10:VAL:O   | 25:Aa:10:VAL:CG1  | 2.63                     | 0.41              |
| 25:Aa:65:ASP:CA  | 25:Aa:68:ARG:CZ   | 2.95                     | 0.41              |
| 27:Ac:16:CYS:O   | 27:Ac:19:ARG:HD3  | 2.20                     | 0.41              |
| 27:Ac:27:LYS:CD  | 27:Ac:29:ASN:HD21 | 2.33                     | 0.41              |
| 28:Ad:5:TRP:CZ3  | 28:Ad:7:PRO:HB3   | 2.53                     | 0.41              |
| 29:Ae:50:LEU:O   | 29:Ae:51:ALA:HB3  | 2.20                     | 0.41              |
| 30:Af:9:ARG:CZ   | 30:Af:16:VAL:HB   | 2.50                     | 0.41              |
| 32:AJ:15:GLY:CA  | 32:AJ:45:THR:O    | 2.66                     | 0.41              |
| 33:Ag:4:UNK:C    | 33:Ag:6:UNK:N     | 2.83                     | 0.41              |
| 34:BA:15:G:N3    | 34:BA:16:A:C8     | 2.88                     | 0.41              |
| 34:BA:42:G:C4    | 34:BA:43:C:C5     | 3.08                     | 0.41              |
| 34:BA:73:G:N2    | 34:BA:74:C:C2     | 2.88                     | 0.41              |
| 34:BA:89:U:C4    | 34:BA:90:C:C5     | 3.07                     | 0.41              |
| 34:BA:95:G:H2'   | 34:BA:96:G:O4'    | 2.20                     | 0.41              |
| 34:BA:118:U:H3'  | 34:BA:288:A:N6    | 2.35                     | 0.41              |
| 34:BA:149:A:C6   | 34:BA:150:C:N4    | 2.88                     | 0.41              |
| 34:BA:255:G:OP1  | 50:BU:69:LYS:NZ   | 2.53                     | 0.41              |
| 34:BA:255:G:C6   | 34:BA:256:U:C4    | 3.08                     | 0.41              |
| 34:BA:266:G:H2'  | 34:BA:267:C:OP2   | 2.19                     | 0.41              |
| 34:BA:299:G:C2'  | 34:BA:300:A:N7    | 2.73                     | 0.41              |
| 34:BA:319:G:H2'  | 34:BA:320:C:H5'   | 2.02                     | 0.41              |
| 34:BA:328:C:O2   | 34:BA:328:C:C3'   | 2.68                     | 0.41              |
| 34:BA:438:G:N3   | 34:BA:495:A:C8    | 2.88                     | 0.41              |
| 34:BA:537:G:O2'  | 34:BA:538:G:H5'   | 2.20                     | 0.41              |
| 34:BA:607:A:C4   | 34:BA:608:A:H8    | 2.38                     | 0.41              |
| 34:BA:671:G:N3   | 34:BA:671:G:H2'   | 2.35                     | 0.41              |
| 34:BA:685:G:H4'  | 44:BO:40:ILE:HA   | 2.02                     | 0.41              |
| 34:BA:688:G:N1   | 34:BA:700:G:C6    | 2.89                     | 0.41              |
| 34:BA:818:G:C3'  | 34:BA:819:A:H5''  | 2.49                     | 0.41              |
| 34:BA:828:A:N3   | 34:BA:859:A:N3    | 2.68                     | 0.41              |
| 34:BA:838:G:N2   | 34:BA:849:C:C2    | 2.88                     | 0.41              |
| 34:BA:937:A:N3   | 34:BA:1379:G:N1   | 2.68                     | 0.41              |
| 34:BA:980:C:H1'  | 47:BR:19:ARG:HA   | 2.01                     | 0.41              |
| 34:BA:993:G:N2   | 34:BA:995:C:N4    | 2.68                     | 0.41              |
| 34:BA:996:A:N1   | 34:BA:997:U:C4    | 2.88                     | 0.41              |
| 34:BA:1053:G:O5' | 34:BA:1055:A:OP1  | 2.38                     | 0.41              |
| 34:BA:1057:G:C2' | 34:BA:1058:G:O5'  | 2.67                     | 0.41              |
| 34:BA:1091:U:C6  | 34:BA:1093:A:OP2  | 2.73                     | 0.41              |
| 34:BA:1107:C:P   | 36:BG:172:ARG:HG2 | 2.60                     | 0.41              |
| 34:BA:1183:A:C2' | 34:BA:1184:G:OP1  | 2.68                     | 0.41              |
| 34:BA:1226:C:O3' | 46:BQ:111:LYS:NZ  | 2.37                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1268:A:N3    | 34:BA:1311:G:C2    | 2.88                     | 0.41              |
| 34:BA:1279:A:H5''  | 43:BN:7:LYS:HE2    | 2.02                     | 0.41              |
| 34:BA:1371:G:C5    | 34:BA:1372:U:C6    | 3.08                     | 0.41              |
| 34:BA:1455:G:C2'   | 34:BA:1459:C:C5'   | 2.88                     | 0.41              |
| 34:BA:1484:C:O2'   | 34:BA:1485:U:C5'   | 2.56                     | 0.41              |
| 34:BA:1518:A:C6    | 34:BA:1519:A:N6    | 2.88                     | 0.41              |
| 34:BA:1534:A:C2    | 34:BA:1535:C:C6    | 3.08                     | 0.41              |
| 35:BF:89:GLY:O     | 35:BF:90:MET:HG2   | 2.20                     | 0.41              |
| 35:BF:117:GLU:CD   | 35:BF:117:GLU:C    | 2.88                     | 0.41              |
| 35:BF:130:ARG:NE   | 35:BF:130:ARG:CA   | 2.78                     | 0.41              |
| 37:BH:22:LYS:HB3   | 37:BH:26:CYS:HB3   | 2.02                     | 0.41              |
| 38:BI:78:HIS:ND1   | 41:BL:104:ARG:CD   | 2.82                     | 0.41              |
| 38:BI:135:THR:HG22 | 38:BI:139:LEU:HD11 | 2.02                     | 0.41              |
| 38:BI:149:GLU:OE2  | 38:BI:152:ARG:HG3  | 2.20                     | 0.41              |
| 40:BK:27:ILE:HA    | 40:BK:30:ILE:HD12  | 2.02                     | 0.41              |
| 40:BK:30:ILE:HD11  | 40:BK:43:PHE:HD1   | 1.86                     | 0.41              |
| 40:BK:118:VAL:HG12 | 40:BK:122:HIS:CE1  | 2.55                     | 0.41              |
| 41:BL:35:ILE:O     | 41:BL:37:ARG:N     | 2.53                     | 0.41              |
| 41:BL:92:ARG:HG2   | 41:BL:92:ARG:NH1   | 2.24                     | 0.41              |
| 42:BM:5:TYR:CZ     | 42:BM:18:PHE:CE2   | 3.08                     | 0.41              |
| 43:BN:22:LYS:HZ2   | 43:BN:90:LEU:CD1   | 2.28                     | 0.41              |
| 44:BO:83:ILE:N     | 44:BO:83:ILE:CD1   | 2.82                     | 0.41              |
| 45:BP:5:PRO:HG3    | 45:BP:15:ARG:NH2   | 2.35                     | 0.41              |
| 46:BQ:74:VAL:O     | 46:BQ:78:ILE:HD12  | 2.20                     | 0.41              |
| 48:BS:68:ARG:O     | 48:BS:69:TYR:C     | 2.61                     | 0.41              |
| 49:BT:8:ARG:HH12   | 49:BT:11:SER:C     | 2.28                     | 0.41              |
| 50:BU:22:LEU:HD12  | 50:BU:23:VAL:N     | 2.34                     | 0.41              |
| 51:BV:47:THR:C     | 51:BV:49:LYS:HE2   | 2.44                     | 0.41              |
| 52:BW:40:ILE:C     | 52:BW:41:VAL:HG22  | 2.45                     | 0.41              |
| 56:BE:7:A:O2'      | 56:BE:8:U:O5'      | 2.33                     | 0.41              |
| 57:BZ:10:ILE:O     | 57:BZ:11:ILE:C     | 2.63                     | 0.41              |
| 57:BZ:13:HIS:C     | 57:BZ:108:GLN:HG3  | 2.27                     | 0.41              |
| 57:BZ:13:HIS:O     | 57:BZ:15:ASP:N     | 2.53                     | 0.41              |
| 57:BZ:19:THR:HA    | 57:BZ:20:THR:C     | 2.31                     | 0.41              |
| 57:BZ:73:VAL:HB    | 57:BZ:74:ASP:C     | 2.45                     | 0.41              |
| 57:BZ:200:ASP:O    | 57:BZ:202:ASP:N    | 2.54                     | 0.41              |
| 57:BZ:211:GLN:HA   | 57:BZ:284:ILE:HG12 | 2.02                     | 0.41              |
| 57:BZ:212:LEU:HD21 | 57:BZ:282:LEU:HB2  | 1.62                     | 0.41              |
| 57:BZ:258:LEU:CD2  | 57:BZ:259:GLY:HA3  | 2.49                     | 0.41              |
| 57:BZ:382:VAL:O    | 57:BZ:578:VAL:HG23 | 2.20                     | 0.41              |
| 57:BZ:426:LEU:O    | 57:BZ:428:ASN:N    | 2.52                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:BZ:500:ALA:N    | 57:BZ:540:GLY:H    | 2.18                     | 0.41              |
| 57:BZ:510:LEU:HD23 | 57:BZ:524:ILE:O    | 2.20                     | 0.41              |
| 57:BZ:538:LEU:N    | 57:BZ:539:THR:C    | 2.72                     | 0.41              |
| 57:BZ:564:THR:O    | 57:BZ:566:GLU:OE2  | 2.38                     | 0.41              |
| 57:BZ:565:LEU:N    | 57:BZ:566:GLU:CB   | 2.72                     | 0.41              |
| 57:BZ:565:LEU:HD21 | 57:BZ:585:ILE:HD12 | 2.03                     | 0.41              |
| 1:AA:119:A:O2'     | 1:AA:120:U:H3'     | 2.20                     | 0.41              |
| 1:AA:192:C:OP1     | 1:AA:2243:U:OP1    | 2.38                     | 0.41              |
| 1:AA:245:G:C2      | 1:AA:246:C:C5      | 3.08                     | 0.41              |
| 1:AA:559:G:HO2'    | 1:AA:560:C:C5'     | 2.26                     | 0.41              |
| 1:AA:618:G:C8      | 1:AA:618(A):C:H5   | 2.36                     | 0.41              |
| 1:AA:696:G:C4      | 1:AA:697:C:C5      | 3.08                     | 0.41              |
| 1:AA:727:A:C2      | 1:AA:728:G:H5'     | 2.55                     | 0.41              |
| 1:AA:956:G:C8      | 1:AA:956:G:C3'     | 3.04                     | 0.41              |
| 1:AA:996:A:N3      | 1:AA:997:G:C8      | 2.88                     | 0.41              |
| 1:AA:1049:C:N4     | 1:AA:1050:A:H62    | 2.16                     | 0.41              |
| 1:AA:1150:C:H2'    | 1:AA:1151:G:O4'    | 2.20                     | 0.41              |
| 1:AA:1155:A:P      | 1:AA:1155:A:C3'    | 3.08                     | 0.41              |
| 1:AA:1257:C:C1'    | 6:AF:83:PHE:HB2    | 2.50                     | 0.41              |
| 1:AA:1389:G:H5'    | 1:AA:1525:G:H5'    | 1.99                     | 0.41              |
| 1:AA:1419:A:H3'    | 1:AA:1420:U:N1     | 2.34                     | 0.41              |
| 1:AA:1448:G:C4'    | 1:AA:1543:A:C6     | 2.90                     | 0.41              |
| 1:AA:1531:C:HO2'   | 1:AA:1532:C:P      | 2.43                     | 0.41              |
| 1:AA:1601:G:N3     | 1:AA:1601:G:H2'    | 2.34                     | 0.41              |
| 1:AA:1605:C:C5     | 1:AA:1606:G:C5     | 3.09                     | 0.41              |
| 1:AA:1651:G:O3'    | 1:AA:1652:A:O4'    | 2.38                     | 0.41              |
| 1:AA:1754:C:H5     | 15:AQ:98:LYS:CD    | 2.33                     | 0.41              |
| 1:AA:1826:G:N2     | 1:AA:1970:A:H2     | 2.15                     | 0.41              |
| 1:AA:1884:A:P      | 1:AA:1884:A:O4'    | 2.78                     | 0.41              |
| 1:AA:1944:U:O2'    | 1:AA:1955:U:C1'    | 2.68                     | 0.41              |
| 1:AA:1945:G:O2'    | 1:AA:1946:U:H5'    | 2.20                     | 0.41              |
| 1:AA:2014:A:C2'    | 1:AA:2015:A:OP2    | 2.69                     | 0.41              |
| 1:AA:2018:G:C5     | 1:AA:2019:A:C5     | 3.08                     | 0.41              |
| 1:AA:2032:G:H4'    | 1:AA:2033:A:OP1    | 2.19                     | 0.41              |
| 1:AA:2074:U:C2     | 1:AA:2436:G:C2     | 3.08                     | 0.41              |
| 1:AA:2101:G:C6     | 1:AA:2102:U:C4     | 3.09                     | 0.41              |
| 1:AA:2148:G:C4     | 1:AA:2149:G:C8     | 3.08                     | 0.41              |
| 1:AA:2155:G:C2'    | 1:AA:2156:G:O5'    | 2.68                     | 0.41              |
| 1:AA:2167:U:O2     | 1:AA:2167:U:H2'    | 2.20                     | 0.41              |
| 1:AA:2208:U:C4'    | 4:AD:151:LYS:NZ    | 2.76                     | 0.41              |
| 1:AA:2236:C:C5'    | 1:AA:2236:C:H6     | 2.33                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2284:C:H2'   | 1:AA:2285:C:C6    | 2.56                     | 0.41              |
| 1:AA:2340:G:C2    | 1:AA:2341:G:C8    | 3.08                     | 0.41              |
| 1:AA:2360:A:OP1   | 29:Ae:49:VAL:HG22 | 2.20                     | 0.41              |
| 1:AA:2427:C:H4'   | 1:AA:2428:G:H5''  | 2.01                     | 0.41              |
| 1:AA:2626:C:C6    | 1:AA:2626:C:O5'   | 2.71                     | 0.41              |
| 1:AA:2640:G:C5    | 1:AA:2641:G:N7    | 2.88                     | 0.41              |
| 1:AA:2680:C:OP1   | 5:AE:190:GLY:CA   | 2.66                     | 0.41              |
| 1:AA:2721:A:H3'   | 1:AA:2722:G:C8    | 2.55                     | 0.41              |
| 1:AA:2729:G:H2'   | 1:AA:2730:C:O4'   | 2.20                     | 0.41              |
| 1:AA:2755:C:H4'   | 1:AA:2756:U:H6    | 1.85                     | 0.41              |
| 1:AA:2792:G:C4    | 1:AA:2805:G:N1    | 2.86                     | 0.41              |
| 1:AA:2817:G:N2    | 1:AA:2830:G:C4    | 2.89                     | 0.41              |
| 1:AA:2847:U:C6    | 1:AA:2848:G:C8    | 3.09                     | 0.41              |
| 1:AA:2893:G:C5'   | 1:AA:2894:G:OP1   | 2.66                     | 0.41              |
| 2:AB:18:G:C2      | 2:AB:19:G:C8      | 3.07                     | 0.41              |
| 2:AB:85:G:H2'     | 2:AB:86:G:H8      | 1.86                     | 0.41              |
| 3:AC:202:GLU:C    | 3:AC:202:GLU:CD   | 2.88                     | 0.41              |
| 4:AD:132:PRO:CB   | 4:AD:190:TYR:CE1  | 3.02                     | 0.41              |
| 5:AE:1:MET:O      | 5:AE:2:LYS:HG3    | 2.20                     | 0.41              |
| 5:AE:38:THR:CB    | 5:AE:39:PRO:CD    | 2.98                     | 0.41              |
| 5:AE:119:ARG:CD   | 5:AE:156:MET:N    | 2.83                     | 0.41              |
| 6:AF:5:ALA:O      | 6:AF:7:TYR:HD1    | 2.03                     | 0.41              |
| 6:AF:12:LEU:HD22  | 6:AF:128:ALA:C    | 2.46                     | 0.41              |
| 6:AF:153:SER:H    | 6:AF:190:GLU:CG   | 2.32                     | 0.41              |
| 6:AF:168:ARG:HB2  | 6:AF:169:ASN:H    | 1.66                     | 0.41              |
| 6:AF:173:VAL:HG22 | 6:AF:174:VAL:N    | 2.33                     | 0.41              |
| 7:AG:86:MET:H     | 7:AG:87:PRO:HD2   | 1.81                     | 0.41              |
| 7:AG:110:ALA:CB   | 7:AG:139:LEU:HD11 | 2.50                     | 0.41              |
| 7:AG:112:PRO:O    | 7:AG:112:PRO:HG2  | 2.20                     | 0.41              |
| 9:AK:10:GLU:HG2   | 9:AK:12:ARG:HH22  | 1.85                     | 0.41              |
| 9:AK:42:TRP:HZ3   | 16:AR:71:GLN:NE2  | 2.17                     | 0.41              |
| 9:AK:74:ARG:HG2   | 9:AK:76:SER:OG    | 2.20                     | 0.41              |
| 10:AL:28:SER:O    | 10:AL:29:ASN:CB   | 2.64                     | 0.41              |
| 12:AN:11:LYS:HZ3  | 12:AN:73:PRO:CG   | 2.31                     | 0.41              |
| 12:AN:72:LYS:O    | 12:AN:93:TYR:HA   | 2.20                     | 0.41              |
| 12:AN:110:THR:O   | 12:AN:111:GLU:HG2 | 2.19                     | 0.41              |
| 13:AO:9:LYS:O     | 13:AO:10:LEU:HD23 | 2.20                     | 0.41              |
| 13:AO:22:ARG:HD3  | 13:AO:69:ASP:O    | 2.21                     | 0.41              |
| 14:AP:10:ARG:C    | 14:AP:12:PHE:N    | 2.76                     | 0.41              |
| 14:AP:69:VAL:O    | 14:AP:73:LEU:HD22 | 2.19                     | 0.41              |
| 15:AQ:21:GLU:HG3  | 15:AQ:88:ILE:CD1  | 2.43                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 15:AQ:50:ILE:CG2  | 15:AQ:68:TYR:CB    | 2.98                     | 0.41              |
| 15:AQ:65:LYS:CE   | 15:AQ:75:ILE:CD1   | 2.98                     | 0.41              |
| 15:AQ:105:LEU:C   | 15:AQ:107:ASP:N    | 2.78                     | 0.41              |
| 16:AR:94:ASN:ND2  | 17:AS:6:LYS:HZ1    | 2.13                     | 0.41              |
| 16:AR:94:ASN:O    | 16:AR:97:ASP:HB2   | 2.19                     | 0.41              |
| 16:AR:108:GLU:HA  | 16:AR:111:GLU:HG2  | 2.02                     | 0.41              |
| 17:AS:1:MET:N     | 17:AS:45:THR:OG1   | 2.50                     | 0.41              |
| 19:AU:21:PHE:HE2  | 19:AU:27:THR:HG1   | 1.61                     | 0.41              |
| 19:AU:27:THR:HG22 | 19:AU:80:ILE:HD12  | 2.02                     | 0.41              |
| 20:AV:95:LYS:HE3  | 20:AV:103:GLY:CA   | 2.49                     | 0.41              |
| 21:AW:80:ARG:HB2  | 21:AW:81:ARG:H     | 1.37                     | 0.41              |
| 21:AW:94:GLU:C    | 21:AW:130:PRO:HG3  | 2.44                     | 0.41              |
| 21:AW:102:LEU:CD2 | 21:AW:125:LEU:HD12 | 2.49                     | 0.41              |
| 23:AY:4:GLN:O     | 23:AY:5:LEU:C      | 2.62                     | 0.41              |
| 23:AY:34:ALA:O    | 23:AY:35:SER:CB    | 2.67                     | 0.41              |
| 26:Ab:29:THR:O    | 26:Ab:30:LEU:HG    | 2.21                     | 0.41              |
| 26:Ab:46:CYS:O    | 26:Ab:48:GLU:N     | 2.41                     | 0.41              |
| 26:Ab:56:LYS:C    | 26:Ab:57:VAL:CG1   | 2.93                     | 0.41              |
| 27:Ac:27:LYS:HG2  | 27:Ac:29:ASN:ND2   | 2.28                     | 0.41              |
| 30:Af:7:VAL:HG21  | 30:Af:36:GLN:CD    | 2.45                     | 0.41              |
| 32:AJ:106:GLU:O   | 32:AJ:109:LYS:HG3  | 2.21                     | 0.41              |
| 34:BA:20:U:H5'    | 34:BA:572:A:C6     | 2.49                     | 0.41              |
| 34:BA:42:G:C6     | 34:BA:43:C:C4      | 3.08                     | 0.41              |
| 34:BA:51:A:H4'    | 34:BA:52:G:O5'     | 2.16                     | 0.41              |
| 34:BA:51:A:N1     | 34:BA:353:A:C2     | 2.87                     | 0.41              |
| 34:BA:222:U:C2'   | 34:BA:223:U:O5'    | 2.68                     | 0.41              |
| 34:BA:253:U:H2'   | 34:BA:254:G:H8     | 1.85                     | 0.41              |
| 34:BA:263:A:H5''  | 53:BX:75:ASN:HD21  | 1.83                     | 0.41              |
| 34:BA:284:G:O2'   | 34:BA:285:G:C5'    | 2.62                     | 0.41              |
| 34:BA:410:G:N2    | 34:BA:429:U:C2     | 2.88                     | 0.41              |
| 34:BA:427:U:O5'   | 34:BA:427:U:C6     | 2.64                     | 0.41              |
| 34:BA:576:G:N7    | 34:BA:881:G:O4'    | 2.53                     | 0.41              |
| 34:BA:648:A:O2'   | 34:BA:649:G:H5'    | 2.19                     | 0.41              |
| 34:BA:652:U:C5    | 34:BA:752:G:C2     | 3.08                     | 0.41              |
| 34:BA:667:G:C2    | 34:BA:740:U:C2     | 3.09                     | 0.41              |
| 34:BA:697:U:C3'   | 34:BA:698:G:H8     | 2.33                     | 0.41              |
| 34:BA:724:G:N2    | 34:BA:725:G:N9     | 2.68                     | 0.41              |
| 34:BA:760:G:C2'   | 50:BU:103:GLY:HA3  | 2.49                     | 0.41              |
| 34:BA:781:A:O2'   | 34:BA:782:A:P      | 2.78                     | 0.41              |
| 34:BA:782:A:C8    | 34:BA:783:C:C5     | 3.08                     | 0.41              |
| 34:BA:826:C:O5'   | 34:BA:826:C:H6     | 2.02                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:835:U:O2    | 34:BA:852:G:N2     | 2.53                     | 0.41              |
| 34:BA:892:A:C4    | 34:BA:907:A:C6     | 3.09                     | 0.41              |
| 34:BA:938:A:C2'   | 34:BA:939:G:C5'    | 2.98                     | 0.41              |
| 34:BA:961:U:O4'   | 34:BA:983:A:C2     | 2.73                     | 0.41              |
| 34:BA:971:G:O5'   | 34:BA:1231:G:N2    | 2.54                     | 0.41              |
| 34:BA:999:U:C4    | 34:BA:1042:G:C6    | 3.08                     | 0.41              |
| 34:BA:1029:G:N3   | 34:BA:1031:G:OP2   | 2.54                     | 0.41              |
| 34:BA:1050:G:N3   | 34:BA:1050:G:H2'   | 2.35                     | 0.41              |
| 34:BA:1055:A:N6   | 34:BA:1206:G:C4    | 2.89                     | 0.41              |
| 34:BA:1090:U:O2'  | 34:BA:1091:U:C5'   | 2.68                     | 0.41              |
| 34:BA:1107:C:H2'  | 34:BA:1108:G:H5''  | 2.01                     | 0.41              |
| 34:BA:1170:A:C8   | 34:BA:1170:A:H3'   | 2.56                     | 0.41              |
| 34:BA:1201:A:N3   | 34:BA:1201:A:C2'   | 2.80                     | 0.41              |
| 34:BA:1221:G:C6   | 34:BA:1222:G:C5    | 3.08                     | 0.41              |
| 34:BA:1226:C:H2'  | 34:BA:1226:C:O2    | 2.21                     | 0.41              |
| 34:BA:1230:C:H5'' | 42:BM:127:LYS:HZ1  | 1.85                     | 0.41              |
| 34:BA:1320:C:O2   | 52:BW:75:ALA:C     | 2.52                     | 0.41              |
| 34:BA:1331:G:OP1  | 34:BA:1331:G:C4'   | 2.68                     | 0.41              |
| 34:BA:1374:A:C1'  | 40:BK:31:MET:HE1   | 2.48                     | 0.41              |
| 34:BA:1475:G:H2'  | 34:BA:1476:G:O5'   | 2.21                     | 0.41              |
| 34:BA:1476:G:C2   | 34:BA:1477:C:C4    | 3.07                     | 0.41              |
| 34:BA:1494:G:H1'  | 34:BA:1495:U:OP1   | 2.20                     | 0.41              |
| 34:BA:1511:G:C5   | 34:BA:1512:U:C5    | 3.08                     | 0.41              |
| 35:BF:11:LEU:HD23 | 35:BF:11:LEU:N     | 2.36                     | 0.41              |
| 35:BF:118:LEU:CD2 | 35:BF:118:LEU:C    | 2.93                     | 0.41              |
| 36:BG:6:HIS:CD2   | 36:BG:8:ILE:HG22   | 2.55                     | 0.41              |
| 36:BG:59:ARG:HD3  | 36:BG:61:ALA:O     | 2.20                     | 0.41              |
| 37:BH:106:TYR:CZ  | 37:BH:112:VAL:O    | 2.73                     | 0.41              |
| 37:BH:106:TYR:OH  | 37:BH:112:VAL:O    | 2.22                     | 0.41              |
| 38:BI:72:GLN:NE2  | 38:BI:144:THR:CG2  | 2.76                     | 0.41              |
| 38:BI:109:ILE:CD1 | 38:BI:139:LEU:HD11 | 2.50                     | 0.41              |
| 40:BK:8:GLU:C     | 40:BK:8:GLU:OE2    | 2.63                     | 0.41              |
| 40:BK:15:ASP:HB3  | 40:BK:20:ASP:H     | 1.84                     | 0.41              |
| 40:BK:87:VAL:HG21 | 40:BK:154:TYR:CB   | 2.49                     | 0.41              |
| 40:BK:106:GLN:O   | 40:BK:107:ALA:C    | 2.60                     | 0.41              |
| 41:BL:77:GLU:HB3  | 41:BL:78:GLN:H     | 1.45                     | 0.41              |
| 41:BL:85:ARG:HD2  | 41:BL:86:ILE:H     | 1.85                     | 0.41              |
| 41:BL:119:LEU:HB3 | 41:BL:123:GLU:OE2  | 2.20                     | 0.41              |
| 42:BM:31:GLN:HG2  | 42:BM:35:GLU:OE1   | 2.21                     | 0.41              |
| 42:BM:127:LYS:HB2 | 56:BE:31:A:OP1     | 2.15                     | 0.41              |
| 43:BN:33:GLN:O    | 43:BN:34:VAL:HG23  | 2.20                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 43:BN:37:PRO:HA   | 43:BN:72:VAL:HA    | 2.03                     | 0.41              |
| 43:BN:44:VAL:HG22 | 43:BN:66:ARG:HD2   | 2.01                     | 0.41              |
| 43:BN:79:ARG:O    | 43:BN:80:LYS:C     | 2.63                     | 0.41              |
| 44:BO:61:ALA:HB1  | 44:BO:94:ALA:CA    | 2.50                     | 0.41              |
| 45:BP:117:ARG:O   | 45:BP:121:GLY:CA   | 2.68                     | 0.41              |
| 47:BR:4:LYS:HA    | 47:BR:7:ILE:CD1    | 2.49                     | 0.41              |
| 48:BS:36:ILE:HD11 | 48:BS:60:VAL:HA    | 2.02                     | 0.41              |
| 50:BU:10:VAL:HG11 | 50:BU:52:LYS:C     | 2.45                     | 0.41              |
| 50:BU:21:VAL:HG23 | 50:BU:42:TYR:C     | 2.45                     | 0.41              |
| 50:BU:97:SER:O    | 50:BU:98:LEU:CD2   | 2.61                     | 0.41              |
| 53:BX:25:ARG:O    | 53:BX:26:ASN:C     | 2.63                     | 0.41              |
| 53:BX:51:GLU:CB   | 53:BX:54:LYS:NZ    | 2.77                     | 0.41              |
| 53:BX:74:LYS:HD3  | 53:BX:74:LYS:N     | 2.35                     | 0.41              |
| 55:BC:58:A:H1'    | 55:BC:60:U:H5      | 1.80                     | 0.41              |
| 56:BE:5:G:N3      | 56:BE:5:G:H2'      | 2.36                     | 0.41              |
| 56:BE:74:C:O5'    | 56:BE:74:C:H6      | 2.04                     | 0.41              |
| 57:BZ:11:ILE:HA   | 57:BZ:112:VAL:HG11 | 2.03                     | 0.41              |
| 57:BZ:24:LYS:O    | 57:BZ:26:LEU:N     | 2.54                     | 0.41              |
| 57:BZ:85:VAL:CG1  | 57:BZ:88:VAL:HG21  | 2.49                     | 0.41              |
| 57:BZ:160:PHE:HA  | 57:BZ:162:ILE:HG13 | 2.03                     | 0.41              |
| 57:BZ:206:GLN:O   | 57:BZ:227:LYS:CA   | 2.67                     | 0.41              |
| 57:BZ:253:LYS:HB2 | 57:BZ:262:ARG:CG   | 2.43                     | 0.41              |
| 1:AA:73:A:H8      | 1:AA:73:A:O5'      | 2.03                     | 0.41              |
| 1:AA:93:C:H2'     | 1:AA:94:G:H8       | 1.80                     | 0.41              |
| 1:AA:149:A:H8     | 1:AA:150:C:O4'     | 2.01                     | 0.41              |
| 1:AA:221:A:C8     | 1:AA:266:G:N7      | 2.88                     | 0.41              |
| 1:AA:235:U:O5'    | 1:AA:235:U:H6      | 2.03                     | 0.41              |
| 1:AA:270(B):A:C2' | 1:AA:270(C):C:H6   | 2.34                     | 0.41              |
| 1:AA:344:G:C2     | 1:AA:345:A:N6      | 2.88                     | 0.41              |
| 1:AA:388:G:N2     | 1:AA:390:A:N1      | 2.68                     | 0.41              |
| 1:AA:413:C:N4     | 1:AA:2410:G:H1     | 2.19                     | 0.41              |
| 1:AA:428:A:H3'    | 1:AA:429:A:C8      | 2.56                     | 0.41              |
| 1:AA:514:A:HO2'   | 16:AR:32:PHE:HZ    | 1.68                     | 0.41              |
| 1:AA:558:G:N3     | 1:AA:559:G:C8      | 2.89                     | 0.41              |
| 1:AA:573:G:C3'    | 1:AA:574:C:H5''    | 2.51                     | 0.41              |
| 1:AA:600:G:H1'    | 6:AF:105:VAL:CG2   | 2.50                     | 0.41              |
| 1:AA:651:G:C8     | 1:AA:652:C:C1'     | 3.03                     | 0.41              |
| 1:AA:656:G:O2'    | 1:AA:657:U:O5'     | 2.38                     | 0.41              |
| 1:AA:665:C:O2'    | 1:AA:666:G:O5'     | 2.19                     | 0.41              |
| 1:AA:725:G:O6     | 1:AA:726:G:N2      | 2.50                     | 0.41              |
| 1:AA:763:G:N1     | 1:AA:765:G:C4      | 2.88                     | 0.41              |

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| Atom-1          | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-------------------|--------------------------|-------------------|
| 1:AA:781:A:N3   | 1:AA:781:A:H2'    | 2.35                     | 0.41              |
| 1:AA:848:G:N3   | 1:AA:933:A:N3     | 2.68                     | 0.41              |
| 1:AA:996:A:C5   | 1:AA:1160:G:C2    | 3.08                     | 0.41              |
| 1:AA:1023:U:H2' | 1:AA:1024:G:C4'   | 2.50                     | 0.41              |
| 1:AA:1046:A:C4  | 31:AI:6:ASN:C     | 2.60                     | 0.41              |
| 1:AA:1051:G:C2' | 1:AA:1052:C:H5''  | 2.49                     | 0.41              |
| 1:AA:1060:U:OP1 | 32:AJ:52:ILE:HD12 | 2.18                     | 0.41              |
| 1:AA:1150:C:C2  | 1:AA:1151:G:C8    | 3.08                     | 0.41              |
| 1:AA:1168:G:H8  | 1:AA:1168:G:O5'   | 2.04                     | 0.41              |
| 1:AA:1272:A:H5' | 1:AA:1646:C:N3    | 2.35                     | 0.41              |
| 1:AA:1283:G:H22 | 1:AA:1286:A:C5'   | 2.33                     | 0.41              |
| 1:AA:1343:G:C8  | 1:AA:1597:A:N6    | 2.89                     | 0.41              |
| 1:AA:1353:A:O2' | 1:AA:1354:A:H5'   | 2.19                     | 0.41              |
| 1:AA:1366:A:OP1 | 25:Aa:1:MET:HA    | 2.20                     | 0.41              |
| 1:AA:1496:A:H2' | 1:AA:1497:U:H5    | 1.84                     | 0.41              |
| 1:AA:1517:G:C2  | 1:AA:1518:C:C2    | 3.09                     | 0.41              |
| 1:AA:1593:G:H2' | 1:AA:1594:G:H8    | 1.85                     | 0.41              |
| 1:AA:1656:C:C5' | 5:AE:136:ARG:CZ   | 2.98                     | 0.41              |
| 1:AA:1664:A:O2' | 10:AL:66:LYS:CE   | 2.69                     | 0.41              |
| 1:AA:1761:C:H3' | 1:AA:1761:C:C6    | 2.55                     | 0.41              |
| 1:AA:1777:U:C2' | 1:AA:1778:U:C5'   | 2.97                     | 0.41              |
| 1:AA:1786:A:C5  | 1:AA:1787:A:C5    | 3.08                     | 0.41              |
| 1:AA:1853:A:OP2 | 1:AA:1853:A:H8    | 2.03                     | 0.41              |
| 1:AA:1920:C:C5  | 1:AA:1921:G:N7    | 2.89                     | 0.41              |
| 1:AA:1946:U:C2' | 1:AA:1947:C:O5'   | 2.68                     | 0.41              |
| 1:AA:1954:G:O2' | 1:AA:1956:U:C4    | 2.65                     | 0.41              |
| 1:AA:2000:G:O2' | 1:AA:2689:U:C5    | 2.73                     | 0.41              |
| 1:AA:2027:G:C4  | 1:AA:2028:U:C6    | 3.08                     | 0.41              |
| 1:AA:2040:C:C2' | 1:AA:2041:U:O5'   | 2.68                     | 0.41              |
| 1:AA:2075:U:O2  | 1:AA:2238:G:N2    | 2.53                     | 0.41              |
| 1:AA:2087:G:H8  | 1:AA:2087:G:C5'   | 2.34                     | 0.41              |
| 1:AA:2093:G:C2' | 1:AA:2094:G:H5'   | 2.51                     | 0.41              |
| 1:AA:2094:G:N7  | 1:AA:2095:C:C4    | 2.88                     | 0.41              |
| 1:AA:2190:G:C6  | 1:AA:2191:G:N7    | 2.89                     | 0.41              |
| 1:AA:2285:C:H4' | 1:AA:2288:A:C6    | 2.55                     | 0.41              |
| 1:AA:2287:A:H2  | 1:AA:2346:A:N6    | 2.18                     | 0.41              |
| 1:AA:2320:A:C2  | 1:AA:2334:G:OP1   | 2.74                     | 0.41              |
| 1:AA:2331:G:C4  | 1:AA:2332:U:C2    | 3.08                     | 0.41              |
| 1:AA:2351:G:H22 | 1:AA:2365:G:H2'   | 1.85                     | 0.41              |
| 1:AA:2399:G:C2  | 27:Ac:21:TYR:OH   | 2.63                     | 0.41              |
| 1:AA:2441:C:H2' | 1:AA:2441:C:O2    | 2.20                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2508:G:N2    | 1:AA:2509:G:H1'   | 2.35                     | 0.41              |
| 1:AA:2582:G:C8    | 1:AA:2582:G:C5'   | 2.98                     | 0.41              |
| 1:AA:2612:C:HO2'  | 26:Ab:4:HIS:HB3   | 1.85                     | 0.41              |
| 1:AA:2660:A:C5    | 57:BZ:457:THR:HA  | 2.55                     | 0.41              |
| 1:AA:2684:U:O2'   | 10:AL:67:LYS:CD   | 2.69                     | 0.41              |
| 1:AA:2705:A:C8    | 1:AA:2706:G:N7    | 2.89                     | 0.41              |
| 1:AA:2717:G:HO2'  | 1:AA:2718:G:P     | 2.38                     | 0.41              |
| 1:AA:2867:G:O3'   | 1:AA:2868:A:H8    | 2.03                     | 0.41              |
| 1:AA:2884:U:H2'   | 1:AA:2885:C:H5'   | 2.01                     | 0.41              |
| 1:AA:2886:G:H21   | 1:AA:2887:U:H1'   | 1.85                     | 0.41              |
| 2:AB:47:C:H2'     | 2:AB:48:A:C5'     | 2.47                     | 0.41              |
| 2:AB:68:C:C2'     | 2:AB:69:G:H8      | 2.34                     | 0.41              |
| 2:AB:112:G:N2     | 2:AB:113:C:H1'    | 2.34                     | 0.41              |
| 3:AC:22:ILE:O     | 3:AC:25:ALA:CB    | 2.63                     | 0.41              |
| 3:AC:83:ILE:O     | 3:AC:87:GLU:CB    | 2.52                     | 0.41              |
| 4:AD:5:LYS:HA     | 4:AD:28:GLU:CB    | 2.50                     | 0.41              |
| 4:AD:29:PRO:HG3   | 4:AD:82:ILE:HG22  | 2.01                     | 0.41              |
| 4:AD:85:ASP:C     | 4:AD:87:ASN:ND2   | 2.79                     | 0.41              |
| 4:AD:90:ALA:HB2   | 4:AD:159:ALA:HB1  | 2.01                     | 0.41              |
| 4:AD:123:ALA:HB1  | 4:AD:129:ASN:HB3  | 2.02                     | 0.41              |
| 5:AE:23:VAL:HG11  | 5:AE:188:VAL:HG22 | 2.01                     | 0.41              |
| 5:AE:173:VAL:CG1  | 5:AE:184:VAL:CA   | 2.77                     | 0.41              |
| 5:AE:195:LEU:HD13 | 5:AE:196:VAL:CA   | 2.42                     | 0.41              |
| 6:AF:197:ASP:C    | 6:AF:200:GLU:HG3  | 2.45                     | 0.41              |
| 7:AG:5:VAL:HG12   | 7:AG:6:ALA:N      | 2.35                     | 0.41              |
| 7:AG:19:LEU:HA    | 7:AG:22:ARG:HG2   | 2.01                     | 0.41              |
| 7:AG:19:LEU:CA    | 7:AG:22:ARG:HG2   | 2.51                     | 0.41              |
| 7:AG:60:LEU:C     | 7:AG:66:GLN:O     | 2.63                     | 0.41              |
| 7:AG:173:LEU:HD12 | 7:AG:176:LEU:CD1  | 2.40                     | 0.41              |
| 8:AH:35:VAL:HG21  | 8:AH:75:ALA:HB2   | 2.00                     | 0.41              |
| 9:AK:23:LEU:HD23  | 9:AK:23:LEU:N     | 2.34                     | 0.41              |
| 9:AK:115:ARG:HA   | 9:AK:118:LYS:CG   | 2.49                     | 0.41              |
| 9:AK:136:GLU:C    | 9:AK:137:LYS:CG   | 2.94                     | 0.41              |
| 10:AL:24:VAL:H    | 10:AL:30:ALA:HB1  | 1.85                     | 0.41              |
| 10:AL:78:ARG:N    | 10:AL:78:ARG:CD   | 2.84                     | 0.41              |
| 12:AN:51:ARG:HG2  | 12:AN:51:ARG:HH11 | 1.83                     | 0.41              |
| 12:AN:63:LYS:CD   | 12:AN:64:ILE:N    | 2.76                     | 0.41              |
| 12:AN:80:GLU:CD   | 12:AN:80:GLU:C    | 2.88                     | 0.41              |
| 12:AN:98:LYS:HE2  | 12:AN:98:LYS:N    | 2.34                     | 0.41              |
| 13:AO:7:GLY:O     | 13:AO:8:ARG:O     | 2.38                     | 0.41              |
| 13:AO:115:GLU:HG2 | 13:AO:116:LEU:O   | 2.20                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 14:AP:71:ARG:HA    | 14:AP:104:GLY:O    | 2.20                     | 0.41              |
| 14:AP:96:GLY:O     | 14:AP:98:VAL:N     | 2.54                     | 0.41              |
| 15:AQ:2:ASN:O      | 15:AQ:3:ARG:C      | 2.64                     | 0.41              |
| 15:AQ:19:LEU:O     | 15:AQ:20:PRO:O     | 2.38                     | 0.41              |
| 15:AQ:28:VAL:HG23  | 15:AQ:94:ALA:CA    | 2.50                     | 0.41              |
| 15:AQ:100:TYR:C    | 15:AQ:102:ILE:H    | 2.27                     | 0.41              |
| 15:AQ:105:LEU:O    | 15:AQ:106:SER:C    | 2.62                     | 0.41              |
| 16:AR:61:TRP:O     | 16:AR:64:ARG:N     | 2.53                     | 0.41              |
| 16:AR:97:ASP:O     | 16:AR:100:VAL:HG23 | 2.20                     | 0.41              |
| 16:AR:105:VAL:HG12 | 16:AR:106:PHE:N    | 2.32                     | 0.41              |
| 16:AR:105:VAL:C    | 16:AR:108:GLU:OE2  | 2.63                     | 0.41              |
| 17:AS:83:ARG:CG    | 17:AS:84:LYS:N     | 2.83                     | 0.41              |
| 18:AT:30:GLU:OE2   | 18:AT:31:GLU:N     | 2.54                     | 0.41              |
| 18:AT:59:VAL:HA    | 18:AT:63:ASP:C     | 2.44                     | 0.41              |
| 20:AV:6:HIS:CD2    | 20:AV:33:LYS:NZ    | 2.89                     | 0.41              |
| 21:AW:139:VAL:HG11 | 21:AW:155:LEU:O    | 2.19                     | 0.41              |
| 23:AY:27:LEU:HD11  | 23:AY:48:LEU:CG    | 2.49                     | 0.41              |
| 23:AY:47:ASP:OD2   | 23:AY:47:ASP:N     | 2.52                     | 0.41              |
| 24:AZ:7:LYS:O      | 24:AZ:54:VAL:CG2   | 2.59                     | 0.41              |
| 24:AZ:40:THR:HB    | 24:AZ:43:ILE:CB    | 2.49                     | 0.41              |
| 24:AZ:43:ILE:O     | 24:AZ:47:VAL:HG23  | 2.20                     | 0.41              |
| 25:Aa:41:PRO:HA    | 25:Aa:58:ARG:NH1   | 2.35                     | 0.41              |
| 25:Aa:59:PHE:HE1   | 25:Aa:60:GLN:HE21  | 1.68                     | 0.41              |
| 26:Ab:15:ARG:C     | 26:Ab:17:ASP:N     | 2.78                     | 0.41              |
| 26:Ab:36:CYS:HB2   | 26:Ab:37:LYS:CE    | 2.50                     | 0.41              |
| 28:Ad:42:LEU:O     | 28:Ad:43:THR:C     | 2.61                     | 0.41              |
| 29:Ae:1:MET:H3     | 29:Ae:2:PRO:HD2    | 1.81                     | 0.41              |
| 29:Ae:38:GLY:C     | 29:Ae:39:LYS:HE2   | 2.45                     | 0.41              |
| 34:BA:62:U:H2'     | 34:BA:63:C:C6      | 2.55                     | 0.41              |
| 34:BA:111:G:C5'    | 34:BA:112:G:OP2    | 2.67                     | 0.41              |
| 34:BA:192:U:C4'    | 53:BX:103:GLY:N    | 2.83                     | 0.41              |
| 34:BA:221:C:C2     | 34:BA:222:U:C5     | 3.08                     | 0.41              |
| 34:BA:299:G:C4     | 34:BA:300:A:N6     | 2.88                     | 0.41              |
| 34:BA:305:G:O2'    | 34:BA:306:G:OP2    | 2.33                     | 0.41              |
| 34:BA:310:G:C4     | 34:BA:311:C:C5     | 3.08                     | 0.41              |
| 34:BA:375:U:C2'    | 34:BA:376:G:C5'    | 2.99                     | 0.41              |
| 34:BA:453:A:C8     | 34:BA:453:A:OP2    | 2.71                     | 0.41              |
| 34:BA:498:A:C8     | 34:BA:547:A:C6     | 3.08                     | 0.41              |
| 34:BA:558:G:H5''   | 34:BA:559:A:C5'    | 2.51                     | 0.41              |
| 34:BA:562:C:O2'    | 45:BP:15:ARG:CG    | 2.68                     | 0.41              |
| 34:BA:689:C:O3'    | 34:BA:705:U:O2'    | 2.32                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:713:G:C2'   | 34:BA:714:G:C8     | 2.94                     | 0.41              |
| 34:BA:744:C:H4'   | 34:BA:852:G:O2'    | 2.20                     | 0.41              |
| 34:BA:952:U:C2'   | 34:BA:953:G:H5'    | 2.50                     | 0.41              |
| 34:BA:994:A:H2    | 47:BR:4:LYS:HG2    | 1.85                     | 0.41              |
| 34:BA:1015:A:C5   | 34:BA:1016:A:C6    | 3.09                     | 0.41              |
| 34:BA:1033:G:C2   | 34:BA:1034:G:C4    | 3.09                     | 0.41              |
| 34:BA:1084:G:OP1  | 34:BA:1086:U:C1'   | 2.68                     | 0.41              |
| 34:BA:1107:C:C2'  | 34:BA:1108:G:H5''  | 2.51                     | 0.41              |
| 34:BA:1175:G:H2'  | 34:BA:1176:A:C8    | 2.56                     | 0.41              |
| 34:BA:1193:G:H2'  | 34:BA:1194:U:C5'   | 2.51                     | 0.41              |
| 34:BA:1302:U:P    | 46:BQ:21:TYR:CE2   | 3.08                     | 0.41              |
| 34:BA:1311:G:H1'  | 34:BA:1327:C:H1'   | 2.02                     | 0.41              |
| 34:BA:1314:C:N4   | 34:BA:1323:G:H1    | 2.19                     | 0.41              |
| 34:BA:1474:G:C6   | 34:BA:1475:G:N7    | 2.88                     | 0.41              |
| 34:BA:1475:G:H2'  | 34:BA:1476:G:H8    | 1.85                     | 0.41              |
| 34:BA:1521:G:N3   | 34:BA:1522:U:C6    | 2.89                     | 0.41              |
| 35:BF:20:GLU:O    | 35:BF:40:HIS:HB2   | 2.20                     | 0.41              |
| 35:BF:35:GLU:OE2  | 35:BF:36:ARG:C     | 2.63                     | 0.41              |
| 35:BF:43:ASP:O    | 35:BF:44:LEU:O     | 2.38                     | 0.41              |
| 35:BF:69:LEU:CB   | 35:BF:159:PRO:HB2  | 2.48                     | 0.41              |
| 35:BF:92:TYR:N    | 35:BF:92:TYR:HD2   | 2.18                     | 0.41              |
| 35:BF:187:LEU:HB2 | 35:BF:201:ILE:HG22 | 2.02                     | 0.41              |
| 36:BG:139:GLN:C   | 36:BG:170:GLN:HE22 | 2.28                     | 0.41              |
| 36:BG:194:GLY:C   | 36:BG:196:LEU:HD23 | 2.45                     | 0.41              |
| 37:BH:17:VAL:O    | 37:BH:17:VAL:HG12  | 2.20                     | 0.41              |
| 37:BH:31:CYS:O    | 37:BH:33:MET:SD    | 2.78                     | 0.41              |
| 37:BH:62:GLN:HA   | 37:BH:62:GLN:NE2   | 2.36                     | 0.41              |
| 38:BI:9:LYS:HD3   | 38:BI:108:ALA:HB1  | 2.02                     | 0.41              |
| 38:BI:109:ILE:CD1 | 38:BI:136:MET:SD   | 3.08                     | 0.41              |
| 39:BJ:41:GLU:HB3  | 39:BJ:62:TRP:O     | 2.21                     | 0.41              |
| 39:BJ:97:PHE:CD2  | 51:BV:31:LEU:HD22  | 2.54                     | 0.41              |
| 40:BK:68:ASN:HB3  | 40:BK:135:VAL:HG11 | 2.02                     | 0.41              |
| 40:BK:140:ASP:O   | 40:BK:141:VAL:C    | 2.62                     | 0.41              |
| 40:BK:146:GLU:HG3 | 40:BK:149:ARG:CZ   | 2.50                     | 0.41              |
| 41:BL:14:ARG:NE   | 41:BL:15:ASN:ND2   | 2.68                     | 0.41              |
| 41:BL:23:SER:HA   | 41:BL:62:TYR:CD1   | 2.55                     | 0.41              |
| 41:BL:45:ILE:C    | 41:BL:47:GLY:N     | 2.78                     | 0.41              |
| 42:BM:7:THR:CG2   | 42:BM:9:ARG:NH1    | 2.83                     | 0.41              |
| 42:BM:45:ALA:O    | 42:BM:78:LYS:CG    | 2.66                     | 0.41              |
| 42:BM:121:ARG:HG2 | 42:BM:121:ARG:O    | 2.21                     | 0.41              |
| 43:BN:34:VAL:CA   | 43:BN:74:ILE:HG12  | 2.40                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 44:BO:114:VAL:CG2 | 44:BO:115:PRO:CD  | 2.98                     | 0.41              |
| 45:BP:9:GLN:O     | 45:BP:12:ARG:N    | 2.50                     | 0.41              |
| 45:BP:86:ARG:NH2  | 45:BP:119:LYS:HD3 | 2.35                     | 0.41              |
| 46:BQ:65:LYS:CG   | 46:BQ:69:GLU:CG   | 2.92                     | 0.41              |
| 48:BS:7:GLU:O     | 48:BS:8:LYS:C     | 2.62                     | 0.41              |
| 48:BS:36:ILE:HG22 | 48:BS:37:ASN:N    | 2.35                     | 0.41              |
| 48:BS:60:VAL:C    | 48:BS:63:ARG:HG3  | 2.41                     | 0.41              |
| 49:BT:53:VAL:CG2  | 49:BT:54:GLU:N    | 2.81                     | 0.41              |
| 50:BU:94:ASN:O    | 50:BU:95:TYR:C    | 2.61                     | 0.41              |
| 51:BV:26:LEU:HD22 | 51:BV:39:VAL:HG21 | 2.03                     | 0.41              |
| 51:BV:53:ARG:O    | 51:BV:55:ARG:N    | 2.53                     | 0.41              |
| 51:BV:53:ARG:CA   | 51:BV:63:GLN:HE21 | 2.26                     | 0.41              |
| 52:BW:35:SER:O    | 52:BW:37:ARG:N    | 2.53                     | 0.41              |
| 52:BW:51:VAL:CB   | 52:BW:75:ALA:CB   | 2.99                     | 0.41              |
| 52:BW:51:VAL:HB   | 52:BW:75:ALA:HB2  | 2.01                     | 0.41              |
| 55:BC:20:U:O4     | 55:BC:59:U:O4     | 2.38                     | 0.41              |
| 55:BC:69:G:H3'    | 55:BC:70:G:H5''   | 2.01                     | 0.41              |
| 56:BD:2:C:C5      | 56:BD:3:C:N4      | 2.89                     | 0.41              |
| 56:BE:5:G:H5''    | 56:BE:6:G:N2      | 2.32                     | 0.41              |
| 56:BE:14:A:C3'    | 56:BE:15:G:H5'    | 2.50                     | 0.41              |
| 57:BZ:23:ASP:C    | 57:BZ:25:LEU:N    | 2.78                     | 0.41              |
| 57:BZ:41:ARG:CD   | 57:BZ:42:VAL:HG13 | 2.50                     | 0.41              |
| 57:BZ:64:ILE:HD11 | 57:BZ:188:GLN:N   | 2.36                     | 0.41              |
| 57:BZ:89:MET:HE3  | 57:BZ:116:ALA:CA  | 2.47                     | 0.41              |
| 1:AA:84:A:O3'     | 1:AA:85:G:O4'     | 2.38                     | 0.41              |
| 1:AA:118:A:C8     | 1:AA:119:A:C8     | 3.09                     | 0.41              |
| 1:AA:213:A:C2     | 1:AA:214:G:O4'    | 2.74                     | 0.41              |
| 1:AA:213:A:N1     | 1:AA:214:G:N3     | 2.68                     | 0.41              |
| 1:AA:256:A:H2'    | 1:AA:257:A:C8     | 2.55                     | 0.41              |
| 1:AA:261:G:HO2'   | 1:AA:609:A:H4'    | 1.84                     | 0.41              |
| 1:AA:281:G:O2'    | 1:AA:282:A:C5'    | 2.68                     | 0.41              |
| 1:AA:291:C:C4     | 1:AA:292:C:C5     | 3.08                     | 0.41              |
| 1:AA:312:G:N3     | 1:AA:313:C:C5     | 2.89                     | 0.41              |
| 1:AA:358:U:O2     | 1:AA:358:U:H2'    | 2.19                     | 0.41              |
| 1:AA:364:C:O5'    | 1:AA:364:C:H6     | 2.03                     | 0.41              |
| 1:AA:410:G:C5'    | 1:AA:411:G:OP2    | 2.69                     | 0.41              |
| 1:AA:434:U:H6     | 1:AA:434:U:P      | 2.43                     | 0.41              |
| 1:AA:452:G:N2     | 1:AA:458:G:H21    | 2.19                     | 0.41              |
| 1:AA:471:A:C8     | 1:AA:472:A:N7     | 2.89                     | 0.41              |
| 1:AA:503:A:O2'    | 1:AA:506:G:C8     | 2.71                     | 0.41              |
| 1:AA:541:C:H5''   | 1:AA:542:C:OP2    | 2.21                     | 0.41              |

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| Atom-1          | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-------------------|--------------------------|-------------------|
| 1:AA:542:C:C2   | 1:AA:543:C:C6     | 3.08                     | 0.41              |
| 1:AA:563:G:C4   | 1:AA:2018:G:C2    | 3.08                     | 0.41              |
| 1:AA:569:U:H2'  | 1:AA:983:A:N6     | 2.35                     | 0.41              |
| 1:AA:601:C:H2'  | 1:AA:602:G:H5'    | 2.03                     | 0.41              |
| 1:AA:607:U:N3   | 1:AA:608:A:N7     | 2.69                     | 0.41              |
| 1:AA:666:G:O2'  | 1:AA:667:U:C5'    | 2.68                     | 0.41              |
| 1:AA:696:G:H2'  | 1:AA:697:C:H6     | 1.86                     | 0.41              |
| 1:AA:730:C:C2   | 1:AA:731:C:C5     | 3.08                     | 0.41              |
| 1:AA:736:C:N4   | 1:AA:737:C:N4     | 2.68                     | 0.41              |
| 1:AA:779:U:H3'  | 1:AA:780:G:H8     | 1.85                     | 0.41              |
| 1:AA:834:C:C2   | 1:AA:835:A:C8     | 3.07                     | 0.41              |
| 1:AA:867:C:OP1  | 1:AA:868:U:OP2    | 2.38                     | 0.41              |
| 1:AA:907:U:H6   | 1:AA:907:U:H5''   | 1.86                     | 0.41              |
| 1:AA:939:G:H2'  | 1:AA:940:G:O5'    | 2.21                     | 0.41              |
| 1:AA:958:U:C6   | 12:AN:41:TRP:HH2  | 2.39                     | 0.41              |
| 1:AA:974:G:C4   | 1:AA:1186:G:C5    | 3.08                     | 0.41              |
| 1:AA:1024:G:C6  | 1:AA:1138:G:O6    | 2.73                     | 0.41              |
| 1:AA:1061:U:H2' | 32:AJ:52:ILE:HG23 | 2.01                     | 0.41              |
| 1:AA:1109:C:H2' | 1:AA:1110:G:O4'   | 2.21                     | 0.41              |
| 1:AA:1136:G:N2  | 1:AA:1137:G:C1'   | 2.84                     | 0.41              |
| 1:AA:1234:U:C4  | 1:AA:1235:G:C2    | 3.08                     | 0.41              |
| 1:AA:1300:U:O2  | 1:AA:1301:A:N6    | 2.54                     | 0.41              |
| 1:AA:1305:C:O2' | 1:AA:1306:C:C5'   | 2.68                     | 0.41              |
| 1:AA:1342:A:H8  | 1:AA:1342:A:O5'   | 2.04                     | 0.41              |
| 1:AA:1364:G:O5' | 1:AA:1809:A:N1    | 2.53                     | 0.41              |
| 1:AA:1410:G:N2  | 1:AA:1593:G:C4    | 2.88                     | 0.41              |
| 1:AA:1482:U:H1' | 1:AA:1512:G:H22   | 1.84                     | 0.41              |
| 1:AA:1498:C:O2  | 1:AA:1498:C:H2'   | 2.21                     | 0.41              |
| 1:AA:1536:A:C5  | 1:AA:1537:C:C4    | 3.08                     | 0.41              |
| 1:AA:1582:C:O5' | 1:AA:1583:A:H5''  | 2.20                     | 0.41              |
| 1:AA:1588:C:O2' | 1:AA:1589:C:H5'   | 2.21                     | 0.41              |
| 1:AA:1613:G:N7  | 1:AA:1617:C:C5    | 2.89                     | 0.41              |
| 1:AA:1629:U:H1' | 1:AA:2699:C:P     | 2.61                     | 0.41              |
| 1:AA:1649:G:C6  | 1:AA:1650:G:N7    | 2.89                     | 0.41              |
| 1:AA:1660:C:N3  | 1:AA:2001:A:C6    | 2.88                     | 0.41              |
| 1:AA:1698:A:C2' | 1:AA:1699:G:OP2   | 2.68                     | 0.41              |
| 1:AA:1779:U:H6  | 1:AA:1779:U:C3'   | 2.30                     | 0.41              |
| 1:AA:1829:A:H5' | 1:AA:1830:C:OP2   | 2.20                     | 0.41              |
| 1:AA:1932:A:N6  | 1:AA:1933:G:C6    | 2.88                     | 0.41              |
| 1:AA:1972:A:C2  | 1:AA:1973:G:N7    | 2.89                     | 0.41              |
| 1:AA:1977:A:O2' | 1:AA:1978:A:O5'   | 2.39                     | 0.41              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:2000:G:N1   | 1:AA:2001:A:C5    | 2.88                     | 0.41              |
| 1:AA:2007:C:O2'  | 1:AA:2008:C:H5'   | 2.21                     | 0.41              |
| 1:AA:2011:U:C2'  | 1:AA:2012:G:O4'   | 2.65                     | 0.41              |
| 1:AA:2017:U:C2'  | 26:Ab:8:LYS:O     | 2.68                     | 0.41              |
| 1:AA:2090:G:C2   | 1:AA:2091:U:N3    | 2.89                     | 0.41              |
| 1:AA:2178:C:P    | 3:AC:211:SER:CB   | 3.09                     | 0.41              |
| 1:AA:2287:A:N7   | 1:AA:2289:G:C4    | 2.88                     | 0.41              |
| 1:AA:2304:G:H4'  | 7:AG:132:ASN:HD21 | 1.84                     | 0.41              |
| 1:AA:2361:A:C4   | 1:AA:2362:G:C8    | 3.08                     | 0.41              |
| 1:AA:2378:A:C4   | 14:AP:20:ARG:NH1  | 2.88                     | 0.41              |
| 1:AA:2423:U:O2'  | 1:AA:2425:A:H5'   | 2.20                     | 0.41              |
| 1:AA:2491:U:C5   | 1:AA:2492:U:O5'   | 2.73                     | 0.41              |
| 1:AA:2572:A:C4'  | 1:AA:2573:C:OP1   | 2.69                     | 0.41              |
| 1:AA:2698:U:N3   | 1:AA:2699:C:N4    | 2.68                     | 0.41              |
| 1:AA:2746:U:H2'  | 1:AA:2747:G:H8    | 1.86                     | 0.41              |
| 1:AA:2776:A:C4   | 1:AA:2778:A:C8    | 3.08                     | 0.41              |
| 1:AA:2801:A:OP1  | 1:AA:2802:G:P     | 2.79                     | 0.41              |
| 1:AA:2820:A:N6   | 5:AE:192:ASN:O    | 2.53                     | 0.41              |
| 1:AA:2851:A:H1'  | 13:AO:61:HIS:NE2  | 2.36                     | 0.41              |
| 1:AA:2879:C:O2   | 1:AA:2879:C:C2'   | 2.68                     | 0.41              |
| 1:AA:2881:C:C2   | 1:AA:2882:A:C8    | 3.09                     | 0.41              |
| 2:AB:4:C:C5      | 2:AB:5:C:C5       | 3.09                     | 0.41              |
| 2:AB:40:U:O5'    | 2:AB:40:U:H6      | 2.04                     | 0.41              |
| 2:AB:82:G:H2'    | 2:AB:83:G:OP2     | 2.20                     | 0.41              |
| 2:AB:85:G:C2     | 2:AB:92:G:C2      | 3.08                     | 0.41              |
| 2:AB:102:G:C2'   | 21:AW:73:GLN:NE2  | 2.63                     | 0.41              |
| 3:AC:34:THR:O    | 3:AC:34:THR:CG2   | 2.59                     | 0.41              |
| 3:AC:46:LYS:HG3  | 3:AC:211:SER:N    | 2.35                     | 0.41              |
| 3:AC:63:SER:H    | 3:AC:191:ALA:CB   | 2.28                     | 0.41              |
| 3:AC:213:TYR:HB3 | 3:AC:222:VAL:O    | 2.20                     | 0.41              |
| 3:AC:213:TYR:HA  | 3:AC:224:ILE:HG12 | 2.02                     | 0.41              |
| 4:AD:5:LYS:O     | 4:AD:27:THR:HG23  | 2.19                     | 0.41              |
| 4:AD:28:GLU:N    | 4:AD:28:GLU:OE1   | 2.53                     | 0.41              |
| 4:AD:63:ARG:CA   | 4:AD:63:ARG:CZ    | 2.98                     | 0.41              |
| 4:AD:175:LEU:CD2 | 4:AD:176:ARG:O    | 2.69                     | 0.41              |
| 4:AD:181:GLU:OE1 | 4:AD:270:ILE:HG22 | 2.20                     | 0.41              |
| 4:AD:234:GLY:CA  | 4:AD:241:PRO:HG2  | 2.48                     | 0.41              |
| 5:AE:11:MET:CG   | 5:AE:12:THR:N     | 2.83                     | 0.41              |
| 5:AE:13:ARG:NE   | 5:AE:21:VAL:CA    | 2.83                     | 0.41              |
| 5:AE:59:VAL:HB   | 5:AE:62:PRO:CG    | 2.49                     | 0.41              |
| 5:AE:64:LYS:C    | 5:AE:66:HIS:N     | 2.74                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 5:AE:80:GLU:HG2   | 5:AE:83:ASP:CG     | 2.41                     | 0.41              |
| 6:AF:7:TYR:OH     | 6:AF:23:ASP:O      | 2.34                     | 0.41              |
| 6:AF:30:PRO:HG2   | 6:AF:31:HIS:N      | 2.35                     | 0.41              |
| 6:AF:136:THR:O    | 6:AF:139:PHE:N     | 2.53                     | 0.41              |
| 6:AF:168:ARG:HD3  | 6:AF:169:ASN:N     | 2.34                     | 0.41              |
| 6:AF:181:LEU:N    | 6:AF:181:LEU:CD1   | 2.76                     | 0.41              |
| 6:AF:200:GLU:CD   | 6:AF:201:VAL:HG23  | 2.37                     | 0.41              |
| 7:AG:47:LYS:HZ2   | 7:AG:49:ASP:CG     | 2.28                     | 0.41              |
| 7:AG:148:MET:CG   | 7:AG:151:ALA:H     | 2.34                     | 0.41              |
| 8:AH:35:VAL:HB    | 8:AH:72:ILE:HG23   | 2.02                     | 0.41              |
| 8:AH:67:LEU:C     | 8:AH:69:ARG:N      | 2.78                     | 0.41              |
| 9:AK:7:LYS:CE     | 9:AK:8:GLN:H       | 2.27                     | 0.41              |
| 10:AL:73:ASP:C    | 15:AQ:79:HIS:CE1   | 2.98                     | 0.41              |
| 10:AL:111:PHE:HD1 | 10:AL:115:VAL:HG23 | 1.86                     | 0.41              |
| 11:AM:15:ARG:NE   | 11:AM:15:ARG:HA    | 2.35                     | 0.41              |
| 11:AM:33:ARG:O    | 11:AM:34:GLY:C     | 2.63                     | 0.41              |
| 11:AM:86:LYS:NZ   | 11:AM:99:LEU:CD1   | 2.83                     | 0.41              |
| 12:AN:45:GLN:N    | 12:AN:45:GLN:OE1   | 2.53                     | 0.41              |
| 12:AN:79:LEU:O    | 12:AN:80:GLU:HG3   | 2.20                     | 0.41              |
| 12:AN:96:VAL:CG1  | 12:AN:98:LYS:HZ3   | 2.24                     | 0.41              |
| 13:AO:61:HIS:C    | 13:AO:64:ARG:NH1   | 2.78                     | 0.41              |
| 13:AO:73:VAL:CG2  | 13:AO:74:LYS:H     | 2.25                     | 0.41              |
| 14:AP:17:ARG:HH11 | 14:AP:25:ARG:HD2   | 1.82                     | 0.41              |
| 15:AQ:17:THR:HG21 | 15:AQ:20:PRO:CG    | 2.50                     | 0.41              |
| 15:AQ:61:PHE:O    | 15:AQ:62:THR:CG2   | 2.67                     | 0.41              |
| 16:AR:46:ALA:N    | 16:AR:49:HIS:ND1   | 2.69                     | 0.41              |
| 16:AR:49:HIS:CA   | 16:AR:52:ARG:CZ    | 2.84                     | 0.41              |
| 16:AR:86:ALA:O    | 16:AR:90:VAL:HG21  | 2.21                     | 0.41              |
| 17:AS:72:VAL:CG1  | 17:AS:73:SER:H     | 2.24                     | 0.41              |
| 18:AT:66:GLU:CA   | 18:AT:69:LEU:HD13  | 2.48                     | 0.41              |
| 20:AV:23:ARG:CG   | 20:AV:39:VAL:HG22  | 2.49                     | 0.41              |
| 20:AV:37:VAL:C    | 20:AV:39:VAL:HG23  | 2.43                     | 0.41              |
| 21:AW:11:GLU:N    | 21:AW:36:LYS:HZ2   | 2.19                     | 0.41              |
| 22:AX:21:LEU:HD11 | 22:AX:40:GLN:N     | 2.36                     | 0.41              |
| 24:AZ:26:LEU:CG   | 24:AZ:47:VAL:HG22  | 2.37                     | 0.41              |
| 25:Aa:8:LYS:CG    | 25:Aa:9:LEU:N      | 2.76                     | 0.41              |
| 25:Aa:39:CYS:O    | 25:Aa:40:HIS:CD2   | 2.74                     | 0.41              |
| 25:Aa:42:PHE:O    | 25:Aa:57:GLU:HA    | 2.20                     | 0.41              |
| 29:Ae:3:LYS:O     | 29:Ae:4:MET:HB2    | 2.20                     | 0.41              |
| 29:Ae:55:ALA:CA   | 29:Ae:58:ILE:HD11  | 2.38                     | 0.41              |
| 30:Af:2:LYS:O     | 30:Af:3:VAL:CG2    | 2.58                     | 0.41              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 34:BA:22:G:N3     | 34:BA:23:C:C6    | 2.89                     | 0.41              |
| 34:BA:89:U:O2'    | 34:BA:90:C:H5'   | 2.21                     | 0.41              |
| 34:BA:131:C:C5    | 34:BA:232:G:N2   | 2.88                     | 0.41              |
| 34:BA:131:C:O2    | 34:BA:131:C:H2'  | 2.19                     | 0.41              |
| 34:BA:149:A:C2    | 34:BA:150:C:C4   | 3.08                     | 0.41              |
| 34:BA:172:A:N7    | 34:BA:174:C:C4   | 2.89                     | 0.41              |
| 34:BA:248:C:O4'   | 34:BA:282:A:H2   | 2.03                     | 0.41              |
| 34:BA:255:G:P     | 50:BU:69:LYS:NZ  | 2.94                     | 0.41              |
| 34:BA:293:G:C6    | 34:BA:305:G:C2   | 3.08                     | 0.41              |
| 34:BA:439:A:C4    | 34:BA:496:A:C5   | 3.09                     | 0.41              |
| 34:BA:543:C:OP2   | 37:BH:10:ARG:NH2 | 2.53                     | 0.41              |
| 34:BA:576:G:C8    | 34:BA:881:G:O2'  | 2.68                     | 0.41              |
| 34:BA:668:G:H2'   | 34:BA:669:U:H6   | 1.86                     | 0.41              |
| 34:BA:681:C:O2'   | 34:BA:682:G:H5'  | 2.20                     | 0.41              |
| 34:BA:698:G:C6    | 34:BA:699:C:N4   | 2.89                     | 0.41              |
| 34:BA:741:G:H2'   | 34:BA:742:G:H8   | 1.86                     | 0.41              |
| 34:BA:867:G:N3    | 34:BA:868:C:C6   | 2.89                     | 0.41              |
| 34:BA:869:G:H5''  | 34:BA:870:U:OP1  | 2.21                     | 0.41              |
| 34:BA:880:C:H2'   | 34:BA:881:G:O5'  | 2.19                     | 0.41              |
| 34:BA:958:A:N1    | 52:BW:55:LYS:C   | 2.77                     | 0.41              |
| 34:BA:975:A:H4'   | 34:BA:976:G:C5'  | 2.49                     | 0.41              |
| 34:BA:1009:G:N3   | 34:BA:1010:G:C8  | 2.89                     | 0.41              |
| 34:BA:1053:G:O3'  | 34:BA:1054:C:H4' | 2.19                     | 0.41              |
| 34:BA:1055:A:N6   | 34:BA:1206:G:C8  | 2.88                     | 0.41              |
| 34:BA:1066:C:H5'' | 34:BA:1067:A:P   | 2.60                     | 0.41              |
| 34:BA:1067:A:O2'  | 34:BA:1068:G:O5' | 2.33                     | 0.41              |
| 34:BA:1080:A:C8   | 34:BA:1080:A:O5' | 2.74                     | 0.41              |
| 34:BA:1081:G:OP1  | 38:BI:18:ARG:CA  | 2.69                     | 0.41              |
| 34:BA:1130:A:C2   | 34:BA:1146:A:C2  | 3.07                     | 0.41              |
| 34:BA:1181:G:C8   | 34:BA:1182:G:N3  | 2.88                     | 0.41              |
| 34:BA:1240:U:HO2' | 34:BA:1241:G:P   | 2.42                     | 0.41              |
| 34:BA:1251:A:C2   | 34:BA:1252:A:N1  | 2.88                     | 0.41              |
| 34:BA:1253:G:H22  | 34:BA:1285:A:N6  | 2.19                     | 0.41              |
| 34:BA:1302:U:O2'  | 34:BA:1303:C:H5' | 2.19                     | 0.41              |
| 34:BA:1315:U:H3   | 34:BA:1319:A:N6  | 2.18                     | 0.41              |
| 34:BA:1320:C:H1'  | 52:BW:71:LEU:O   | 2.20                     | 0.41              |
| 34:BA:1350:A:H2'  | 34:BA:1351:U:H6  | 1.86                     | 0.41              |
| 34:BA:1386:G:O2'  | 34:BA:1387:G:C5' | 2.68                     | 0.41              |
| 34:BA:1386:G:H2'  | 34:BA:1387:G:H8  | 1.86                     | 0.41              |
| 34:BA:1405:G:C6   | 34:BA:1497:G:N1  | 2.88                     | 0.41              |
| 34:BA:1487:G:C2   | 34:BA:1488:G:C8  | 3.08                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1488:G:N2    | 34:BA:1489:G:C5    | 2.88                     | 0.41              |
| 34:BA:1537:U:N3    | 34:BA:1538:C:C5    | 2.89                     | 0.41              |
| 35:BF:42:ILE:HD12  | 35:BF:203:GLY:N    | 2.36                     | 0.41              |
| 35:BF:50:GLU:O     | 35:BF:53:ARG:HB3   | 2.21                     | 0.41              |
| 35:BF:71:VAL:O     | 35:BF:164:VAL:CG2  | 2.63                     | 0.41              |
| 35:BF:213:LEU:HD21 | 35:BF:217:ARG:HE   | 1.85                     | 0.41              |
| 36:BG:84:ILE:HA    | 36:BG:101:LEU:CD1  | 2.50                     | 0.41              |
| 36:BG:183:ASP:OD2  | 36:BG:184:TYR:N    | 2.54                     | 0.41              |
| 37:BH:4:TYR:CD2    | 37:BH:5:ILE:N      | 2.89                     | 0.41              |
| 37:BH:61:LYS:CG    | 37:BH:207:TYR:CE1  | 2.92                     | 0.41              |
| 37:BH:105:VAL:HB   | 37:BH:117:ALA:HB1  | 2.01                     | 0.41              |
| 37:BH:112:VAL:HG22 | 37:BH:161:ASN:HD21 | 1.81                     | 0.41              |
| 37:BH:127:THR:C    | 37:BH:128:VAL:O    | 2.61                     | 0.41              |
| 38:BI:57:LYS:NZ    | 38:BI:61:TYR:OH    | 2.45                     | 0.41              |
| 38:BI:71:LEU:HG    | 38:BI:72:GLN:N     | 2.35                     | 0.41              |
| 38:BI:72:GLN:CG    | 38:BI:77:PRO:HD3   | 2.49                     | 0.41              |
| 39:BJ:18:GLN:O     | 39:BJ:19:LEU:C     | 2.63                     | 0.41              |
| 39:BJ:76:ALA:CA    | 39:BJ:79:LEU:HG    | 2.50                     | 0.41              |
| 40:BK:41:ARG:CG    | 40:BK:41:ARG:NH1   | 2.84                     | 0.41              |
| 40:BK:64:GLN:HB3   | 40:BK:128:ALA:CB   | 2.45                     | 0.41              |
| 41:BL:9:MET:CG     | 41:BL:26:VAL:HG11  | 2.41                     | 0.41              |
| 41:BL:20:TYR:HD1   | 41:BL:65:TYR:CZ    | 2.38                     | 0.41              |
| 41:BL:87:SER:O     | 41:BL:88:LYS:C     | 2.63                     | 0.41              |
| 42:BM:24:GLY:C     | 42:BM:25:LYS:HD2   | 2.46                     | 0.41              |
| 43:BN:12:ASP:C     | 43:BN:15:THR:HG22  | 2.45                     | 0.41              |
| 44:BO:44:SER:HB2   | 44:BO:47:VAL:HG23  | 2.02                     | 0.41              |
| 45:BP:6:THR:CB     | 45:BP:9:GLN:OE1    | 2.69                     | 0.41              |
| 45:BP:62:SER:O     | 45:BP:64:TYR:N     | 2.53                     | 0.41              |
| 45:BP:80:HIS:HD2   | 57:BZ:326:VAL:N    | 2.17                     | 0.41              |
| 47:BR:47:LEU:HD23  | 47:BR:47:LEU:HA    | 1.67                     | 0.41              |
| 49:BT:34:GLU:OE1   | 49:BT:36:ILE:HG23  | 2.20                     | 0.41              |
| 50:BU:5:VAL:O      | 50:BU:6:LEU:CB     | 2.68                     | 0.41              |
| 50:BU:10:VAL:HG11  | 50:BU:53:LEU:N     | 2.36                     | 0.41              |
| 50:BU:13:ASP:HB3   | 50:BU:52:LYS:HG2   | 2.03                     | 0.41              |
| 51:BV:22:VAL:C     | 51:BV:24:ALA:H     | 2.29                     | 0.41              |
| 57:BZ:18:LYS:N     | 60:BZ:701:GCP:O1A  | 2.53                     | 0.41              |
| 57:BZ:33:ASP:HA    | 57:BZ:34:SER:HA    | 1.85                     | 0.41              |
| 57:BZ:153:ALA:HB3  | 57:BZ:156:GLU:H    | 1.86                     | 0.41              |
| 57:BZ:306:THR:C    | 57:BZ:307:VAL:HG23 | 2.45                     | 0.41              |
| 57:BZ:403:VAL:O    | 57:BZ:465:LEU:CG   | 2.68                     | 0.41              |
| 57:BZ:427:LYS:HA   | 57:BZ:427:LYS:HD3  | 1.59                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:BZ:527:HIS:CE1 | 57:BZ:531:ASN:HD21 | 2.38                     | 0.41              |
| 57:BZ:589:LYS:C   | 57:BZ:591:HIS:N    | 2.79                     | 0.41              |
| 1:AA:5:A:N1       | 1:AA:2899:G:C8     | 2.89                     | 0.41              |
| 1:AA:14:A:C2      | 1:AA:2625:G:O2'    | 2.73                     | 0.41              |
| 1:AA:28:A:H2'     | 1:AA:29:U:C5'      | 2.45                     | 0.41              |
| 1:AA:179:G:H3'    | 1:AA:180:G:C8      | 2.54                     | 0.41              |
| 1:AA:210:C:OP1    | 28:Ad:29:LYS:HD3   | 2.21                     | 0.41              |
| 1:AA:234:C:O2'    | 1:AA:235:U:H5'     | 2.20                     | 0.41              |
| 1:AA:270(T):G:N1  | 1:AA:270(U):C:C4   | 2.88                     | 0.41              |
| 1:AA:365:C:C4     | 1:AA:366:C:N4      | 2.88                     | 0.41              |
| 1:AA:416:C:C5     | 1:AA:417:C:C5      | 3.09                     | 0.41              |
| 1:AA:447:A:C4     | 1:AA:473:G:C8      | 3.08                     | 0.41              |
| 1:AA:459:U:O2'    | 1:AA:460:A:H5'     | 2.20                     | 0.41              |
| 1:AA:469:G:C2     | 28:Ad:40:TRP:CZ2   | 3.07                     | 0.41              |
| 1:AA:481:G:O2'    | 1:AA:507:A:N6      | 2.54                     | 0.41              |
| 1:AA:507:A:C4'    | 1:AA:509:C:C6      | 3.03                     | 0.41              |
| 1:AA:508:G:O2'    | 1:AA:509:C:C5'     | 2.61                     | 0.41              |
| 1:AA:528:A:H3'    | 1:AA:528:A:C8      | 2.55                     | 0.41              |
| 1:AA:545:G:N3     | 1:AA:545:G:H2'     | 2.36                     | 0.41              |
| 1:AA:682:G:C4     | 1:AA:683:C:C5      | 3.08                     | 0.41              |
| 1:AA:684:G:C2     | 1:AA:775:G:C5      | 3.09                     | 0.41              |
| 1:AA:693:C:H4'    | 1:AA:1354:A:H1'    | 2.03                     | 0.41              |
| 1:AA:735:A:C8     | 1:AA:735:A:C3'     | 3.04                     | 0.41              |
| 1:AA:743:G:C6     | 1:AA:744:G:C6      | 3.09                     | 0.41              |
| 1:AA:793:A:OP2    | 1:AA:793:A:O4'     | 2.39                     | 0.41              |
| 1:AA:800:A:C8     | 1:AA:802:A:H5'     | 2.55                     | 0.41              |
| 1:AA:813:U:OP2    | 11:AM:26:GLY:CA    | 2.57                     | 0.41              |
| 1:AA:844:C:OP2    | 1:AA:845:G:C5      | 2.74                     | 0.41              |
| 1:AA:849:A:C6     | 1:AA:931:G:N1      | 2.86                     | 0.41              |
| 1:AA:850:C:C2     | 1:AA:851:U:C6      | 3.09                     | 0.41              |
| 1:AA:955:C:O3'    | 12:AN:87:LYS:NZ    | 2.51                     | 0.41              |
| 1:AA:960:A:H8     | 1:AA:960:A:O5'     | 2.04                     | 0.41              |
| 1:AA:967:C:O2'    | 1:AA:968:G:H5'     | 2.20                     | 0.41              |
| 1:AA:987:G:C5     | 1:AA:988:A:C8      | 3.08                     | 0.41              |
| 1:AA:1008:C:OP1   | 1:AA:1008:C:C6     | 2.72                     | 0.41              |
| 1:AA:1076:C:C6    | 1:AA:1076:C:C3'    | 3.03                     | 0.41              |
| 1:AA:1106:G:C5    | 1:AA:1107:G:C5     | 3.03                     | 0.41              |
| 1:AA:1151:G:H2'   | 1:AA:1152:C:H6     | 1.76                     | 0.41              |
| 1:AA:1166:C:C2'   | 1:AA:1167:U:O5'    | 2.69                     | 0.41              |
| 1:AA:1177:A:C6    | 1:AA:1178:C:N4     | 2.88                     | 0.41              |
| 1:AA:1284:A:C6    | 1:AA:1285:G:C2     | 3.08                     | 0.41              |

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| Atom-1           | Atom-2          | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-----------------|--------------------------|-------------------|
| 1:AA:1343:G:C2   | 1:AA:1405:U:C6  | 3.08                     | 0.41              |
| 1:AA:1358:G:C8   | 1:AA:1371:G:C6  | 3.09                     | 0.41              |
| 1:AA:1363:C:N4   | 25:Aa:2:LYS:CD  | 2.83                     | 0.41              |
| 1:AA:1429:G:H1'  | 1:AA:1568:G:N3  | 2.36                     | 0.41              |
| 1:AA:1455:G:H2'  | 1:AA:1456:G:O4' | 2.21                     | 0.41              |
| 1:AA:1489:U:H4'  | 1:AA:1490:A:OP2 | 2.20                     | 0.41              |
| 1:AA:1635:G:O2'  | 1:AA:1636:C:H5' | 2.20                     | 0.41              |
| 1:AA:1672:C:O2   | 1:AA:2582:G:H1' | 2.20                     | 0.41              |
| 1:AA:1702:G:C5   | 1:AA:1703:G:C8  | 3.08                     | 0.41              |
| 1:AA:1789:A:H5'  | 1:AA:1790:C:OP2 | 2.21                     | 0.41              |
| 1:AA:1952:A:H2'  | 1:AA:1953:A:O4' | 2.20                     | 0.41              |
| 1:AA:1970:A:C6   | 1:AA:1972:A:N7  | 2.89                     | 0.41              |
| 1:AA:2025:C:C3'  | 1:AA:2026:C:H6  | 2.34                     | 0.41              |
| 1:AA:2117:A:O3'  | 1:AA:2147:G:N2  | 2.54                     | 0.41              |
| 1:AA:2124:G:O3'  | 3:AC:42:GLU:OE2 | 2.37                     | 0.41              |
| 1:AA:2218:G:C6   | 1:AA:2219:G:C5  | 3.09                     | 0.41              |
| 1:AA:2227:A:C4'  | 4:AD:262:ARG:CG | 2.99                     | 0.41              |
| 1:AA:2230:G:N1   | 1:AA:2231:C:C4  | 2.89                     | 0.41              |
| 1:AA:2244:U:C2'  | 1:AA:2244:U:O2  | 2.65                     | 0.41              |
| 1:AA:2295:C:OP1  | 14:AP:9:ARG:NE  | 2.54                     | 0.41              |
| 1:AA:2320:A:H5'  | 1:AA:2321:G:C6  | 2.55                     | 0.41              |
| 1:AA:2345:G:H21  | 1:AA:2381:C:H2' | 1.84                     | 0.41              |
| 1:AA:2356:C:H5'' | 1:AA:2356:C:C6  | 2.55                     | 0.41              |
| 1:AA:2370:G:C4   | 1:AA:2371:G:C8  | 3.08                     | 0.41              |
| 1:AA:2371:G:H2'  | 1:AA:2372:G:C1' | 2.51                     | 0.41              |
| 1:AA:2383:G:N2   | 1:AA:2384:G:C2  | 2.89                     | 0.41              |
| 1:AA:2392:A:N1   | 1:AA:2424:C:O2  | 2.53                     | 0.41              |
| 1:AA:2469:A:OP2  | 1:AA:2476:A:C2  | 2.74                     | 0.41              |
| 1:AA:2509:G:O2'  | 1:AA:2510:C:O4' | 2.39                     | 0.41              |
| 1:AA:2511:U:O4   | 1:AA:2512:C:N4  | 2.54                     | 0.41              |
| 1:AA:2548:G:C2'  | 1:AA:2549:G:O5' | 2.69                     | 0.41              |
| 1:AA:2570:G:N2   | 1:AA:2571:C:C1' | 2.83                     | 0.41              |
| 1:AA:2631:G:C5   | 1:AA:2632:A:C8  | 3.08                     | 0.41              |
| 1:AA:2640:G:O3'  | 9:AK:75:TYR:CE1 | 2.74                     | 0.41              |
| 1:AA:2652:C:O2'  | 1:AA:2653:U:P   | 2.79                     | 0.41              |
| 1:AA:2673:G:C2'  | 1:AA:2674:G:H5' | 2.48                     | 0.41              |
| 1:AA:2691:C:N3   | 1:AA:2719:G:C2  | 2.88                     | 0.41              |
| 1:AA:2705:A:N7   | 1:AA:2706:G:N7  | 2.68                     | 0.41              |
| 1:AA:2748:A:O2'  | 8:AH:63:SER:O   | 2.29                     | 0.41              |
| 1:AA:2794:C:H42  | 1:AA:2799:A:H1' | 1.85                     | 0.41              |
| 1:AA:2817:G:C6   | 1:AA:2818:G:C5  | 3.08                     | 0.41              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:2842:G:C2     | 1:AA:2843:G:H1'   | 2.55                     | 0.41              |
| 3:AC:47:LEU:HA     | 3:AC:208:PHE:O    | 2.21                     | 0.41              |
| 3:AC:65:PRO:CD     | 3:AC:187:ASP:CG   | 2.80                     | 0.41              |
| 3:AC:75:LEU:HD22   | 3:AC:110:PHE:CE2  | 2.54                     | 0.41              |
| 3:AC:175:VAL:HG11  | 3:AC:189:ILE:CA   | 2.12                     | 0.41              |
| 4:AD:20:ASP:C      | 4:AD:21:PHE:CG    | 2.98                     | 0.41              |
| 4:AD:117:VAL:HG13  | 4:AD:129:ASN:N    | 2.35                     | 0.41              |
| 4:AD:159:ALA:O     | 4:AD:196:VAL:CG1  | 2.63                     | 0.41              |
| 4:AD:244:ARG:HA    | 4:AD:252:TRP:HE1  | 1.83                     | 0.41              |
| 5:AE:4:ILE:HD11    | 5:AE:76:ARG:NH1   | 2.33                     | 0.41              |
| 5:AE:14:ILE:O      | 5:AE:14:ILE:CD1   | 2.69                     | 0.41              |
| 5:AE:51:PHE:C      | 5:AE:52:LEU:HD23  | 2.46                     | 0.41              |
| 5:AE:102:VAL:CG2   | 5:AE:104:VAL:HG23 | 2.50                     | 0.41              |
| 6:AF:124:LEU:HG    | 6:AF:197:ASP:HB2  | 2.02                     | 0.41              |
| 6:AF:185:ASP:C     | 6:AF:188:ARG:HG3  | 2.45                     | 0.41              |
| 6:AF:201:VAL:CB    | 6:AF:205:ARG:HH21 | 2.32                     | 0.41              |
| 7:AG:119:GLY:CA    | 7:AG:180:PHE:CG   | 3.04                     | 0.41              |
| 9:AK:18:ALA:N      | 9:AK:21:LYS:HD2   | 2.35                     | 0.41              |
| 9:AK:35:ARG:HD3    | 9:AK:48:MET:HE3   | 2.02                     | 0.41              |
| 9:AK:127:ASP:C     | 9:AK:129:PRO:N    | 2.78                     | 0.41              |
| 10:AL:53:LYS:HG3   | 10:AL:55:GLY:H    | 1.84                     | 0.41              |
| 12:AN:59:ARG:NH1   | 21:AW:177:PRO:HB2 | 2.36                     | 0.41              |
| 13:AO:52:ILE:CG2   | 13:AO:53:HIS:N    | 2.83                     | 0.41              |
| 13:AO:96:ARG:CD    | 13:AO:98:LEU:HD11 | 2.51                     | 0.41              |
| 14:AP:17:ARG:NH1   | 14:AP:89:ARG:HB2  | 2.25                     | 0.41              |
| 14:AP:19:LYS:C     | 14:AP:19:LYS:CD   | 2.91                     | 0.41              |
| 14:AP:27:SER:C     | 14:AP:28:VAL:O    | 2.64                     | 0.41              |
| 15:AQ:6:LEU:CD2    | 15:AQ:7:ILE:N     | 2.82                     | 0.41              |
| 15:AQ:58:ASN:N     | 15:AQ:61:PHE:HD2  | 2.15                     | 0.41              |
| 15:AQ:71:GLY:N     | 15:AQ:74:ARG:HH11 | 2.15                     | 0.41              |
| 15:AQ:115:ARG:CD   | 34:BA:1463:C:OP1  | 2.67                     | 0.41              |
| 16:AR:28:ARG:CB    | 16:AR:38:THR:HG21 | 2.37                     | 0.41              |
| 18:AT:42:ARG:C     | 18:AT:44:ALA:H    | 2.29                     | 0.41              |
| 21:AW:77:ASP:HA    | 21:AW:84:GLU:CD   | 2.46                     | 0.41              |
| 21:AW:116:VAL:HG23 | 21:AW:144:LEU:O   | 2.20                     | 0.41              |
| 23:AY:43:HIS:O     | 23:AY:44:LYS:C    | 2.64                     | 0.41              |
| 23:AY:48:LEU:HD12  | 23:AY:51:GLN:CD   | 2.45                     | 0.41              |
| 24:AZ:17:LYS:CA    | 24:AZ:20:LYS:HZ3  | 2.32                     | 0.41              |
| 27:Ac:14:THR:HA    | 27:Ac:51:GLU:O    | 2.21                     | 0.41              |
| 27:Ac:27:LYS:HB3   | 27:Ac:28:ARG:H    | 1.48                     | 0.41              |
| 29:Ae:42:ARG:C     | 29:Ae:43:GLN:NE2  | 2.78                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 30:Af:1:MET:HG2    | 30:Af:2:LYS:N      | 2.35                     | 0.41              |
| 32:AJ:94:GLU:O     | 32:AJ:95:LYS:HB2   | 2.19                     | 0.41              |
| 34:BA:97:U:H6      | 34:BA:97:U:O5'     | 2.04                     | 0.41              |
| 34:BA:134:A:C5     | 34:BA:325:A:C2     | 3.09                     | 0.41              |
| 34:BA:173:U:C5'    | 34:BA:197:A:C2'    | 2.99                     | 0.41              |
| 34:BA:186(B):C:C4' | 53:BX:89:ARG:NH2   | 2.83                     | 0.41              |
| 34:BA:451:A:HO2'   | 34:BA:452:A:C1'    | 2.34                     | 0.41              |
| 34:BA:498:A:N6     | 34:BA:547:A:O5'    | 2.45                     | 0.41              |
| 34:BA:518:C:O2     | 34:BA:529:G:O6     | 2.38                     | 0.41              |
| 34:BA:520:A:OP1    | 45:BP:52:LEU:CD2   | 2.68                     | 0.41              |
| 34:BA:551:U:C5'    | 45:BP:119:LYS:HZ3  | 2.28                     | 0.41              |
| 34:BA:570:G:OP2    | 34:BA:820:U:O2'    | 2.39                     | 0.41              |
| 34:BA:579:G:O4'    | 34:BA:728:A:H1'    | 2.20                     | 0.41              |
| 34:BA:581:G:HO2'   | 34:BA:582:U:P      | 2.43                     | 0.41              |
| 34:BA:723:U:O2     | 34:BA:723:U:C2'    | 2.68                     | 0.41              |
| 34:BA:834:C:O2'    | 34:BA:835:U:C4'    | 2.69                     | 0.41              |
| 34:BA:866:C:H5''   | 34:BA:867:G:C8     | 2.56                     | 0.41              |
| 34:BA:879:C:N3     | 34:BA:880:C:C5     | 2.88                     | 0.41              |
| 34:BA:880:C:C2'    | 34:BA:881:G:O5'    | 2.68                     | 0.41              |
| 34:BA:1032(B):G:C2 | 34:BA:1033:G:C4    | 3.08                     | 0.41              |
| 34:BA:1092:A:N1    | 34:BA:1110:A:H4'   | 2.36                     | 0.41              |
| 34:BA:1109:C:C2    | 34:BA:1110:A:C8    | 3.08                     | 0.41              |
| 34:BA:1124:G:OP1   | 43:BN:36:GLY:HA3   | 2.20                     | 0.41              |
| 34:BA:1175:G:N1    | 34:BA:1176:A:C6    | 2.88                     | 0.41              |
| 34:BA:1226:C:N3    | 46:BQ:104:ARG:CG   | 2.71                     | 0.41              |
| 34:BA:1268:A:O2'   | 34:BA:1269:A:O5'   | 2.38                     | 0.41              |
| 34:BA:1415:G:H2'   | 34:BA:1416:G:C5'   | 2.50                     | 0.41              |
| 34:BA:1507:A:N6    | 34:BA:1530:G:C5    | 2.88                     | 0.41              |
| 35:BF:20:GLU:O     | 35:BF:39:ILE:CG1   | 2.63                     | 0.41              |
| 35:BF:23:ARG:HH11  | 35:BF:23:ARG:C     | 2.25                     | 0.41              |
| 35:BF:59:GLU:HA    | 35:BF:221:LEU:HD11 | 2.01                     | 0.41              |
| 35:BF:59:GLU:N     | 35:BF:221:LEU:HD11 | 2.36                     | 0.41              |
| 35:BF:80:ILE:CG2   | 35:BF:212:GLN:HE21 | 2.34                     | 0.41              |
| 35:BF:85:ALA:HB3   | 35:BF:92:TYR:CD1   | 2.56                     | 0.41              |
| 35:BF:92:TYR:CE2   | 35:BF:151:GLY:C    | 2.98                     | 0.41              |
| 35:BF:184:VAL:N    | 35:BF:198:ASP:CG   | 2.70                     | 0.41              |
| 36:BG:15:THR:HG21  | 36:BG:181:ASN:H    | 1.85                     | 0.41              |
| 36:BG:22:TRP:CH2   | 36:BG:33:LEU:N     | 2.86                     | 0.41              |
| 36:BG:82:GLU:O     | 36:BG:85:ARG:CB    | 2.65                     | 0.41              |
| 37:BH:3:ARG:C      | 37:BH:4:TYR:O      | 2.63                     | 0.41              |
| 37:BH:58:LEU:C     | 37:BH:58:LEU:CD1   | 2.83                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 37:BH:62:GLN:O     | 37:BH:63:LYS:C     | 2.62                     | 0.41              |
| 38:BI:71:LEU:HD11  | 38:BI:74:GLY:CA    | 2.37                     | 0.41              |
| 39:BJ:86:ARG:HD3   | 39:BJ:86:ARG:HA    | 1.75                     | 0.41              |
| 40:BK:16:LEU:O     | 42:BM:41:VAL:CG1   | 2.69                     | 0.41              |
| 40:BK:49:ILE:HD12  | 40:BK:49:ILE:N     | 2.34                     | 0.41              |
| 40:BK:81:GLY:C     | 40:BK:83:ALA:N     | 2.77                     | 0.41              |
| 40:BK:118:VAL:HG12 | 40:BK:122:HIS:NE2  | 2.36                     | 0.41              |
| 41:BL:86:ILE:CB    | 41:BL:133:LEU:HB2  | 2.50                     | 0.41              |
| 42:BM:17:VAL:HG11  | 42:BM:81:ILE:CG1   | 2.50                     | 0.41              |
| 42:BM:26:VAL:CG1   | 42:BM:63:ILE:HD13  | 2.51                     | 0.41              |
| 43:BN:46:ARG:CZ    | 47:BR:61:TRP:CE3   | 3.03                     | 0.41              |
| 44:BO:20:TYR:HE1   | 44:BO:33:THR:OG1   | 2.04                     | 0.41              |
| 44:BO:54:ARG:O     | 44:BO:57:THR:N     | 2.54                     | 0.41              |
| 44:BO:120:ARG:HE   | 44:BO:126:ARG:NH2  | 2.19                     | 0.41              |
| 45:BP:32:PHE:HB3   | 45:BP:86:ARG:HA    | 2.02                     | 0.41              |
| 45:BP:37:CYS:SG    | 45:BP:78:GLN:O     | 2.78                     | 0.41              |
| 45:BP:61:THR:O     | 45:BP:62:SER:CB    | 2.68                     | 0.41              |
| 45:BP:69:TYR:O     | 45:BP:100:ILE:HD11 | 2.21                     | 0.41              |
| 46:BQ:104:ARG:HG2  | 46:BQ:105:THR:HG23 | 2.03                     | 0.41              |
| 48:BS:34:LEU:HD11  | 48:BS:35:ARG:HG3   | 2.02                     | 0.41              |
| 49:BT:9:PHE:HD2    | 49:BT:9:PHE:N      | 2.19                     | 0.41              |
| 50:BU:78:GLU:HG3   | 50:BU:79:SER:N     | 2.34                     | 0.41              |
| 52:BW:18:LYS:CE    | 52:BW:22:LEU:HB2   | 2.51                     | 0.41              |
| 53:BX:53:LEU:HB2   | 53:BX:100:ILE:HD11 | 2.02                     | 0.41              |
| 55:BC:39:U:H3'     | 55:BC:39:U:O2      | 2.20                     | 0.41              |
| 56:BD:43:C:O2'     | 56:BD:44:G:H5'     | 2.21                     | 0.41              |
| 57:BZ:50:LYS:HD3   | 57:BZ:50:LYS:O     | 2.19                     | 0.41              |
| 57:BZ:236:GLN:NE2  | 57:BZ:245:LYS:N    | 2.49                     | 0.41              |
| 57:BZ:539:THR:CA   | 57:BZ:541:LYS:N    | 2.73                     | 0.41              |
| 57:BZ:583:THR:O    | 57:BZ:584:SER:OG   | 2.39                     | 0.41              |
| 1:AA:28:A:C3'      | 1:AA:29:U:H5'      | 2.50                     | 0.41              |
| 1:AA:29:U:C2'      | 1:AA:30:G:C8       | 2.95                     | 0.41              |
| 1:AA:64:A:H2'      | 1:AA:65:C:O4'      | 2.21                     | 0.41              |
| 1:AA:150:C:O2'     | 1:AA:151:C:C5'     | 2.67                     | 0.41              |
| 1:AA:270(D):C:O3'  | 1:AA:270(E):G:O4'  | 2.39                     | 0.41              |
| 1:AA:326:G:C4      | 1:AA:327:G:N7      | 2.89                     | 0.41              |
| 1:AA:408:G:C2      | 1:AA:409:C:C6      | 3.09                     | 0.41              |
| 1:AA:521:G:C2      | 1:AA:522:G:C8      | 3.09                     | 0.41              |
| 1:AA:522:G:C5      | 1:AA:523:C:C5      | 3.08                     | 0.41              |
| 1:AA:573:G:O3'     | 1:AA:576:U:O4      | 2.39                     | 0.41              |
| 1:AA:596:G:H2'     | 1:AA:597:U:O4'     | 2.20                     | 0.41              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:622:G:C6    | 1:AA:623:G:N2     | 2.89                     | 0.41              |
| 1:AA:822:U:O2    | 1:AA:823:G:C8     | 2.72                     | 0.41              |
| 1:AA:856:C:H1'   | 22:AX:69:PHE:CD1  | 2.56                     | 0.41              |
| 1:AA:985:C:O5'   | 1:AA:985:C:H6     | 2.04                     | 0.41              |
| 1:AA:991:C:O4'   | 1:AA:1185:C:H2'   | 2.20                     | 0.41              |
| 1:AA:997:G:H5''  | 16:AR:92:ARG:CD   | 2.44                     | 0.41              |
| 1:AA:1019:U:OP1  | 1:AA:1120:G:N2    | 2.42                     | 0.41              |
| 1:AA:1183:G:N3   | 1:AA:1183:G:O4'   | 2.53                     | 0.41              |
| 1:AA:1213:A:C8   | 1:AA:1237:A:C2    | 3.09                     | 0.41              |
| 1:AA:1221:C:O2   | 1:AA:1221:C:C2'   | 2.68                     | 0.41              |
| 1:AA:1255:U:OP1  | 1:AA:1256:G:H4'   | 2.20                     | 0.41              |
| 1:AA:1260:G:C2   | 1:AA:1261:C:C6    | 3.09                     | 0.41              |
| 1:AA:1275:A:H1'  | 13:AO:12:ARG:HH21 | 1.85                     | 0.41              |
| 1:AA:1333:C:N3   | 1:AA:1334:G:N7    | 2.69                     | 0.41              |
| 1:AA:1342:A:N7   | 1:AA:1601:G:O6    | 2.53                     | 0.41              |
| 1:AA:1352:U:O2   | 1:AA:1352:U:C2'   | 2.62                     | 0.41              |
| 1:AA:1353:A:C6   | 1:AA:1378:A:C5    | 3.09                     | 0.41              |
| 1:AA:1410:G:C6   | 1:AA:1411:C:C4    | 3.08                     | 0.41              |
| 1:AA:1476:C:O2   | 1:AA:1476:C:C2'   | 2.69                     | 0.41              |
| 1:AA:1500:G:C4   | 1:AA:1501:C:C5    | 3.08                     | 0.41              |
| 1:AA:1520:U:C6   | 1:AA:1520:U:O5'   | 2.74                     | 0.41              |
| 1:AA:1553:A:H2'  | 1:AA:1555:G:N7    | 2.36                     | 0.41              |
| 1:AA:1558:A:H4'  | 1:AA:1559:G:N7    | 2.35                     | 0.41              |
| 1:AA:1565:C:H5'' | 1:AA:1565:C:H6    | 1.86                     | 0.41              |
| 1:AA:1571:A:OP2  | 1:AA:1571:A:O4'   | 2.38                     | 0.41              |
| 1:AA:1675:C:O2   | 1:AA:1676:A:C8    | 2.73                     | 0.41              |
| 1:AA:1696:G:H2'  | 1:AA:1697:G:C1'   | 2.51                     | 0.41              |
| 1:AA:1742:C:O4'  | 1:AA:1742:C:P     | 2.79                     | 0.41              |
| 1:AA:1807:G:H21  | 1:AA:1809:A:H4'   | 1.85                     | 0.41              |
| 1:AA:1858:G:HO2' | 1:AA:1859:A:C5'   | 2.34                     | 0.41              |
| 1:AA:1935:G:C2'  | 1:AA:1936:A:OP2   | 2.68                     | 0.41              |
| 1:AA:1951:U:C2   | 1:AA:1953:A:C5'   | 3.03                     | 0.41              |
| 1:AA:1951:U:C2'  | 1:AA:1953:A:O5'   | 2.66                     | 0.41              |
| 1:AA:1964:G:C6   | 1:AA:1967:C:N4    | 2.78                     | 0.41              |
| 1:AA:2103:C:C2'  | 1:AA:2104:G:H8    | 2.13                     | 0.41              |
| 1:AA:2161:C:N3   | 1:AA:2162:G:N7    | 2.68                     | 0.41              |
| 1:AA:2264:C:C2   | 1:AA:2277:G:N2    | 2.89                     | 0.41              |
| 1:AA:2482:G:H2'  | 1:AA:2483:C:C5'   | 2.48                     | 0.41              |
| 1:AA:2491:U:C5   | 1:AA:2492:U:C5'   | 3.00                     | 0.41              |
| 1:AA:2648:C:C3'  | 1:AA:2649:U:C6    | 3.01                     | 0.41              |
| 1:AA:2665:A:C2   | 1:AA:2666:C:N3    | 2.89                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2694:G:N2    | 1:AA:2716:U:C2    | 2.89                     | 0.41              |
| 1:AA:2766:G:N3    | 1:AA:2767:C:C5    | 2.89                     | 0.41              |
| 1:AA:2822:G:OP2   | 1:AA:2822:G:C8    | 2.73                     | 0.41              |
| 1:AA:2823:A:C5'   | 1:AA:2824:C:OP2   | 2.69                     | 0.41              |
| 1:AA:2848:G:O2'   | 1:AA:2849:U:P     | 2.78                     | 0.41              |
| 1:AA:2856:C:H6    | 1:AA:2856:C:O5'   | 2.03                     | 0.41              |
| 2:AB:82:G:O2'     | 2:AB:83:G:P       | 2.79                     | 0.41              |
| 3:AC:36:LYS:HA    | 3:AC:36:LYS:HD2   | 1.85                     | 0.41              |
| 3:AC:64:LEU:HA    | 3:AC:188:ASN:HA   | 1.41                     | 0.41              |
| 3:AC:137:LEU:HD23 | 3:AC:138:PRO:N    | 2.35                     | 0.41              |
| 4:AD:5:LYS:HB2    | 4:AD:82:ILE:CG1   | 2.50                     | 0.41              |
| 4:AD:46:GLN:HE22  | 4:AD:51:VAL:CG2   | 2.34                     | 0.41              |
| 4:AD:47:GLY:O     | 4:AD:49:ILE:CD1   | 2.66                     | 0.41              |
| 4:AD:133:LEU:HD12 | 4:AD:186:HIS:C    | 2.45                     | 0.41              |
| 5:AE:5:LEU:O      | 5:AE:195:LEU:HD22 | 2.21                     | 0.41              |
| 5:AE:47:VAL:C     | 5:AE:48:GLN:NE2   | 2.78                     | 0.41              |
| 5:AE:113:PHE:HA   | 5:AE:158:GLY:CA   | 2.51                     | 0.41              |
| 6:AF:11:VAL:CB    | 6:AF:17:ARG:HH12  | 2.33                     | 0.41              |
| 6:AF:46:ARG:C     | 6:AF:46:ARG:CD    | 2.93                     | 0.41              |
| 7:AG:49:ASP:O     | 7:AG:50:ALA:C     | 2.63                     | 0.41              |
| 7:AG:57:ALA:CB    | 7:AG:67:LYS:C     | 2.93                     | 0.41              |
| 7:AG:63:ILE:HG23  | 7:AG:64:THR:N     | 2.36                     | 0.41              |
| 7:AG:119:GLY:CA   | 7:AG:180:PHE:CD2  | 3.03                     | 0.41              |
| 8:AH:24:VAL:HG13  | 8:AH:37:VAL:HG12  | 2.03                     | 0.41              |
| 8:AH:25:LYS:HD3   | 8:AH:27:LYS:HZ2   | 1.81                     | 0.41              |
| 8:AH:41:MET:HE3   | 8:AH:68:THR:HG21  | 2.03                     | 0.41              |
| 8:AH:85:LYS:NZ    | 8:AH:85:LYS:CB    | 2.82                     | 0.41              |
| 8:AH:91:GLY:C     | 8:AH:93:GLY:N     | 2.77                     | 0.41              |
| 9:AK:53:VAL:CG1   | 9:AK:123:TYR:HE2  | 2.33                     | 0.41              |
| 9:AK:63:THR:O     | 9:AK:65:LYS:CD    | 2.68                     | 0.41              |
| 10:AL:22:ILE:CG1  | 10:AL:40:VAL:HG13 | 2.50                     | 0.41              |
| 10:AL:97:ARG:NH1  | 10:AL:98:VAL:O    | 2.42                     | 0.41              |
| 11:AM:32:THR:OG1  | 11:AM:33:ARG:N    | 2.53                     | 0.41              |
| 11:AM:79:ARG:HE   | 11:AM:83:VAL:HG12 | 1.86                     | 0.41              |
| 11:AM:111:ARG:CD  | 11:AM:129:ALA:HB2 | 2.50                     | 0.41              |
| 12:AN:42:ILE:HD13 | 12:AN:43:THR:CA   | 2.49                     | 0.41              |
| 12:AN:79:LEU:C    | 12:AN:80:GLU:CG   | 2.93                     | 0.41              |
| 12:AN:109:VAL:O   | 12:AN:110:THR:C   | 2.64                     | 0.41              |
| 12:AN:119:ARG:HE  | 12:AN:119:ARG:HB3 | 1.25                     | 0.41              |
| 13:AO:67:LEU:C    | 13:AO:67:LEU:CD1  | 2.90                     | 0.41              |
| 15:AQ:11:GLU:C    | 15:AQ:13:ARG:N    | 2.71                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:AQ:22:PHE:C    | 15:AQ:24:PRO:HD3  | 2.46                     | 0.41              |
| 16:AR:57:PHE:CD2  | 16:AR:60:LEU:CD1  | 2.99                     | 0.41              |
| 17:AS:1:MET:HB3   | 17:AS:15:GLU:CG   | 2.50                     | 0.41              |
| 21:AW:16:SER:O    | 21:AW:17:ALA:C    | 2.61                     | 0.41              |
| 21:AW:150:LEU:O   | 21:AW:171:ILE:CG2 | 2.68                     | 0.41              |
| 22:AX:33:ALA:CA   | 22:AX:61:ALA:O    | 2.60                     | 0.41              |
| 22:AX:63:VAL:HG22 | 22:AX:81:VAL:HB   | 2.03                     | 0.41              |
| 23:AY:7:GLU:CD    | 23:AY:7:GLU:N     | 2.79                     | 0.41              |
| 23:AY:20:VAL:HB   | 23:AY:55:LEU:HB3  | 2.01                     | 0.41              |
| 23:AY:57:THR:O    | 23:AY:60:ASN:HB3  | 2.21                     | 0.41              |
| 25:Aa:5:ILE:O     | 25:Aa:56:VAL:HA   | 2.20                     | 0.41              |
| 25:Aa:31:ILE:O    | 25:Aa:32:TYR:CG   | 2.74                     | 0.41              |
| 27:Ac:17:LYS:CE   | 27:Ac:48:VAL:CG1  | 2.98                     | 0.41              |
| 29:Ae:15:LYS:C    | 29:Ae:22:VAL:HG13 | 2.42                     | 0.41              |
| 34:BA:20:U:O2'    | 34:BA:21:G:C5'    | 2.65                     | 0.41              |
| 34:BA:68:G:C4'    | 34:BA:171:A:C1'   | 2.98                     | 0.41              |
| 34:BA:130:A:O2'   | 34:BA:190:G:N2    | 2.53                     | 0.41              |
| 34:BA:188:U:H2'   | 34:BA:189:U:O5'   | 2.20                     | 0.41              |
| 34:BA:258:G:C6    | 34:BA:259:G:C5    | 3.08                     | 0.41              |
| 34:BA:261:U:C3'   | 34:BA:263:A:OP2   | 2.69                     | 0.41              |
| 34:BA:292:G:C8    | 34:BA:293:G:H1'   | 2.55                     | 0.41              |
| 34:BA:319:G:C2'   | 34:BA:320:C:C5'   | 2.98                     | 0.41              |
| 34:BA:335:C:H4'   | 34:BA:1434:A:H4'  | 2.02                     | 0.41              |
| 34:BA:426:G:C2    | 34:BA:427:U:C2    | 3.09                     | 0.41              |
| 34:BA:448:A:C5    | 34:BA:487:A:C2    | 3.08                     | 0.41              |
| 34:BA:485:G:O2'   | 34:BA:486:U:C6    | 2.70                     | 0.41              |
| 34:BA:518:C:O2'   | 45:BP:50:SER:CB   | 2.66                     | 0.41              |
| 34:BA:535:A:C4'   | 34:BA:536:C:OP2   | 2.63                     | 0.41              |
| 34:BA:577:G:HO2'  | 34:BA:578:C:P     | 2.42                     | 0.41              |
| 34:BA:599:C:O3'   | 41:BL:96:GLY:HA3  | 2.21                     | 0.41              |
| 34:BA:619:U:O2    | 34:BA:619:U:H2'   | 2.20                     | 0.41              |
| 34:BA:690:G:C2    | 34:BA:691:G:O4'   | 2.74                     | 0.41              |
| 34:BA:815:A:N6    | 34:BA:1529:G:C4   | 2.89                     | 0.41              |
| 34:BA:957:U:O2    | 34:BA:960:U:C6    | 2.73                     | 0.41              |
| 34:BA:978:A:C2    | 34:BA:1319:A:N3   | 2.89                     | 0.41              |
| 34:BA:988:G:C6    | 34:BA:989:C:C4    | 3.09                     | 0.41              |
| 34:BA:1026:G:O6   | 34:BA:1036:G:N2   | 2.53                     | 0.41              |
| 34:BA:1128:C:H4'  | 34:BA:1148:U:H5   | 1.85                     | 0.41              |
| 34:BA:1139:G:C6   | 34:BA:1143:G:O6   | 2.74                     | 0.41              |
| 34:BA:1245:A:C6   | 34:BA:1293:G:N1   | 2.89                     | 0.41              |
| 34:BA:1250:A:N7   | 34:BA:1251:A:C5   | 2.88                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1301:U:C5   | 34:BA:1303:C:C5    | 3.09                     | 0.41              |
| 34:BA:1302:U:H4'  | 34:BA:1303:C:OP1   | 2.20                     | 0.41              |
| 34:BA:1306:A:H3'  | 34:BA:1307:U:C5    | 2.55                     | 0.41              |
| 34:BA:1346:A:C8   | 34:BA:1348:U:C4    | 3.09                     | 0.41              |
| 34:BA:1360:A:C2   | 34:BA:1361:G:C4    | 3.09                     | 0.41              |
| 34:BA:1433:A:C2'  | 34:BA:1434:A:H5'   | 2.50                     | 0.41              |
| 34:BA:1468:A:C2'  | 34:BA:1469:G:H5'   | 2.51                     | 0.41              |
| 35:BF:9:GLU:CG    | 35:BF:10:LEU:N     | 2.83                     | 0.41              |
| 35:BF:19:HIS:C    | 35:BF:20:GLU:CG    | 2.91                     | 0.41              |
| 35:BF:33:TYR:HB3  | 35:BF:42:ILE:O     | 2.20                     | 0.41              |
| 35:BF:39:ILE:HG23 | 35:BF:41:ILE:CD1   | 2.40                     | 0.41              |
| 35:BF:43:ASP:OD2  | 35:BF:45:GLN:HB2   | 2.21                     | 0.41              |
| 35:BF:91:PRO:CB   | 35:BF:152:PHE:CD1  | 2.95                     | 0.41              |
| 35:BF:118:LEU:O   | 35:BF:121:LEU:N    | 2.53                     | 0.41              |
| 36:BG:52:LEU:O    | 36:BG:115:LEU:HD21 | 2.21                     | 0.41              |
| 36:BG:65:ALA:O    | 36:BG:66:VAL:CB    | 2.69                     | 0.41              |
| 36:BG:164:ARG:CG  | 36:BG:165:THR:H    | 2.34                     | 0.41              |
| 37:BH:3:ARG:HG3   | 37:BH:3:ARG:HH11   | 1.85                     | 0.41              |
| 39:BJ:11:ASN:HB3  | 39:BJ:84:ASN:HB3   | 2.03                     | 0.41              |
| 40:BK:38:LEU:CA   | 40:BK:41:ARG:HG3   | 2.45                     | 0.41              |
| 40:BK:108:ALA:O   | 40:BK:119:ARG:HG2  | 2.20                     | 0.41              |
| 40:BK:112:PRO:O   | 40:BK:113:GLU:HG2  | 2.19                     | 0.41              |
| 42:BM:113:LYS:HB2 | 42:BM:114:TYR:H    | 1.39                     | 0.41              |
| 43:BN:4:ILE:O     | 43:BN:4:ILE:HG22   | 2.20                     | 0.41              |
| 43:BN:5:ARG:CD    | 43:BN:6:ILE:N      | 2.83                     | 0.41              |
| 43:BN:46:ARG:CD   | 43:BN:64:GLU:OE2   | 2.69                     | 0.41              |
| 44:BO:86:GLY:N    | 44:BO:112:THR:HG23 | 2.35                     | 0.41              |
| 44:BO:99:GLN:O    | 44:BO:102:GLY:N    | 2.52                     | 0.41              |
| 45:BP:6:THR:HG21  | 45:BP:9:GLN:OE1    | 2.21                     | 0.41              |
| 45:BP:126:LYS:O   | 45:BP:128:ALA:N    | 2.54                     | 0.41              |
| 46:BQ:6:GLY:H     | 46:BQ:67:GLU:CD    | 2.14                     | 0.41              |
| 48:BS:54:ARG:O    | 48:BS:57:LEU:CB    | 2.51                     | 0.41              |
| 49:BT:55:ARG:HA   | 49:BT:55:ARG:NE    | 2.23                     | 0.41              |
| 49:BT:55:ARG:O    | 49:BT:59:TRP:HB2   | 2.19                     | 0.41              |
| 50:BU:92:ARG:O    | 50:BU:95:TYR:CB    | 2.56                     | 0.41              |
| 51:BV:80:PRO:O    | 51:BV:82:THR:N     | 2.53                     | 0.41              |
| 52:BW:27:GLU:CG   | 52:BW:28:LYS:H     | 2.25                     | 0.41              |
| 53:BX:49:ALA:HB3  | 53:BX:99:LEU:HG    | 2.01                     | 0.41              |
| 53:BX:72:LEU:HD13 | 53:BX:77:ALA:HA    | 2.01                     | 0.41              |
| 53:BX:73:HIS:CD2  | 53:BX:74:LYS:NZ    | 2.89                     | 0.41              |
| 54:BY:25:LYS:CD   | 54:BY:25:LYS:O     | 2.68                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 55:BC:36:A:H3'    | 55:BC:37:A:H5''   | 2.02                     | 0.41              |
| 55:BC:41:C:C2'    | 55:BC:42:C:H5'    | 2.50                     | 0.41              |
| 56:BD:16:U:C3'    | 56:BD:17:C:C5'    | 2.96                     | 0.41              |
| 56:BD:52:G:C4     | 56:BD:63:G:N3     | 2.86                     | 0.41              |
| 57:BZ:37:GLU:CA   | 57:BZ:39:GLN:HB3  | 2.33                     | 0.41              |
| 57:BZ:171:ILE:CD1 | 57:BZ:182:ASP:OD1 | 2.68                     | 0.41              |
| 57:BZ:288:VAL:CG1 | 57:BZ:289:CYS:N   | 2.84                     | 0.41              |
| 57:BZ:422:ARG:NH1 | 57:BZ:480:VAL:C   | 2.65                     | 0.41              |
| 57:BZ:499:PHE:CG  | 57:BZ:540:GLY:O   | 2.72                     | 0.41              |
| 57:BZ:556:VAL:O   | 57:BZ:557:LEU:CD2 | 2.68                     | 0.41              |
| 57:BZ:565:LEU:HG  | 57:BZ:566:GLU:OE2 | 2.19                     | 0.41              |
| 1:AA:54:G:N2      | 1:AA:55:G:C4      | 2.89                     | 0.41              |
| 1:AA:64:A:N3      | 19:AU:66:LEU:CD2  | 2.71                     | 0.41              |
| 1:AA:83:G:O2'     | 1:AA:84:A:O5'     | 2.38                     | 0.41              |
| 1:AA:150:C:N4     | 1:AA:176:G:H22    | 2.19                     | 0.41              |
| 1:AA:224:G:N2     | 1:AA:225:A:H1'    | 2.36                     | 0.41              |
| 1:AA:241:A:O4'    | 1:AA:241:A:P      | 2.79                     | 0.41              |
| 1:AA:245:G:P      | 11:AM:65:ARG:HH21 | 2.43                     | 0.41              |
| 1:AA:270(D):C:H2' | 1:AA:270(E):G:C8  | 2.56                     | 0.41              |
| 1:AA:295:G:OP1    | 1:AA:338:G:O6     | 2.38                     | 0.41              |
| 1:AA:301:G:C5     | 1:AA:317:G:N1     | 2.89                     | 0.41              |
| 1:AA:303:U:H2'    | 1:AA:304:G:C5'    | 2.50                     | 0.41              |
| 1:AA:432:A:H8     | 1:AA:432:A:O5'    | 2.04                     | 0.41              |
| 1:AA:443:A:C5'    | 6:AF:45:ARG:NH1   | 2.62                     | 0.41              |
| 1:AA:480:A:C2'    | 1:AA:481:G:OP1    | 2.68                     | 0.41              |
| 1:AA:568:U:H2'    | 1:AA:570:G:H8     | 1.75                     | 0.41              |
| 1:AA:627:A:P      | 1:AA:637:A:H61    | 2.43                     | 0.41              |
| 1:AA:718:A:H8     | 1:AA:719:C:C6     | 2.38                     | 0.41              |
| 1:AA:766:C:H2'    | 1:AA:767:U:H6     | 1.86                     | 0.41              |
| 1:AA:790:C:C6     | 1:AA:790:C:C3'    | 3.03                     | 0.41              |
| 1:AA:824:A:H2'    | 1:AA:825:C:C6     | 2.54                     | 0.41              |
| 1:AA:830:G:H1'    | 1:AA:2448:A:N1    | 2.35                     | 0.41              |
| 1:AA:848:G:H3'    | 1:AA:848:G:H8     | 1.85                     | 0.41              |
| 1:AA:918:A:H2'    | 2:AB:80:U:O2'     | 2.20                     | 0.41              |
| 1:AA:997:G:C3'    | 16:AR:92:ARG:NH1  | 2.84                     | 0.41              |
| 1:AA:1009:A:N1    | 1:AA:1010:A:C2    | 2.89                     | 0.41              |
| 1:AA:1012:U:H5'   | 1:AA:1013:C:P     | 2.61                     | 0.41              |
| 1:AA:1079:C:H42   | 1:AA:1088:A:H5'   | 1.77                     | 0.41              |
| 1:AA:1083:U:C4    | 1:AA:1085:A:C8    | 3.06                     | 0.41              |
| 1:AA:1085:A:H1'   | 1:AA:1086:A:O5'   | 2.20                     | 0.41              |
| 1:AA:1144:G:C2'   | 1:AA:1145:C:C6    | 2.83                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1147:C:C2     | 1:AA:1148:A:C8     | 3.08                     | 0.41              |
| 1:AA:1229:G:H2'    | 1:AA:1230:C:H5'    | 2.03                     | 0.41              |
| 1:AA:1239:G:C2'    | 1:AA:1240:U:H5'    | 2.51                     | 0.41              |
| 1:AA:1279:G:H4'    | 13:AO:31:HIS:CD2   | 2.55                     | 0.41              |
| 1:AA:1348:G:O6     | 1:AA:1349:A:C6     | 2.74                     | 0.41              |
| 1:AA:1418:G:C4     | 1:AA:1581:G:N2     | 2.85                     | 0.41              |
| 1:AA:1420:U:C6     | 1:AA:1420:U:OP2    | 2.73                     | 0.41              |
| 1:AA:1422:G:H4'    | 1:AA:1493:C:O2'    | 2.21                     | 0.41              |
| 1:AA:1444(A):A:H4' | 1:AA:1445:C:O5'    | 2.21                     | 0.41              |
| 1:AA:1519:G:H2'    | 1:AA:1519:G:N3     | 2.35                     | 0.41              |
| 1:AA:1571:A:N3     | 1:AA:1571:A:C2'    | 2.83                     | 0.41              |
| 1:AA:1693:U:O4     | 1:AA:1977:A:N7     | 2.53                     | 0.41              |
| 1:AA:1789:A:H2'    | 4:AD:213:ARG:HH12  | 1.86                     | 0.41              |
| 1:AA:1899:G:N2     | 1:AA:1901:A:C6     | 2.85                     | 0.41              |
| 1:AA:1901:A:O2'    | 4:AD:244:ARG:HD2   | 2.20                     | 0.41              |
| 1:AA:1920:C:H1'    | 1:AA:1921:G:OP1    | 2.21                     | 0.41              |
| 1:AA:1953:A:H1'    | 1:AA:2560:C:O4'    | 2.21                     | 0.41              |
| 1:AA:1990:C:C4     | 1:AA:1991:U:O4     | 2.73                     | 0.41              |
| 1:AA:1991:U:C2'    | 1:AA:1992:G:OP2    | 2.69                     | 0.41              |
| 1:AA:2051:A:O2'    | 1:AA:2052:G:O5'    | 2.39                     | 0.41              |
| 1:AA:2077:A:C5     | 1:AA:2435:A:N7     | 2.88                     | 0.41              |
| 1:AA:2106:G:N1     | 1:AA:2184:G:C5     | 2.89                     | 0.41              |
| 1:AA:2175:C:N3     | 1:AA:2176:A:C8     | 2.89                     | 0.41              |
| 1:AA:2285:C:OP2    | 27:Ac:27:LYS:HE3   | 2.21                     | 0.41              |
| 1:AA:2408:U:O2'    | 1:AA:2409:G:C5'    | 2.64                     | 0.41              |
| 1:AA:2414:G:O6     | 1:AA:2415:G:O6     | 2.38                     | 0.41              |
| 1:AA:2424:C:O2     | 1:AA:2424:C:C2'    | 2.65                     | 0.41              |
| 1:AA:2469:A:N6     | 1:AA:2481:G:H1'    | 2.33                     | 0.41              |
| 1:AA:2474:C:H2'    | 1:AA:2475:C:O5'    | 2.20                     | 0.41              |
| 1:AA:2515:C:H2'    | 1:AA:2516:G:O5'    | 2.20                     | 0.41              |
| 1:AA:2528:U:O2'    | 1:AA:2529:G:H8     | 2.04                     | 0.41              |
| 1:AA:2554:U:C4     | 1:AA:2555:U:O4     | 2.73                     | 0.41              |
| 1:AA:2581:G:O6     | 1:AA:2610:C:H2'    | 2.18                     | 0.41              |
| 1:AA:2660:A:C8     | 57:BZ:457:THR:HG23 | 2.55                     | 0.41              |
| 1:AA:2691:C:O4'    | 1:AA:2872:G:C5     | 2.74                     | 0.41              |
| 1:AA:2720:U:H2'    | 1:AA:2721:A:C8     | 2.52                     | 0.41              |
| 1:AA:2741:A:C2     | 1:AA:2742:C:H1'    | 2.56                     | 0.41              |
| 1:AA:2791:C:O2     | 1:AA:2807:G:C5     | 2.74                     | 0.41              |
| 1:AA:2803:C:N4     | 1:AA:2804:C:H42    | 2.19                     | 0.41              |
| 2:AB:2:C:OP2       | 2:AB:2:C:C6        | 2.74                     | 0.41              |
| 2:AB:37:C:N4       | 2:AB:44:G:C6       | 2.89                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:AB:45:A:N3      | 2:AB:45:A:H2'     | 2.36                     | 0.41              |
| 2:AB:73:A:C2'     | 2:AB:74:U:O5'     | 2.69                     | 0.41              |
| 2:AB:85:G:N1      | 2:AB:86:G:C5      | 2.88                     | 0.41              |
| 2:AB:118:G:C4     | 2:AB:119:A:N7     | 2.89                     | 0.41              |
| 3:AC:59:ARG:NH2   | 3:AC:164:ARG:NH1  | 2.69                     | 0.41              |
| 4:AD:105:ILE:HD11 | 4:AD:106:ILE:HG23 | 2.03                     | 0.41              |
| 4:AD:146:GLU:HA   | 4:AD:154:LYS:O    | 2.20                     | 0.41              |
| 4:AD:243:GLY:O    | 4:AD:244:ARG:CG   | 2.68                     | 0.41              |
| 4:AD:245:PRO:HA   | 4:AD:246:PRO:HD3  | 1.68                     | 0.41              |
| 4:AD:259:THR:CG2  | 4:AD:260:ARG:NH1  | 2.83                     | 0.41              |
| 5:AE:40:GLU:OE2   | 5:AE:40:GLU:HA    | 2.20                     | 0.41              |
| 5:AE:46:ALA:HB2   | 5:AE:85:ASN:OD1   | 2.21                     | 0.41              |
| 5:AE:119:ARG:HH11 | 5:AE:120:TRP:CA   | 2.30                     | 0.41              |
| 6:AF:31:HIS:O     | 6:AF:38:ARG:NH2   | 2.54                     | 0.41              |
| 6:AF:57:VAL:HG12  | 6:AF:58:ALA:N     | 2.35                     | 0.41              |
| 6:AF:138:GLU:H    | 6:AF:138:GLU:HG2  | 1.43                     | 0.41              |
| 7:AG:55:LYS:HE3   | 7:AG:152:LEU:CD2  | 2.41                     | 0.41              |
| 8:AH:22:GLY:O     | 8:AH:37:VAL:HG22  | 2.20                     | 0.41              |
| 8:AH:152:ARG:CG   | 8:AH:152:ARG:NH2  | 2.82                     | 0.41              |
| 9:AK:34:LEU:HA    | 9:AK:49:GLY:HA2   | 2.03                     | 0.41              |
| 9:AK:42:TRP:CZ3   | 16:AR:67:ALA:CB   | 3.01                     | 0.41              |
| 9:AK:74:ARG:CZ    | 9:AK:82:LEU:HD21  | 2.51                     | 0.41              |
| 9:AK:91:LEU:HA    | 9:AK:95:PRO:HA    | 2.03                     | 0.41              |
| 10:AL:13:ASN:CB   | 10:AL:94:ARG:HB2  | 2.50                     | 0.41              |
| 11:AM:97:PRO:HA   | 11:AM:102:ARG:HE  | 1.83                     | 0.41              |
| 13:AO:28:LEU:O    | 13:AO:28:LEU:HD13 | 2.21                     | 0.41              |
| 13:AO:45:ARG:CA   | 13:AO:95:THR:HG21 | 2.51                     | 0.41              |
| 13:AO:53:HIS:O    | 13:AO:56:LYS:CG   | 2.60                     | 0.41              |
| 13:AO:108:GLY:O   | 13:AO:110:PRO:CD  | 2.65                     | 0.41              |
| 14:AP:29:PHE:CD1  | 14:AP:29:PHE:C    | 2.97                     | 0.41              |
| 14:AP:65:VAL:HG22 | 14:AP:66:ALA:H    | 1.86                     | 0.41              |
| 15:AQ:29:ARG:HA   | 15:AQ:51:ARG:CA   | 2.47                     | 0.41              |
| 17:AS:1:MET:SD    | 17:AS:15:GLU:OE2  | 2.78                     | 0.41              |
| 17:AS:17:GLY:O    | 17:AS:19:LYS:N    | 2.51                     | 0.41              |
| 18:AT:13:SER:O    | 18:AT:17:VAL:CG2  | 2.65                     | 0.41              |
| 19:AU:68:ARG:NH1  | 19:AU:68:ARG:CB   | 2.84                     | 0.41              |
| 20:AV:76:CYS:HB2  | 20:AV:100:ALA:CB  | 2.50                     | 0.41              |
| 20:AV:105:ALA:O   | 20:AV:107:ASP:N   | 2.53                     | 0.41              |
| 21:AW:66:SER:C    | 21:AW:67:LEU:HG   | 2.45                     | 0.41              |
| 23:AY:15:GLU:O    | 23:AY:17:GLU:N    | 2.54                     | 0.41              |
| 24:AZ:3:ARG:O     | 24:AZ:59:VAL:O    | 2.39                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 24:AZ:19:GLN:O     | 24:AZ:20:LYS:C     | 2.61                     | 0.41              |
| 24:AZ:41:PRO:HG3   | 24:AZ:44:ARG:NH1   | 2.36                     | 0.41              |
| 26:Ab:35:GLU:OE1   | 26:Ab:51:TYR:CD2   | 2.74                     | 0.41              |
| 28:Ad:13:ALA:O     | 28:Ad:16:HIS:O     | 2.39                     | 0.41              |
| 28:Ad:43:THR:O     | 28:Ad:46:VAL:CA    | 2.69                     | 0.41              |
| 29:Ae:40:GLU:C     | 29:Ae:42:ARG:N     | 2.78                     | 0.41              |
| 30:Af:10:ILE:HD13  | 30:Af:32:HIS:CG    | 2.51                     | 0.41              |
| 31:AI:139:VAL:C    | 31:AI:141:VAL:H    | 2.28                     | 0.41              |
| 33:Ag:309:UNK:CB   | 57:BZ:141:VAL:C    | 2.94                     | 0.41              |
| 34:BA:74:C:O2'     | 34:BA:75:C:H5'     | 2.21                     | 0.41              |
| 34:BA:136:C:C2     | 34:BA:137:C:C5     | 3.09                     | 0.41              |
| 34:BA:161:A:N1     | 34:BA:347:G:O2'    | 2.48                     | 0.41              |
| 34:BA:181:G:O2'    | 34:BA:182:U:C6     | 2.70                     | 0.41              |
| 34:BA:186(B):C:H2' | 34:BA:186(C):G:C5' | 2.51                     | 0.41              |
| 34:BA:235:C:H1'    | 50:BU:61:GLU:OE1   | 2.21                     | 0.41              |
| 34:BA:321:A:HO2'   | 34:BA:322:C:H6     | 1.69                     | 0.41              |
| 34:BA:354:G:N3     | 34:BA:355:C:C6     | 2.88                     | 0.41              |
| 34:BA:369:C:C2     | 34:BA:370:C:C5     | 3.09                     | 0.41              |
| 34:BA:371:G:O2'    | 34:BA:372:C:H5'    | 2.18                     | 0.41              |
| 34:BA:378:G:C4     | 34:BA:379:C:C5     | 3.09                     | 0.41              |
| 34:BA:409:G:OP2    | 37:BH:22:LYS:HE2   | 2.20                     | 0.41              |
| 34:BA:413:G:N1     | 37:BH:36:ARG:NH1   | 2.69                     | 0.41              |
| 34:BA:458:C:C4     | 34:BA:464:G:C6     | 3.08                     | 0.41              |
| 34:BA:467:G:O2'    | 34:BA:468:A:H5'    | 2.21                     | 0.41              |
| 34:BA:468:A:N6     | 34:BA:474:G:N1     | 2.69                     | 0.41              |
| 34:BA:547:A:C4'    | 34:BA:548:G:OP1    | 2.69                     | 0.41              |
| 34:BA:548:G:C6     | 34:BA:549:C:N4     | 2.89                     | 0.41              |
| 34:BA:637:G:C2     | 34:BA:638:G:C8     | 3.08                     | 0.41              |
| 34:BA:760:G:H5'    | 34:BA:761:G:OP2    | 2.20                     | 0.41              |
| 34:BA:780:A:N3     | 34:BA:803:G:N1     | 2.69                     | 0.41              |
| 34:BA:791:G:N7     | 34:BA:792:A:N7     | 2.68                     | 0.41              |
| 34:BA:885:G:O2'    | 34:BA:915:A:C2     | 2.74                     | 0.41              |
| 34:BA:924:C:C2     | 34:BA:925:G:C8     | 3.08                     | 0.41              |
| 34:BA:938:A:H2'    | 34:BA:939:G:O5'    | 2.19                     | 0.41              |
| 34:BA:942:G:N2     | 34:BA:943:U:C2     | 2.88                     | 0.41              |
| 34:BA:993:G:N2     | 34:BA:1046:A:N3    | 2.68                     | 0.41              |
| 34:BA:1029:G:O2'   | 34:BA:1031:G:N7    | 2.43                     | 0.41              |
| 34:BA:1092:A:C8    | 34:BA:1183:A:N7    | 2.89                     | 0.41              |
| 34:BA:1093:A:H2    | 34:BA:1110:A:H1'   | 1.85                     | 0.41              |
| 34:BA:1121:U:O5'   | 34:BA:1121:U:H6    | 2.04                     | 0.41              |
| 34:BA:1387:G:O2'   | 34:BA:1388:C:H5'   | 2.21                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:1395:C:H3'  | 34:BA:1395:C:P     | 2.60                     | 0.41              |
| 34:BA:1422:G:C2   | 34:BA:1479:C:C2    | 3.09                     | 0.41              |
| 34:BA:1428:A:H2'  | 34:BA:1429:C:C5    | 2.50                     | 0.41              |
| 34:BA:1517:G:C6   | 34:BA:1518:A:C2    | 3.09                     | 0.41              |
| 34:BA:1540:U:C6   | 34:BA:1540:U:O5'   | 2.74                     | 0.41              |
| 35:BF:124:SER:CB  | 35:BF:126:GLU:CD   | 2.94                     | 0.41              |
| 35:BF:169:LYS:NZ  | 35:BF:170:GLU:HB2  | 2.35                     | 0.41              |
| 35:BF:179:LYS:HB3 | 41:BL:72:PRO:HB3   | 2.03                     | 0.41              |
| 36:BG:72:LYS:O    | 36:BG:76:VAL:CB    | 2.68                     | 0.41              |
| 36:BG:180:ALA:O   | 36:BG:181:ASN:C    | 2.62                     | 0.41              |
| 37:BH:61:LYS:C    | 37:BH:61:LYS:HE3   | 2.46                     | 0.41              |
| 37:BH:138:TYR:C   | 37:BH:138:TYR:CD2  | 2.99                     | 0.41              |
| 37:BH:165:MET:SD  | 37:BH:165:MET:C    | 3.04                     | 0.41              |
| 37:BH:169:LYS:HA  | 37:BH:176:LEU:HD11 | 2.02                     | 0.41              |
| 37:BH:180:GLY:C   | 37:BH:182:LYS:HG2  | 2.46                     | 0.41              |
| 40:BK:38:LEU:HD12 | 40:BK:41:ARG:CD    | 2.49                     | 0.41              |
| 40:BK:71:PRO:HB2  | 40:BK:72:ARG:H     | 1.77                     | 0.41              |
| 41:BL:14:ARG:CD   | 41:BL:15:ASN:ND2   | 2.83                     | 0.41              |
| 42:BM:47:LEU:HD11 | 42:BM:56:LEU:CD1   | 2.51                     | 0.41              |
| 42:BM:117:HIS:C   | 42:BM:119:ALA:N    | 2.70                     | 0.41              |
| 43:BN:5:ARG:HH11  | 43:BN:5:ARG:HG2    | 1.86                     | 0.41              |
| 43:BN:51:ARG:N    | 43:BN:60:ARG:HA    | 2.35                     | 0.41              |
| 48:BS:34:LEU:HD12 | 48:BS:35:ARG:CA    | 2.50                     | 0.41              |
| 49:BT:21:VAL:HG22 | 49:BT:36:ILE:CD1   | 2.51                     | 0.41              |
| 49:BT:34:GLU:CD   | 49:BT:35:LYS:O     | 2.64                     | 0.41              |
| 50:BU:14:LYS:O    | 50:BU:15:MET:O     | 2.39                     | 0.41              |
| 50:BU:76:LEU:HD23 | 50:BU:76:LEU:O     | 2.20                     | 0.41              |
| 53:BX:56:MET:O    | 53:BX:56:MET:SD    | 2.78                     | 0.41              |
| 54:BY:19:GLY:C    | 54:BY:21:TYR:H     | 2.28                     | 0.41              |
| 55:BC:67:C:C4     | 55:BC:68:C:N4      | 2.89                     | 0.41              |
| 56:BE:15:G:C4     | 56:BE:16:U:C5      | 3.09                     | 0.41              |
| 57:BZ:190:ILE:CG2 | 57:BZ:194:VAL:HG21 | 2.50                     | 0.41              |
| 57:BZ:398:GLU:N   | 57:BZ:472:TYR:CD1  | 2.89                     | 0.41              |
| 1:AA:2:G:H1'      | 1:AA:2902:C:O2     | 2.21                     | 0.41              |
| 1:AA:43:G:C2      | 1:AA:438:G:C4      | 3.08                     | 0.41              |
| 1:AA:72:U:H5      | 1:AA:112:U:HO2'    | 1.64                     | 0.41              |
| 1:AA:109:G:N1     | 1:AA:110:G:C8      | 2.88                     | 0.41              |
| 1:AA:112:U:N3     | 1:AA:113:G:H1'     | 2.35                     | 0.41              |
| 1:AA:146:G:H2'    | 1:AA:147:U:H5''    | 2.03                     | 0.41              |
| 1:AA:154:G:C2     | 1:AA:173:G:C2      | 3.09                     | 0.41              |
| 1:AA:196:A:N6     | 1:AA:831:G:O2'     | 2.53                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:202:U:H2'    | 1:AA:203:C:N1     | 2.36                     | 0.41              |
| 1:AA:222:A:N6     | 1:AA:232:G:N3     | 2.68                     | 0.41              |
| 1:AA:225:A:N6     | 1:AA:226:G:C6     | 2.89                     | 0.41              |
| 1:AA:270(B):A:O2' | 1:AA:270(C):C:H3' | 2.21                     | 0.41              |
| 1:AA:270(W):G:C5  | 1:AA:270(X):G:N7  | 2.88                     | 0.41              |
| 1:AA:278:A:OP1    | 1:AA:278:A:O4'    | 2.38                     | 0.41              |
| 1:AA:280:C:H3'    | 1:AA:282:A:OP2    | 2.20                     | 0.41              |
| 1:AA:317:G:C2'    | 1:AA:318:C:H5'    | 2.50                     | 0.41              |
| 1:AA:355:G:C6     | 1:AA:356:G:O6     | 2.74                     | 0.41              |
| 1:AA:358:U:OP2    | 1:AA:359:A:N7     | 2.54                     | 0.41              |
| 1:AA:379:G:H4'    | 1:AA:2232:U:H5''  | 2.02                     | 0.41              |
| 1:AA:392:C:C2     | 1:AA:393:C:C5     | 3.09                     | 0.41              |
| 1:AA:424:G:C2'    | 1:AA:425:G:C5'    | 2.99                     | 0.41              |
| 1:AA:468:G:C2'    | 1:AA:469:G:H5'    | 2.51                     | 0.41              |
| 1:AA:535:C:C2'    | 1:AA:536:A:C5'    | 2.98                     | 0.41              |
| 1:AA:542:C:N3     | 1:AA:552:G:N1     | 2.69                     | 0.41              |
| 1:AA:544:C:H2'    | 1:AA:545:G:C5'    | 2.50                     | 0.41              |
| 1:AA:545:G:C8     | 1:AA:545:G:O5'    | 2.74                     | 0.41              |
| 1:AA:558:G:N1     | 1:AA:559:G:C6     | 2.89                     | 0.41              |
| 1:AA:562:U:C2'    | 1:AA:563:G:OP2    | 2.69                     | 0.41              |
| 1:AA:579:G:N1     | 1:AA:580:C:C4     | 2.89                     | 0.41              |
| 1:AA:598:G:H21    | 1:AA:599:G:H1'    | 1.85                     | 0.41              |
| 1:AA:609:A:N6     | 1:AA:619:G:N2     | 2.61                     | 0.41              |
| 1:AA:613:U:C5     | 1:AA:614:U:C2     | 3.09                     | 0.41              |
| 1:AA:623:G:P      | 11:AM:105:LEU:CD2 | 3.03                     | 0.41              |
| 1:AA:657:U:C4     | 1:AA:658:C:N4     | 2.89                     | 0.41              |
| 1:AA:667:U:C4     | 1:AA:668:G:N7     | 2.89                     | 0.41              |
| 1:AA:720:C:C2     | 1:AA:721:C:C6     | 3.09                     | 0.41              |
| 1:AA:752:A:H5'    | 28:Ad:1:MET:HE3   | 2.03                     | 0.41              |
| 1:AA:774:A:H5'    | 1:AA:778:G:C4'    | 2.50                     | 0.41              |
| 1:AA:792:G:C6     | 1:AA:2440:C:C6    | 3.09                     | 0.41              |
| 1:AA:850:C:O2'    | 24:AZ:46:ASN:ND2  | 2.54                     | 0.41              |
| 1:AA:903:C:H2'    | 1:AA:904:C:H6     | 1.66                     | 0.41              |
| 1:AA:903:C:C6     | 1:AA:903:C:O5'    | 2.74                     | 0.41              |
| 1:AA:928:G:C8     | 1:AA:929:G:C8     | 3.09                     | 0.41              |
| 1:AA:948:G:C6     | 1:AA:949:C:C4     | 3.09                     | 0.41              |
| 1:AA:957:A:C2     | 1:AA:2459:A:OP1   | 2.74                     | 0.41              |
| 1:AA:1007:C:C2    | 1:AA:1008:C:N4    | 2.89                     | 0.41              |
| 1:AA:1019:U:C6    | 1:AA:1019:U:C3'   | 3.04                     | 0.41              |
| 1:AA:1036:G:C2    | 1:AA:1037:G:C8    | 3.09                     | 0.41              |
| 1:AA:1050:A:N3    | 1:AA:2752:C:H5    | 2.19                     | 0.41              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 1:AA:1058:G:H2'  | 1:AA:1059:G:H5''   | 2.01                     | 0.41              |
| 1:AA:1061:U:O2'  | 32:AJ:52:ILE:HG23  | 2.20                     | 0.41              |
| 1:AA:1062:G:O2'  | 1:AA:1064:C:OP2    | 2.38                     | 0.41              |
| 1:AA:1069:A:H4'  | 1:AA:1070:A:H3'    | 2.01                     | 0.41              |
| 1:AA:1069:A:H5'  | 1:AA:1070:A:N7     | 2.36                     | 0.41              |
| 1:AA:1079:C:H2'  | 32:AJ:129:GLY:HA2  | 2.02                     | 0.41              |
| 1:AA:1081:U:H4'  | 32:AJ:125:ARG:HD2  | 2.02                     | 0.41              |
| 1:AA:1136:G:H2'  | 1:AA:1137:G:H5'    | 2.03                     | 0.41              |
| 1:AA:1142:U:H2'  | 1:AA:1142(A):A:O5' | 2.21                     | 0.41              |
| 1:AA:1190:G:OP1  | 11:AM:30:THR:C     | 2.64                     | 0.41              |
| 1:AA:1207:C:H6   | 1:AA:1207:C:H5''   | 1.86                     | 0.41              |
| 1:AA:1247:A:H2'  | 1:AA:1248:G:H5''   | 2.03                     | 0.41              |
| 1:AA:1266:G:H2'  | 1:AA:1267:U:OP2    | 2.20                     | 0.41              |
| 1:AA:1274:A:O2'  | 1:AA:1275:A:H5'    | 2.21                     | 0.41              |
| 1:AA:1277:G:O2'  | 13:AO:24:GLN:CG    | 2.69                     | 0.41              |
| 1:AA:1291:C:C5'  | 1:AA:1535:U:O3'    | 2.69                     | 0.41              |
| 1:AA:1310:G:H1   | 1:AA:1604:C:N4     | 2.18                     | 0.41              |
| 1:AA:1325:G:OP2  | 1:AA:1616:A:C8     | 2.74                     | 0.41              |
| 1:AA:1360:A:H2'  | 1:AA:1361:G:C5'    | 2.51                     | 0.41              |
| 1:AA:1367:A:N6   | 1:AA:1368:G:H1'    | 2.35                     | 0.41              |
| 1:AA:1431:U:C4   | 1:AA:1432:C:C5     | 3.09                     | 0.41              |
| 1:AA:1449:A:C6   | 1:AA:1449(A):G:C5  | 3.08                     | 0.41              |
| 1:AA:1511:A:C8   | 1:AA:1512:G:H5''   | 2.56                     | 0.41              |
| 1:AA:1521:G:H8   | 1:AA:1522:G:O4'    | 2.03                     | 0.41              |
| 1:AA:1567:A:N6   | 4:AD:84:TYR:CE1    | 2.89                     | 0.41              |
| 1:AA:1581:G:H2'  | 1:AA:1582:C:C6     | 2.56                     | 0.41              |
| 1:AA:1614:A:H5'' | 1:AA:1615:C:OP2    | 2.21                     | 0.41              |
| 1:AA:1655:A:H2'  | 1:AA:1656:C:C1'    | 2.50                     | 0.41              |
| 1:AA:1665:A:H8   | 1:AA:2726:U:H3     | 1.54                     | 0.41              |
| 1:AA:1670:C:C3'  | 1:AA:1671:U:H5'    | 2.51                     | 0.41              |
| 1:AA:1676:A:C2'  | 1:AA:1677:A:O5'    | 2.69                     | 0.41              |
| 1:AA:1688:U:H3   | 1:AA:1700:A:C5'    | 2.34                     | 0.41              |
| 1:AA:1699:G:C5   | 1:AA:1763:G:N3     | 2.89                     | 0.41              |
| 1:AA:1769:G:C2   | 1:AA:1984:G:C4     | 3.09                     | 0.41              |
| 1:AA:1786:A:H2'  | 1:AA:1787:A:C8     | 2.56                     | 0.41              |
| 1:AA:1786:A:N7   | 1:AA:1787:A:N7     | 2.69                     | 0.41              |
| 1:AA:1800:C:H1'  | 1:AA:1802:A:C8     | 2.56                     | 0.41              |
| 1:AA:1825:A:C6   | 1:AA:1826:G:C6     | 3.08                     | 0.41              |
| 1:AA:1845:G:C5   | 1:AA:1896:G:N1     | 2.89                     | 0.41              |
| 1:AA:1847:A:O2'  | 1:AA:1848:A:C8     | 2.74                     | 0.41              |
| 1:AA:1900:A:C2   | 1:AA:1970:A:N6     | 2.89                     | 0.41              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:1905:C:H2'  | 1:AA:1906:G:OP2   | 2.20                     | 0.41              |
| 1:AA:1926:U:O2'  | 1:AA:1927:A:C8    | 2.70                     | 0.41              |
| 1:AA:1936:A:C1'  | 1:AA:1940:U:N3    | 2.82                     | 0.41              |
| 1:AA:1952:A:C2   | 10:AL:22:ILE:HG23 | 2.55                     | 0.41              |
| 1:AA:1956:U:O2'  | 1:AA:1985:G:C5'   | 2.69                     | 0.41              |
| 1:AA:1967:C:O2'  | 1:AA:1968:G:OP1   | 2.38                     | 0.41              |
| 1:AA:1982:C:H5'' | 1:AA:1983:C:OP2   | 2.21                     | 0.41              |
| 1:AA:1999:C:O2'  | 1:AA:2722:G:N2    | 2.52                     | 0.41              |
| 1:AA:2040:C:C4   | 1:AA:2041:U:O4    | 2.74                     | 0.41              |
| 1:AA:2046:G:C1'  | 26:Ab:22:HIS:HD1  | 2.33                     | 0.41              |
| 1:AA:2075:U:C2'  | 1:AA:2076:U:H5''  | 2.40                     | 0.41              |
| 1:AA:2097:C:C4   | 1:AA:2193:G:C6    | 3.09                     | 0.41              |
| 1:AA:2123:G:H1'  | 3:AC:44:HIS:ND1   | 2.35                     | 0.41              |
| 1:AA:2157:G:O2'  | 1:AA:2158:A:P     | 2.79                     | 0.41              |
| 1:AA:2205:C:OP1  | 25:Aa:44:THR:HG23 | 2.21                     | 0.41              |
| 1:AA:2246:G:C1'  | 1:AA:2426:A:C2    | 3.04                     | 0.41              |
| 1:AA:2249:U:O2'  | 1:AA:2275:C:C2    | 2.73                     | 0.41              |
| 1:AA:2252:G:N7   | 1:AA:2253:G:N7    | 2.69                     | 0.41              |
| 1:AA:2279:G:N3   | 1:AA:2280:G:C8    | 2.88                     | 0.41              |
| 1:AA:2287:A:H2   | 1:AA:2346:A:H61   | 1.69                     | 0.41              |
| 1:AA:2305:A:C8   | 1:AA:2306:C:H5'   | 2.56                     | 0.41              |
| 1:AA:2327:A:N7   | 1:AA:2388:A:C6    | 2.89                     | 0.41              |
| 1:AA:2345:G:H21  | 1:AA:2381:C:C2'   | 2.34                     | 0.41              |
| 1:AA:2380:C:O5'  | 1:AA:2380:C:H6    | 2.04                     | 0.41              |
| 1:AA:2390:U:H2'  | 1:AA:2391:G:O5'   | 2.21                     | 0.41              |
| 1:AA:2394:C:O2   | 1:AA:2394:C:C2'   | 2.64                     | 0.41              |
| 1:AA:2447:G:N7   | 1:AA:2500:U:C6    | 2.89                     | 0.41              |
| 1:AA:2458:G:HO2' | 1:AA:2459:A:C5'   | 2.34                     | 0.41              |
| 1:AA:2459:A:C5   | 1:AA:2493:U:C4    | 3.08                     | 0.41              |
| 1:AA:2490:G:O2'  | 1:AA:2491:U:O5'   | 2.35                     | 0.41              |
| 1:AA:2505:G:C8   | 1:AA:2505:G:C3'   | 3.03                     | 0.41              |
| 1:AA:2509:G:H21  | 1:AA:2510:C:H1'   | 1.86                     | 0.41              |
| 1:AA:2531:A:H1'  | 1:AA:2658:C:O2'   | 2.21                     | 0.41              |
| 1:AA:2610:C:C2'  | 1:AA:2611:U:OP2   | 2.68                     | 0.41              |
| 1:AA:2652:C:H4'  | 1:AA:2653:U:OP1   | 2.19                     | 0.41              |
| 1:AA:2674:G:C2   | 1:AA:2675:A:C5    | 3.09                     | 0.41              |
| 1:AA:2708:G:C4'  | 13:AO:71:GLN:OE1  | 2.68                     | 0.41              |
| 1:AA:2714:G:C6   | 1:AA:2715:C:C5    | 3.08                     | 0.41              |
| 1:AA:2737:G:N3   | 1:AA:2738:A:C8    | 2.89                     | 0.41              |
| 1:AA:2784:C:C4'  | 5:AE:41:LYS:CE    | 2.95                     | 0.41              |
| 1:AA:2788:C:H4'  | 1:AA:2810:A:C5'   | 2.37                     | 0.41              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:2791:C:H1'  | 1:AA:2807:G:C4    | 2.56                     | 0.41              |
| 2:AB:10:C:O5'    | 2:AB:10:C:H6      | 2.04                     | 0.41              |
| 2:AB:16:G:C6     | 2:AB:69:G:C2      | 3.09                     | 0.41              |
| 2:AB:40:U:H2'    | 2:AB:41:U:OP1     | 2.21                     | 0.41              |
| 2:AB:44:G:H1'    | 2:AB:47:C:H42     | 1.85                     | 0.41              |
| 2:AB:62:C:N3     | 2:AB:63:G:N7      | 2.68                     | 0.41              |
| 2:AB:66:A:H2     | 2:AB:108:C:C1'    | 2.33                     | 0.41              |
| 2:AB:95:U:C2     | 2:AB:96:G:N7      | 2.89                     | 0.41              |
| 3:AC:20:TYR:O    | 3:AC:21:THR:HG23  | 2.21                     | 0.41              |
| 3:AC:46:LYS:HD3  | 3:AC:46:LYS:C     | 2.46                     | 0.41              |
| 3:AC:52:ARG:CG   | 3:AC:53:ARG:N     | 2.84                     | 0.41              |
| 3:AC:120:MET:CG  | 3:AC:145:VAL:HG13 | 2.48                     | 0.41              |
| 3:AC:207:THR:O   | 3:AC:207:THR:HG22 | 2.21                     | 0.41              |
| 4:AD:5:LYS:CD    | 4:AD:31:LYS:NZ    | 2.84                     | 0.41              |
| 4:AD:51:VAL:HG12 | 4:AD:52:ARG:HD3   | 2.02                     | 0.41              |
| 4:AD:70:TRP:CD1  | 4:AD:70:TRP:N     | 2.88                     | 0.41              |
| 4:AD:112:GLN:N   | 4:AD:115:GLN:HE21 | 2.14                     | 0.41              |
| 4:AD:120:GLY:O   | 4:AD:131:LEU:CD1  | 2.48                     | 0.41              |
| 4:AD:122:ASP:HA  | 4:AD:135:PHE:CD2  | 2.56                     | 0.41              |
| 4:AD:132:PRO:HB2 | 4:AD:134:ARG:HD3  | 2.02                     | 0.41              |
| 4:AD:168:ARG:HD3 | 4:AD:173:VAL:CG2  | 2.33                     | 0.41              |
| 4:AD:178:PRO:O   | 4:AD:179:SER:C    | 2.63                     | 0.41              |
| 4:AD:223:GLY:O   | 4:AD:224:ALA:C    | 2.64                     | 0.41              |
| 4:AD:258:LYS:CA  | 4:AD:261:LYS:NZ   | 2.71                     | 0.41              |
| 5:AE:8:LYS:O     | 5:AE:192:ASN:CB   | 2.62                     | 0.41              |
| 5:AE:8:LYS:CB    | 5:AE:24:THR:CG2   | 2.98                     | 0.41              |
| 5:AE:154:LYS:O   | 5:AE:154:LYS:CD   | 2.69                     | 0.41              |
| 6:AF:4:VAL:O     | 6:AF:4:VAL:HG12   | 2.20                     | 0.41              |
| 6:AF:54:ARG:HA   | 6:AF:56:GLU:OE1   | 2.21                     | 0.41              |
| 6:AF:63:LYS:O    | 6:AF:63:LYS:HG2   | 2.21                     | 0.41              |
| 6:AF:104:LYS:C   | 6:AF:108:LYS:HZ1  | 2.27                     | 0.41              |
| 6:AF:155:LEU:HB2 | 6:AF:189:THR:OG1  | 2.21                     | 0.41              |
| 7:AG:1:MET:O     | 7:AG:2:PRO:C      | 2.60                     | 0.41              |
| 7:AG:11:TYR:O    | 7:AG:15:VAL:CG2   | 2.67                     | 0.41              |
| 7:AG:22:ARG:HG3  | 7:AG:23:PHE:HD2   | 1.84                     | 0.41              |
| 7:AG:30:GLU:HB2  | 7:AG:162:THR:HG21 | 2.02                     | 0.41              |
| 7:AG:33:ARG:NH2  | 7:AG:34:LEU:CA    | 2.84                     | 0.41              |
| 7:AG:36:LYS:HE2  | 7:AG:38:VAL:CG1   | 2.29                     | 0.41              |
| 7:AG:39:ILE:CG1  | 7:AG:157:ILE:HG13 | 2.48                     | 0.41              |
| 7:AG:64:THR:CG2  | 7:AG:92:VAL:HG11  | 2.51                     | 0.41              |
| 7:AG:72:ARG:HA   | 7:AG:88:ILE:CD1   | 2.51                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AH:7:LEU:CB     | 8:AH:65:HIS:NE2   | 2.80                     | 0.41              |
| 8:AH:11:VAL:HG21  | 8:AH:17:VAL:CG2   | 2.50                     | 0.41              |
| 8:AH:30:LYS:O     | 8:AH:31:GLY:C     | 2.64                     | 0.41              |
| 8:AH:98:LEU:C     | 8:AH:100:GLY:N    | 2.77                     | 0.41              |
| 8:AH:156:ALA:O    | 8:AH:157:TYR:CD2  | 2.74                     | 0.41              |
| 9:AK:22:THR:CG2   | 9:AK:61:ARG:CZ    | 2.98                     | 0.41              |
| 9:AK:26:LEU:O     | 9:AK:30:ILE:CD1   | 2.69                     | 0.41              |
| 9:AK:30:ILE:O     | 9:AK:33:LEU:HD12  | 2.21                     | 0.41              |
| 9:AK:46:VAL:CG1   | 9:AK:119:ARG:HH12 | 2.34                     | 0.41              |
| 9:AK:53:VAL:HG12  | 9:AK:130:HIS:NE2  | 2.36                     | 0.41              |
| 9:AK:58:ASP:OD1   | 9:AK:59:LYS:HG3   | 2.20                     | 0.41              |
| 9:AK:100:GLU:CB   | 9:AK:104:LYS:HE2  | 2.50                     | 0.41              |
| 9:AK:135:PRO:O    | 9:AK:136:GLU:C    | 2.64                     | 0.41              |
| 9:AK:140:VAL:OXT  | 9:AK:140:VAL:CG1  | 2.69                     | 0.41              |
| 10:AL:23:ARG:H    | 10:AL:23:ARG:CD   | 2.29                     | 0.41              |
| 10:AL:96:THR:CG2  | 10:AL:97:ARG:N    | 2.54                     | 0.41              |
| 11:AM:34:GLY:C    | 11:AM:36:LYS:N    | 2.78                     | 0.41              |
| 11:AM:40:SER:O    | 11:AM:42:SER:N    | 2.50                     | 0.41              |
| 11:AM:108:LYS:HG2 | 11:AM:109:GLY:N   | 2.35                     | 0.41              |
| 11:AM:124:LYS:HB3 | 11:AM:143:GLY:HA2 | 2.02                     | 0.41              |
| 12:AN:6:ARG:CD    | 12:AN:7:MET:N     | 2.84                     | 0.41              |
| 12:AN:11:LYS:HD2  | 12:AN:13:GLN:O    | 2.20                     | 0.41              |
| 12:AN:22:LYS:CE   | 12:AN:23:GLY:N    | 2.84                     | 0.41              |
| 12:AN:77:LYS:HB3  | 12:AN:78:PRO:CD   | 2.39                     | 0.41              |
| 12:AN:130:LYS:HZ1 | 12:AN:132:VAL:CG2 | 2.34                     | 0.41              |
| 12:AN:132:VAL:CG1 | 12:AN:133:ARG:NH2 | 2.82                     | 0.41              |
| 13:AO:30:THR:CG2  | 13:AO:31:HIS:CE1  | 3.04                     | 0.41              |
| 13:AO:45:ARG:HB2  | 13:AO:97:VAL:CG2  | 2.51                     | 0.41              |
| 13:AO:83:ILE:C    | 13:AO:85:PRO:N    | 2.77                     | 0.41              |
| 13:AO:97:VAL:O    | 13:AO:98:LEU:HG   | 2.20                     | 0.41              |
| 14:AP:57:LYS:HZ3  | 14:AP:62:LYS:CB   | 2.34                     | 0.41              |
| 14:AP:76:LYS:C    | 14:AP:80:LEU:HD23 | 2.45                     | 0.41              |
| 14:AP:104:GLY:O   | 14:AP:105:ALA:C   | 2.63                     | 0.41              |
| 15:AQ:23:ARG:NH2  | 15:AQ:89:VAL:HA   | 2.36                     | 0.41              |
| 15:AQ:26:ASP:CA   | 15:AQ:100:TYR:CE2 | 3.00                     | 0.41              |
| 15:AQ:50:ILE:HG23 | 15:AQ:68:TYR:CB   | 2.48                     | 0.41              |
| 15:AQ:59:THR:O    | 15:AQ:81:PRO:HG2  | 2.21                     | 0.41              |
| 15:AQ:73:GLU:HG3  | 15:AQ:73:GLU:O    | 2.21                     | 0.41              |
| 15:AQ:110:ILE:HB  | 15:AQ:113:LYS:CG  | 2.50                     | 0.41              |
| 15:AQ:113:LYS:O   | 15:AQ:116:ALA:CB  | 2.65                     | 0.41              |
| 15:AQ:114:LEU:O   | 15:AQ:117:ASP:OD1 | 2.39                     | 0.41              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 16:AR:45:TYR:HD1   | 16:AR:45:TYR:HA   | 1.81                     | 0.41              |
| 16:AR:92:ARG:CA    | 16:AR:95:LEU:HG   | 2.49                     | 0.41              |
| 16:AR:97:ASP:O     | 16:AR:101:ARG:NE  | 2.53                     | 0.41              |
| 17:AS:22:VAL:HG13  | 17:AS:23:GLU:N    | 2.36                     | 0.41              |
| 17:AS:49:THR:HG22  | 17:AS:50:PRO:CD   | 2.37                     | 0.41              |
| 18:AT:25:ARG:CA    | 18:AT:71:VAL:CG1  | 2.97                     | 0.41              |
| 18:AT:35:ILE:HG23  | 18:AT:36:LEU:N    | 2.36                     | 0.41              |
| 19:AU:7:VAL:CG2    | 23:AY:31:ARG:CZ   | 2.99                     | 0.41              |
| 19:AU:25:LYS:O     | 19:AU:26:TYR:CD1  | 2.73                     | 0.41              |
| 19:AU:35:THR:H     | 19:AU:38:GLU:HB2  | 1.86                     | 0.41              |
| 19:AU:70:LEU:CD2   | 19:AU:71:GLY:N    | 2.76                     | 0.41              |
| 19:AU:83:VAL:HG11  | 19:AU:87:GLN:O    | 2.20                     | 0.41              |
| 19:AU:89:ILE:C     | 19:AU:92:LEU:HD13 | 2.45                     | 0.41              |
| 20:AV:1:MET:HA     | 20:AV:33:LYS:CE   | 2.49                     | 0.41              |
| 20:AV:12:THR:HG21  | 20:AV:70:SER:C    | 2.45                     | 0.41              |
| 20:AV:36:ALA:HB1   | 20:AV:62:GLU:O    | 2.20                     | 0.41              |
| 20:AV:46:LYS:HD3   | 20:AV:52:SER:CB   | 2.51                     | 0.41              |
| 21:AW:15:PRO:HB2   | 21:AW:19:ARG:NH1  | 2.35                     | 0.41              |
| 21:AW:23:LYS:HE3   | 21:AW:38:TYR:CB   | 2.51                     | 0.41              |
| 21:AW:92:SER:O     | 21:AW:93:ASP:CB   | 2.65                     | 0.41              |
| 21:AW:155:LEU:HD12 | 21:AW:155:LEU:HA  | 1.87                     | 0.41              |
| 21:AW:160:GLY:O    | 21:AW:161:VAL:O   | 2.38                     | 0.41              |
| 22:AX:31:VAL:HG13  | 22:AX:67:VAL:HG23 | 2.03                     | 0.41              |
| 23:AY:31:ARG:H     | 23:AY:31:ARG:HG2  | 1.62                     | 0.41              |
| 23:AY:33:GLN:H     | 23:AY:33:GLN:CD   | 2.29                     | 0.41              |
| 23:AY:51:GLN:HA    | 23:AY:54:ARG:CD   | 2.51                     | 0.41              |
| 23:AY:56:LEU:O     | 23:AY:57:THR:C    | 2.63                     | 0.41              |
| 24:AZ:16:PRO:O     | 24:AZ:19:GLN:HB3  | 2.20                     | 0.41              |
| 24:AZ:47:VAL:O     | 24:AZ:50:VAL:HB   | 2.21                     | 0.41              |
| 25:Aa:4:GLY:HA2    | 25:Aa:11:PRO:CG   | 2.51                     | 0.41              |
| 26:Ab:17:ASP:C     | 26:Ab:21:SER:OG   | 2.64                     | 0.41              |
| 26:Ab:55:ARG:O     | 26:Ab:57:VAL:HG13 | 2.21                     | 0.41              |
| 27:Ac:33:LYS:HZ3   | 27:Ac:34:LEU:HD23 | 1.85                     | 0.41              |
| 28:Ad:20:ALA:HB3   | 28:Ad:21:ARG:HH21 | 1.76                     | 0.41              |
| 28:Ad:43:THR:HA    | 28:Ad:46:VAL:HB   | 2.03                     | 0.41              |
| 29:Ae:26:LYS:O     | 29:Ae:47:LYS:HD2  | 2.21                     | 0.41              |
| 29:Ae:63:PRO:CG    | 29:Ae:64:TYR:H    | 2.33                     | 0.41              |
| 31:AI:118:THR:O    | 31:AI:119:ALA:HB3 | 2.21                     | 0.41              |
| 32:AJ:18:THR:CG2   | 32:AJ:38:VAL:HG11 | 2.07                     | 0.41              |
| 32:AJ:35:MET:CG    | 32:AJ:36:GLU:N    | 2.83                     | 0.41              |
| 32:AJ:86:LYS:HD2   | 32:AJ:87:GLY:H    | 1.78                     | 0.41              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 34:BA:11:G:O2'   | 34:BA:12:U:H5'    | 2.21                     | 0.41              |
| 34:BA:27:G:H8    | 34:BA:27:G:P      | 2.44                     | 0.41              |
| 34:BA:47:C:C4'   | 34:BA:48:C:C5'    | 2.86                     | 0.41              |
| 34:BA:47:C:H5    | 34:BA:365:U:H2'   | 1.86                     | 0.41              |
| 34:BA:80:G:C2'   | 34:BA:81:G:H8     | 2.34                     | 0.41              |
| 34:BA:102:G:N3   | 34:BA:151:A:C2    | 2.88                     | 0.41              |
| 34:BA:130:A:C4   | 34:BA:264:U:C1'   | 3.01                     | 0.41              |
| 34:BA:160:A:H2   | 34:BA:343:U:H1'   | 1.84                     | 0.41              |
| 34:BA:220:G:H2'  | 34:BA:221:C:O5'   | 2.20                     | 0.41              |
| 34:BA:222:U:C2   | 34:BA:223:U:C5    | 3.09                     | 0.41              |
| 34:BA:265:G:H5'' | 50:BU:65:ILE:HA   | 2.03                     | 0.41              |
| 34:BA:279:A:H5'  | 34:BA:280:C:C3'   | 2.33                     | 0.41              |
| 34:BA:280:C:H1'  | 50:BU:38:ARG:CD   | 2.51                     | 0.41              |
| 34:BA:321:A:H5'  | 34:BA:1435:G:O2'  | 2.21                     | 0.41              |
| 34:BA:324:G:OP1  | 53:BX:22:ARG:HB3  | 2.20                     | 0.41              |
| 34:BA:343:U:H2'  | 34:BA:345:C:H5    | 1.86                     | 0.41              |
| 34:BA:424:G:H8   | 34:BA:424:G:O5'   | 2.02                     | 0.41              |
| 34:BA:429:U:O2   | 34:BA:431:A:N7    | 2.54                     | 0.41              |
| 34:BA:437:U:C5   | 34:BA:438:G:C5    | 3.09                     | 0.41              |
| 34:BA:438:G:N2   | 34:BA:494:U:C2    | 2.88                     | 0.41              |
| 34:BA:455:C:O2'  | 34:BA:456:C:H5'   | 2.21                     | 0.41              |
| 34:BA:489:C:O2'  | 34:BA:490:G:C5'   | 2.65                     | 0.41              |
| 34:BA:563:A:O2'  | 34:BA:566:G:C2'   | 2.68                     | 0.41              |
| 34:BA:578:C:H3'  | 34:BA:578:C:C6    | 2.55                     | 0.41              |
| 34:BA:596:C:N4   | 34:BA:645:C:O2    | 2.54                     | 0.41              |
| 34:BA:689:C:H2'  | 34:BA:690:G:O4'   | 2.21                     | 0.41              |
| 34:BA:730:G:N7   | 34:BA:731:G:C1'   | 2.78                     | 0.41              |
| 34:BA:791:G:C6   | 34:BA:792:A:N6    | 2.87                     | 0.41              |
| 34:BA:796:C:OP1  | 44:BO:123:LYS:HD3 | 2.20                     | 0.41              |
| 34:BA:815:A:H1'  | 34:BA:817:C:H41   | 1.74                     | 0.41              |
| 34:BA:981:U:C5   | 34:BA:981:U:OP2   | 2.73                     | 0.41              |
| 34:BA:986:A:H2'  | 34:BA:987:G:C8    | 2.56                     | 0.41              |
| 34:BA:986:A:H2   | 52:BW:52:TYR:OH   | 2.01                     | 0.41              |
| 34:BA:1001:G:C8  | 34:BA:1001:G:C3'  | 3.04                     | 0.41              |
| 34:BA:1068:G:H2' | 34:BA:1069:C:O4'  | 2.20                     | 0.41              |
| 34:BA:1103:C:O2' | 35:BF:111:ARG:CD  | 2.69                     | 0.41              |
| 34:BA:1109:C:C3' | 34:BA:1110:A:H8   | 2.34                     | 0.41              |
| 34:BA:1112:C:C1' | 36:BG:179:ARG:NH2 | 2.60                     | 0.41              |
| 34:BA:1114:C:O2' | 47:BR:60:SER:CB   | 2.67                     | 0.41              |
| 34:BA:1119:C:C2' | 34:BA:1120:G:C8   | 2.87                     | 0.41              |
| 34:BA:1164:G:H2' | 34:BA:1165:C:C5'  | 2.48                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:1167:A:N1    | 34:BA:1169:A:C2    | 2.89                     | 0.41              |
| 34:BA:1169:A:C5    | 34:BA:1170:A:N1    | 2.89                     | 0.41              |
| 34:BA:1188:A:H2'   | 34:BA:1189:C:C6    | 2.56                     | 0.41              |
| 34:BA:1224:G:N2    | 34:BA:1362(A):C:C4 | 2.81                     | 0.41              |
| 34:BA:1225:A:O3'   | 52:BW:80:TYR:HB3   | 2.21                     | 0.41              |
| 34:BA:1245:A:C4    | 34:BA:1246:C:C5    | 3.08                     | 0.41              |
| 34:BA:1274:G:H2'   | 34:BA:1274:G:N3    | 2.36                     | 0.41              |
| 34:BA:1289:A:N6    | 34:BA:1371:G:HO2'  | 2.18                     | 0.41              |
| 34:BA:1308:U:C3'   | 34:BA:1309:G:P     | 2.99                     | 0.41              |
| 34:BA:1308:U:P     | 46:BQ:99:ARG:N     | 2.88                     | 0.41              |
| 34:BA:1309:G:N2    | 34:BA:1328:C:C2'   | 2.83                     | 0.41              |
| 34:BA:1313:U:N3    | 34:BA:1325:C:O2    | 2.54                     | 0.41              |
| 34:BA:1339:A:C8    | 34:BA:1339:A:O5'   | 2.73                     | 0.41              |
| 34:BA:1442:G:H5''  | 34:BA:1443:G:O5'   | 2.20                     | 0.41              |
| 34:BA:1480:G:O2'   | 34:BA:1481:U:C5'   | 2.61                     | 0.41              |
| 34:BA:1480:G:C2'   | 34:BA:1481:U:H5'   | 2.50                     | 0.41              |
| 35:BF:61:LEU:C     | 35:BF:64:ARG:HD2   | 2.46                     | 0.41              |
| 35:BF:70:PHE:O     | 35:BF:92:TYR:CB    | 2.67                     | 0.41              |
| 35:BF:80:ILE:HD12  | 35:BF:208:ILE:CD1  | 2.50                     | 0.41              |
| 35:BF:144:ARG:O    | 35:BF:147:LYS:N    | 2.54                     | 0.41              |
| 35:BF:167:PRO:CG   | 35:BF:168:THR:N    | 2.83                     | 0.41              |
| 35:BF:186:ALA:C    | 35:BF:201:ILE:HB   | 2.43                     | 0.41              |
| 35:BF:188:ALA:O    | 35:BF:205:ASP:HB3  | 2.21                     | 0.41              |
| 35:BF:201:ILE:HD12 | 35:BF:201:ILE:H    | 1.86                     | 0.41              |
| 35:BF:215:LEU:HD22 | 35:BF:215:LEU:HA   | 1.82                     | 0.41              |
| 35:BF:216:SER:O    | 35:BF:217:ARG:C    | 2.64                     | 0.41              |
| 36:BG:74:GLY:C     | 36:BG:76:VAL:H     | 2.28                     | 0.41              |
| 36:BG:113:ALA:O    | 36:BG:114:PRO:C    | 2.63                     | 0.41              |
| 36:BG:172:ARG:HH11 | 36:BG:172:ARG:HG2  | 1.86                     | 0.41              |
| 37:BH:13:ARG:NH1   | 37:BH:36:ARG:HB2   | 2.28                     | 0.41              |
| 37:BH:59:ARG:CA    | 37:BH:63:LYS:HZ2   | 2.34                     | 0.41              |
| 37:BH:100:ARG:NH1  | 37:BH:137:SER:HA   | 2.35                     | 0.41              |
| 37:BH:106:TYR:O    | 37:BH:108:LEU:N    | 2.54                     | 0.41              |
| 37:BH:129:ASN:OD1  | 37:BH:145:GLU:N    | 2.54                     | 0.41              |
| 37:BH:191:ARG:CD   | 37:BH:192:GLU:N    | 2.69                     | 0.41              |
| 37:BH:191:ARG:O    | 37:BH:194:LEU:HD23 | 2.20                     | 0.41              |
| 37:BH:200:GLU:C    | 37:BH:204:ILE:CD1  | 2.94                     | 0.41              |
| 38:BI:11:ILE:CD1   | 38:BI:104:ALA:HB1  | 2.47                     | 0.41              |
| 39:BJ:2:ARG:CD     | 39:BJ:69:GLU:HG2   | 2.51                     | 0.41              |
| 39:BJ:3:ARG:O      | 39:BJ:93:SER:CB    | 2.69                     | 0.41              |
| 39:BJ:4:TYR:CA     | 39:BJ:93:SER:OG    | 2.68                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 39:BJ:82:ARG:O     | 39:BJ:84:ASN:N     | 2.54                     | 0.41              |
| 40:BK:90:GLU:OE2   | 40:BK:90:GLU:N     | 2.54                     | 0.41              |
| 40:BK:150:ALA:HA   | 44:BO:59:TYR:HB2   | 2.03                     | 0.41              |
| 41:BL:31:PHE:O     | 41:BL:32:LYS:C     | 2.64                     | 0.41              |
| 41:BL:32:LYS:CG    | 41:BL:59:LEU:HD12  | 2.51                     | 0.41              |
| 41:BL:44:PHE:CE2   | 41:BL:109:ILE:HD13 | 2.50                     | 0.41              |
| 41:BL:49:GLU:CG    | 41:BL:62:TYR:OH    | 2.69                     | 0.41              |
| 41:BL:100:ILE:O    | 41:BL:101:PRO:C    | 2.62                     | 0.41              |
| 41:BL:104:ARG:O    | 41:BL:107:LEU:HD23 | 2.21                     | 0.41              |
| 41:BL:109:ILE:HG12 | 41:BL:137:VAL:H    | 1.84                     | 0.41              |
| 42:BM:8:GLY:C      | 42:BM:76:ALA:HB1   | 2.45                     | 0.41              |
| 42:BM:33:PHE:CZ    | 42:BM:43:ALA:O     | 2.74                     | 0.41              |
| 42:BM:49:PRO:CD    | 42:BM:78:LYS:HZ3   | 2.31                     | 0.41              |
| 42:BM:127:LYS:HB2  | 56:BE:31:A:P       | 2.61                     | 0.41              |
| 43:BN:47:PHE:O     | 43:BN:62:HIS:HB2   | 2.21                     | 0.41              |
| 44:BO:54:ARG:HH11  | 44:BO:54:ARG:CG    | 2.22                     | 0.41              |
| 45:BP:7:ILE:O      | 45:BP:10:LEU:HB2   | 2.21                     | 0.41              |
| 45:BP:33:ARG:HG3   | 45:BP:60:LEU:HD23  | 2.00                     | 0.41              |
| 45:BP:54:LYS:HB3   | 45:BP:70:ILE:CB    | 2.38                     | 0.41              |
| 45:BP:85:ILE:CD1   | 45:BP:99:HIS:O     | 2.69                     | 0.41              |
| 46:BQ:23:TYR:O     | 46:BQ:25:ILE:HG13  | 2.20                     | 0.41              |
| 47:BR:16:PHE:HB3   | 47:BR:18:VAL:HG22  | 2.03                     | 0.41              |
| 48:BS:60:VAL:O     | 48:BS:61:GLY:C     | 2.64                     | 0.41              |
| 48:BS:79:ARG:HG3   | 48:BS:82:ILE:HD12  | 2.02                     | 0.41              |
| 49:BT:26:ARG:CD    | 49:BT:31:LYS:HB3   | 2.51                     | 0.41              |
| 49:BT:27:LYS:N     | 49:BT:27:LYS:NZ    | 2.55                     | 0.41              |
| 49:BT:58:TYR:HD1   | 49:BT:59:TRP:CA    | 2.33                     | 0.41              |
| 50:BU:48:GLU:C     | 50:BU:48:GLU:CD    | 2.89                     | 0.41              |
| 51:BV:41:LYS:O     | 51:BV:44:LEU:CG    | 2.52                     | 0.41              |
| 53:BX:51:GLU:HA    | 53:BX:54:LYS:HE3   | 1.97                     | 0.41              |
| 53:BX:53:LEU:O     | 53:BX:55:ILE:N     | 2.54                     | 0.41              |
| 53:BX:64:ASP:C     | 53:BX:66:ALA:N     | 2.72                     | 0.41              |
| 53:BX:80:ARG:HA    | 53:BX:80:ARG:HD3   | 1.87                     | 0.41              |
| 53:BX:85:MET:H     | 53:BX:85:MET:HG2   | 1.62                     | 0.41              |
| 53:BX:102:GLY:O    | 53:BX:104:LEU:N    | 2.54                     | 0.41              |
| 55:BC:39:U:O2      | 55:BC:39:U:H5'     | 2.21                     | 0.41              |
| 55:BC:51:U:H3      | 55:BC:63:G:H1      | 1.69                     | 0.41              |
| 55:BC:56:C:C2      | 55:BC:57:G:H8      | 2.39                     | 0.41              |
| 56:BD:64:A:C2      | 56:BD:65:G:C5      | 3.09                     | 0.41              |
| 56:BE:48:C:H2'     | 56:BE:59:U:C1'     | 2.51                     | 0.41              |
| 57:BZ:236:GLN:HA   | 57:BZ:247:ARG:CB   | 2.44                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:BZ:236:GLN:HB2  | 57:BZ:247:ARG:CG   | 2.51                     | 0.41              |
| 57:BZ:258:LEU:CB   | 57:BZ:259:GLY:CA   | 2.95                     | 0.41              |
| 57:BZ:311:PHE:C    | 57:BZ:355:ALA:HA   | 2.13                     | 0.41              |
| 57:BZ:338:GLU:HG3  | 57:BZ:345:LEU:HD22 | 2.02                     | 0.41              |
| 57:BZ:374:ARG:NE   | 57:BZ:581:THR:N    | 2.61                     | 0.41              |
| 57:BZ:406:ASP:HB3  | 57:BZ:407:VAL:O    | 2.20                     | 0.41              |
| 57:BZ:407:VAL:HG23 | 57:BZ:436:ARG:CA   | 2.50                     | 0.41              |
| 57:BZ:564:THR:OG1  | 57:BZ:567:GLN:HB2  | 2.21                     | 0.41              |
| 1:AA:6:A:N3        | 1:AA:2898:U:C2     | 2.89                     | 0.41              |
| 1:AA:121:G:O4'     | 1:AA:148:C:H2'     | 2.20                     | 0.41              |
| 1:AA:146:G:C2'     | 1:AA:147:U:H5''    | 2.49                     | 0.41              |
| 1:AA:184:C:H2'     | 1:AA:185:U:H5      | 1.85                     | 0.41              |
| 1:AA:251:A:O2'     | 1:AA:252:G:OP1     | 2.36                     | 0.41              |
| 1:AA:266:G:H2'     | 1:AA:267:C:O5'     | 2.21                     | 0.41              |
| 1:AA:270(C):C:O2'  | 1:AA:270(D):C:C5'  | 2.62                     | 0.41              |
| 1:AA:412:A:C6      | 1:AA:413:C:C2      | 3.09                     | 0.41              |
| 1:AA:470:A:H2'     | 1:AA:471:A:C4'     | 2.51                     | 0.41              |
| 1:AA:479:A:C6      | 1:AA:481:G:C4      | 3.09                     | 0.41              |
| 1:AA:566:U:C3'     | 1:AA:567:A:H8      | 2.32                     | 0.41              |
| 1:AA:577:G:C6      | 1:AA:578:A:C5      | 3.08                     | 0.41              |
| 1:AA:598:G:C6      | 1:AA:660:G:C6      | 3.09                     | 0.41              |
| 1:AA:604:G:H2'     | 1:AA:605:C:C6      | 2.56                     | 0.41              |
| 1:AA:638:G:N2      | 1:AA:651:G:H5'     | 2.35                     | 0.41              |
| 1:AA:672:C:N4      | 1:AA:809:G:N1      | 2.69                     | 0.41              |
| 1:AA:699:A:O5'     | 1:AA:699:A:H8      | 2.03                     | 0.41              |
| 1:AA:815:C:C2      | 1:AA:816:C:C5      | 3.09                     | 0.41              |
| 1:AA:884:C:H1'     | 1:AA:885:C:O5'     | 2.20                     | 0.41              |
| 1:AA:987:G:O6      | 1:AA:988:A:C6      | 2.74                     | 0.41              |
| 1:AA:1003:G:O2'    | 1:AA:1010:A:N1     | 2.43                     | 0.41              |
| 1:AA:1013:C:OP2    | 1:AA:1142:U:C2     | 2.73                     | 0.41              |
| 1:AA:1061:U:H2'    | 32:AJ:73:PRO:HG2   | 2.02                     | 0.41              |
| 1:AA:1082:U:H6     | 1:AA:1082:U:O5'    | 2.03                     | 0.41              |
| 1:AA:1101:U:O2     | 1:AA:1102:C:C6     | 2.73                     | 0.41              |
| 1:AA:1241:A:C5'    | 1:AA:1241:A:C2     | 2.89                     | 0.41              |
| 1:AA:1248:G:C8     | 16:AR:2:PRO:C      | 2.99                     | 0.41              |
| 1:AA:1296:G:C2     | 1:AA:1297:C:C4     | 3.09                     | 0.41              |
| 1:AA:1332:G:C6     | 1:AA:1609:A:C6     | 3.09                     | 0.41              |
| 1:AA:1453:A:C2     | 1:AA:1454:U:C1'    | 3.04                     | 0.41              |
| 1:AA:1540:G:H2'    | 1:AA:1541:U:H4'    | 2.02                     | 0.41              |
| 1:AA:1545(A):A:H8  | 1:AA:1545(A):A:P   | 2.44                     | 0.41              |
| 1:AA:1703:G:H2'    | 1:AA:1704:G:O4'    | 2.21                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1749:A:C2'   | 1:AA:1750:G:H5'   | 2.51                     | 0.41              |
| 1:AA:1793:C:O2'   | 1:AA:1900:A:N1    | 2.42                     | 0.41              |
| 1:AA:1861:G:C2    | 1:AA:1862:G:N9    | 2.89                     | 0.41              |
| 1:AA:1967:C:N3    | 1:AA:1968:G:N3    | 2.68                     | 0.41              |
| 1:AA:2003:G:O6    | 1:AA:2004:G:C6    | 2.74                     | 0.41              |
| 1:AA:2015:A:H2'   | 1:AA:2016:U:H6    | 1.86                     | 0.41              |
| 1:AA:2017:U:C1'   | 26:Ab:8:LYS:O     | 2.69                     | 0.41              |
| 1:AA:2018:G:O6    | 1:AA:2035:G:C6    | 2.74                     | 0.41              |
| 1:AA:2033:A:C2'   | 1:AA:2034:U:O5'   | 2.68                     | 0.41              |
| 1:AA:2040:C:H2'   | 1:AA:2041:U:C6    | 2.56                     | 0.41              |
| 1:AA:2057:A:H1'   | 26:Ab:4:HIS:O     | 2.21                     | 0.41              |
| 1:AA:2072:G:C2    | 1:AA:2073:C:C5    | 3.09                     | 0.41              |
| 1:AA:2152:G:H4'   | 3:AC:2:LYS:HD2    | 2.02                     | 0.41              |
| 1:AA:2216:G:C2    | 1:AA:2217:G:C8    | 3.09                     | 0.41              |
| 1:AA:2373:G:N3    | 1:AA:2374:C:C4    | 2.89                     | 0.41              |
| 1:AA:2437:U:O2'   | 1:AA:2438:U:H5'   | 2.21                     | 0.41              |
| 1:AA:2472:G:H3'   | 1:AA:2475:C:N4    | 2.34                     | 0.41              |
| 1:AA:2479:G:OP1   | 1:AA:2537:U:O2'   | 2.32                     | 0.41              |
| 1:AA:2756:U:C5    | 1:AA:2758:A:N6    | 2.89                     | 0.41              |
| 1:AA:2794:C:C6    | 1:AA:2799:A:C2    | 3.09                     | 0.41              |
| 1:AA:2820:A:H62   | 5:AE:192:ASN:H    | 1.69                     | 0.41              |
| 1:AA:2870:C:O2    | 1:AA:2871:C:H1'   | 2.21                     | 0.41              |
| 2:AB:46:A:C2'     | 2:AB:47:C:O5'     | 2.68                     | 0.41              |
| 2:AB:78:A:N7      | 2:AB:99:A:N6      | 2.69                     | 0.41              |
| 3:AC:41:VAL:C     | 3:AC:216:THR:HG22 | 2.46                     | 0.41              |
| 3:AC:46:LYS:CE    | 3:AC:210:ARG:NE   | 2.69                     | 0.41              |
| 3:AC:62:VAL:CG1   | 3:AC:192:PHE:CB   | 2.99                     | 0.41              |
| 4:AD:98:VAL:HG23  | 4:AD:98:VAL:H     | 1.63                     | 0.41              |
| 4:AD:147:LEU:HD23 | 4:AD:154:LYS:CG   | 2.49                     | 0.41              |
| 4:AD:245:PRO:O    | 4:AD:252:TRP:CH2  | 2.74                     | 0.41              |
| 6:AF:80:ALA:O     | 6:AF:83:PHE:CD2   | 2.74                     | 0.41              |
| 6:AF:90:PHE:O     | 6:AF:91:GLY:O     | 2.39                     | 0.41              |
| 6:AF:106:ARG:NH2  | 6:AF:106:ARG:CB   | 2.84                     | 0.41              |
| 6:AF:120:GLU:OE1  | 6:AF:120:GLU:N    | 2.53                     | 0.41              |
| 6:AF:156:LEU:O    | 6:AF:176:LEU:C    | 2.64                     | 0.41              |
| 6:AF:199:TRP:CD1  | 6:AF:199:TRP:H    | 2.38                     | 0.41              |
| 7:AG:120:LEU:HA   | 7:AG:181:ARG:CG   | 2.51                     | 0.41              |
| 8:AH:87:LEU:HD23  | 8:AH:87:LEU:C     | 2.46                     | 0.41              |
| 8:AH:97:ARG:HA    | 8:AH:125:VAL:CG1  | 2.46                     | 0.41              |
| 8:AH:104:GLU:O    | 8:AH:105:LEU:O    | 2.39                     | 0.41              |
| 9:AK:100:GLU:CA   | 9:AK:104:LYS:HE2  | 2.51                     | 0.41              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 10:AL:112:MET:CE   | 34:BA:345:C:N4    | 2.84                     | 0.41              |
| 11:AM:76:LYS:HD3   | 11:AM:112:LEU:HB3 | 2.02                     | 0.41              |
| 11:AM:123:LEU:O    | 11:AM:138:LEU:CD2 | 2.69                     | 0.41              |
| 11:AM:126:VAL:HG23 | 11:AM:127:ALA:H   | 1.85                     | 0.41              |
| 12:AN:37:LEU:CB    | 12:AN:38:GLU:OE2  | 2.69                     | 0.41              |
| 12:AN:97:VAL:N     | 12:AN:98:LYS:HE2  | 2.36                     | 0.41              |
| 14:AP:24:LEU:HG    | 14:AP:41:ASP:CA   | 2.49                     | 0.41              |
| 15:AQ:33:LYS:HB2   | 15:AQ:45:PHE:CD1  | 2.56                     | 0.41              |
| 15:AQ:50:ILE:HD12  | 15:AQ:76:PHE:HB3  | 2.00                     | 0.41              |
| 17:AS:15:GLU:CB    | 17:AS:16:PRO:CD   | 2.97                     | 0.41              |
| 17:AS:37:VAL:CG1   | 17:AS:37:VAL:O    | 2.68                     | 0.41              |
| 17:AS:62:LEU:HA    | 17:AS:99:ILE:HB   | 2.03                     | 0.41              |
| 18:AT:8:ARG:O      | 18:AT:10:VAL:N    | 2.53                     | 0.41              |
| 18:AT:21:VAL:CG2   | 18:AT:75:TYR:CD2  | 3.03                     | 0.41              |
| 18:AT:33:ARG:CD    | 18:AT:33:ARG:C    | 2.94                     | 0.41              |
| 18:AT:88:ARG:O     | 18:AT:89:ALA:CB   | 2.69                     | 0.41              |
| 18:AT:88:ARG:HE    | 18:AT:88:ARG:C    | 2.29                     | 0.41              |
| 19:AU:11:PRO:O     | 19:AU:13:LEU:HD23 | 2.21                     | 0.41              |
| 19:AU:25:LYS:HG2   | 19:AU:82:GLN:HE21 | 1.86                     | 0.41              |
| 20:AV:19:LYS:NZ    | 20:AV:39:VAL:HG12 | 2.36                     | 0.41              |
| 21:AW:110:GLY:CA   | 21:AW:144:LEU:CB  | 2.94                     | 0.41              |
| 23:AY:27:LEU:CD1   | 23:AY:52:ILE:HD11 | 2.40                     | 0.41              |
| 23:AY:36:ILE:HG23  | 23:AY:41:GLN:NE2  | 2.35                     | 0.41              |
| 25:Aa:5:ILE:CG2    | 25:Aa:7:PRO:CD    | 2.82                     | 0.41              |
| 25:Aa:22:ILE:N     | 25:Aa:22:ILE:CD1  | 2.84                     | 0.41              |
| 25:Aa:33:VAL:HG12  | 25:Aa:35:VAL:CG2  | 2.51                     | 0.41              |
| 27:Ac:16:CYS:SG    | 27:Ac:20:ASN:HB2  | 2.61                     | 0.41              |
| 27:Ac:19:ARG:O     | 27:Ac:20:ASN:CB   | 2.68                     | 0.41              |
| 28:Ad:8:ASN:OD1    | 28:Ad:11:LYS:N    | 2.53                     | 0.41              |
| 28:Ad:34:ARG:HH22  | 28:Ad:42:LEU:CA   | 2.16                     | 0.41              |
| 29:Ae:4:MET:O      | 29:Ae:5:LYS:O     | 2.39                     | 0.41              |
| 34:BA:77:C:O5'     | 34:BA:77:C:H6     | 2.03                     | 0.41              |
| 34:BA:116:A:OP1    | 34:BA:289:G:OP1   | 2.39                     | 0.41              |
| 34:BA:119:A:H62    | 34:BA:287:U:H3    | 1.66                     | 0.41              |
| 34:BA:279:A:C1'    | 34:BA:281:G:N3    | 2.79                     | 0.41              |
| 34:BA:329:A:C6     | 34:BA:332:G:C2    | 3.09                     | 0.41              |
| 34:BA:392:G:C5'    | 49:BT:12:LYS:NZ   | 2.78                     | 0.41              |
| 34:BA:397:A:C2'    | 34:BA:398:C:OP2   | 2.69                     | 0.41              |
| 34:BA:403:C:HO2'   | 37:BH:122:ARG:CZ  | 2.32                     | 0.41              |
| 34:BA:406:G:C8     | 34:BA:495:A:C2    | 3.09                     | 0.41              |
| 34:BA:444:C:H2'    | 34:BA:445:G:H8    | 1.86                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:BA:498:A:C4    | 34:BA:547:A:C2     | 3.09                     | 0.41              |
| 34:BA:507:C:H3'   | 34:BA:508:C:H6     | 1.86                     | 0.41              |
| 34:BA:528:C:C4'   | 34:BA:535:A:N6     | 2.84                     | 0.41              |
| 34:BA:577:G:C1'   | 34:BA:816:A:C2     | 3.03                     | 0.41              |
| 34:BA:609:A:O2'   | 34:BA:610:G:H5'    | 2.21                     | 0.41              |
| 34:BA:657:G:C5    | 34:BA:658:G:C8     | 3.10                     | 0.41              |
| 34:BA:690:G:C2'   | 34:BA:691:G:O5'    | 2.69                     | 0.41              |
| 34:BA:766:A:C2'   | 34:BA:767:A:H8     | 2.34                     | 0.41              |
| 34:BA:799:G:C6    | 34:BA:800:G:C2     | 3.09                     | 0.41              |
| 34:BA:835:U:C2    | 34:BA:852:G:N2     | 2.89                     | 0.41              |
| 34:BA:837:G:C2    | 34:BA:838:G:C5     | 3.08                     | 0.41              |
| 34:BA:899:C:C4    | 34:BA:900:A:N1     | 2.89                     | 0.41              |
| 34:BA:937:A:C8    | 34:BA:938:A:N7     | 2.88                     | 0.41              |
| 34:BA:993:G:H21   | 34:BA:995:C:N4     | 2.19                     | 0.41              |
| 34:BA:1097:C:O2'  | 34:BA:1098:C:C5'   | 2.67                     | 0.41              |
| 34:BA:1109:C:OP1  | 36:BG:176:HIS:CE1  | 2.67                     | 0.41              |
| 34:BA:1110:A:C2'  | 34:BA:1111:A:C5'   | 2.94                     | 0.41              |
| 34:BA:1210:C:H4'  | 34:BA:1214:C:C4    | 2.55                     | 0.41              |
| 34:BA:1270:C:C4   | 34:BA:1271:G:N7    | 2.89                     | 0.41              |
| 34:BA:1300:G:N2   | 34:BA:1335:C:C2    | 2.89                     | 0.41              |
| 34:BA:1358:U:OP1  | 47:BR:35:ARG:HG3   | 2.21                     | 0.41              |
| 34:BA:1395:C:O2'  | 34:BA:1396:A:O5'   | 2.39                     | 0.41              |
| 34:BA:1405:G:H4'  | 34:BA:1519:A:C5'   | 2.50                     | 0.41              |
| 34:BA:1419:G:H2'  | 34:BA:1420:C:H6    | 1.74                     | 0.41              |
| 34:BA:1438:G:H2'  | 34:BA:1439:C:C5'   | 2.50                     | 0.41              |
| 34:BA:1485:U:H2'  | 34:BA:1486:G:H8    | 1.81                     | 0.41              |
| 35:BF:45:GLN:C    | 35:BF:49:GLU:OE1   | 2.64                     | 0.41              |
| 35:BF:46:LYS:O    | 35:BF:49:GLU:N     | 2.54                     | 0.41              |
| 35:BF:137:ARG:O   | 35:BF:141:GLU:HB2  | 2.21                     | 0.41              |
| 35:BF:213:LEU:O   | 35:BF:216:SER:HB3  | 2.21                     | 0.41              |
| 36:BG:113:ALA:HB3 | 36:BG:183:ASP:CG   | 2.46                     | 0.41              |
| 37:BH:13:ARG:HA   | 37:BH:32:ALA:HB1   | 2.03                     | 0.41              |
| 37:BH:64:LEU:O    | 37:BH:65:ARG:C     | 2.64                     | 0.41              |
| 37:BH:108:LEU:C   | 37:BH:110:PHE:N    | 2.79                     | 0.41              |
| 37:BH:152:SER:C   | 37:BH:154:ASN:N    | 2.79                     | 0.41              |
| 38:BI:9:LYS:HD3   | 38:BI:108:ALA:CB   | 2.51                     | 0.41              |
| 38:BI:31:LEU:HB2  | 38:BI:129:ILE:HG23 | 2.03                     | 0.41              |
| 40:BK:21:VAL:HG23 | 40:BK:22:LEU:HD23  | 2.03                     | 0.41              |
| 40:BK:46:ALA:HA   | 40:BK:49:ILE:CD1   | 2.22                     | 0.41              |
| 40:BK:91:VAL:O    | 40:BK:92:SER:C     | 2.63                     | 0.41              |
| 40:BK:113:GLU:OE1 | 40:BK:122:HIS:ND1  | 2.54                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 41:BL:6:ILE:CD1   | 41:BL:85:ARG:CD   | 2.98                     | 0.41              |
| 41:BL:33:GLU:HG2  | 41:BL:59:LEU:HD21 | 2.03                     | 0.41              |
| 41:BL:46:LYS:HG3  | 41:BL:64:LYS:HG3  | 2.03                     | 0.41              |
| 41:BL:96:GLY:O    | 41:BL:97:VAL:O    | 2.38                     | 0.41              |
| 42:BM:69:GLY:C    | 42:BM:73:GLN:CD   | 2.89                     | 0.41              |
| 43:BN:52:GLY:HA2  | 43:BN:53:PRO:HD2  | 1.83                     | 0.41              |
| 44:BO:12:ARG:NH1  | 44:BO:40:ILE:HG23 | 2.35                     | 0.41              |
| 44:BO:18:ARG:HB3  | 44:BO:83:ILE:HD11 | 2.03                     | 0.41              |
| 44:BO:29:ILE:CA   | 44:BO:44:SER:OG   | 2.68                     | 0.41              |
| 44:BO:50:TYR:CE2  | 44:BO:54:ARG:HB3  | 2.56                     | 0.41              |
| 45:BP:58:VAL:CG1  | 45:BP:59:ARG:H    | 2.32                     | 0.41              |
| 46:BQ:19:LEU:O    | 46:BQ:21:TYR:N    | 2.54                     | 0.41              |
| 46:BQ:66:LEU:N    | 46:BQ:70:LEU:CA   | 2.84                     | 0.41              |
| 48:BS:79:ARG:HB2  | 48:BS:79:ARG:CZ   | 2.51                     | 0.41              |
| 49:BT:27:LYS:C    | 49:BT:29:ASP:H    | 2.29                     | 0.41              |
| 50:BU:13:ASP:O    | 50:BU:14:LYS:C    | 2.63                     | 0.41              |
| 50:BU:22:LEU:HD12 | 50:BU:23:VAL:H    | 1.86                     | 0.41              |
| 50:BU:27:PHE:O    | 50:BU:36:ILE:HG12 | 2.20                     | 0.41              |
| 50:BU:41:LYS:C    | 50:BU:42:TYR:HD1  | 2.29                     | 0.41              |
| 51:BV:21:LYS:HE2  | 51:BV:23:LYS:CB   | 2.51                     | 0.41              |
| 51:BV:22:VAL:O    | 51:BV:23:LYS:C    | 2.63                     | 0.41              |
| 51:BV:47:THR:N    | 51:BV:49:LYS:HE2  | 2.36                     | 0.41              |
| 51:BV:63:GLN:O    | 51:BV:66:LEU:CD1  | 2.69                     | 0.41              |
| 52:BW:22:LEU:C    | 52:BW:22:LEU:CD2  | 2.91                     | 0.41              |
| 52:BW:46:GLY:HA2  | 52:BW:61:TYR:HE2  | 1.86                     | 0.41              |
| 56:BD:41:C:C3'    | 56:BD:42:C:C5'    | 2.94                     | 0.41              |
| 57:BZ:35:ARG:HA   | 57:BZ:36:ALA:CB   | 2.40                     | 0.41              |
| 57:BZ:324:LYS:HG3 | 57:BZ:325:PHE:CZ  | 2.56                     | 0.41              |
| 57:BZ:383:SER:N   | 57:BZ:384:ARG:HB2 | 2.35                     | 0.41              |
| 57:BZ:406:ASP:C   | 57:BZ:407:VAL:CG1 | 2.92                     | 0.41              |
| 57:BZ:426:LEU:CA  | 57:BZ:441:TYR:CD2 | 3.04                     | 0.41              |
| 57:BZ:497:VAL:O   | 57:BZ:500:ALA:N   | 2.42                     | 0.41              |
| 1:AA:7:G:O6       | 1:AA:2896:C:C2    | 2.73                     | 0.40              |
| 1:AA:76:C:C2'     | 1:AA:76:C:O2      | 2.65                     | 0.40              |
| 1:AA:152:G:H2'    | 1:AA:153:C:C6     | 2.57                     | 0.40              |
| 1:AA:214:G:C2'    | 1:AA:215:G:O4'    | 2.70                     | 0.40              |
| 1:AA:270(V):G:H5' | 1:AA:270(W):G:OP2 | 2.21                     | 0.40              |
| 1:AA:319:C:C4     | 1:AA:320:A:C5     | 3.09                     | 0.40              |
| 1:AA:331:A:C4     | 1:AA:1209:G:N1    | 2.89                     | 0.40              |
| 1:AA:385:C:O2'    | 1:AA:386:G:H5''   | 2.21                     | 0.40              |
| 1:AA:433:C:H2'    | 1:AA:434:U:C6     | 2.56                     | 0.40              |

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| Atom-1           | Atom-2          | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-----------------|--------------------------|-------------------|
| 1:AA:445:C:O2'   | 1:AA:449:A:C8   | 2.74                     | 0.40              |
| 1:AA:463:G:C2    | 1:AA:467:G:C5   | 3.09                     | 0.40              |
| 1:AA:465:G:C6    | 1:AA:466:A:C5   | 3.08                     | 0.40              |
| 1:AA:491:G:C6    | 1:AA:492:A:C6   | 3.09                     | 0.40              |
| 1:AA:514:A:H2'   | 1:AA:515:A:C5'  | 2.50                     | 0.40              |
| 1:AA:564:C:O2'   | 1:AA:1252:G:N1  | 2.44                     | 0.40              |
| 1:AA:573:G:H22   | 1:AA:2029:G:H21 | 1.69                     | 0.40              |
| 1:AA:584:C:O2'   | 1:AA:585:G:H5'  | 2.21                     | 0.40              |
| 1:AA:609(A):G:C5 | 1:AA:610:C:C5   | 3.09                     | 0.40              |
| 1:AA:612:G:C4'   | 1:AA:616:A:C6   | 2.94                     | 0.40              |
| 1:AA:629:G:C6    | 1:AA:630:G:C6   | 3.09                     | 0.40              |
| 1:AA:638:G:H21   | 1:AA:651:G:H5'  | 1.86                     | 0.40              |
| 1:AA:658:C:C2'   | 1:AA:659:C:O5'  | 2.70                     | 0.40              |
| 1:AA:678:C:C4    | 1:AA:679:C:C5   | 3.09                     | 0.40              |
| 1:AA:730:C:O5'   | 1:AA:761:A:OP1  | 2.38                     | 0.40              |
| 1:AA:746:A:C2'   | 1:AA:747:U:OP2  | 2.69                     | 0.40              |
| 1:AA:793:A:C2'   | 1:AA:794:G:OP2  | 2.69                     | 0.40              |
| 1:AA:807:U:C2'   | 1:AA:807:U:O2   | 2.69                     | 0.40              |
| 1:AA:840:C:O2'   | 1:AA:841:A:H5'  | 2.21                     | 0.40              |
| 1:AA:932:G:N2    | 1:AA:933:A:C2   | 2.89                     | 0.40              |
| 1:AA:958:U:H2'   | 1:AA:959:A:OP2  | 2.22                     | 0.40              |
| 1:AA:967:C:H3'   | 1:AA:967:C:C6   | 2.55                     | 0.40              |
| 1:AA:1029:A:N6   | 1:AA:1125:G:N2  | 2.70                     | 0.40              |
| 1:AA:1087:G:C2   | 1:AA:1103:A:C2  | 3.09                     | 0.40              |
| 1:AA:1180:C:H2'  | 1:AA:1181:C:C5  | 2.54                     | 0.40              |
| 1:AA:1264:G:C6   | 1:AA:1265:A:N7  | 2.86                     | 0.40              |
| 1:AA:1280:G:C2'  | 1:AA:1281:G:H5' | 2.51                     | 0.40              |
| 1:AA:1322:A:OP1  | 18:AT:11:ARG:NE | 2.47                     | 0.40              |
| 1:AA:1355:G:C2   | 1:AA:1377:G:C2  | 3.09                     | 0.40              |
| 1:AA:1363:C:O2   | 1:AA:1363:C:C2' | 2.59                     | 0.40              |
| 1:AA:1364:G:C8   | 1:AA:1364:G:OP2 | 2.74                     | 0.40              |
| 1:AA:1472:A:H61  | 1:AA:1518:C:N4  | 2.18                     | 0.40              |
| 1:AA:1528:A:N7   | 1:AA:1529:A:C2  | 2.90                     | 0.40              |
| 1:AA:1542:G:H1'  | 1:AA:1543:A:C2  | 2.53                     | 0.40              |
| 1:AA:1559:G:H3'  | 1:AA:1559:G:N3  | 2.36                     | 0.40              |
| 1:AA:1631:A:H2'  | 1:AA:1632:A:O5' | 2.22                     | 0.40              |
| 1:AA:1652:A:N7   | 1:AA:1653:G:C2  | 2.89                     | 0.40              |
| 1:AA:1664:A:O2'  | 10:AL:66:LYS:NZ | 2.52                     | 0.40              |
| 1:AA:1665:A:H5'  | 10:AL:66:LYS:CD | 2.47                     | 0.40              |
| 1:AA:1669:A:H4'  | 1:AA:2549:G:O3' | 2.21                     | 0.40              |
| 1:AA:1957:C:H2'  | 1:AA:1958:C:C6  | 2.55                     | 0.40              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:2015:A:OP2  | 1:AA:2015:A:O4'   | 2.38                     | 0.40              |
| 1:AA:2199:A:C4   | 1:AA:2205:C:C6    | 3.09                     | 0.40              |
| 1:AA:2286:A:C8   | 1:AA:2286:A:C3'   | 2.91                     | 0.40              |
| 1:AA:2300:G:C2'  | 1:AA:2301:C:H5'   | 2.52                     | 0.40              |
| 1:AA:2302:G:C2   | 1:AA:2303:G:C8    | 3.08                     | 0.40              |
| 1:AA:2382:G:H8   | 1:AA:2382:G:O5'   | 2.05                     | 0.40              |
| 1:AA:2384:G:H3'  | 1:AA:2386:C:P     | 2.61                     | 0.40              |
| 1:AA:2457:U:C4   | 1:AA:2458:G:C2    | 3.09                     | 0.40              |
| 1:AA:2469:A:N7   | 1:AA:2470:G:C8    | 2.88                     | 0.40              |
| 1:AA:2496:C:C3'  | 1:AA:2497:A:C2    | 3.00                     | 0.40              |
| 1:AA:2602:A:N6   | 56:BD:74:C:O2'    | 2.55                     | 0.40              |
| 1:AA:2624:G:H1'  | 26:Ab:22:HIS:NE2  | 2.35                     | 0.40              |
| 1:AA:2634:G:HO2' | 1:AA:2635:C:C5'   | 2.33                     | 0.40              |
| 1:AA:2637:U:O2'  | 1:AA:2638:G:C1'   | 2.69                     | 0.40              |
| 1:AA:2644:G:C6   | 1:AA:2645:G:N2    | 2.89                     | 0.40              |
| 1:AA:2648:C:C2   | 1:AA:2649:U:C2    | 3.08                     | 0.40              |
| 1:AA:2660:A:O5'  | 1:AA:2660:A:H8    | 2.04                     | 0.40              |
| 1:AA:2692:C:C2   | 1:AA:2693:A:C8    | 3.09                     | 0.40              |
| 1:AA:2737:G:C4   | 1:AA:2738:A:C8    | 3.09                     | 0.40              |
| 1:AA:2821:A:OP2  | 5:AE:110:GLY:O    | 2.40                     | 0.40              |
| 1:AA:2825:C:N4   | 1:AA:2826:A:N6    | 2.69                     | 0.40              |
| 2:AB:63:G:C4     | 2:AB:64:C:C5      | 3.09                     | 0.40              |
| 3:AC:52:ARG:CB   | 3:AC:52:ARG:NH1   | 2.85                     | 0.40              |
| 3:AC:62:VAL:HG13 | 3:AC:191:ALA:HB3  | 2.02                     | 0.40              |
| 3:AC:111:ASP:O   | 3:AC:136:LEU:CD2  | 2.69                     | 0.40              |
| 4:AD:74:GLY:O    | 4:AD:75:ILE:C     | 2.64                     | 0.40              |
| 4:AD:86:PRO:C    | 4:AD:87:ASN:HD22  | 2.23                     | 0.40              |
| 4:AD:105:ILE:CD1 | 4:AD:106:ILE:HG23 | 2.51                     | 0.40              |
| 4:AD:276:LYS:OXT | 4:AD:276:LYS:HD2  | 2.21                     | 0.40              |
| 5:AE:53:PRO:CG   | 5:AE:75:VAL:CG2   | 2.86                     | 0.40              |
| 5:AE:111:ARG:N   | 5:AE:161:GLY:CA   | 2.57                     | 0.40              |
| 5:AE:118:LYS:CA  | 5:AE:118:LYS:CE   | 2.85                     | 0.40              |
| 5:AE:118:LYS:HD3 | 5:AE:119:ARG:H    | 1.85                     | 0.40              |
| 5:AE:184:VAL:O   | 5:AE:185:LYS:C    | 2.63                     | 0.40              |
| 6:AF:52:LYS:HZ2  | 6:AF:88:VAL:HG21  | 1.86                     | 0.40              |
| 6:AF:114:VAL:CG2 | 6:AF:186:ILE:HD13 | 2.51                     | 0.40              |
| 6:AF:118:ALA:HB1 | 6:AF:122:LYS:CB   | 2.49                     | 0.40              |
| 7:AG:19:LEU:HG   | 7:AG:22:ARG:NH1   | 2.29                     | 0.40              |
| 7:AG:47:LYS:CG   | 7:AG:72:ARG:O     | 2.68                     | 0.40              |
| 7:AG:55:LYS:HE2  | 7:AG:148:MET:HB3  | 2.02                     | 0.40              |
| 7:AG:93:THR:O    | 7:AG:93:THR:CG2   | 2.66                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:AG:118:ARG:NH1  | 7:AG:118:ARG:CB   | 2.78                     | 0.40              |
| 8:AH:91:GLY:O     | 8:AH:92:ILE:C     | 2.64                     | 0.40              |
| 8:AH:97:ARG:NH1   | 8:AH:99:VAL:HG22  | 2.36                     | 0.40              |
| 8:AH:119:GLU:N    | 8:AH:121:ILE:CG2  | 2.83                     | 0.40              |
| 9:AK:13:TRP:O     | 9:AK:136:GLU:OE2  | 2.39                     | 0.40              |
| 9:AK:126:PRO:HG2  | 9:AK:128:HIS:ND1  | 2.36                     | 0.40              |
| 10:AL:39:ILE:O    | 10:AL:58:VAL:CA   | 2.70                     | 0.40              |
| 10:AL:88:ASN:HB2  | 10:AL:89:ASN:OD1  | 2.20                     | 0.40              |
| 11:AM:34:GLY:O    | 11:AM:36:LYS:N    | 2.54                     | 0.40              |
| 11:AM:98:GLU:O    | 11:AM:99:LEU:C    | 2.61                     | 0.40              |
| 11:AM:113:LYS:HG2 | 11:AM:114:ILE:H   | 1.86                     | 0.40              |
| 11:AM:124:LYS:HB3 | 11:AM:143:GLY:CA  | 2.50                     | 0.40              |
| 13:AO:14:SER:O    | 13:AO:17:ARG:CG   | 2.54                     | 0.40              |
| 13:AO:51:LEU:C    | 13:AO:53:HIS:N    | 2.77                     | 0.40              |
| 14:AP:71:ARG:N    | 14:AP:104:GLY:HA3 | 2.35                     | 0.40              |
| 15:AQ:82:LEU:HD23 | 15:AQ:82:LEU:HA   | 1.81                     | 0.40              |
| 16:AR:16:LYS:CD   | 16:AR:17:ILE:HD13 | 2.52                     | 0.40              |
| 16:AR:33:ARG:HB2  | 16:AR:33:ARG:CZ   | 2.50                     | 0.40              |
| 16:AR:115:ALA:O   | 16:AR:116:ALA:C   | 2.63                     | 0.40              |
| 17:AS:15:GLU:O    | 17:AS:98:GLU:OE1  | 2.39                     | 0.40              |
| 17:AS:83:ARG:CD   | 17:AS:84:LYS:N    | 2.80                     | 0.40              |
| 17:AS:100:ARG:HA  | 17:AS:100:ARG:NE  | 2.36                     | 0.40              |
| 18:AT:12:ILE:HG12 | 18:AT:101:SER:CB  | 2.40                     | 0.40              |
| 20:AV:10:GLY:N    | 20:AV:110:GLU:CD  | 2.79                     | 0.40              |
| 20:AV:50:ARG:HG3  | 20:AV:54:LYS:CB   | 2.40                     | 0.40              |
| 20:AV:81:LYS:NZ   | 20:AV:96:ILE:HG12 | 2.36                     | 0.40              |
| 20:AV:82:PRO:HB2  | 20:AV:83:THR:H    | 1.70                     | 0.40              |
| 21:AW:18:LEU:HB3  | 21:AW:23:LYS:HB3  | 2.03                     | 0.40              |
| 21:AW:40:ASP:N    | 21:AW:44:PHE:CE1  | 2.89                     | 0.40              |
| 21:AW:44:PHE:HB3  | 21:AW:48:PHE:HE1  | 1.86                     | 0.40              |
| 21:AW:130:PRO:C   | 21:AW:132:ASN:N   | 2.79                     | 0.40              |
| 23:AY:53:ALA:O    | 23:AY:54:ARG:C    | 2.61                     | 0.40              |
| 24:AZ:2:PRO:O     | 24:AZ:39:ASP:HB2  | 2.20                     | 0.40              |
| 25:Aa:40:HIS:CB   | 25:Aa:41:PRO:HD3  | 2.51                     | 0.40              |
| 25:Aa:42:PHE:O    | 25:Aa:61:ARG:CZ   | 2.69                     | 0.40              |
| 26:Ab:10:LYS:CD   | 26:Ab:15:ARG:CZ   | 2.99                     | 0.40              |
| 26:Ab:10:LYS:HA   | 26:Ab:15:ARG:NH2  | 2.36                     | 0.40              |
| 26:Ab:43:HIS:O    | 26:Ab:44:THR:CG2  | 2.65                     | 0.40              |
| 26:Ab:47:PRO:O    | 26:Ab:58:LEU:CD2  | 2.69                     | 0.40              |
| 26:Ab:57:VAL:O    | 26:Ab:58:LEU:HB3  | 2.20                     | 0.40              |
| 27:Ac:17:LYS:CE   | 27:Ac:48:VAL:HG11 | 2.47                     | 0.40              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 28:Ad:10:ARG:HB3 | 28:Ad:14:LYS:HD2  | 2.03                     | 0.40              |
| 29:Ae:30:ARG:NH1 | 29:Ae:41:ILE:O    | 2.54                     | 0.40              |
| 32:AJ:33:ASN:H   | 32:AJ:59:ILE:HG22 | 1.86                     | 0.40              |
| 34:BA:22:G:OP2   | 34:BA:561:U:O2    | 2.39                     | 0.40              |
| 34:BA:52:G:O2'   | 34:BA:53:A:C5'    | 2.68                     | 0.40              |
| 34:BA:122:G:H2'  | 34:BA:123:C:O4'   | 2.21                     | 0.40              |
| 34:BA:136:C:O4'  | 49:BT:1:MET:HE1   | 2.21                     | 0.40              |
| 34:BA:136:C:O2   | 34:BA:137:C:C6    | 2.74                     | 0.40              |
| 34:BA:174:C:C2   | 34:BA:175:C:H5    | 2.32                     | 0.40              |
| 34:BA:195:A:P    | 53:BX:68:LYS:HZ1  | 2.44                     | 0.40              |
| 34:BA:217:C:C4   | 34:BA:218:C:C4    | 3.09                     | 0.40              |
| 34:BA:246:A:H1'  | 34:BA:247:G:C1'   | 2.48                     | 0.40              |
| 34:BA:253:U:O4'  | 34:BA:276:G:H1'   | 2.21                     | 0.40              |
| 34:BA:323:U:O4   | 34:BA:324:G:N3    | 2.54                     | 0.40              |
| 34:BA:386:C:N4   | 34:BA:387:U:C4    | 2.89                     | 0.40              |
| 34:BA:398:C:H2'  | 34:BA:399:G:C8    | 2.56                     | 0.40              |
| 34:BA:403:C:H2'  | 34:BA:404:U:C6    | 2.55                     | 0.40              |
| 34:BA:454:C:H3'  | 34:BA:455:C:H6    | 1.83                     | 0.40              |
| 34:BA:520:A:H3'  | 34:BA:520:A:C8    | 2.56                     | 0.40              |
| 34:BA:521:G:P    | 45:BP:54:LYS:NZ   | 2.95                     | 0.40              |
| 34:BA:582:U:H2'  | 34:BA:583:A:O5'   | 2.21                     | 0.40              |
| 34:BA:592:G:C6   | 34:BA:648:A:N6    | 2.89                     | 0.40              |
| 34:BA:634:C:H2'  | 34:BA:635:G:H8    | 1.86                     | 0.40              |
| 34:BA:712:A:H2'  | 34:BA:713:G:O4'   | 2.21                     | 0.40              |
| 34:BA:867:G:C2   | 34:BA:868:C:C5    | 3.09                     | 0.40              |
| 34:BA:894:G:C6   | 34:BA:895:G:N7    | 2.89                     | 0.40              |
| 34:BA:979:C:OP2  | 34:BA:980:C:N4    | 2.54                     | 0.40              |
| 34:BA:1081:G:OP1 | 38:BI:18:ARG:CB   | 2.68                     | 0.40              |
| 34:BA:1105:A:O2' | 34:BA:1106:G:C5'  | 2.38                     | 0.40              |
| 34:BA:1125:U:H4' | 34:BA:1125:U:OP2  | 2.21                     | 0.40              |
| 34:BA:1133:G:C5  | 34:BA:1134:G:N7   | 2.89                     | 0.40              |
| 34:BA:1167:A:N3  | 34:BA:1167:A:C2'  | 2.83                     | 0.40              |
| 34:BA:1180:A:O2' | 34:BA:1181:G:C5'  | 2.66                     | 0.40              |
| 34:BA:1187:G:C4  | 34:BA:1188:A:N7   | 2.89                     | 0.40              |
| 34:BA:1226:C:C5  | 46:BQ:104:ARG:HA  | 2.50                     | 0.40              |
| 34:BA:1318:A:H8  | 34:BA:1318:A:O5'  | 2.04                     | 0.40              |
| 34:BA:1371:G:C6  | 34:BA:1372:U:C4   | 3.08                     | 0.40              |
| 34:BA:1417:G:H2' | 34:BA:1482:G:H21  | 1.74                     | 0.40              |
| 34:BA:1423:G:C6  | 34:BA:1424:C:C4   | 3.09                     | 0.40              |
| 34:BA:1447:G:C6  | 34:BA:1460:A:N1   | 2.88                     | 0.40              |
| 35:BF:62:ALA:CB  | 35:BF:225:ALA:HB3 | 2.51                     | 0.40              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 35:BF:85:ALA:C     | 35:BF:87:ARG:N    | 2.77                     | 0.40              |
| 37:BH:8:VAL:HG12   | 37:BH:11:LEU:HD12 | 2.03                     | 0.40              |
| 37:BH:20:TYR:CD2   | 37:BH:27:TYR:CD2  | 3.09                     | 0.40              |
| 37:BH:101:LEU:HG   | 37:BH:102:ASP:N   | 2.35                     | 0.40              |
| 37:BH:198:VAL:HG23 | 37:BH:199:ASN:N   | 2.25                     | 0.40              |
| 38:BI:72:GLN:NE2   | 38:BI:144:THR:CA  | 2.83                     | 0.40              |
| 38:BI:82:VAL:HG13  | 38:BI:82:VAL:O    | 2.21                     | 0.40              |
| 38:BI:95:ALA:HB3   | 38:BI:96:PRO:HD3  | 2.03                     | 0.40              |
| 41:BL:6:ILE:HD12   | 41:BL:85:ARG:CD   | 2.51                     | 0.40              |
| 41:BL:39:LEU:HB3   | 41:BL:40:ALA:H    | 1.75                     | 0.40              |
| 41:BL:81:HIS:CD2   | 41:BL:138:TRP:O   | 2.74                     | 0.40              |
| 45:BP:109:GLY:O    | 45:BP:111:LYS:N   | 2.54                     | 0.40              |
| 46:BQ:37:THR:CG2   | 46:BQ:39:ILE:CG1  | 2.97                     | 0.40              |
| 46:BQ:40:ASN:C     | 46:BQ:42:ALA:H    | 2.30                     | 0.40              |
| 46:BQ:64:TRP:HE1   | 46:BQ:66:LEU:HD22 | 1.80                     | 0.40              |
| 47:BR:16:PHE:CZ    | 52:BW:14:HIS:HE2  | 1.78                     | 0.40              |
| 48:BS:4:THR:O      | 48:BS:5:LYS:C     | 2.64                     | 0.40              |
| 48:BS:13:GLN:C     | 48:BS:15:PHE:N    | 2.78                     | 0.40              |
| 49:BT:32:TYR:O     | 49:BT:34:GLU:N    | 2.54                     | 0.40              |
| 49:BT:74:LEU:HA    | 49:BT:74:LEU:HD23 | 1.82                     | 0.40              |
| 51:BV:50:ILE:O     | 51:BV:50:ILE:HG22 | 2.20                     | 0.40              |
| 52:BW:17:GLU:HG3   | 52:BW:18:LYS:H    | 1.86                     | 0.40              |
| 54:BY:2:GLY:C      | 54:BY:10:ARG:HB2  | 2.47                     | 0.40              |
| 54:BY:17:THR:C     | 54:BY:22:ARG:HH21 | 2.29                     | 0.40              |
| 56:BD:2:C:C4       | 56:BD:3:C:N4      | 2.89                     | 0.40              |
| 56:BD:51:U:C4      | 56:BD:64:A:C2     | 3.07                     | 0.40              |
| 56:BE:40:C:H2'     | 56:BE:41:C:C6     | 2.56                     | 0.40              |
| 56:BE:73:A:O2'     | 56:BE:74:C:C4     | 2.69                     | 0.40              |
| 57:BZ:16:HIS:HB2   | 57:BZ:100:ASP:CG  | 2.46                     | 0.40              |
| 57:BZ:34:SER:O     | 57:BZ:35:ARG:HB3  | 2.21                     | 0.40              |
| 57:BZ:83:GLY:O     | 57:BZ:85:VAL:HG23 | 2.21                     | 0.40              |
| 57:BZ:128:ASN:C    | 57:BZ:130:VAL:N   | 2.78                     | 0.40              |
| 57:BZ:207:MET:HE1  | 57:BZ:224:GLY:N   | 2.36                     | 0.40              |
| 57:BZ:541:LYS:HG3  | 57:BZ:542:LYS:HB3 | 1.97                     | 0.40              |
| 1:AA:87:C:N4       | 1:AA:96:G:C6      | 2.89                     | 0.40              |
| 1:AA:92:G:OP2      | 1:AA:92:G:H3'     | 2.21                     | 0.40              |
| 1:AA:283:A:OP1     | 1:AA:283:A:H3'    | 2.20                     | 0.40              |
| 1:AA:292:C:N4      | 1:AA:346:A:H62    | 2.19                     | 0.40              |
| 1:AA:298:G:N1      | 1:AA:338:G:H4'    | 2.37                     | 0.40              |
| 1:AA:298:G:H1      | 1:AA:338:G:C4'    | 2.34                     | 0.40              |
| 1:AA:322:A:H1'     | 1:AA:341:G:C8     | 2.57                     | 0.40              |

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| Atom-1          | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-------------------|--------------------------|-------------------|
| 1:AA:398:G:OP2  | 25:Aa:59:PHE:HE2  | 2.04                     | 0.40              |
| 1:AA:431:U:O5'  | 1:AA:431:U:C6     | 2.75                     | 0.40              |
| 1:AA:447:A:C2   | 1:AA:473:G:C8     | 3.09                     | 0.40              |
| 1:AA:454:A:O3'  | 1:AA:455:C:O4'    | 2.38                     | 0.40              |
| 1:AA:464:U:C1'  | 28:Ad:12:ARG:HH22 | 2.33                     | 0.40              |
| 1:AA:475:U:C6   | 1:AA:509:C:C4     | 3.09                     | 0.40              |
| 1:AA:496:G:C6   | 1:AA:497:A:C6     | 3.09                     | 0.40              |
| 1:AA:506:G:OP2  | 1:AA:506:G:O4'    | 2.40                     | 0.40              |
| 1:AA:630:G:H2'  | 1:AA:631:A:O5'    | 2.21                     | 0.40              |
| 1:AA:723:G:C2   | 1:AA:724:U:N1     | 2.90                     | 0.40              |
| 1:AA:728:G:C2'  | 1:AA:729:G:H8     | 2.34                     | 0.40              |
| 1:AA:733:G:N7   | 1:AA:761:A:C5     | 2.89                     | 0.40              |
| 1:AA:750:A:C2'  | 1:AA:751:A:H5''   | 2.51                     | 0.40              |
| 1:AA:754:C:C6   | 1:AA:754:C:O5'    | 2.74                     | 0.40              |
| 1:AA:763:G:C5'  | 4:AD:211:ARG:CZ   | 2.98                     | 0.40              |
| 1:AA:776:G:H1'  | 1:AA:793:A:C2     | 2.56                     | 0.40              |
| 1:AA:833:U:O2'  | 11:AM:49:ARG:HD3  | 2.20                     | 0.40              |
| 1:AA:838:C:O2'  | 1:AA:839:U:C5'    | 2.69                     | 0.40              |
| 1:AA:881:G:C5   | 1:AA:896:A:N1     | 2.80                     | 0.40              |
| 1:AA:886:C:C3'  | 1:AA:886:C:C6     | 3.04                     | 0.40              |
| 1:AA:974:G:H1'  | 1:AA:1186:G:C8    | 2.56                     | 0.40              |
| 1:AA:1031:G:C6  | 1:AA:1032:A:N7    | 2.89                     | 0.40              |
| 1:AA:1043:C:C3' | 1:AA:1043:C:C6    | 3.03                     | 0.40              |
| 1:AA:1073:A:O3' | 1:AA:1074:G:P     | 2.79                     | 0.40              |
| 1:AA:1157:G:C2  | 1:AA:1158:C:C2    | 3.09                     | 0.40              |
| 1:AA:1186:G:C8  | 1:AA:1187:G:N7    | 2.87                     | 0.40              |
| 1:AA:1283:G:O2' | 1:AA:1285:G:O6    | 2.32                     | 0.40              |
| 1:AA:1338:G:N3  | 1:AA:1393:A:H2    | 2.19                     | 0.40              |
| 1:AA:1403:C:C2' | 1:AA:1404:C:O5'   | 2.70                     | 0.40              |
| 1:AA:1510:A:N3  | 1:AA:1511:A:H2    | 2.17                     | 0.40              |
| 1:AA:1667:G:O5' | 10:AL:7:TYR:CZ    | 2.74                     | 0.40              |
| 1:AA:1672:C:O2  | 1:AA:2582:G:O4'   | 2.38                     | 0.40              |
| 1:AA:1817:G:H2' | 1:AA:1818:U:H5'   | 1.99                     | 0.40              |
| 1:AA:1847:A:O2' | 1:AA:1848:A:N7    | 2.55                     | 0.40              |
| 1:AA:1911:U:C2' | 1:AA:1912:A:H5''  | 2.51                     | 0.40              |
| 1:AA:1940:U:H4' | 1:AA:1941:C:OP1   | 2.21                     | 0.40              |
| 1:AA:2000:G:C6  | 1:AA:2001:A:N7    | 2.89                     | 0.40              |
| 1:AA:2147:G:C2  | 1:AA:2148:G:H4'   | 2.55                     | 0.40              |
| 1:AA:2173:A:C2  | 1:AA:2174:C:H1'   | 2.55                     | 0.40              |
| 1:AA:2181:G:N2  | 1:AA:2182:G:N2    | 2.61                     | 0.40              |
| 1:AA:2280:G:C6  | 1:AA:2281:C:N4    | 2.88                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2344:U:H5''  | 27:Ac:38:LYS:CD   | 2.48                     | 0.40              |
| 1:AA:2578:G:N7    | 5:AE:140:SER:CB   | 2.84                     | 0.40              |
| 1:AA:2618:G:C4    | 1:AA:2619:C:C5    | 3.10                     | 0.40              |
| 1:AA:2627:G:O2'   | 1:AA:2628:C:H5'   | 2.20                     | 0.40              |
| 1:AA:2639:A:N3    | 1:AA:2778:A:C2    | 2.89                     | 0.40              |
| 1:AA:2718:G:O3'   | 15:AQ:101:PHE:HD1 | 2.03                     | 0.40              |
| 1:AA:2744:G:C6    | 1:AA:2761:G:C6    | 3.10                     | 0.40              |
| 1:AA:2782:G:C2    | 1:AA:2783:G:C5    | 3.10                     | 0.40              |
| 1:AA:2841:C:C2'   | 1:AA:2842:G:C8    | 2.87                     | 0.40              |
| 1:AA:2844:G:N3    | 1:AA:2844:G:C2'   | 2.81                     | 0.40              |
| 2:AB:9:G:C4'      | 14:AP:43:GLU:OE2  | 2.62                     | 0.40              |
| 2:AB:65:C:C4      | 2:AB:108:C:C5     | 3.09                     | 0.40              |
| 2:AB:73:A:C6      | 2:AB:104:A:H1'    | 2.55                     | 0.40              |
| 3:AC:39:GLU:OE2   | 3:AC:220:PRO:CD   | 2.69                     | 0.40              |
| 4:AD:12:SER:HB2   | 4:AD:14:ARG:NH2   | 2.34                     | 0.40              |
| 4:AD:33:LEU:HD11  | 4:AD:61:LEU:CD1   | 2.52                     | 0.40              |
| 4:AD:68:LYS:HG2   | 4:AD:152:GLY:HA2  | 2.03                     | 0.40              |
| 4:AD:131:LEU:HG   | 4:AD:135:PHE:HD2  | 1.78                     | 0.40              |
| 4:AD:183:ARG:NH2  | 4:AD:268:ARG:NH1  | 2.68                     | 0.40              |
| 4:AD:232:PRO:CG   | 4:AD:246:PRO:O    | 2.68                     | 0.40              |
| 5:AE:5:LEU:CD1    | 5:AE:196:VAL:C    | 2.93                     | 0.40              |
| 5:AE:91:VAL:CG2   | 5:AE:180:ASN:ND2  | 2.82                     | 0.40              |
| 5:AE:111:ARG:CA   | 5:AE:161:GLY:HA3  | 2.49                     | 0.40              |
| 5:AE:187:ALA:C    | 5:AE:189:PRO:N    | 2.78                     | 0.40              |
| 6:AF:31:HIS:ND1   | 11:AM:11:GLY:N    | 2.69                     | 0.40              |
| 6:AF:46:ARG:HA    | 6:AF:46:ARG:CZ    | 2.52                     | 0.40              |
| 6:AF:75:HIS:CE1   | 6:AF:77:ASP:O     | 2.75                     | 0.40              |
| 6:AF:106:ARG:CG   | 6:AF:107:LYS:HG3  | 2.49                     | 0.40              |
| 6:AF:124:LEU:HD21 | 6:AF:201:VAL:CG2  | 2.52                     | 0.40              |
| 6:AF:163:VAL:HG21 | 6:AF:195:ASP:CG   | 2.46                     | 0.40              |
| 7:AG:34:LEU:HD12  | 7:AG:34:LEU:H     | 1.85                     | 0.40              |
| 7:AG:38:VAL:O     | 7:AG:157:ILE:CG1  | 2.70                     | 0.40              |
| 7:AG:153:ARG:HA   | 7:AG:155:MET:SD   | 2.61                     | 0.40              |
| 8:AH:23:ARG:NH2   | 8:AH:34:GLU:C     | 2.80                     | 0.40              |
| 8:AH:133:VAL:CG2  | 8:AH:134:SER:N    | 2.83                     | 0.40              |
| 9:AK:100:GLU:O    | 9:AK:103:VAL:N    | 2.54                     | 0.40              |
| 10:AL:2:ILE:HG12  | 10:AL:32:TYR:HD1  | 1.86                     | 0.40              |
| 10:AL:94:ARG:HG2  | 10:AL:96:THR:N    | 2.35                     | 0.40              |
| 11:AM:112:LEU:HB2 | 11:AM:128:HIS:CE1 | 2.56                     | 0.40              |
| 11:AM:130:PHE:O   | 11:AM:131:SER:O   | 2.39                     | 0.40              |
| 13:AO:39:PRO:C    | 13:AO:41:ALA:N    | 2.74                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:AO:43:GLU:O    | 13:AO:44:LEU:C    | 2.63                     | 0.40              |
| 13:AO:54:LEU:C    | 13:AO:57:ARG:HB2  | 2.43                     | 0.40              |
| 14:AP:28:VAL:CG2  | 14:AP:101:LEU:HG  | 2.51                     | 0.40              |
| 14:AP:38:GLN:NE2  | 14:AP:47:THR:HG21 | 2.36                     | 0.40              |
| 14:AP:59:LYS:H    | 14:AP:59:LYS:HD3  | 1.86                     | 0.40              |
| 16:AR:44:ASN:HA   | 16:AR:47:TYR:CG   | 2.56                     | 0.40              |
| 16:AR:111:GLU:O   | 16:AR:114:LYS:HE3 | 2.20                     | 0.40              |
| 17:AS:25:LEU:HD23 | 17:AS:28:GLU:HB2  | 2.02                     | 0.40              |
| 18:AT:6:ILE:CA    | 18:AT:103:ILE:O   | 2.67                     | 0.40              |
| 18:AT:32:ALA:O    | 18:AT:35:ILE:CG2  | 2.69                     | 0.40              |
| 19:AU:25:LYS:HA   | 19:AU:82:GLN:HA   | 2.03                     | 0.40              |
| 21:AW:6:LYS:HA    | 21:AW:37:VAL:HA   | 2.04                     | 0.40              |
| 21:AW:14:LYS:N    | 21:AW:14:LYS:HD3  | 2.36                     | 0.40              |
| 21:AW:63:ASP:OD1  | 21:AW:64:GLY:N    | 2.53                     | 0.40              |
| 21:AW:71:VAL:HG22 | 21:AW:88:PHE:CD2  | 2.56                     | 0.40              |
| 22:AX:27:GLU:HA   | 22:AX:69:PHE:CE1  | 2.56                     | 0.40              |
| 23:AY:33:GLN:NE2  | 23:AY:33:GLN:CA   | 2.85                     | 0.40              |
| 24:AZ:4:LEU:CD2   | 24:AZ:4:LEU:C     | 2.94                     | 0.40              |
| 26:Ab:22:HIS:O    | 26:Ab:23:HIS:O    | 2.39                     | 0.40              |
| 27:Ac:17:LYS:HE2  | 27:Ac:49:HIS:C    | 2.46                     | 0.40              |
| 27:Ac:20:ASN:HD21 | 27:Ac:43:CYS:CB   | 2.30                     | 0.40              |
| 30:Af:10:ILE:CG1  | 30:Af:32:HIS:HD2  | 2.34                     | 0.40              |
| 31:AI:136:ALA:C   | 31:AI:138:LEU:N   | 2.79                     | 0.40              |
| 32:AJ:103:GLN:HG2 | 32:AJ:107:ILE:CD1 | 2.47                     | 0.40              |
| 34:BA:93:U:O2     | 34:BA:95:G:N7     | 2.54                     | 0.40              |
| 34:BA:173:U:H5''  | 34:BA:197:A:C1'   | 2.49                     | 0.40              |
| 34:BA:266:G:O2'   | 34:BA:268:C:OP2   | 2.30                     | 0.40              |
| 34:BA:392:G:C4    | 34:BA:393:A:C8    | 3.08                     | 0.40              |
| 34:BA:401:C:OP2   | 37:BH:73:ARG:CZ   | 2.69                     | 0.40              |
| 34:BA:475:G:C4    | 34:BA:476:G:N7    | 2.89                     | 0.40              |
| 34:BA:477:G:C2    | 34:BA:478:A:C4    | 3.09                     | 0.40              |
| 34:BA:563:A:H3'   | 45:BP:15:ARG:CZ   | 2.51                     | 0.40              |
| 34:BA:570:G:N2    | 34:BA:873:A:H61   | 2.18                     | 0.40              |
| 34:BA:573:A:C2    | 34:BA:574:A:C5    | 3.09                     | 0.40              |
| 34:BA:602:A:C6    | 34:BA:603:U:C4    | 3.10                     | 0.40              |
| 34:BA:650:G:C2    | 34:BA:651:C:C6    | 3.09                     | 0.40              |
| 34:BA:654:G:O6    | 34:BA:655:A:C2    | 2.74                     | 0.40              |
| 34:BA:687:A:O2'   | 34:BA:688:G:OP2   | 2.38                     | 0.40              |
| 34:BA:901:A:H2    | 34:BA:902:G:O2'   | 2.04                     | 0.40              |
| 34:BA:908:A:N3    | 34:BA:909:A:N7    | 2.67                     | 0.40              |
| 34:BA:934:C:H5    | 34:BA:1344:C:C2   | 2.39                     | 0.40              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BA:951:G:C2'    | 34:BA:970:C:O2'    | 2.68                     | 0.40              |
| 34:BA:971:G:C8     | 34:BA:1365:G:H4'   | 2.56                     | 0.40              |
| 34:BA:972:C:O2     | 34:BA:972:C:C2'    | 2.68                     | 0.40              |
| 34:BA:1049:U:O2    | 34:BA:1201:A:H1'   | 2.21                     | 0.40              |
| 34:BA:1102:A:N1    | 34:BA:1103:C:C4    | 2.88                     | 0.40              |
| 34:BA:1181:G:O2'   | 34:BA:1182:G:H5'   | 2.20                     | 0.40              |
| 34:BA:1210:C:C4'   | 34:BA:1214:C:H42   | 2.33                     | 0.40              |
| 34:BA:1277:C:C5    | 34:BA:1278:U:O2    | 2.74                     | 0.40              |
| 34:BA:1331:G:OP1   | 34:BA:1331:G:O4'   | 2.40                     | 0.40              |
| 34:BA:1422:G:N1    | 34:BA:1423:G:C6    | 2.89                     | 0.40              |
| 34:BA:1434:A:C8    | 34:BA:1435:G:C8    | 3.10                     | 0.40              |
| 34:BA:1465:C:O5'   | 34:BA:1465:C:C6    | 2.70                     | 0.40              |
| 34:BA:1540:U:O5'   | 34:BA:1540:U:H6    | 2.04                     | 0.40              |
| 35:BF:49:GLU:O     | 35:BF:52:GLU:OE2   | 2.39                     | 0.40              |
| 35:BF:54:THR:O     | 35:BF:55:PHE:C     | 2.63                     | 0.40              |
| 35:BF:80:ILE:CG1   | 35:BF:208:ILE:HD13 | 2.52                     | 0.40              |
| 35:BF:90:MET:SD    | 35:BF:91:PRO:CD    | 3.01                     | 0.40              |
| 35:BF:106:LYS:O    | 35:BF:106:LYS:HG2  | 2.22                     | 0.40              |
| 35:BF:115:LEU:HD12 | 35:BF:115:LEU:C    | 2.46                     | 0.40              |
| 35:BF:157:ARG:O    | 35:BF:158:LEU:CG   | 2.68                     | 0.40              |
| 36:BG:117:ALA:O    | 36:BG:121:ALA:CB   | 2.69                     | 0.40              |
| 36:BG:120:VAL:HG13 | 36:BG:133:ALA:HB1  | 2.00                     | 0.40              |
| 37:BH:13:ARG:HA    | 37:BH:32:ALA:HB2   | 2.02                     | 0.40              |
| 37:BH:187:ARG:NH2  | 37:BH:188:LEU:HD21 | 2.37                     | 0.40              |
| 38:BI:23:GLY:HA3   | 38:BI:25:ARG:CZ    | 2.45                     | 0.40              |
| 38:BI:45:PHE:HE1   | 38:BI:47:LYS:CD    | 2.33                     | 0.40              |
| 39:BJ:27:GLN:O     | 39:BJ:28:ARG:C     | 2.63                     | 0.40              |
| 39:BJ:29:ALA:O     | 39:BJ:32:ASN:N     | 2.54                     | 0.40              |
| 39:BJ:45:LEU:HA    | 39:BJ:59:TYR:HA    | 2.03                     | 0.40              |
| 39:BJ:85:VAL:HG11  | 39:BJ:88:VAL:CG1   | 2.42                     | 0.40              |
| 39:BJ:98:LEU:CD2   | 39:BJ:98:LEU:C     | 2.94                     | 0.40              |
| 40:BK:51:GLN:HE22  | 40:BK:58:PRO:CD    | 2.33                     | 0.40              |
| 40:BK:69:VAL:HA    | 40:BK:135:VAL:HG13 | 2.02                     | 0.40              |
| 41:BL:39:LEU:HD12  | 41:BL:44:PHE:HB2   | 2.04                     | 0.40              |
| 42:BM:6:GLY:CA     | 42:BM:80:GLY:O     | 2.60                     | 0.40              |
| 42:BM:15:ALA:HA    | 42:BM:65:VAL:HG23  | 2.03                     | 0.40              |
| 42:BM:33:PHE:HB3   | 42:BM:34:ASN:H     | 1.71                     | 0.40              |
| 42:BM:121:ARG:CG   | 42:BM:121:ARG:NH1  | 2.81                     | 0.40              |
| 44:BO:21:ILE:HD11  | 44:BO:82:VAL:HG11  | 2.03                     | 0.40              |
| 44:BO:33:THR:CA    | 44:BO:38:ASN:O     | 2.68                     | 0.40              |
| 44:BO:79:SER:HA    | 44:BO:104:GLN:CB   | 2.51                     | 0.40              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 46:BQ:66:LEU:N     | 46:BQ:70:LEU:HA   | 2.35                     | 0.40              |
| 50:BU:29:HIS:CG    | 50:BU:30:PRO:CD   | 3.04                     | 0.40              |
| 50:BU:53:LEU:HG    | 50:BU:82:MET:HE1  | 2.03                     | 0.40              |
| 52:BW:44:MET:O     | 52:BW:62:ILE:HD13 | 2.20                     | 0.40              |
| 53:BX:53:LEU:HB2   | 53:BX:100:ILE:CD1 | 2.50                     | 0.40              |
| 56:BE:41:C:O2      | 56:BE:41:C:C2'    | 2.69                     | 0.40              |
| 57:BZ:26:LEU:HA    | 57:BZ:29:SER:HB2  | 2.03                     | 0.40              |
| 57:BZ:72:ILE:HG22  | 57:BZ:73:VAL:N    | 2.37                     | 0.40              |
| 57:BZ:99:VAL:HG13  | 57:BZ:105:PRO:HA  | 2.02                     | 0.40              |
| 57:BZ:154:THR:C    | 57:BZ:156:GLU:N   | 2.73                     | 0.40              |
| 57:BZ:405:LEU:HD12 | 57:BZ:405:LEU:HA  | 1.79                     | 0.40              |
| 57:BZ:417:GLN:CD   | 57:BZ:418:ALA:N   | 2.79                     | 0.40              |
| 57:BZ:543:LEU:CG   | 57:BZ:544:THR:CG2 | 2.86                     | 0.40              |
| 57:BZ:564:THR:OG1  | 57:BZ:567:GLN:CB  | 2.69                     | 0.40              |
| 1:AA:119:A:C2'     | 1:AA:120:U:OP2    | 2.69                     | 0.40              |
| 1:AA:196:A:C2      | 1:AA:828:U:H5''   | 2.50                     | 0.40              |
| 1:AA:219:G:O2'     | 1:AA:220:G:H5'    | 2.22                     | 0.40              |
| 1:AA:225:A:N6      | 1:AA:226:G:N1     | 2.70                     | 0.40              |
| 1:AA:239:U:C2'     | 1:AA:240:G:O4'    | 2.63                     | 0.40              |
| 1:AA:246:C:N4      | 1:AA:252:G:C6     | 2.83                     | 0.40              |
| 1:AA:270(G):C:O2   | 1:AA:270(G):C:C2' | 2.69                     | 0.40              |
| 1:AA:270(R):G:N2   | 1:AA:270(S):G:C4  | 2.89                     | 0.40              |
| 1:AA:270(Z):U:H3   | 1:AA:271(C):U:C1' | 2.35                     | 0.40              |
| 1:AA:282:A:C2      | 1:AA:283:A:O3'    | 2.75                     | 0.40              |
| 1:AA:291:C:N4      | 1:AA:292:C:C4     | 2.90                     | 0.40              |
| 1:AA:310:A:C2      | 1:AA:312:G:H1'    | 2.56                     | 0.40              |
| 1:AA:355:G:O6      | 1:AA:356:G:O6     | 2.39                     | 0.40              |
| 1:AA:363(D):G:N2   | 1:AA:363(E):U:H1' | 2.36                     | 0.40              |
| 1:AA:479:A:OP2     | 1:AA:479:A:O4'    | 2.39                     | 0.40              |
| 1:AA:572:A:N7      | 1:AA:573:G:N1     | 2.69                     | 0.40              |
| 1:AA:594:U:N3      | 1:AA:595:C:N4     | 2.69                     | 0.40              |
| 1:AA:623:G:N7      | 1:AA:624:C:C5     | 2.89                     | 0.40              |
| 1:AA:624:C:H6      | 1:AA:624:C:C4'    | 2.34                     | 0.40              |
| 1:AA:691:C:C2'     | 1:AA:692:C:H5'    | 2.51                     | 0.40              |
| 1:AA:703:U:O4      | 1:AA:730:C:N4     | 2.54                     | 0.40              |
| 1:AA:705:A:N6      | 1:AA:727:A:C1'    | 2.84                     | 0.40              |
| 1:AA:710:G:H2'     | 1:AA:711:G:C8     | 2.56                     | 0.40              |
| 1:AA:747:U:C2'     | 1:AA:748:G:OP1    | 2.70                     | 0.40              |
| 1:AA:771:G:N2      | 1:AA:772:C:C2     | 2.89                     | 0.40              |
| 1:AA:796:C:H2'     | 1:AA:797:C:C6     | 2.55                     | 0.40              |
| 1:AA:838:C:O2'     | 1:AA:839:U:H5'    | 2.21                     | 0.40              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:930:U:C6    | 1:AA:930:U:C3'    | 3.05                     | 0.40              |
| 1:AA:988:A:O2'   | 1:AA:1157:G:H4'   | 2.21                     | 0.40              |
| 1:AA:1034:G:C4   | 1:AA:1122:G:C6    | 3.07                     | 0.40              |
| 1:AA:1036:G:C6   | 1:AA:1037:G:N7    | 2.90                     | 0.40              |
| 1:AA:1046:A:N6   | 31:AI:9:LEU:O     | 2.53                     | 0.40              |
| 1:AA:1062:G:H1'  | 1:AA:1063:G:OP1   | 2.21                     | 0.40              |
| 1:AA:1323:U:C5   | 1:AA:1324:G:N7    | 2.89                     | 0.40              |
| 1:AA:1328:G:O2'  | 1:AA:1329:U:H5''  | 2.21                     | 0.40              |
| 1:AA:1356:G:C5   | 1:AA:1357:U:C5    | 3.08                     | 0.40              |
| 1:AA:1363:C:C1'  | 1:AA:1810:A:H1'   | 2.49                     | 0.40              |
| 1:AA:1368:G:H2'  | 1:AA:1369:G:O5'   | 2.21                     | 0.40              |
| 1:AA:1395:A:C6   | 1:AA:1398:C:C2    | 3.09                     | 0.40              |
| 1:AA:1450:C:C2'  | 1:AA:1451:C:H4'   | 2.48                     | 0.40              |
| 1:AA:1562:A:H2'  | 1:AA:1563:G:H8    | 1.85                     | 0.40              |
| 1:AA:1648:C:O2   | 1:AA:1648:C:H2'   | 2.20                     | 0.40              |
| 1:AA:1649:G:N1   | 1:AA:1650:G:N7    | 2.69                     | 0.40              |
| 1:AA:1728:G:N3   | 1:AA:1728:G:C2'   | 2.81                     | 0.40              |
| 1:AA:1750:G:C4   | 1:AA:1751:C:C5    | 3.09                     | 0.40              |
| 1:AA:1906:G:O4'  | 1:AA:1929:G:N7    | 2.54                     | 0.40              |
| 1:AA:1919:A:O2'  | 1:AA:1920:C:P     | 2.79                     | 0.40              |
| 1:AA:2020:A:P    | 16:AR:27:LEU:HD22 | 2.62                     | 0.40              |
| 1:AA:2023:G:N2   | 1:AA:2041:U:C2    | 2.90                     | 0.40              |
| 1:AA:2045:C:O2'  | 1:AA:2046:G:C5'   | 2.69                     | 0.40              |
| 1:AA:2056:G:N3   | 1:AA:2056:G:C2'   | 2.79                     | 0.40              |
| 1:AA:2091:U:C2'  | 1:AA:2092:U:OP1   | 2.69                     | 0.40              |
| 1:AA:2280:G:N3   | 1:AA:2281:C:C5    | 2.89                     | 0.40              |
| 1:AA:2304:G:P    | 7:AG:132:ASN:ND2  | 2.95                     | 0.40              |
| 1:AA:2323:G:N3   | 1:AA:2324:C:C5    | 2.88                     | 0.40              |
| 1:AA:2354:G:H21  | 22:AX:39:ARG:NH2  | 2.20                     | 0.40              |
| 1:AA:2390:U:HO2' | 1:AA:2391:G:H5'   | 1.78                     | 0.40              |
| 1:AA:2485:G:H5'' | 12:AN:46:GLN:OE1  | 2.21                     | 0.40              |
| 1:AA:2571:C:H2'  | 1:AA:2572:A:OP1   | 2.22                     | 0.40              |
| 1:AA:2578:G:O2'  | 1:AA:2579:C:P     | 2.79                     | 0.40              |
| 1:AA:2580:U:C5   | 1:AA:2581:G:N7    | 2.90                     | 0.40              |
| 1:AA:2624:G:H3'  | 1:AA:2625:G:H5''  | 2.02                     | 0.40              |
| 1:AA:2651:C:N3   | 1:AA:2652:C:C5    | 2.89                     | 0.40              |
| 1:AA:2690:C:N4   | 13:AO:14:SER:CB   | 2.84                     | 0.40              |
| 2:AB:9:G:N1      | 2:AB:10:C:N4      | 2.69                     | 0.40              |
| 2:AB:18:G:H2'    | 2:AB:19:G:H8      | 1.86                     | 0.40              |
| 2:AB:96:G:N3     | 2:AB:97:G:C8      | 2.90                     | 0.40              |
| 3:AC:65:PRO:CD   | 3:AC:187:ASP:OD2  | 2.68                     | 0.40              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 3:AC:100:ILE:CG2  | 3:AC:126:LYS:HE2   | 2.51                     | 0.40              |
| 3:AC:104:LEU:HD13 | 3:AC:130:ILE:CG1   | 2.51                     | 0.40              |
| 3:AC:113:VAL:CG2  | 3:AC:136:LEU:O     | 2.69                     | 0.40              |
| 3:AC:119:VAL:HG23 | 3:AC:123:VAL:CG2   | 2.52                     | 0.40              |
| 4:AD:5:LYS:HA     | 4:AD:28:GLU:CA     | 2.52                     | 0.40              |
| 4:AD:57:GLY:O     | 4:AD:58:HIS:CB     | 2.69                     | 0.40              |
| 5:AE:100:GLU:N    | 5:AE:172:VAL:HG22  | 2.35                     | 0.40              |
| 5:AE:119:ARG:HE   | 5:AE:120:TRP:CA    | 2.33                     | 0.40              |
| 6:AF:34:TRP:HB3   | 6:AF:38:ARG:NH2    | 2.31                     | 0.40              |
| 6:AF:194:MET:HE1  | 6:AF:197:ASP:CA    | 2.51                     | 0.40              |
| 7:AG:30:GLU:C     | 7:AG:32:PRO:HA     | 2.46                     | 0.40              |
| 7:AG:54:GLU:OE1   | 7:AG:70:VAL:HG22   | 2.22                     | 0.40              |
| 7:AG:131:TYR:CE1  | 7:AG:132:ASN:HA    | 2.57                     | 0.40              |
| 7:AG:133:LEU:HD13 | 7:AG:133:LEU:HA    | 1.93                     | 0.40              |
| 8:AH:58:GLU:O     | 8:AH:62:LYS:HD2    | 2.22                     | 0.40              |
| 9:AK:74:ARG:O     | 9:AK:76:SER:N      | 2.53                     | 0.40              |
| 9:AK:93:THR:CG2   | 9:AK:94:HIS:CD2    | 2.99                     | 0.40              |
| 9:AK:127:ASP:CG   | 9:AK:128:HIS:N     | 2.79                     | 0.40              |
| 10:AL:21:CYS:SG   | 10:AL:23:ARG:N     | 2.94                     | 0.40              |
| 10:AL:54:GLU:HA   | 10:AL:54:GLU:OE1   | 2.21                     | 0.40              |
| 11:AM:15:ARG:NH2  | 11:AM:16:ARG:CB    | 2.77                     | 0.40              |
| 14:AP:54:LEU:O    | 14:AP:56:LEU:HD22  | 2.21                     | 0.40              |
| 15:AQ:64:ARG:NH2  | 15:AQ:77:PRO:C     | 2.79                     | 0.40              |
| 19:AU:90:GLU:O    | 19:AU:91:ALA:C     | 2.64                     | 0.40              |
| 20:AV:13:VAL:N    | 20:AV:73:ARG:CZ    | 2.83                     | 0.40              |
| 20:AV:14:LEU:N    | 20:AV:14:LEU:CD1   | 2.80                     | 0.40              |
| 21:AW:1:MET:CE    | 21:AW:61:LEU:HG    | 2.51                     | 0.40              |
| 21:AW:10:ARG:NH1  | 21:AW:36:LYS:H     | 2.17                     | 0.40              |
| 21:AW:112:ARG:HG2 | 21:AW:112:ARG:O    | 2.22                     | 0.40              |
| 21:AW:158:PRO:O   | 21:AW:161:VAL:HG22 | 2.21                     | 0.40              |
| 22:AX:53:MET:SD   | 22:AX:59:LEU:CD2   | 3.09                     | 0.40              |
| 23:AY:51:GLN:HA   | 23:AY:54:ARG:CZ    | 2.51                     | 0.40              |
| 24:AZ:10:LYS:HD2  | 24:AZ:31:LEU:HD11  | 2.03                     | 0.40              |
| 24:AZ:17:LYS:O    | 24:AZ:20:LYS:N     | 2.54                     | 0.40              |
| 24:AZ:17:LYS:C    | 24:AZ:19:GLN:N     | 2.78                     | 0.40              |
| 24:AZ:28:LEU:N    | 24:AZ:28:LEU:CD2   | 2.66                     | 0.40              |
| 25:Aa:52:THR:O    | 25:Aa:53:GLU:CB    | 2.68                     | 0.40              |
| 26:Ab:51:TYR:HD1  | 26:Ab:55:ARG:HD3   | 1.81                     | 0.40              |
| 28:Ad:5:TRP:CD2   | 28:Ad:7:PRO:HD3    | 2.56                     | 0.40              |
| 29:Ae:5:LYS:CA    | 29:Ae:60:LEU:HA    | 2.48                     | 0.40              |
| 29:Ae:37:SER:O    | 29:Ae:41:ILE:CG1   | 2.70                     | 0.40              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 29:Ae:40:GLU:O     | 29:Ae:42:ARG:N     | 2.54                     | 0.40              |
| 31:AI:30:GLN:C     | 31:AI:32:LEU:N     | 2.78                     | 0.40              |
| 32:AJ:51:ALA:O     | 32:AJ:73:PRO:HD2   | 2.20                     | 0.40              |
| 34:BA:31:G:H5''    | 34:BA:32:A:OP2     | 2.22                     | 0.40              |
| 34:BA:149:A:C2     | 34:BA:150:C:N3     | 2.89                     | 0.40              |
| 34:BA:186(A):C:O4' | 53:BX:85:MET:SD    | 2.79                     | 0.40              |
| 34:BA:247:G:C6     | 34:BA:278:G:C2     | 3.09                     | 0.40              |
| 34:BA:260:G:N3     | 34:BA:261:U:O2     | 2.54                     | 0.40              |
| 34:BA:433:C:O5'    | 34:BA:433:C:H6     | 2.04                     | 0.40              |
| 34:BA:452:A:N6     | 34:BA:480:U:N3     | 2.70                     | 0.40              |
| 34:BA:586:C:H2'    | 34:BA:587:G:O4'    | 2.22                     | 0.40              |
| 34:BA:641:U:O2'    | 34:BA:642:A:N7     | 2.50                     | 0.40              |
| 34:BA:660:G:O6     | 34:BA:746:A:N6     | 2.54                     | 0.40              |
| 34:BA:692:U:H2'    | 34:BA:693:G:OP2    | 2.21                     | 0.40              |
| 34:BA:828:A:H5''   | 34:BA:859:A:N1     | 2.37                     | 0.40              |
| 34:BA:910:C:H6     | 34:BA:910:C:O5'    | 2.05                     | 0.40              |
| 34:BA:932:C:H5''   | 40:BK:3:ARG:HG3    | 2.03                     | 0.40              |
| 34:BA:938:A:C2     | 34:BA:939:G:N9     | 2.89                     | 0.40              |
| 34:BA:1025:U:C2'   | 34:BA:1026:G:C8    | 3.04                     | 0.40              |
| 34:BA:1029:G:N2    | 34:BA:1031:G:O5'   | 2.55                     | 0.40              |
| 34:BA:1056:U:O2    | 34:BA:1056:U:C2'   | 2.68                     | 0.40              |
| 34:BA:1081:G:OP1   | 38:BI:17:ALA:C     | 2.64                     | 0.40              |
| 34:BA:1144:G:N1    | 34:BA:1145:C:C2    | 2.89                     | 0.40              |
| 34:BA:1221:G:H8    | 52:BW:54:GLY:HA2   | 1.74                     | 0.40              |
| 34:BA:1317:C:C2'   | 34:BA:1318:A:O4'   | 2.69                     | 0.40              |
| 34:BA:1363:A:H4'   | 34:BA:1364:U:O5'   | 2.21                     | 0.40              |
| 34:BA:1367:C:OP2   | 42:BM:115:GLY:HA2  | 2.21                     | 0.40              |
| 34:BA:1376:U:O2    | 34:BA:1377:A:C5    | 2.74                     | 0.40              |
| 34:BA:1415:G:O6    | 34:BA:1486:G:C6    | 2.52                     | 0.40              |
| 34:BA:1466:C:H6    | 34:BA:1466:C:O5'   | 2.04                     | 0.40              |
| 35:BF:45:GLN:H     | 35:BF:45:GLN:CD    | 2.29                     | 0.40              |
| 35:BF:114:ARG:HG3  | 35:BF:115:LEU:N    | 2.35                     | 0.40              |
| 35:BF:118:LEU:HD22 | 35:BF:142:LEU:HD13 | 2.02                     | 0.40              |
| 35:BF:171:ALA:HA   | 35:BF:174:VAL:CG2  | 2.51                     | 0.40              |
| 35:BF:187:LEU:CD2  | 35:BF:188:ALA:N    | 2.76                     | 0.40              |
| 35:BF:223:ILE:HA   | 35:BF:226:ARG:HE   | 1.86                     | 0.40              |
| 36:BG:43:LEU:CD2   | 36:BG:44:GLU:N     | 2.84                     | 0.40              |
| 37:BH:4:TYR:CE1    | 37:BH:5:ILE:O      | 2.74                     | 0.40              |
| 37:BH:191:ARG:HD3  | 37:BH:192:GLU:HA   | 2.03                     | 0.40              |
| 37:BH:193:ASP:C    | 37:BH:194:LEU:HD13 | 2.46                     | 0.40              |
| 38:BI:138:ALA:O    | 38:BI:139:LEU:C    | 2.64                     | 0.40              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 39:BJ:56:PRO:HD2   | 39:BJ:57:GLN:OE1   | 2.21                     | 0.40              |
| 39:BJ:96:PRO:O     | 39:BJ:97:PHE:CB    | 2.60                     | 0.40              |
| 40:BK:55:GLY:O     | 40:BK:56:GLN:C     | 2.64                     | 0.40              |
| 40:BK:68:ASN:C     | 40:BK:135:VAL:HG13 | 2.46                     | 0.40              |
| 41:BL:17:THR:O     | 41:BL:18:ARG:C     | 2.64                     | 0.40              |
| 41:BL:46:LYS:HG3   | 41:BL:64:LYS:CG    | 2.51                     | 0.40              |
| 42:BM:34:ASN:CG    | 42:BM:43:ALA:CB    | 2.94                     | 0.40              |
| 42:BM:48:GLU:HB3   | 42:BM:78:LYS:CE    | 2.51                     | 0.40              |
| 43:BN:15:THR:OG1   | 43:BN:93:GLY:C     | 2.64                     | 0.40              |
| 44:BO:84:VAL:HG11  | 51:BV:88:LYS:HD3   | 2.03                     | 0.40              |
| 45:BP:84:LEU:CA    | 45:BP:104:VAL:HG11 | 2.50                     | 0.40              |
| 45:BP:119:LYS:O    | 45:BP:120:TYR:C    | 2.64                     | 0.40              |
| 45:BP:122:THR:O    | 45:BP:123:LYS:C    | 2.63                     | 0.40              |
| 46:BQ:19:LEU:HD21  | 46:BQ:30:ALA:HA    | 2.02                     | 0.40              |
| 46:BQ:92:HIS:C     | 46:BQ:94:ARG:N     | 2.77                     | 0.40              |
| 47:BR:22:THR:O     | 47:BR:23:ARG:CG    | 2.68                     | 0.40              |
| 47:BR:48:ALA:O     | 47:BR:49:HIS:C     | 2.64                     | 0.40              |
| 50:BU:15:MET:HB3   | 50:BU:18:THR:OG1   | 2.22                     | 0.40              |
| 50:BU:40:LYS:NZ    | 50:BU:40:LYS:CB    | 2.71                     | 0.40              |
| 50:BU:93:GLN:O     | 50:BU:94:ASN:C     | 2.64                     | 0.40              |
| 52:BW:64:GLU:CG    | 52:BW:65:ASN:H     | 2.33                     | 0.40              |
| 52:BW:66:MET:O     | 52:BW:69:HIS:HD2   | 2.04                     | 0.40              |
| 53:BX:13:LEU:O     | 53:BX:16:HIS:N     | 2.54                     | 0.40              |
| 53:BX:36:LEU:HA    | 53:BX:36:LEU:HD23  | 1.47                     | 0.40              |
| 56:BD:59:U:C4      | 56:BD:60:U:C4      | 3.09                     | 0.40              |
| 57:BZ:3:GLU:C      | 57:BZ:4:LYS:HE2    | 2.47                     | 0.40              |
| 57:BZ:73:VAL:HG22  | 57:BZ:92:VAL:HG11  | 2.02                     | 0.40              |
| 57:BZ:171:ILE:HG12 | 57:BZ:182:ASP:O    | 2.22                     | 0.40              |
| 57:BZ:191:VAL:C    | 57:BZ:193:HIS:N    | 2.78                     | 0.40              |
| 57:BZ:405:LEU:HB2  | 57:BZ:455:PHE:HZ   | 1.85                     | 0.40              |
| 57:BZ:426:LEU:C    | 57:BZ:428:ASN:H    | 2.30                     | 0.40              |
| 57:BZ:547:ARG:CB   | 57:BZ:548:ALA:CB   | 2.80                     | 0.40              |
| 1:AA:2:G:C5        | 1:AA:2902:C:C2     | 2.64                     | 0.40              |
| 1:AA:7:G:C5        | 1:AA:2896:C:C2     | 3.08                     | 0.40              |
| 1:AA:122:G:OP1     | 1:AA:149:A:O2'     | 2.39                     | 0.40              |
| 1:AA:128:C:N4      | 1:AA:129:C:N4      | 2.69                     | 0.40              |
| 1:AA:164:U:H2'     | 1:AA:172:C:H1'     | 2.02                     | 0.40              |
| 1:AA:200:U:C5      | 1:AA:201:C:C1'     | 3.05                     | 0.40              |
| 1:AA:247:G:H8      | 1:AA:247:G:O5'     | 2.04                     | 0.40              |
| 1:AA:311:A:C1'     | 1:AA:332:A:C6      | 3.04                     | 0.40              |
| 1:AA:325:G:C8      | 1:AA:325:G:C3'     | 3.04                     | 0.40              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:AA:348:G:H2'  | 1:AA:349:G:C8    | 2.48                     | 0.40              |
| 1:AA:385:C:O2   | 1:AA:385:C:H2'   | 2.21                     | 0.40              |
| 1:AA:479:A:C1'  | 1:AA:480:A:C8    | 2.92                     | 0.40              |
| 1:AA:544:C:C2'  | 1:AA:545:G:H5'   | 2.52                     | 0.40              |
| 1:AA:569:U:OP2  | 1:AA:945:A:N6    | 2.54                     | 0.40              |
| 1:AA:592:G:C5'  | 1:AA:593:G:OP2   | 2.59                     | 0.40              |
| 1:AA:612:G:H2'  | 1:AA:615:G:H2'   | 2.04                     | 0.40              |
| 1:AA:650:C:H2'  | 1:AA:651:G:O5'   | 2.21                     | 0.40              |
| 1:AA:677:A:N6   | 1:AA:802:A:N7    | 2.70                     | 0.40              |
| 1:AA:733:G:OP2  | 1:AA:733:G:H8    | 2.04                     | 0.40              |
| 1:AA:875:G:N1   | 1:AA:876:C:N3    | 2.69                     | 0.40              |
| 1:AA:888:C:C1'  | 1:AA:889:C:N3    | 2.76                     | 0.40              |
| 1:AA:928:G:O2'  | 24:AZ:43:ILE:CG1 | 2.69                     | 0.40              |
| 1:AA:967:C:H2'  | 1:AA:968:G:O4'   | 2.22                     | 0.40              |
| 1:AA:967:C:H6   | 1:AA:967:C:O5'   | 2.04                     | 0.40              |
| 1:AA:988:A:O2'  | 1:AA:1157:G:C5'  | 2.65                     | 0.40              |
| 1:AA:1222:C:N3  | 1:AA:1223:C:C6   | 2.90                     | 0.40              |
| 1:AA:1267:U:H3' | 1:AA:1267:U:H6   | 1.83                     | 0.40              |
| 1:AA:1359:A:C6  | 1:AA:1360:A:C8   | 3.09                     | 0.40              |
| 1:AA:1370:C:H2' | 1:AA:1371:G:H5'  | 2.04                     | 0.40              |
| 1:AA:1416:G:N2  | 1:AA:1581:G:C6   | 2.81                     | 0.40              |
| 1:AA:1453:A:C5  | 13:AO:77:ARG:HD3 | 2.56                     | 0.40              |
| 1:AA:1454:U:H5' | 1:AA:1455:G:P    | 2.58                     | 0.40              |
| 1:AA:1495:A:P   | 1:AA:1496:A:OP2  | 2.79                     | 0.40              |
| 1:AA:1579:A:C5  | 1:AA:1580:A:H1'  | 2.56                     | 0.40              |
| 1:AA:1603:A:N1  | 1:AA:1604:C:C4   | 2.89                     | 0.40              |
| 1:AA:1609:A:H3' | 1:AA:1609:A:N3   | 2.36                     | 0.40              |
| 1:AA:1661:G:C5  | 1:AA:2000:G:C2   | 3.09                     | 0.40              |
| 1:AA:1689:A:C6  | 1:AA:1700:A:N3   | 2.89                     | 0.40              |
| 1:AA:1764:G:C2' | 1:AA:1765:C:C5'  | 3.00                     | 0.40              |
| 1:AA:1794:U:O4' | 1:AA:1900:A:C6   | 2.75                     | 0.40              |
| 1:AA:1838:C:C4  | 1:AA:1899:G:C6   | 3.10                     | 0.40              |
| 1:AA:1839:G:O6  | 1:AA:1927:A:N1   | 2.50                     | 0.40              |
| 1:AA:1906:G:H4' | 1:AA:1906:G:OP1  | 2.21                     | 0.40              |
| 1:AA:1935:G:H3' | 1:AA:1962:C:N4   | 2.26                     | 0.40              |
| 1:AA:1971:A:H8  | 1:AA:1971:A:C3'  | 2.16                     | 0.40              |
| 1:AA:1975:G:C2  | 1:AA:1976:U:C2   | 3.10                     | 0.40              |
| 1:AA:2026:C:O2  | 1:AA:2027:G:O4'  | 2.38                     | 0.40              |
| 1:AA:2049:G:N2  | 1:AA:2620:C:C1'  | 2.85                     | 0.40              |
| 1:AA:2091:U:C3' | 1:AA:2092:U:C5'  | 3.00                     | 0.40              |
| 1:AA:2207:C:C3' | 1:AA:2208:U:C5'  | 2.98                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:2259:G:C4    | 1:AA:2427:C:N4    | 2.90                     | 0.40              |
| 1:AA:2262:U:C4'   | 1:AA:2328:A:C2    | 2.97                     | 0.40              |
| 1:AA:2431:U:O2    | 1:AA:2433:A:C2    | 2.75                     | 0.40              |
| 1:AA:2489:G:C6    | 1:AA:2490:G:C6    | 3.10                     | 0.40              |
| 1:AA:2519:U:C4'   | 1:AA:2520:C:OP1   | 2.68                     | 0.40              |
| 1:AA:2564:A:N1    | 1:AA:2647:U:H4'   | 2.35                     | 0.40              |
| 1:AA:2568:C:C6    | 1:AA:2568:C:O5'   | 2.75                     | 0.40              |
| 1:AA:2589:A:N1    | 1:AA:2606:C:N4    | 2.70                     | 0.40              |
| 1:AA:2596:U:C5    | 1:AA:2597:G:C6    | 3.10                     | 0.40              |
| 1:AA:2789:C:O2'   | 1:AA:2791:C:C4'   | 2.68                     | 0.40              |
| 1:AA:2792:G:N1    | 1:AA:2793:G:C5    | 2.89                     | 0.40              |
| 1:AA:2798:C:H5''  | 1:AA:2798:C:H6    | 1.87                     | 0.40              |
| 1:AA:2843:G:N3    | 1:AA:2844:G:C8    | 2.90                     | 0.40              |
| 2:AB:52:A:N3      | 2:AB:53:A:O4'     | 2.54                     | 0.40              |
| 2:AB:57:A:O4'     | 7:AG:29:TRP:CZ2   | 2.75                     | 0.40              |
| 2:AB:118:G:C5     | 2:AB:119:A:N7     | 2.90                     | 0.40              |
| 3:AC:42:GLU:OE2   | 3:AC:174:PRO:CB   | 2.66                     | 0.40              |
| 3:AC:90:GLY:C     | 3:AC:153:ILE:CG2  | 2.93                     | 0.40              |
| 3:AC:190:ARG:CG   | 3:AC:190:ARG:HH11 | 2.34                     | 0.40              |
| 4:AD:9:TYR:CD1    | 4:AD:25:THR:HG23  | 2.56                     | 0.40              |
| 4:AD:29:PRO:HB2   | 4:AD:31:LYS:HD2   | 2.03                     | 0.40              |
| 4:AD:159:ALA:CB   | 4:AD:202:LYS:NZ   | 2.80                     | 0.40              |
| 4:AD:259:THR:CG2  | 4:AD:260:ARG:H    | 2.34                     | 0.40              |
| 5:AE:179:GLU:CD   | 5:AE:179:GLU:H    | 2.28                     | 0.40              |
| 6:AF:149:ASP:HA   | 6:AF:172:TRP:NE1  | 2.36                     | 0.40              |
| 7:AG:53:LEU:CA    | 7:AG:72:ARG:HH21  | 2.35                     | 0.40              |
| 7:AG:107:LEU:HD21 | 7:AG:177:GLY:HA3  | 2.03                     | 0.40              |
| 7:AG:107:LEU:CG   | 7:AG:177:GLY:O    | 2.70                     | 0.40              |
| 7:AG:134:GLY:CA   | 7:AG:156:ASP:HA   | 2.51                     | 0.40              |
| 8:AH:8:PRO:C      | 8:AH:9:ILE:HG13   | 2.47                     | 0.40              |
| 8:AH:27:LYS:NZ    | 8:AH:32:GLU:HB2   | 2.36                     | 0.40              |
| 8:AH:98:LEU:O     | 8:AH:99:VAL:HB    | 2.20                     | 0.40              |
| 9:AK:15:LEU:CD2   | 9:AK:137:LYS:C    | 2.86                     | 0.40              |
| 10:AL:16:ALA:HB1  | 10:AL:45:GLU:CB   | 2.52                     | 0.40              |
| 10:AL:43:VAL:CG2  | 10:AL:45:GLU:O    | 2.69                     | 0.40              |
| 10:AL:64:ARG:HE   | 10:AL:66:LYS:C    | 2.27                     | 0.40              |
| 12:AN:6:ARG:HB2   | 12:AN:44:ALA:HB3  | 1.94                     | 0.40              |
| 12:AN:22:LYS:CG   | 12:AN:23:GLY:N    | 2.85                     | 0.40              |
| 12:AN:135:ASP:O   | 12:AN:136:ALA:HB2 | 2.22                     | 0.40              |
| 13:AO:17:ARG:O    | 13:AO:20:LEU:N    | 2.54                     | 0.40              |
| 13:AO:28:LEU:O    | 13:AO:30:THR:N    | 2.54                     | 0.40              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 13:AO:86:ARG:NH1   | 13:AO:87:TYR:CE2   | 2.88                     | 0.40              |
| 13:AO:90:ARG:HH21  | 13:AO:117:VAL:HG13 | 1.81                     | 0.40              |
| 14:AP:32:LEU:O     | 14:AP:35:ILE:HG22  | 2.22                     | 0.40              |
| 14:AP:57:LYS:O     | 14:AP:58:LEU:CB    | 2.69                     | 0.40              |
| 15:AQ:104:ASN:N    | 15:AQ:107:ASP:OD2  | 2.54                     | 0.40              |
| 16:AR:58:ARG:CG    | 16:AR:58:ARG:NH1   | 2.84                     | 0.40              |
| 17:AS:78:LYS:HG3   | 17:AS:79:VAL:N     | 2.35                     | 0.40              |
| 18:AT:68:ARG:HB2   | 18:AT:110:LYS:O    | 2.22                     | 0.40              |
| 19:AU:33:LYS:O     | 19:AU:34:ALA:C     | 2.64                     | 0.40              |
| 21:AW:6:LYS:HA     | 21:AW:38:TYR:H     | 1.87                     | 0.40              |
| 21:AW:10:ARG:HD3   | 21:AW:36:LYS:HE3   | 2.04                     | 0.40              |
| 21:AW:30:ASN:OD1   | 21:AW:33:LEU:HD12  | 2.22                     | 0.40              |
| 21:AW:48:PHE:O     | 21:AW:51:ALA:N     | 2.39                     | 0.40              |
| 21:AW:116:VAL:HG22 | 21:AW:145:GLU:HG2  | 2.01                     | 0.40              |
| 22:AX:65:GLY:CA    | 22:AX:82:ARG:O     | 2.69                     | 0.40              |
| 23:AY:15:GLU:C     | 23:AY:17:GLU:N     | 2.75                     | 0.40              |
| 23:AY:28:MET:HE2   | 23:AY:32:PHE:HZ    | 1.87                     | 0.40              |
| 25:Aa:55:ARG:HB3   | 25:Aa:56:VAL:H     | 1.57                     | 0.40              |
| 26:Ab:35:GLU:OE2   | 26:Ab:51:TYR:CZ    | 2.74                     | 0.40              |
| 31:AI:129:PRO:O    | 31:AI:131:MET:N    | 2.54                     | 0.40              |
| 34:BA:14:U:O2      | 34:BA:17:U:C5      | 2.74                     | 0.40              |
| 34:BA:68:G:C4      | 34:BA:69:G:C8      | 3.09                     | 0.40              |
| 34:BA:87:A:C8      | 34:BA:88:C:C6      | 3.09                     | 0.40              |
| 34:BA:130:A:C8     | 50:BU:63:ARG:HG3   | 2.57                     | 0.40              |
| 34:BA:160:A:N1     | 34:BA:346:G:O6     | 2.55                     | 0.40              |
| 34:BA:191:G:N2     | 53:BX:103:GLY:O    | 2.51                     | 0.40              |
| 34:BA:245:C:C4     | 34:BA:284:G:N1     | 2.90                     | 0.40              |
| 34:BA:254:G:H21    | 50:BU:16:GLN:CD    | 2.29                     | 0.40              |
| 34:BA:335:C:H4'    | 34:BA:1434:A:C4'   | 2.52                     | 0.40              |
| 34:BA:393:A:OP2    | 49:BT:12:LYS:CE    | 2.70                     | 0.40              |
| 34:BA:402:G:OP1    | 37:BH:74:GLN:NE2   | 2.54                     | 0.40              |
| 34:BA:475:G:N3     | 34:BA:476:G:N7     | 2.70                     | 0.40              |
| 34:BA:508:C:H4'    | 34:BA:509:A:OP1    | 2.19                     | 0.40              |
| 34:BA:510:A:C8     | 34:BA:510:A:O5'    | 2.71                     | 0.40              |
| 34:BA:657:G:C4'    | 48:BS:28:GLN:NE2   | 2.84                     | 0.40              |
| 34:BA:664:G:OP1    | 51:BV:64:ARG:NE    | 2.25                     | 0.40              |
| 34:BA:687:A:C5     | 34:BA:701:C:C4     | 3.09                     | 0.40              |
| 34:BA:698:G:N2     | 34:BA:699:C:C2     | 2.89                     | 0.40              |
| 34:BA:824:C:H2'    | 34:BA:825:G:C8     | 2.57                     | 0.40              |
| 34:BA:830:G:O6     | 34:BA:857:C:N4     | 2.54                     | 0.40              |
| 34:BA:833:U:H2'    | 34:BA:834:C:H6     | 1.85                     | 0.40              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BA:896:C:H2'    | 34:BA:897:C:C6    | 2.56                     | 0.40              |
| 34:BA:1056:U:O2    | 34:BA:1057:G:C8   | 2.75                     | 0.40              |
| 34:BA:1080:A:H4'   | 38:BI:16:THR:OG1  | 2.22                     | 0.40              |
| 34:BA:1105:A:N3    | 34:BA:1106:G:N7   | 2.69                     | 0.40              |
| 34:BA:1162:C:O2    | 34:BA:1163:C:C5   | 2.71                     | 0.40              |
| 34:BA:1202:G:N7    | 43:BN:53:PRO:HB3  | 2.36                     | 0.40              |
| 34:BA:1206:G:C6    | 34:BA:1207:G:C5   | 3.09                     | 0.40              |
| 34:BA:1273:G:C2'   | 34:BA:1274:G:H8   | 2.35                     | 0.40              |
| 34:BA:1286:A:C5'   | 54:BY:25:LYS:HG2  | 2.25                     | 0.40              |
| 34:BA:1477:C:C2    | 34:BA:1478:C:C5   | 3.09                     | 0.40              |
| 34:BA:1541:U:O2    | 34:BA:1541:U:H2'  | 2.20                     | 0.40              |
| 35:BF:20:GLU:OE2   | 35:BF:205:ASP:OD2 | 2.39                     | 0.40              |
| 35:BF:36:ARG:NE    | 35:BF:36:ARG:HA   | 2.35                     | 0.40              |
| 35:BF:56:ARG:HH11  | 35:BF:56:ARG:C    | 2.30                     | 0.40              |
| 35:BF:61:LEU:CA    | 35:BF:64:ARG:CD   | 2.98                     | 0.40              |
| 35:BF:118:LEU:CD1  | 35:BF:141:GLU:OE2 | 2.65                     | 0.40              |
| 35:BF:221:LEU:HD13 | 35:BF:222:ILE:HA  | 2.03                     | 0.40              |
| 36:BG:64:VAL:HB    | 36:BG:99:VAL:HG11 | 2.03                     | 0.40              |
| 36:BG:124:ILE:O    | 36:BG:125:GLU:C   | 2.64                     | 0.40              |
| 37:BH:14:ARG:HD3   | 37:BH:15:GLU:N    | 2.36                     | 0.40              |
| 37:BH:159:ARG:HG2  | 37:BH:159:ARG:NH1 | 2.35                     | 0.40              |
| 38:BI:84:PHE:HB2   | 38:BI:134:ALA:HA  | 2.03                     | 0.40              |
| 39:BJ:7:ASN:CG     | 39:BJ:62:TRP:CD1  | 2.90                     | 0.40              |
| 40:BK:123:GLU:O    | 40:BK:125:MET:N   | 2.55                     | 0.40              |
| 40:BK:140:ASP:O    | 40:BK:143:ARG:HD2 | 2.22                     | 0.40              |
| 41:BL:25:ASP:CG    | 41:BL:60:ARG:HB2  | 2.47                     | 0.40              |
| 41:BL:84:ARG:C     | 41:BL:135:CYS:HG  | 2.30                     | 0.40              |
| 42:BM:81:ILE:HG13  | 42:BM:81:ILE:H    | 1.74                     | 0.40              |
| 42:BM:112:LYS:CG   | 42:BM:117:HIS:HA  | 2.45                     | 0.40              |
| 43:BN:8:LEU:HD12   | 43:BN:16:LEU:HD13 | 2.00                     | 0.40              |
| 43:BN:17:ASP:O     | 43:BN:21:GLN:CB   | 2.70                     | 0.40              |
| 43:BN:27:ALA:HB1   | 43:BN:74:ILE:CD1  | 2.52                     | 0.40              |
| 44:BO:15:ALA:C     | 44:BO:78:GLN:HE22 | 2.30                     | 0.40              |
| 45:BP:82:VAL:HB    | 57:BZ:329:ARG:HG3 | 2.03                     | 0.40              |
| 46:BQ:8:GLU:HB3    | 46:BQ:22:ILE:CD1  | 2.51                     | 0.40              |
| 46:BQ:19:LEU:C     | 46:BQ:21:TYR:H    | 2.29                     | 0.40              |
| 46:BQ:74:VAL:O     | 46:BQ:78:ILE:HG13 | 2.21                     | 0.40              |
| 46:BQ:90:LEU:CD2   | 46:BQ:93:ARG:NE   | 2.85                     | 0.40              |
| 48:BS:53:HIS:CD2   | 48:BS:57:LEU:CD1  | 3.01                     | 0.40              |
| 49:BT:8:ARG:O      | 49:BT:9:PHE:CD2   | 2.75                     | 0.40              |
| 51:BV:46:GLU:C     | 51:BV:48:GLY:H    | 2.30                     | 0.40              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 53:BX:24:LEU:HB2   | 53:BX:25:ARG:H     | 1.68                     | 0.40              |
| 55:BC:4:C:C2       | 55:BC:70:G:C2      | 3.10                     | 0.40              |
| 55:BC:25:C:H2'     | 55:BC:26:A:H8      | 1.87                     | 0.40              |
| 56:BD:5:G:O6       | 56:BD:69:G:O6      | 2.36                     | 0.40              |
| 57:BZ:10:ILE:HD13  | 57:BZ:21:LEU:CG    | 2.47                     | 0.40              |
| 57:BZ:59:LYS:HZ2   | 57:BZ:66:TRP:HZ2   | 1.69                     | 0.40              |
| 57:BZ:67:ASP:HA    | 57:BZ:191:VAL:CG1  | 2.51                     | 0.40              |
| 57:BZ:207:MET:HE2  | 57:BZ:208:GLN:C    | 2.47                     | 0.40              |
| 57:BZ:249:ALA:H    | 57:BZ:276:ILE:H    | 1.66                     | 0.40              |
| 57:BZ:255:LEU:HA   | 57:BZ:255:LEU:HD22 | 1.78                     | 0.40              |
| 57:BZ:280:GLY:HA2  | 57:BZ:281:GLU:HA   | 1.69                     | 0.40              |
| 57:BZ:311:PHE:CB   | 57:BZ:356:PHE:HD2  | 2.34                     | 0.40              |
| 57:BZ:403:VAL:HG21 | 57:BZ:466:TYR:HD1  | 1.82                     | 0.40              |
| 57:BZ:512:LEU:HD22 | 57:BZ:518:VAL:HG13 | 2.01                     | 0.40              |
| 1:AA:4:C:C5        | 1:AA:2900:A:N1     | 2.89                     | 0.40              |
| 1:AA:5:A:N3        | 1:AA:6:A:C8        | 2.89                     | 0.40              |
| 1:AA:6:A:N1        | 1:AA:2897:U:C5     | 2.88                     | 0.40              |
| 1:AA:47:C:C4       | 1:AA:179:G:C6      | 3.09                     | 0.40              |
| 1:AA:64:A:C2       | 19:AU:66:LEU:HD13  | 2.53                     | 0.40              |
| 1:AA:65:C:N3       | 1:AA:66:C:C5       | 2.90                     | 0.40              |
| 1:AA:108:U:H2'     | 1:AA:109:G:O4'     | 2.20                     | 0.40              |
| 1:AA:184:C:HO2'    | 1:AA:185:U:H6      | 1.70                     | 0.40              |
| 1:AA:198:C:C6      | 1:AA:198:C:O5'     | 2.74                     | 0.40              |
| 1:AA:222:A:C8      | 1:AA:224:G:C8      | 3.09                     | 0.40              |
| 1:AA:349:G:OP2     | 1:AA:349:G:N9      | 2.55                     | 0.40              |
| 1:AA:363(C):G:H2'  | 1:AA:363(D):G:O5'  | 2.21                     | 0.40              |
| 1:AA:432:A:C6      | 1:AA:433:C:N3      | 2.90                     | 0.40              |
| 1:AA:459:U:H2'     | 1:AA:460:A:H8      | 1.86                     | 0.40              |
| 1:AA:551:G:O4'     | 1:AA:1220:A:N1     | 2.55                     | 0.40              |
| 1:AA:571:A:C6      | 1:AA:2030:A:N1     | 2.89                     | 0.40              |
| 1:AA:596:G:O6      | 1:AA:660:G:O6      | 2.40                     | 0.40              |
| 1:AA:629:G:OP1     | 1:AA:649:G:O2'     | 2.12                     | 0.40              |
| 1:AA:713:G:H2'     | 1:AA:714:U:OP2     | 2.22                     | 0.40              |
| 1:AA:727:A:N1      | 1:AA:729:G:C5      | 2.87                     | 0.40              |
| 1:AA:748:G:N7      | 1:AA:750:A:N7      | 2.69                     | 0.40              |
| 1:AA:748:G:OP2     | 18:AT:88:ARG:NE    | 2.54                     | 0.40              |
| 1:AA:761:A:C5'     | 1:AA:762:U:OP1     | 2.69                     | 0.40              |
| 1:AA:769:G:C4      | 1:AA:770:G:C8      | 3.10                     | 0.40              |
| 1:AA:1083:U:O2     | 1:AA:1085:A:C8     | 2.70                     | 0.40              |
| 1:AA:1124:C:O2'    | 30:Af:36:GLN:O     | 2.39                     | 0.40              |
| 1:AA:1148:A:C6     | 1:AA:1149:G:C6     | 3.10                     | 0.40              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1228:G:C5'   | 1:AA:1228:G:H8     | 2.34                     | 0.40              |
| 1:AA:1252:G:H3'   | 1:AA:1253:A:C1'    | 2.52                     | 0.40              |
| 1:AA:1263:U:C6    | 1:AA:1264:G:C2     | 3.10                     | 0.40              |
| 1:AA:1276:A:N7    | 1:AA:1645:G:C2     | 2.89                     | 0.40              |
| 1:AA:1298:C:N4    | 1:AA:1299:G:C6     | 2.89                     | 0.40              |
| 1:AA:1340:U:H2'   | 1:AA:1341:U:OP1    | 2.20                     | 0.40              |
| 1:AA:1356:G:H2'   | 1:AA:1357:U:C5'    | 2.51                     | 0.40              |
| 1:AA:1398:C:O2'   | 1:AA:1399:C:C5'    | 2.68                     | 0.40              |
| 1:AA:1418:G:H1'   | 1:AA:1579:A:N6     | 2.27                     | 0.40              |
| 1:AA:1444(A):A:C8 | 1:AA:1460:A:O2'    | 2.74                     | 0.40              |
| 1:AA:1453:A:N7    | 13:AO:73:VAL:HG12  | 2.37                     | 0.40              |
| 1:AA:1491:G:N1    | 1:AA:1500:G:C2     | 2.89                     | 0.40              |
| 1:AA:1492:G:C2    | 1:AA:1493:C:N3     | 2.90                     | 0.40              |
| 1:AA:1592:C:C2    | 1:AA:1593:G:C8     | 3.10                     | 0.40              |
| 1:AA:1641:A:H8    | 1:AA:1641:A:OP2    | 2.05                     | 0.40              |
| 1:AA:1668:A:N7    | 1:AA:1670:C:N4     | 2.70                     | 0.40              |
| 1:AA:1670:C:H2'   | 1:AA:1671:U:C4'    | 2.52                     | 0.40              |
| 1:AA:1889:A:H5'   | 1:AA:2087:G:H4'    | 2.03                     | 0.40              |
| 1:AA:1906:G:C6    | 1:AA:1929:G:C2     | 3.08                     | 0.40              |
| 1:AA:1949:G:C2    | 1:AA:1958:C:N3     | 2.90                     | 0.40              |
| 1:AA:2088:G:O2'   | 1:AA:2089:U:H5'    | 2.21                     | 0.40              |
| 1:AA:2103:C:N3    | 1:AA:2104:G:N7     | 2.68                     | 0.40              |
| 1:AA:2112:G:N3    | 1:AA:2112:G:H2'    | 2.07                     | 0.40              |
| 1:AA:2150:U:H2'   | 1:AA:2151:G:C8     | 2.50                     | 0.40              |
| 1:AA:2255:G:C2    | 1:AA:2256:G:N9     | 2.89                     | 0.40              |
| 1:AA:2318:G:P     | 1:AA:2318:G:C8     | 3.10                     | 0.40              |
| 1:AA:2319:G:O2'   | 1:AA:2320:A:P      | 2.80                     | 0.40              |
| 1:AA:2423:U:C6    | 1:AA:2423:U:H5'    | 2.56                     | 0.40              |
| 1:AA:2447:G:N7    | 1:AA:2500:U:N1     | 2.69                     | 0.40              |
| 1:AA:2527:C:C2    | 1:AA:2528:U:C5     | 3.10                     | 0.40              |
| 1:AA:2544:G:C4    | 1:AA:2545:G:C8     | 3.10                     | 0.40              |
| 1:AA:2600:A:C2    | 1:AA:2601:C:C4     | 3.10                     | 0.40              |
| 1:AA:2633:G:C6    | 1:AA:2634:G:C5     | 3.09                     | 0.40              |
| 1:AA:2664:G:C8    | 1:AA:2664:G:O5'    | 2.72                     | 0.40              |
| 1:AA:2793:G:N3    | 1:AA:2794:C:C6     | 2.89                     | 0.40              |
| 1:AA:2838:G:C6    | 1:AA:2839:G:C5     | 3.10                     | 0.40              |
| 1:AA:2856:C:C4    | 1:AA:2862:G:N1     | 2.90                     | 0.40              |
| 1:AA:2881:C:H4'   | 13:AO:117:VAL:HG21 | 2.03                     | 0.40              |
| 2:AB:76:G:H4'     | 21:AW:85:HIS:CB    | 2.42                     | 0.40              |
| 3:AC:7:TYR:CE1    | 3:AC:10:LEU:HG     | 2.55                     | 0.40              |
| 3:AC:64:LEU:CD1   | 3:AC:174:PRO:O     | 2.70                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:AC:64:LEU:CG    | 3:AC:161:ILE:HG12 | 2.50                     | 0.40              |
| 3:AC:71:GLN:NE2   | 3:AC:72:VAL:HG23  | 2.37                     | 0.40              |
| 3:AC:89:ALA:HB2   | 3:AC:154:ARG:NH1  | 2.36                     | 0.40              |
| 3:AC:129:ARG:HB2  | 3:AC:130:ILE:HD12 | 2.02                     | 0.40              |
| 4:AD:27:THR:HG22  | 4:AD:29:PRO:CG    | 2.48                     | 0.40              |
| 4:AD:112:GLN:O    | 4:AD:113:VAL:C    | 2.64                     | 0.40              |
| 4:AD:137:PRO:HG2  | 4:AD:140:THR:CG2  | 2.52                     | 0.40              |
| 4:AD:148:GLU:CB   | 4:AD:151:LYS:HG3  | 2.51                     | 0.40              |
| 4:AD:184:LYS:H    | 4:AD:267:SER:HG   | 1.70                     | 0.40              |
| 4:AD:244:ARG:CA   | 4:AD:252:TRP:NE1  | 2.84                     | 0.40              |
| 5:AE:55:ASN:HB2   | 5:AE:73:GLU:CD    | 2.46                     | 0.40              |
| 5:AE:127:ASP:HB2  | 5:AE:135:HIS:N    | 2.35                     | 0.40              |
| 7:AG:9:ARG:CG     | 7:AG:9:ARG:NH1    | 2.80                     | 0.40              |
| 7:AG:45:GLU:HB2   | 7:AG:77:ILE:CG2   | 2.52                     | 0.40              |
| 7:AG:59:GLU:HG3   | 7:AG:60:LEU:H     | 1.87                     | 0.40              |
| 7:AG:105:LYS:O    | 7:AG:109:VAL:CG2  | 2.53                     | 0.40              |
| 7:AG:111:LEU:CB   | 7:AG:112:PRO:CD   | 2.86                     | 0.40              |
| 7:AG:172:LEU:HG   | 7:AG:173:LEU:N    | 2.37                     | 0.40              |
| 8:AH:7:LEU:N      | 8:AH:7:LEU:CD2    | 2.83                     | 0.40              |
| 8:AH:24:VAL:HG13  | 8:AH:37:VAL:HG11  | 2.03                     | 0.40              |
| 8:AH:97:ARG:CB    | 8:AH:97:ARG:HH21  | 2.34                     | 0.40              |
| 10:AL:16:ALA:HB1  | 10:AL:45:GLU:HB2  | 1.98                     | 0.40              |
| 11:AM:68:GLN:HE21 | 11:AM:68:GLN:HB2  | 1.60                     | 0.40              |
| 11:AM:74:GLU:N    | 11:AM:107:LYS:HE3 | 2.36                     | 0.40              |
| 11:AM:81:GLN:HE22 | 11:AM:123:LEU:CD2 | 2.32                     | 0.40              |
| 11:AM:122:PRO:CG  | 11:AM:138:LEU:CA  | 2.99                     | 0.40              |
| 12:AN:10:ARG:O    | 12:AN:11:LYS:O    | 2.40                     | 0.40              |
| 12:AN:44:ALA:HA   | 12:AN:47:ILE:CD1  | 2.26                     | 0.40              |
| 12:AN:68:ILE:HG21 | 12:AN:95:ALA:HB1  | 2.02                     | 0.40              |
| 13:AO:58:GLY:N    | 13:AO:80:PHE:CZ   | 2.89                     | 0.40              |
| 15:AQ:30:VAL:CG1  | 15:AQ:32:TYR:OH   | 2.66                     | 0.40              |
| 15:AQ:72:VAL:HB   | 15:AQ:74:ARG:NE   | 2.37                     | 0.40              |
| 16:AR:31:SER:OG   | 16:AR:35:ALA:HA   | 2.21                     | 0.40              |
| 16:AR:57:PHE:O    | 16:AR:60:LEU:N    | 2.54                     | 0.40              |
| 18:AT:12:ILE:CD1  | 18:AT:12:ILE:H    | 2.32                     | 0.40              |
| 18:AT:25:ARG:C    | 18:AT:71:VAL:CG1  | 2.94                     | 0.40              |
| 19:AU:68:ARG:C    | 19:AU:69:TYR:CD1  | 2.99                     | 0.40              |
| 20:AV:35:TYR:CE2  | 20:AV:67:LEU:CD1  | 3.05                     | 0.40              |
| 20:AV:47:LYS:CB   | 20:AV:49:VAL:HG22 | 2.36                     | 0.40              |
| 21:AW:84:GLU:O    | 21:AW:85:HIS:HB2  | 2.22                     | 0.40              |
| 21:AW:95:PRO:CG   | 21:AW:131:ARG:HD3 | 2.52                     | 0.40              |

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| Atom-1             | Atom-2              | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 21:AW:151:HIS:CD2  | 21:AW:170:THR:H     | 2.39                     | 0.40              |
| 21:AW:155:LEU:O    | 21:AW:156:LYS:CB    | 2.68                     | 0.40              |
| 22:AX:44:ARG:O     | 22:AX:44:ARG:HG2    | 2.22                     | 0.40              |
| 23:AY:58:VAL:O     | 23:AY:60:ASN:N      | 2.53                     | 0.40              |
| 24:AZ:44:ARG:O     | 24:AZ:46:ASN:N      | 2.55                     | 0.40              |
| 25:Aa:5:ILE:HG21   | 25:Aa:5:ILE:HD13    | 1.89                     | 0.40              |
| 25:Aa:33:VAL:HG13  | 25:Aa:35:VAL:HG23   | 2.04                     | 0.40              |
| 29:Ae:39:LYS:HA    | 29:Ae:42:ARG:CD     | 2.48                     | 0.40              |
| 29:Ae:51:ALA:C     | 29:Ae:54:GLU:OE1    | 2.65                     | 0.40              |
| 30:Af:3:VAL:C      | 30:Af:5:ALA:N       | 2.79                     | 0.40              |
| 30:Af:7:VAL:CB     | 30:Af:36:GLN:OE1    | 2.58                     | 0.40              |
| 31:AI:118:THR:O    | 31:AI:120:LYS:N     | 2.49                     | 0.40              |
| 31:AI:143:GLN:C    | 33:Ag:141:UNK:CB    | 2.94                     | 0.40              |
| 32:AJ:37:PHE:O     | 32:AJ:41:PHE:CG     | 2.75                     | 0.40              |
| 32:AJ:76:TYR:O     | 32:AJ:80:LYS:HD2    | 2.21                     | 0.40              |
| 33:Ag:290:UNK:CB   | 33:Ag:293:UNK:CB    | 2.99                     | 0.40              |
| 33:Ag:335:UNK:C    | 33:Ag:345:UNK:CB    | 2.98                     | 0.40              |
| 34:BA:159:G:N1     | 34:BA:163:C:N4      | 2.70                     | 0.40              |
| 34:BA:236:G:N3     | 34:BA:236:G:C2'     | 2.83                     | 0.40              |
| 34:BA:374:A:O4'    | 34:BA:481:G:N2      | 2.54                     | 0.40              |
| 34:BA:390:C:O2'    | 34:BA:391:G:H5'     | 2.22                     | 0.40              |
| 34:BA:391:G:O6     | 34:BA:392:G:C6      | 2.74                     | 0.40              |
| 34:BA:541:G:H2'    | 34:BA:542:G:C8      | 2.53                     | 0.40              |
| 34:BA:652:U:C1'    | 34:BA:653:A:C2      | 3.04                     | 0.40              |
| 34:BA:673:G:C6     | 34:BA:734:G:C6      | 3.09                     | 0.40              |
| 34:BA:683:G:H21    | 44:BO:38:ASN:ND2    | 2.20                     | 0.40              |
| 34:BA:697:U:H5'    | 34:BA:786:G:O2'     | 2.20                     | 0.40              |
| 34:BA:698:G:O2'    | 34:BA:699:C:H5'     | 2.21                     | 0.40              |
| 34:BA:821:G:C6     | 34:BA:880:C:C4      | 3.10                     | 0.40              |
| 34:BA:933:G:OP2    | 40:BK:3:ARG:CG      | 2.70                     | 0.40              |
| 34:BA:963:G:H2'    | 34:BA:964:A:C8      | 2.49                     | 0.40              |
| 34:BA:981:U:OP2    | 34:BA:981:U:H5      | 2.05                     | 0.40              |
| 34:BA:1032:A:C4    | 34:BA:1032(A):G:H1' | 2.56                     | 0.40              |
| 34:BA:1181:G:H2'   | 34:BA:1182:G:C5'    | 2.51                     | 0.40              |
| 34:BA:1338:G:C6    | 34:BA:1339:A:N6     | 2.90                     | 0.40              |
| 34:BA:1347:G:H3'   | 42:BM:107:ARG:CA    | 2.51                     | 0.40              |
| 34:BA:1363:A:H1'   | 34:BA:1365:G:N7     | 2.35                     | 0.40              |
| 34:BA:1461:G:C4    | 34:BA:1462:G:C8     | 3.10                     | 0.40              |
| 34:BA:1462:G:H2'   | 34:BA:1463:C:H5'    | 2.02                     | 0.40              |
| 35:BF:28:PHE:CE1   | 35:BF:31:TYR:CB     | 3.04                     | 0.40              |
| 36:BG:156:ARG:HH12 | 36:BG:161:GLU:C     | 2.22                     | 0.40              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 36:BG:157:ILE:CD1 | 36:BG:164:ARG:HG2  | 2.51                     | 0.40              |
| 37:BH:14:ARG:N    | 37:BH:40:PRO:HD3   | 2.37                     | 0.40              |
| 37:BH:153:ARG:O   | 37:BH:154:ASN:HB3  | 2.22                     | 0.40              |
| 37:BH:173:TRP:O   | 37:BH:185:PHE:HD2  | 2.05                     | 0.40              |
| 37:BH:208:SER:O   | 37:BH:209:ARG:NH1  | 2.43                     | 0.40              |
| 38:BI:142:LEU:C   | 38:BI:143:ARG:HD3  | 2.47                     | 0.40              |
| 39:BJ:4:TYR:HA    | 39:BJ:93:SER:OG    | 2.22                     | 0.40              |
| 39:BJ:42:GLU:OE2  | 39:BJ:61:LEU:HD22  | 2.22                     | 0.40              |
| 39:BJ:49:ALA:CB   | 51:BV:80:PRO:CD    | 2.97                     | 0.40              |
| 40:BK:121:ALA:CB  | 40:BK:125:MET:HE3  | 2.52                     | 0.40              |
| 41:BL:69:ARG:NH1  | 41:BL:69:ARG:HG3   | 2.34                     | 0.40              |
| 41:BL:87:SER:HB2  | 41:BL:92:ARG:C     | 2.45                     | 0.40              |
| 41:BL:102:ARG:NH1 | 41:BL:102:ARG:CG   | 2.85                     | 0.40              |
| 41:BL:120:THR:O   | 41:BL:121:ASP:C    | 2.64                     | 0.40              |
| 42:BM:10:ARG:HA   | 42:BM:104:ARG:CZ   | 2.51                     | 0.40              |
| 42:BM:50:LEU:CD2  | 42:BM:56:LEU:HB2   | 2.51                     | 0.40              |
| 43:BN:49:VAL:O    | 43:BN:60:ARG:CA    | 2.70                     | 0.40              |
| 43:BN:94:VAL:CG1  | 43:BN:95:GLU:N     | 2.66                     | 0.40              |
| 44:BO:62:GLN:OE1  | 44:BO:63:LEU:CB    | 2.67                     | 0.40              |
| 45:BP:32:PHE:HB2  | 45:BP:84:LEU:CD2   | 2.51                     | 0.40              |
| 45:BP:103:GLY:HA2 | 45:BP:107:ALA:O    | 2.22                     | 0.40              |
| 46:BQ:67:GLU:O    | 46:BQ:69:GLU:N     | 2.42                     | 0.40              |
| 46:BQ:90:LEU:HD21 | 46:BQ:93:ARG:NH1   | 2.36                     | 0.40              |
| 47:BR:41:ARG:C    | 47:BR:44:LEU:HB3   | 2.46                     | 0.40              |
| 49:BT:4:ILE:CD1   | 49:BT:4:ILE:H      | 2.24                     | 0.40              |
| 51:BV:34:TYR:HE1  | 51:BV:35:ARG:NE    | 2.17                     | 0.40              |
| 51:BV:45:SER:CA   | 51:BV:51:LEU:HD21  | 2.52                     | 0.40              |
| 53:BX:57:ARG:HH12 | 53:BX:102:GLY:HA3  | 1.86                     | 0.40              |
| 56:BD:28:G:N2     | 56:BD:43:C:C6      | 2.89                     | 0.40              |
| 56:BD:28:G:N2     | 56:BD:43:C:C5      | 2.90                     | 0.40              |
| 56:BE:16:U:H5'    | 56:BE:16:U:H6      | 1.85                     | 0.40              |
| 56:BE:73:A:O3'    | 56:BE:74:C:C6      | 2.75                     | 0.40              |
| 57:BZ:20:THR:N    | 57:BZ:23:ASP:CG    | 2.80                     | 0.40              |
| 57:BZ:249:ALA:H   | 57:BZ:276:ILE:HG13 | 1.86                     | 0.40              |

There are no symmetry-related clashes.

## 5.3 Torsion angles ⓘ

### 5.3.1 Protein backbone ⓘ

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

| Mol | Chain | Analysed      | Favoured  | Allowed  | Outliers | Percentiles |   |
|-----|-------|---------------|-----------|----------|----------|-------------|---|
| 3   | AC    | 220/228 (96%) | 153 (70%) | 39 (18%) | 28 (13%) | 0           | 4 |
| 4   | AD    | 270/272 (99%) | 125 (46%) | 59 (22%) | 86 (32%) | 0           | 0 |
| 5   | AE    | 204/206 (99%) | 117 (57%) | 31 (15%) | 56 (28%) | 0           | 0 |
| 6   | AF    | 206/208 (99%) | 109 (53%) | 46 (22%) | 51 (25%) | 0           | 1 |
| 7   | AG    | 180/182 (99%) | 79 (44%)  | 47 (26%) | 54 (30%) | 0           | 0 |
| 8   | AH    | 172/174 (99%) | 80 (46%)  | 46 (27%) | 46 (27%) | 0           | 0 |
| 9   | AK    | 137/139 (99%) | 64 (47%)  | 28 (20%) | 45 (33%) | 0           | 0 |
| 10  | AL    | 120/122 (98%) | 59 (49%)  | 23 (19%) | 38 (32%) | 0           | 0 |
| 11  | AM    | 143/145 (99%) | 57 (40%)  | 36 (25%) | 50 (35%) | 0           | 0 |
| 12  | AN    | 134/136 (98%) | 49 (37%)  | 33 (25%) | 52 (39%) | 0           | 0 |
| 13  | AO    | 115/117 (98%) | 57 (50%)  | 39 (34%) | 19 (16%) | 0           | 3 |
| 14  | AP    | 108/110 (98%) | 48 (44%)  | 28 (26%) | 32 (30%) | 0           | 0 |
| 15  | AQ    | 115/117 (98%) | 52 (45%)  | 26 (23%) | 37 (32%) | 0           | 0 |
| 16  | AR    | 115/117 (98%) | 35 (30%)  | 50 (44%) | 30 (26%) | 0           | 1 |
| 17  | AS    | 99/101 (98%)  | 52 (52%)  | 19 (19%) | 28 (28%) | 0           | 0 |
| 18  | AT    | 108/110 (98%) | 63 (58%)  | 24 (22%) | 21 (19%) | 0           | 2 |
| 19  | AU    | 92/94 (98%)   | 57 (62%)  | 16 (17%) | 19 (21%) | 0           | 1 |
| 20  | AV    | 108/110 (98%) | 43 (40%)  | 32 (30%) | 33 (31%) | 0           | 0 |
| 21  | AW    | 178/180 (99%) | 96 (54%)  | 43 (24%) | 39 (22%) | 0           | 1 |
| 22  | AX    | 83/85 (98%)   | 52 (63%)  | 21 (25%) | 10 (12%) | 0           | 4 |
| 23  | AY    | 65/67 (97%)   | 36 (55%)  | 20 (31%) | 9 (14%)  | 0           | 3 |
| 24  | AZ    | 57/59 (97%)   | 34 (60%)  | 8 (14%)  | 15 (26%) | 0           | 1 |
| 25  | Aa    | 69/71 (97%)   | 23 (33%)  | 15 (22%) | 31 (45%) | 0           | 0 |
| 26  | Ab    | 55/57 (96%)   | 14 (26%)  | 19 (34%) | 22 (40%) | 0           | 0 |
| 27  | Ac    | 47/49 (96%)   | 14 (30%)  | 7 (15%)  | 26 (55%) | 0           | 0 |

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| Mol | Chain | Analysed        | Favoured   | Allowed    | Outliers   | Percentiles |   |
|-----|-------|-----------------|------------|------------|------------|-------------|---|
| 28  | Ad    | 47/49 (96%)     | 20 (43%)   | 12 (26%)   | 15 (32%)   | 0           | 0 |
| 29  | Ae    | 62/64 (97%)     | 23 (37%)   | 17 (27%)   | 22 (36%)   | 0           | 0 |
| 30  | Af    | 35/37 (95%)     | 20 (57%)   | 5 (14%)    | 10 (29%)   | 0           | 0 |
| 31  | AI    | 151/153 (99%)   | 89 (59%)   | 33 (22%)   | 29 (19%)   | 0           | 2 |
| 32  | AJ    | 132/134 (98%)   | 56 (42%)   | 44 (33%)   | 32 (24%)   | 0           | 1 |
| 35  | BF    | 232/234 (99%)   | 114 (49%)  | 41 (18%)   | 77 (33%)   | 0           | 0 |
| 36  | BG    | 204/206 (99%)   | 107 (52%)  | 46 (22%)   | 51 (25%)   | 0           | 1 |
| 37  | BH    | 206/208 (99%)   | 95 (46%)   | 58 (28%)   | 53 (26%)   | 0           | 1 |
| 38  | BI    | 148/150 (99%)   | 93 (63%)   | 38 (26%)   | 17 (12%)   | 0           | 5 |
| 39  | BJ    | 99/101 (98%)    | 58 (59%)   | 19 (19%)   | 22 (22%)   | 0           | 1 |
| 40  | BK    | 153/155 (99%)   | 73 (48%)   | 45 (29%)   | 35 (23%)   | 0           | 1 |
| 41  | BL    | 136/138 (99%)   | 68 (50%)   | 35 (26%)   | 33 (24%)   | 0           | 1 |
| 42  | BM    | 125/127 (98%)   | 62 (50%)   | 33 (26%)   | 30 (24%)   | 0           | 1 |
| 43  | BN    | 96/98 (98%)     | 52 (54%)   | 20 (21%)   | 24 (25%)   | 0           | 1 |
| 44  | BO    | 117/119 (98%)   | 65 (56%)   | 29 (25%)   | 23 (20%)   | 0           | 2 |
| 45  | BP    | 122/124 (98%)   | 50 (41%)   | 30 (25%)   | 42 (34%)   | 0           | 0 |
| 46  | BQ    | 112/114 (98%)   | 64 (57%)   | 28 (25%)   | 20 (18%)   | 0           | 2 |
| 47  | BR    | 58/60 (97%)     | 24 (41%)   | 16 (28%)   | 18 (31%)   | 0           | 0 |
| 48  | BS    | 86/88 (98%)     | 36 (42%)   | 35 (41%)   | 15 (17%)   | 0           | 2 |
| 49  | BT    | 81/83 (98%)     | 42 (52%)   | 24 (30%)   | 15 (18%)   | 0           | 2 |
| 50  | BU    | 102/104 (98%)   | 62 (61%)   | 23 (22%)   | 17 (17%)   | 0           | 3 |
| 51  | BV    | 71/73 (97%)     | 26 (37%)   | 26 (37%)   | 19 (27%)   | 0           | 0 |
| 52  | BW    | 78/80 (98%)     | 30 (38%)   | 25 (32%)   | 23 (30%)   | 0           | 0 |
| 53  | BX    | 97/99 (98%)     | 38 (39%)   | 32 (33%)   | 27 (28%)   | 0           | 0 |
| 54  | BY    | 22/24 (92%)     | 9 (41%)    | 6 (27%)    | 7 (32%)    | 0           | 0 |
| 57  | BZ    | 603/605 (100%)  | 280 (46%)  | 200 (33%)  | 123 (20%)  | 0           | 1 |
| All | All   | 6575/6683 (98%) | 3224 (49%) | 1675 (26%) | 1676 (26%) | 0           | 1 |

All (1676) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | AC    | 35  | ALA  |
| 3   | AC    | 39  | GLU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | AC    | 54  | SER  |
| 3   | AC    | 61  | THR  |
| 3   | AC    | 72  | VAL  |
| 3   | AC    | 217 | THR  |
| 4   | AD    | 6   | PHE  |
| 4   | AD    | 10  | THR  |
| 4   | AD    | 17  | THR  |
| 4   | AD    | 18  | VAL  |
| 4   | AD    | 30  | GLU  |
| 4   | AD    | 33  | LEU  |
| 4   | AD    | 35  | LYS  |
| 4   | AD    | 44  | ASN  |
| 4   | AD    | 53  | PHE  |
| 4   | AD    | 54  | ARG  |
| 4   | AD    | 58  | HIS  |
| 4   | AD    | 70  | TRP  |
| 4   | AD    | 72  | LYS  |
| 4   | AD    | 73  | VAL  |
| 4   | AD    | 81  | ALA  |
| 4   | AD    | 91  | ARG  |
| 4   | AD    | 106 | ILE  |
| 4   | AD    | 107 | ALA  |
| 4   | AD    | 108 | PRO  |
| 4   | AD    | 118 | VAL  |
| 4   | AD    | 121 | PRO  |
| 4   | AD    | 122 | ASP  |
| 4   | AD    | 125 | ILE  |
| 4   | AD    | 133 | LEU  |
| 4   | AD    | 134 | ARG  |
| 4   | AD    | 145 | VAL  |
| 4   | AD    | 153 | ALA  |
| 4   | AD    | 155 | LEU  |
| 4   | AD    | 157 | ARG  |
| 4   | AD    | 158 | ALA  |
| 4   | AD    | 160 | GLY  |
| 4   | AD    | 167 | GLY  |
| 4   | AD    | 178 | PRO  |
| 4   | AD    | 179 | SER  |
| 4   | AD    | 219 | PRO  |
| 4   | AD    | 224 | ALA  |
| 4   | AD    | 225 | ALA  |
| 4   | AD    | 232 | PRO  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 4   | AD    | 239 | ARG  |
| 4   | AD    | 241 | PRO  |
| 4   | AD    | 244 | ARG  |
| 4   | AD    | 247 | ALA  |
| 4   | AD    | 249 | PRO  |
| 4   | AD    | 252 | TRP  |
| 4   | AD    | 258 | LYS  |
| 4   | AD    | 264 | LYS  |
| 4   | AD    | 268 | ARG  |
| 4   | AD    | 270 | ILE  |
| 4   | AD    | 271 | ILE  |
| 5   | AE    | 16  | ARG  |
| 5   | AE    | 38  | THR  |
| 5   | AE    | 42  | ASP  |
| 5   | AE    | 54  | GLN  |
| 5   | AE    | 68  | ALA  |
| 5   | AE    | 70  | ALA  |
| 5   | AE    | 74  | PRO  |
| 5   | AE    | 92  | THR  |
| 5   | AE    | 111 | ARG  |
| 5   | AE    | 117 | MET  |
| 5   | AE    | 122 | PHE  |
| 5   | AE    | 128 | SER  |
| 5   | AE    | 133 | LYS  |
| 5   | AE    | 134 | ILE  |
| 5   | AE    | 145 | LYS  |
| 5   | AE    | 149 | ARG  |
| 5   | AE    | 151 | TYR  |
| 5   | AE    | 157 | ALA  |
| 5   | AE    | 168 | MET  |
| 5   | AE    | 173 | VAL  |
| 5   | AE    | 180 | ASN  |
| 5   | AE    | 191 | PRO  |
| 5   | AE    | 202 | LYS  |
| 6   | AF    | 13  | SER  |
| 6   | AF    | 14  | PRO  |
| 6   | AF    | 30  | PRO  |
| 6   | AF    | 45  | ARG  |
| 6   | AF    | 52  | LYS  |
| 6   | AF    | 53  | THR  |
| 6   | AF    | 57  | VAL  |
| 6   | AF    | 58  | ALA  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 6   | AF    | 62  | ARG  |
| 6   | AF    | 67  | GLN  |
| 6   | AF    | 68  | LYS  |
| 6   | AF    | 69  | HIS  |
| 6   | AF    | 75  | HIS  |
| 6   | AF    | 82  | ILE  |
| 6   | AF    | 84  | VAL  |
| 6   | AF    | 85  | GLY  |
| 6   | AF    | 89  | VAL  |
| 6   | AF    | 91  | GLY  |
| 6   | AF    | 99  | TYR  |
| 6   | AF    | 100 | THR  |
| 6   | AF    | 104 | LYS  |
| 6   | AF    | 132 | VAL  |
| 6   | AF    | 151 | SER  |
| 6   | AF    | 169 | ASN  |
| 6   | AF    | 172 | TRP  |
| 6   | AF    | 186 | ILE  |
| 6   | AF    | 196 | LEU  |
| 7   | AG    | 16  | ARG  |
| 7   | AG    | 18  | GLU  |
| 7   | AG    | 27  | ASN  |
| 7   | AG    | 32  | PRO  |
| 7   | AG    | 36  | LYS  |
| 7   | AG    | 42  | GLY  |
| 7   | AG    | 43  | LEU  |
| 7   | AG    | 51  | ARG  |
| 7   | AG    | 66  | GLN  |
| 7   | AG    | 68  | PRO  |
| 7   | AG    | 73  | ALA  |
| 7   | AG    | 76  | SER  |
| 7   | AG    | 78  | SER  |
| 7   | AG    | 86  | MET  |
| 7   | AG    | 104 | GLU  |
| 7   | AG    | 111 | LEU  |
| 7   | AG    | 114 | ILE  |
| 7   | AG    | 115 | ARG  |
| 7   | AG    | 116 | ASP  |
| 7   | AG    | 117 | PHE  |
| 7   | AG    | 123 | ASN  |
| 7   | AG    | 124 | SER  |
| 7   | AG    | 128 | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 7   | AG    | 131 | TYR  |
| 7   | AG    | 132 | ASN  |
| 7   | AG    | 133 | LEU  |
| 7   | AG    | 138 | GLN  |
| 7   | AG    | 140 | ILE  |
| 7   | AG    | 143 | GLU  |
| 7   | AG    | 144 | ILE  |
| 7   | AG    | 148 | MET  |
| 7   | AG    | 164 | GLU  |
| 7   | AG    | 172 | LEU  |
| 7   | AG    | 181 | ARG  |
| 8   | AH    | 6   | ARG  |
| 8   | AH    | 7   | LEU  |
| 8   | AH    | 12  | PRO  |
| 8   | AH    | 15  | VAL  |
| 8   | AH    | 20  | ALA  |
| 8   | AH    | 30  | LYS  |
| 8   | AH    | 56  | SER  |
| 8   | AH    | 99  | VAL  |
| 8   | AH    | 104 | GLU  |
| 8   | AH    | 107 | VAL  |
| 8   | AH    | 111 | HIS  |
| 8   | AH    | 127 | GLU  |
| 8   | AH    | 136 | ILE  |
| 8   | AH    | 152 | ARG  |
| 8   | AH    | 153 | LYS  |
| 8   | AH    | 155 | SER  |
| 8   | AH    | 157 | TYR  |
| 8   | AH    | 160 | LYS  |
| 8   | AH    | 164 | TYR  |
| 8   | AH    | 168 | PRO  |
| 9   | AK    | 3   | THR  |
| 9   | AK    | 4   | TYR  |
| 9   | AK    | 7   | LYS  |
| 9   | AK    | 9   | VAL  |
| 9   | AK    | 23  | LEU  |
| 9   | AK    | 31  | ALA  |
| 9   | AK    | 35  | ARG  |
| 9   | AK    | 43  | THR  |
| 9   | AK    | 46  | VAL  |
| 9   | AK    | 48  | MET  |
| 9   | AK    | 50  | ASP  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 9   | AK    | 58  | ASP  |
| 9   | AK    | 59  | LYS  |
| 9   | AK    | 66  | LYS  |
| 9   | AK    | 68  | GLU  |
| 9   | AK    | 76  | SER  |
| 9   | AK    | 79  | PRO  |
| 9   | AK    | 83  | LYS  |
| 9   | AK    | 127 | ASP  |
| 9   | AK    | 135 | PRO  |
| 9   | AK    | 136 | GLU  |
| 10  | AL    | 4   | PRO  |
| 10  | AL    | 11  | ALA  |
| 10  | AL    | 14  | THR  |
| 10  | AL    | 17  | ARG  |
| 10  | AL    | 26  | LYS  |
| 10  | AL    | 28  | SER  |
| 10  | AL    | 29  | ASN  |
| 10  | AL    | 30  | ALA  |
| 10  | AL    | 46  | ALA  |
| 10  | AL    | 53  | LYS  |
| 10  | AL    | 63  | VAL  |
| 10  | AL    | 64  | ARG  |
| 10  | AL    | 66  | LYS  |
| 10  | AL    | 89  | ASN  |
| 10  | AL    | 93  | PRO  |
| 10  | AL    | 97  | ARG  |
| 10  | AL    | 101 | PRO  |
| 10  | AL    | 103 | ALA  |
| 10  | AL    | 105 | GLU  |
| 10  | AL    | 110 | GLY  |
| 10  | AL    | 111 | PHE  |
| 10  | AL    | 119 | PRO  |
| 11  | AM    | 8   | PRO  |
| 11  | AM    | 12  | ALA  |
| 11  | AM    | 14  | LYS  |
| 11  | AM    | 27  | HIS  |
| 11  | AM    | 29  | LYS  |
| 11  | AM    | 42  | SER  |
| 11  | AM    | 44  | GLY  |
| 11  | AM    | 47  | ASP  |
| 11  | AM    | 55  | ARG  |
| 11  | AM    | 56  | SER  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 11  | AM    | 57  | THR  |
| 11  | AM    | 58  | THR  |
| 11  | AM    | 64  | LYS  |
| 11  | AM    | 72  | PRO  |
| 11  | AM    | 88  | LEU  |
| 11  | AM    | 96  | THR  |
| 11  | AM    | 102 | ARG  |
| 11  | AM    | 106 | LEU  |
| 11  | AM    | 107 | LYS  |
| 11  | AM    | 122 | PRO  |
| 11  | AM    | 127 | ALA  |
| 12  | AN    | 11  | LYS  |
| 12  | AN    | 21  | THR  |
| 12  | AN    | 27  | VAL  |
| 12  | AN    | 29  | PHE  |
| 12  | AN    | 39  | PRO  |
| 12  | AN    | 40  | ALA  |
| 12  | AN    | 58  | PHE  |
| 12  | AN    | 59  | ARG  |
| 12  | AN    | 66  | ILE  |
| 12  | AN    | 67  | ARG  |
| 12  | AN    | 68  | ILE  |
| 12  | AN    | 71  | ASP  |
| 12  | AN    | 77  | LYS  |
| 12  | AN    | 78  | PRO  |
| 12  | AN    | 80  | GLU  |
| 12  | AN    | 81  | VAL  |
| 12  | AN    | 111 | GLU  |
| 12  | AN    | 124 | LYS  |
| 12  | AN    | 125 | LEU  |
| 12  | AN    | 126 | PRO  |
| 12  | AN    | 132 | VAL  |
| 12  | AN    | 138 | ASP  |
| 13  | AO    | 4   | LEU  |
| 13  | AO    | 38  | VAL  |
| 13  | AO    | 57  | ARG  |
| 13  | AO    | 72  | ASP  |
| 13  | AO    | 76  | VAL  |
| 13  | AO    | 88  | ARG  |
| 13  | AO    | 89  | ASP  |
| 14  | AP    | 5   | THR  |
| 14  | AP    | 14  | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 14  | AP    | 28  | VAL  |
| 14  | AP    | 29  | PHE  |
| 14  | AP    | 30  | ARG  |
| 14  | AP    | 31  | SER  |
| 14  | AP    | 32  | LEU  |
| 14  | AP    | 35  | ILE  |
| 14  | AP    | 36  | TYR  |
| 14  | AP    | 48  | LEU  |
| 14  | AP    | 51  | ALA  |
| 14  | AP    | 54  | LEU  |
| 14  | AP    | 58  | LEU  |
| 14  | AP    | 61  | ASN  |
| 15  | AQ    | 2   | ASN  |
| 15  | AQ    | 3   | ARG  |
| 15  | AQ    | 5   | ALA  |
| 15  | AQ    | 19  | LEU  |
| 15  | AQ    | 20  | PRO  |
| 15  | AQ    | 22  | PHE  |
| 15  | AQ    | 25  | GLY  |
| 15  | AQ    | 27  | THR  |
| 15  | AQ    | 39  | ARG  |
| 15  | AQ    | 45  | PHE  |
| 15  | AQ    | 58  | ASN  |
| 15  | AQ    | 83  | ILE  |
| 15  | AQ    | 98  | LYS  |
| 15  | AQ    | 100 | TYR  |
| 15  | AQ    | 103 | ARG  |
| 15  | AQ    | 105 | LEU  |
| 15  | AQ    | 106 | SER  |
| 15  | AQ    | 109 | GLU  |
| 16  | AR    | 3   | ARG  |
| 16  | AR    | 4   | ALA  |
| 16  | AR    | 8   | VAL  |
| 16  | AR    | 22  | LYS  |
| 16  | AR    | 31  | SER  |
| 16  | AR    | 32  | PHE  |
| 16  | AR    | 33  | ARG  |
| 16  | AR    | 62  | ILE  |
| 16  | AR    | 75  | ASN  |
| 16  | AR    | 94  | ASN  |
| 17  | AS    | 10  | LYS  |
| 17  | AS    | 11  | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 17  | AS    | 13  | ARG  |
| 17  | AS    | 15  | GLU  |
| 17  | AS    | 19  | LYS  |
| 17  | AS    | 22  | VAL  |
| 17  | AS    | 31  | ALA  |
| 17  | AS    | 32  | THR  |
| 17  | AS    | 39  | LEU  |
| 17  | AS    | 40  | LEU  |
| 17  | AS    | 46  | VAL  |
| 17  | AS    | 50  | PRO  |
| 17  | AS    | 57  | VAL  |
| 17  | AS    | 68  | LYS  |
| 17  | AS    | 69  | LYS  |
| 17  | AS    | 73  | SER  |
| 17  | AS    | 82  | ARG  |
| 17  | AS    | 100 | ARG  |
| 18  | AT    | 9   | TYR  |
| 18  | AT    | 11  | ARG  |
| 18  | AT    | 12  | ILE  |
| 18  | AT    | 14  | PRO  |
| 18  | AT    | 25  | ARG  |
| 18  | AT    | 27  | LYS  |
| 18  | AT    | 41  | LYS  |
| 18  | AT    | 44  | ALA  |
| 18  | AT    | 58  | ALA  |
| 18  | AT    | 64  | MET  |
| 18  | AT    | 65  | LEU  |
| 18  | AT    | 73  | ALA  |
| 18  | AT    | 92  | ARG  |
| 19  | AU    | 4   | ALA  |
| 19  | AU    | 6   | ASP  |
| 19  | AU    | 63  | LYS  |
| 19  | AU    | 73  | ARG  |
| 19  | AU    | 89  | ILE  |
| 19  | AU    | 90  | GLU  |
| 19  | AU    | 95  | LEU  |
| 20  | AV    | 10  | GLY  |
| 20  | AV    | 15  | VAL  |
| 20  | AV    | 31  | LEU  |
| 20  | AV    | 40  | GLU  |
| 20  | AV    | 42  | VAL  |
| 20  | AV    | 45  | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 20  | AV    | 46  | LYS  |
| 20  | AV    | 47  | LYS  |
| 20  | AV    | 57  | GLN  |
| 20  | AV    | 58  | GLY  |
| 20  | AV    | 65  | ALA  |
| 20  | AV    | 71  | LYS  |
| 20  | AV    | 72  | VAL  |
| 20  | AV    | 77  | PRO  |
| 20  | AV    | 82  | PRO  |
| 20  | AV    | 108 | THR  |
| 21  | AW    | 41  | LEU  |
| 21  | AW    | 42  | VAL  |
| 21  | AW    | 57  | ILE  |
| 21  | AW    | 62  | PRO  |
| 21  | AW    | 78  | LYS  |
| 21  | AW    | 79  | ARG  |
| 21  | AW    | 83  | PRO  |
| 21  | AW    | 93  | ASP  |
| 21  | AW    | 94  | GLU  |
| 21  | AW    | 108 | PRO  |
| 21  | AW    | 109 | ALA  |
| 21  | AW    | 146 | ILE  |
| 21  | AW    | 155 | LEU  |
| 21  | AW    | 159 | PRO  |
| 21  | AW    | 161 | VAL  |
| 21  | AW    | 162 | GLU  |
| 21  | AW    | 165 | VAL  |
| 22  | AX    | 2   | ALA  |
| 22  | AX    | 29  | GLN  |
| 22  | AX    | 55  | ARG  |
| 22  | AX    | 84  | LEU  |
| 23  | AY    | 12  | SER  |
| 23  | AY    | 13  | PRO  |
| 23  | AY    | 15  | GLU  |
| 23  | AY    | 34  | ALA  |
| 23  | AY    | 35  | SER  |
| 23  | AY    | 42  | ASN  |
| 24  | AZ    | 9   | VAL  |
| 24  | AZ    | 11  | SER  |
| 24  | AZ    | 13  | ILE  |
| 24  | AZ    | 28  | LEU  |
| 24  | AZ    | 29  | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 24  | AZ    | 30  | ARG  |
| 24  | AZ    | 31  | LEU  |
| 24  | AZ    | 52  | HIS  |
| 25  | Aa    | 6   | HIS  |
| 25  | Aa    | 8   | LYS  |
| 25  | Aa    | 11  | PRO  |
| 25  | Aa    | 13  | ARG  |
| 25  | Aa    | 14  | ILE  |
| 25  | Aa    | 18  | CYS  |
| 25  | Aa    | 32  | TYR  |
| 25  | Aa    | 33  | VAL  |
| 25  | Aa    | 39  | CYS  |
| 25  | Aa    | 53  | GLU  |
| 25  | Aa    | 55  | ARG  |
| 26  | Ab    | 7   | PRO  |
| 26  | Ab    | 10  | LYS  |
| 26  | Ab    | 11  | THR  |
| 26  | Ab    | 18  | ALA  |
| 26  | Ab    | 23  | HIS  |
| 26  | Ab    | 36  | CYS  |
| 26  | Ab    | 38  | ALA  |
| 26  | Ab    | 42  | PRO  |
| 27  | Ac    | 8   | LYS  |
| 27  | Ac    | 17  | LYS  |
| 27  | Ac    | 20  | ASN  |
| 27  | Ac    | 23  | THR  |
| 27  | Ac    | 26  | ASN  |
| 27  | Ac    | 27  | LYS  |
| 27  | Ac    | 29  | ASN  |
| 27  | Ac    | 30  | THR  |
| 27  | Ac    | 36  | LEU  |
| 27  | Ac    | 37  | ARG  |
| 27  | Ac    | 38  | LYS  |
| 27  | Ac    | 46  | HIS  |
| 27  | Ac    | 49  | HIS  |
| 27  | Ac    | 50  | ARG  |
| 27  | Ac    | 51  | GLU  |
| 27  | Ac    | 53  | LYS  |
| 28  | Ad    | 2   | LYS  |
| 28  | Ad    | 10  | ARG  |
| 28  | Ad    | 41  | ARG  |
| 28  | Ad    | 47  | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 29  | Ae    | 5   | LYS  |
| 29  | Ae    | 27  | THR  |
| 29  | Ae    | 30  | ARG  |
| 29  | Ae    | 36  | LYS  |
| 29  | Ae    | 37  | SER  |
| 29  | Ae    | 39  | LYS  |
| 29  | Ae    | 62  | LEU  |
| 29  | Ae    | 63  | PRO  |
| 30  | Af    | 5   | ALA  |
| 30  | Af    | 9   | ARG  |
| 30  | Af    | 10  | ILE  |
| 30  | Af    | 11  | CYS  |
| 31  | AI    | 7   | VAL  |
| 31  | AI    | 30  | GLN  |
| 31  | AI    | 52  | PHE  |
| 31  | AI    | 53  | VAL  |
| 31  | AI    | 57  | THR  |
| 31  | AI    | 58  | LEU  |
| 31  | AI    | 74  | LEU  |
| 31  | AI    | 77  | PRO  |
| 31  | AI    | 80  | VAL  |
| 31  | AI    | 90  | ALA  |
| 31  | AI    | 93  | LEU  |
| 31  | AI    | 107 | VAL  |
| 32  | AJ    | 20  | ALA  |
| 32  | AJ    | 29  | GLN  |
| 32  | AJ    | 34  | ILE  |
| 32  | AJ    | 50  | ASP  |
| 32  | AJ    | 51  | ALA  |
| 32  | AJ    | 68  | VAL  |
| 32  | AJ    | 71  | THR  |
| 32  | AJ    | 84  | LEU  |
| 32  | AJ    | 93  | ARG  |
| 32  | AJ    | 108 | ALA  |
| 32  | AJ    | 111 | LYS  |
| 32  | AJ    | 113 | PRO  |
| 35  | BF    | 8   | LYS  |
| 35  | BF    | 11  | LEU  |
| 35  | BF    | 13  | ALA  |
| 35  | BF    | 15  | VAL  |
| 35  | BF    | 16  | HIS  |
| 35  | BF    | 17  | PHE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 35  | BF    | 22  | LYS  |
| 35  | BF    | 26  | PRO  |
| 35  | BF    | 37  | ASN  |
| 35  | BF    | 42  | ILE  |
| 35  | BF    | 44  | LEU  |
| 35  | BF    | 45  | GLN  |
| 35  | BF    | 76  | GLN  |
| 35  | BF    | 77  | ALA  |
| 35  | BF    | 78  | GLN  |
| 35  | BF    | 97  | TRP  |
| 35  | BF    | 104 | ASN  |
| 35  | BF    | 109 | SER  |
| 35  | BF    | 122 | PHE  |
| 35  | BF    | 124 | SER  |
| 35  | BF    | 127 | ILE  |
| 35  | BF    | 131 | PRO  |
| 35  | BF    | 147 | LYS  |
| 35  | BF    | 153 | ARG  |
| 35  | BF    | 154 | LEU  |
| 35  | BF    | 155 | LEU  |
| 35  | BF    | 161 | ALA  |
| 35  | BF    | 165 | VAL  |
| 35  | BF    | 168 | THR  |
| 35  | BF    | 169 | LYS  |
| 35  | BF    | 171 | ALA  |
| 35  | BF    | 172 | ILE  |
| 35  | BF    | 181 | PHE  |
| 35  | BF    | 191 | ASP  |
| 35  | BF    | 194 | PRO  |
| 35  | BF    | 195 | ASP  |
| 35  | BF    | 200 | ILE  |
| 35  | BF    | 201 | ILE  |
| 35  | BF    | 204 | ASN  |
| 35  | BF    | 207 | ALA  |
| 35  | BF    | 211 | ILE  |
| 35  | BF    | 226 | ARG  |
| 35  | BF    | 230 | VAL  |
| 35  | BF    | 232 | PRO  |
| 35  | BF    | 236 | TYR  |
| 36  | BG    | 4   | LYS  |
| 36  | BG    | 12  | LEU  |
| 36  | BG    | 14  | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 36  | BG    | 18  | TRP  |
| 36  | BG    | 24  | ALA  |
| 36  | BG    | 28  | GLN  |
| 36  | BG    | 39  | ILE  |
| 36  | BG    | 43  | LEU  |
| 36  | BG    | 52  | LEU  |
| 36  | BG    | 53  | ALA  |
| 36  | BG    | 64  | VAL  |
| 36  | BG    | 65  | ALA  |
| 36  | BG    | 79  | ARG  |
| 36  | BG    | 83  | ARG  |
| 36  | BG    | 84  | ILE  |
| 36  | BG    | 95  | THR  |
| 36  | BG    | 97  | LYS  |
| 36  | BG    | 98  | ASN  |
| 36  | BG    | 119 | ARG  |
| 36  | BG    | 129 | ALA  |
| 36  | BG    | 157 | ILE  |
| 36  | BG    | 160 | ALA  |
| 36  | BG    | 176 | HIS  |
| 36  | BG    | 177 | THR  |
| 36  | BG    | 179 | ARG  |
| 36  | BG    | 191 | THR  |
| 36  | BG    | 192 | THR  |
| 37  | BH    | 3   | ARG  |
| 37  | BH    | 17  | VAL  |
| 37  | BH    | 18  | LYS  |
| 37  | BH    | 21  | LEU  |
| 37  | BH    | 29  | PRO  |
| 37  | BH    | 30  | LYS  |
| 37  | BH    | 31  | CYS  |
| 37  | BH    | 48  | ALA  |
| 37  | BH    | 56  | VAL  |
| 37  | BH    | 71  | SER  |
| 37  | BH    | 86  | LYS  |
| 37  | BH    | 88  | VAL  |
| 37  | BH    | 99  | SER  |
| 37  | BH    | 109 | GLY  |
| 37  | BH    | 131 | ARG  |
| 37  | BH    | 142 | PRO  |
| 37  | BH    | 148 | VAL  |
| 37  | BH    | 150 | GLU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 37  | BH    | 151 | LYS  |
| 37  | BH    | 154 | ASN  |
| 37  | BH    | 166 | LYS  |
| 37  | BH    | 168 | ARG  |
| 37  | BH    | 170 | VAL  |
| 37  | BH    | 179 | GLU  |
| 37  | BH    | 191 | ARG  |
| 37  | BH    | 195 | ALA  |
| 37  | BH    | 198 | VAL  |
| 37  | BH    | 199 | ASN  |
| 38  | BI    | 12  | LEU  |
| 38  | BI    | 55  | VAL  |
| 38  | BI    | 75  | THR  |
| 38  | BI    | 128 | PRO  |
| 38  | BI    | 144 | THR  |
| 39  | BJ    | 11  | ASN  |
| 39  | BJ    | 16  | GLN  |
| 39  | BJ    | 27  | GLN  |
| 39  | BJ    | 72  | VAL  |
| 39  | BJ    | 81  | ILE  |
| 39  | BJ    | 82  | ARG  |
| 39  | BJ    | 84  | ASN  |
| 39  | BJ    | 85  | VAL  |
| 39  | BJ    | 95  | GLU  |
| 39  | BJ    | 97  | PHE  |
| 40  | BK    | 4   | ARG  |
| 40  | BK    | 8   | GLU  |
| 40  | BK    | 14  | PRO  |
| 40  | BK    | 17  | VAL  |
| 40  | BK    | 31  | MET  |
| 40  | BK    | 35  | LYS  |
| 40  | BK    | 37  | ASN  |
| 40  | BK    | 71  | PRO  |
| 40  | BK    | 91  | VAL  |
| 40  | BK    | 111 | ARG  |
| 40  | BK    | 134 | ALA  |
| 40  | BK    | 142 | GLU  |
| 41  | BL    | 6   | ILE  |
| 41  | BL    | 13  | ILE  |
| 41  | BL    | 29  | SER  |
| 41  | BL    | 30  | ARG  |
| 41  | BL    | 63  | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 41  | BL    | 74  | PRO  |
| 41  | BL    | 75  | ARG  |
| 41  | BL    | 76  | PRO  |
| 41  | BL    | 77  | GLU  |
| 41  | BL    | 79  | VAL  |
| 41  | BL    | 103 | VAL  |
| 41  | BL    | 105 | ARG  |
| 41  | BL    | 115 | SER  |
| 41  | BL    | 121 | ASP  |
| 41  | BL    | 129 | VAL  |
| 42  | BM    | 29  | ASN  |
| 42  | BM    | 33  | PHE  |
| 42  | BM    | 44  | VAL  |
| 42  | BM    | 70  | LYS  |
| 42  | BM    | 98  | PRO  |
| 42  | BM    | 109 | VAL  |
| 42  | BM    | 116 | LYS  |
| 42  | BM    | 118 | LYS  |
| 43  | BN    | 34  | VAL  |
| 43  | BN    | 36  | GLY  |
| 43  | BN    | 39  | PRO  |
| 43  | BN    | 40  | LEU  |
| 43  | BN    | 55  | LYS  |
| 43  | BN    | 56  | HIS  |
| 43  | BN    | 60  | ARG  |
| 43  | BN    | 72  | VAL  |
| 43  | BN    | 79  | ARG  |
| 43  | BN    | 80  | LYS  |
| 43  | BN    | 90  | LEU  |
| 44  | BO    | 14  | VAL  |
| 44  | BO    | 15  | ALA  |
| 44  | BO    | 27  | ASN  |
| 44  | BO    | 39  | PRO  |
| 44  | BO    | 74  | ALA  |
| 44  | BO    | 78  | GLN  |
| 44  | BO    | 106 | LYS  |
| 44  | BO    | 113 | PRO  |
| 44  | BO    | 116 | HIS  |
| 45  | BP    | 6   | THR  |
| 45  | BP    | 7   | ILE  |
| 45  | BP    | 18  | VAL  |
| 45  | BP    | 19  | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 45  | BP    | 22  | SER  |
| 45  | BP    | 28  | LYS  |
| 45  | BP    | 30  | ALA  |
| 45  | BP    | 46  | LYS  |
| 45  | BP    | 48  | PRO  |
| 45  | BP    | 51  | ALA  |
| 45  | BP    | 62  | SER  |
| 45  | BP    | 66  | VAL  |
| 45  | BP    | 83  | VAL  |
| 45  | BP    | 92  | ASP  |
| 45  | BP    | 101 | VAL  |
| 45  | BP    | 110 | VAL  |
| 45  | BP    | 116 | SER  |
| 45  | BP    | 127 | GLU  |
| 46  | BQ    | 12  | ASN  |
| 46  | BQ    | 47  | ASP  |
| 46  | BQ    | 48  | LEU  |
| 46  | BQ    | 102 | ARG  |
| 46  | BQ    | 107 | ALA  |
| 47  | BR    | 12  | ARG  |
| 47  | BR    | 18  | VAL  |
| 47  | BR    | 29  | ARG  |
| 47  | BR    | 31  | ARG  |
| 47  | BR    | 34  | TYR  |
| 47  | BR    | 36  | PHE  |
| 47  | BR    | 44  | LEU  |
| 47  | BR    | 54  | PRO  |
| 47  | BR    | 55  | GLY  |
| 48  | BS    | 3   | ILE  |
| 48  | BS    | 16  | ALA  |
| 49  | BT    | 11  | SER  |
| 49  | BT    | 15  | PRO  |
| 49  | BT    | 24  | ALA  |
| 49  | BT    | 27  | LYS  |
| 49  | BT    | 61  | SER  |
| 50  | BU    | 3   | LYS  |
| 50  | BU    | 4   | LYS  |
| 50  | BU    | 15  | MET  |
| 50  | BU    | 34  | LYS  |
| 50  | BU    | 48  | GLU  |
| 50  | BU    | 50  | LYS  |
| 50  | BU    | 81  | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 50  | BU    | 104 | LYS  |
| 51  | BV    | 42  | ARG  |
| 51  | BV    | 49  | LYS  |
| 51  | BV    | 52  | PRO  |
| 51  | BV    | 59  | SER  |
| 51  | BV    | 75  | ILE  |
| 51  | BV    | 79  | LEU  |
| 51  | BV    | 82  | THR  |
| 51  | BV    | 87  | ARG  |
| 52  | BW    | 9   | VAL  |
| 52  | BW    | 21  | GLU  |
| 52  | BW    | 28  | LYS  |
| 52  | BW    | 32  | LYS  |
| 52  | BW    | 40  | ILE  |
| 52  | BW    | 42  | PRO  |
| 52  | BW    | 43  | GLU  |
| 52  | BW    | 64  | GLU  |
| 52  | BW    | 70  | LYS  |
| 52  | BW    | 79  | THR  |
| 53  | BX    | 12  | ALA  |
| 53  | BX    | 99  | LEU  |
| 53  | BX    | 105 | SER  |
| 54  | BY    | 6   | ARG  |
| 54  | BY    | 9   | ARG  |
| 57  | BZ    | 11  | ILE  |
| 57  | BZ    | 18  | LYS  |
| 57  | BZ    | 28  | GLN  |
| 57  | BZ    | 42  | VAL  |
| 57  | BZ    | 56  | ILE  |
| 57  | BZ    | 58  | ALA  |
| 57  | BZ    | 71  | ASN  |
| 57  | BZ    | 133 | PRO  |
| 57  | BZ    | 135 | ALA  |
| 57  | BZ    | 179 | MET  |
| 57  | BZ    | 182 | ASP  |
| 57  | BZ    | 184 | THR  |
| 57  | BZ    | 209 | ILE  |
| 57  | BZ    | 231 | VAL  |
| 57  | BZ    | 253 | LYS  |
| 57  | BZ    | 284 | ILE  |
| 57  | BZ    | 289 | CYS  |
| 57  | BZ    | 305 | PRO  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 57  | BZ    | 307 | VAL  |
| 57  | BZ    | 314 | ASN  |
| 57  | BZ    | 321 | LYS  |
| 57  | BZ    | 395 | ARG  |
| 57  | BZ    | 424 | GLY  |
| 57  | BZ    | 437 | VAL  |
| 57  | BZ    | 442 | VAL  |
| 57  | BZ    | 475 | VAL  |
| 57  | BZ    | 476 | ARG  |
| 57  | BZ    | 477 | PRO  |
| 57  | BZ    | 557 | LEU  |
| 57  | BZ    | 561 | ILE  |
| 57  | BZ    | 567 | GLN  |
| 57  | BZ    | 583 | THR  |
| 57  | BZ    | 603 | ALA  |
| 3   | AC    | 22  | ILE  |
| 3   | AC    | 80  | GLY  |
| 3   | AC    | 132 | GLY  |
| 3   | AC    | 140 | PRO  |
| 3   | AC    | 161 | ILE  |
| 3   | AC    | 164 | ARG  |
| 4   | AD    | 52  | ARG  |
| 4   | AD    | 62  | TYR  |
| 4   | AD    | 110 | GLY  |
| 4   | AD    | 111 | LEU  |
| 4   | AD    | 123 | ALA  |
| 4   | AD    | 149 | PRO  |
| 4   | AD    | 152 | GLY  |
| 4   | AD    | 189 | CYS  |
| 4   | AD    | 196 | VAL  |
| 4   | AD    | 204 | ILE  |
| 4   | AD    | 207 | GLY  |
| 4   | AD    | 217 | ARG  |
| 4   | AD    | 243 | GLY  |
| 4   | AD    | 262 | ARG  |
| 4   | AD    | 263 | ARG  |
| 4   | AD    | 266 | SER  |
| 5   | AE    | 22  | PRO  |
| 5   | AE    | 44  | TYR  |
| 5   | AE    | 72  | VAL  |
| 5   | AE    | 93  | VAL  |
| 5   | AE    | 95  | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 5   | AE    | 115 | GLY  |
| 5   | AE    | 118 | LYS  |
| 5   | AE    | 121 | ASN  |
| 5   | AE    | 124 | GLY  |
| 5   | AE    | 139 | GLY  |
| 5   | AE    | 155 | LYS  |
| 5   | AE    | 178 | GLU  |
| 5   | AE    | 187 | ALA  |
| 6   | AF    | 54  | ARG  |
| 6   | AF    | 81  | PRO  |
| 6   | AF    | 98  | SER  |
| 6   | AF    | 102 | PRO  |
| 6   | AF    | 126 | VAL  |
| 6   | AF    | 136 | THR  |
| 6   | AF    | 158 | THR  |
| 6   | AF    | 167 | ALA  |
| 6   | AF    | 177 | ALA  |
| 6   | AF    | 184 | TYR  |
| 6   | AF    | 190 | GLU  |
| 7   | AG    | 20  | ILE  |
| 7   | AG    | 24  | GLY  |
| 7   | AG    | 61  | ALA  |
| 7   | AG    | 88  | ILE  |
| 7   | AG    | 151 | ALA  |
| 7   | AG    | 154 | GLY  |
| 7   | AG    | 163 | ALA  |
| 8   | AH    | 31  | GLY  |
| 8   | AH    | 33  | LEU  |
| 8   | AH    | 42  | ARG  |
| 8   | AH    | 57  | ASP  |
| 8   | AH    | 105 | LEU  |
| 8   | AH    | 110 | SER  |
| 8   | AH    | 118 | PRO  |
| 8   | AH    | 120 | GLY  |
| 8   | AH    | 151 | ILE  |
| 8   | AH    | 156 | ALA  |
| 8   | AH    | 169 | VAL  |
| 9   | AK    | 19  | GLU  |
| 9   | AK    | 30  | ILE  |
| 9   | AK    | 34  | LEU  |
| 9   | AK    | 38  | HIS  |
| 9   | AK    | 40  | PRO  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 9   | AK    | 47  | ALA  |
| 9   | AK    | 63  | THR  |
| 9   | AK    | 67  | LEU  |
| 9   | AK    | 88  | GLU  |
| 9   | AK    | 92  | ALA  |
| 9   | AK    | 105 | GLY  |
| 9   | AK    | 110 | GLY  |
| 9   | AK    | 114 | ARG  |
| 10  | AL    | 49  | ARG  |
| 10  | AL    | 50  | GLY  |
| 10  | AL    | 52  | VAL  |
| 10  | AL    | 88  | ASN  |
| 10  | AL    | 90  | GLN  |
| 10  | AL    | 102 | VAL  |
| 10  | AL    | 104 | ARG  |
| 10  | AL    | 121 | VAL  |
| 11  | AM    | 7   | ARG  |
| 11  | AM    | 11  | GLY  |
| 11  | AM    | 23  | PRO  |
| 11  | AM    | 32  | THR  |
| 11  | AM    | 34  | GLY  |
| 11  | AM    | 39  | LYS  |
| 11  | AM    | 43  | GLY  |
| 11  | AM    | 67  | MET  |
| 11  | AM    | 84  | ASN  |
| 11  | AM    | 87  | ASP  |
| 11  | AM    | 92  | GLU  |
| 12  | AN    | 12  | GLN  |
| 12  | AN    | 45  | GLN  |
| 12  | AN    | 88  | GLY  |
| 12  | AN    | 94  | VAL  |
| 12  | AN    | 100 | GLY  |
| 12  | AN    | 107 | ALA  |
| 12  | AN    | 127 | ILE  |
| 12  | AN    | 136 | ALA  |
| 12  | AN    | 137 | TYR  |
| 13  | AO    | 8   | ARG  |
| 13  | AO    | 71  | GLN  |
| 13  | AO    | 86  | ARG  |
| 13  | AO    | 94  | TYR  |
| 14  | AP    | 11  | LYS  |
| 14  | AP    | 23  | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 14  | AP    | 33  | LYS  |
| 14  | AP    | 43  | GLU  |
| 14  | AP    | 67  | ARG  |
| 14  | AP    | 78  | LEU  |
| 14  | AP    | 82  | ILE  |
| 14  | AP    | 97  | ARG  |
| 15  | AQ    | 24  | PRO  |
| 15  | AQ    | 30  | VAL  |
| 15  | AQ    | 36  | GLU  |
| 15  | AQ    | 41  | ARG  |
| 15  | AQ    | 82  | LEU  |
| 15  | AQ    | 99  | LEU  |
| 15  | AQ    | 104 | ASN  |
| 15  | AQ    | 114 | LEU  |
| 16  | AR    | 26  | GLY  |
| 16  | AR    | 27  | LEU  |
| 16  | AR    | 47  | TYR  |
| 16  | AR    | 53  | ARG  |
| 16  | AR    | 78  | THR  |
| 16  | AR    | 88  | ILE  |
| 16  | AR    | 90  | VAL  |
| 16  | AR    | 93  | LYS  |
| 16  | AR    | 110 | VAL  |
| 17  | AS    | 8   | GLY  |
| 17  | AS    | 14  | VAL  |
| 17  | AS    | 18  | LEU  |
| 17  | AS    | 45  | THR  |
| 17  | AS    | 72  | VAL  |
| 17  | AS    | 81  | TYR  |
| 18  | AT    | 15  | ARG  |
| 18  | AT    | 26  | GLY  |
| 18  | AT    | 30  | GLU  |
| 18  | AT    | 75  | TYR  |
| 18  | AT    | 90  | ARG  |
| 19  | AU    | 8   | ILE  |
| 19  | AU    | 15  | GLU  |
| 19  | AU    | 33  | LYS  |
| 19  | AU    | 49  | VAL  |
| 19  | AU    | 53  | LYS  |
| 19  | AU    | 67  | GLY  |
| 19  | AU    | 74  | PRO  |
| 19  | AU    | 85  | PRO  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 20  | AV    | 21  | LYS  |
| 20  | AV    | 29  | GLU  |
| 20  | AV    | 33  | LYS  |
| 20  | AV    | 34  | LYS  |
| 20  | AV    | 48  | ALA  |
| 20  | AV    | 66  | PRO  |
| 20  | AV    | 83  | THR  |
| 20  | AV    | 86  | ARG  |
| 20  | AV    | 95  | LYS  |
| 20  | AV    | 106 | LEU  |
| 21  | AW    | 11  | GLU  |
| 21  | AW    | 31  | ARG  |
| 21  | AW    | 50  | GLN  |
| 21  | AW    | 54  | HIS  |
| 21  | AW    | 123 | ASP  |
| 21  | AW    | 169 | GLU  |
| 21  | AW    | 170 | THR  |
| 22  | AX    | 21  | LEU  |
| 22  | AX    | 67  | VAL  |
| 23  | AY    | 17  | GLU  |
| 23  | AY    | 66  | ASN  |
| 24  | AZ    | 39  | ASP  |
| 24  | AZ    | 53  | LEU  |
| 25  | Aa    | 3   | GLU  |
| 25  | Aa    | 7   | PRO  |
| 25  | Aa    | 21  | VAL  |
| 25  | Aa    | 48  | ARG  |
| 25  | Aa    | 50  | VAL  |
| 25  | Aa    | 51  | ASP  |
| 25  | Aa    | 56  | VAL  |
| 26  | Ab    | 20  | ARG  |
| 27  | Ac    | 18  | ARG  |
| 27  | Ac    | 28  | ARG  |
| 27  | Ac    | 31  | PRO  |
| 27  | Ac    | 32  | ASN  |
| 27  | Ac    | 48  | VAL  |
| 27  | Ac    | 52  | VAL  |
| 28  | Ad    | 3   | ARG  |
| 28  | Ad    | 5   | TRP  |
| 28  | Ad    | 14  | LYS  |
| 28  | Ad    | 19  | ARG  |
| 29  | Ae    | 32  | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 29  | Ae    | 34  | TRP  |
| 29  | Ae    | 52  | LYS  |
| 30  | Af    | 3   | VAL  |
| 30  | Af    | 7   | VAL  |
| 30  | Af    | 33  | LYS  |
| 31  | AI    | 23  | SER  |
| 31  | AI    | 55  | LYS  |
| 31  | AI    | 73  | GLY  |
| 31  | AI    | 91  | LYS  |
| 31  | AI    | 116 | ILE  |
| 31  | AI    | 136 | ALA  |
| 31  | AI    | 154 | GLY  |
| 32  | AJ    | 66  | THR  |
| 32  | AJ    | 69  | THR  |
| 32  | AJ    | 74  | ALA  |
| 32  | AJ    | 86  | LYS  |
| 32  | AJ    | 90  | LYS  |
| 35  | BF    | 9   | GLU  |
| 35  | BF    | 29  | ALA  |
| 35  | BF    | 73  | THR  |
| 35  | BF    | 102 | LEU  |
| 35  | BF    | 151 | GLY  |
| 35  | BF    | 178 | ARG  |
| 35  | BF    | 190 | THR  |
| 35  | BF    | 227 | GLY  |
| 36  | BG    | 27  | LYS  |
| 36  | BG    | 30  | ARG  |
| 36  | BG    | 66  | VAL  |
| 36  | BG    | 74  | GLY  |
| 36  | BG    | 101 | LEU  |
| 36  | BG    | 158 | GLY  |
| 36  | BG    | 206 | GLU  |
| 37  | BH    | 4   | TYR  |
| 37  | BH    | 67  | ILE  |
| 37  | BH    | 73  | ARG  |
| 37  | BH    | 101 | LEU  |
| 37  | BH    | 107 | ARG  |
| 37  | BH    | 138 | TYR  |
| 37  | BH    | 139 | ARG  |
| 37  | BH    | 165 | MET  |
| 37  | BH    | 181 | MET  |
| 37  | BH    | 200 | GLU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 37  | BH    | 208 | SER  |
| 38  | BI    | 37  | ARG  |
| 38  | BI    | 98  | THR  |
| 38  | BI    | 102 | ALA  |
| 38  | BI    | 104 | ALA  |
| 39  | BJ    | 13  | ASN  |
| 39  | BJ    | 14  | LEU  |
| 39  | BJ    | 51  | PRO  |
| 39  | BJ    | 83  | ASP  |
| 40  | BK    | 23  | VAL  |
| 40  | BK    | 56  | GLN  |
| 40  | BK    | 72  | ARG  |
| 40  | BK    | 92  | SER  |
| 40  | BK    | 94  | ARG  |
| 40  | BK    | 112 | PRO  |
| 40  | BK    | 113 | GLU  |
| 40  | BK    | 146 | GLU  |
| 40  | BK    | 153 | HIS  |
| 41  | BL    | 37  | ARG  |
| 41  | BL    | 78  | GLN  |
| 41  | BL    | 97  | VAL  |
| 41  | BL    | 102 | ARG  |
| 41  | BL    | 108 | GLY  |
| 41  | BL    | 123 | GLU  |
| 41  | BL    | 134 | ILE  |
| 42  | BM    | 39  | GLY  |
| 42  | BM    | 68  | GLY  |
| 42  | BM    | 71  | SER  |
| 42  | BM    | 94  | ALA  |
| 42  | BM    | 104 | ARG  |
| 42  | BM    | 114 | TYR  |
| 42  | BM    | 120 | ARG  |
| 42  | BM    | 125 | TYR  |
| 43  | BN    | 31  | GLY  |
| 43  | BN    | 58  | ASP  |
| 43  | BN    | 61  | GLU  |
| 43  | BN    | 78  | ASN  |
| 43  | BN    | 94  | VAL  |
| 44  | BO    | 13  | GLN  |
| 44  | BO    | 55  | LYS  |
| 44  | BO    | 76  | GLY  |
| 44  | BO    | 102 | GLY  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 44  | BO    | 104 | GLN  |
| 44  | BO    | 115 | PRO  |
| 45  | BP    | 31  | PRO  |
| 45  | BP    | 41  | ARG  |
| 45  | BP    | 42  | THR  |
| 45  | BP    | 76  | ASN  |
| 45  | BP    | 87  | GLY  |
| 45  | BP    | 94  | PRO  |
| 45  | BP    | 126 | LYS  |
| 46  | BQ    | 46  | LYS  |
| 46  | BQ    | 64  | TRP  |
| 46  | BQ    | 65  | LYS  |
| 46  | BQ    | 86  | CYS  |
| 47  | BR    | 5   | ALA  |
| 47  | BR    | 9   | LYS  |
| 47  | BR    | 17  | LYS  |
| 47  | BR    | 22  | THR  |
| 47  | BR    | 28  | GLY  |
| 47  | BR    | 56  | VAL  |
| 48  | BS    | 6   | GLU  |
| 48  | BS    | 46  | HIS  |
| 48  | BS    | 76  | GLU  |
| 48  | BS    | 83  | GLU  |
| 48  | BS    | 87  | ILE  |
| 49  | BT    | 30  | GLY  |
| 49  | BT    | 43  | LYS  |
| 49  | BT    | 82  | GLN  |
| 50  | BU    | 16  | GLN  |
| 50  | BU    | 33  | GLY  |
| 50  | BU    | 96  | GLN  |
| 50  | BU    | 98  | LEU  |
| 51  | BV    | 28  | GLU  |
| 51  | BV    | 34  | TYR  |
| 51  | BV    | 37  | VAL  |
| 51  | BV    | 38  | GLU  |
| 51  | BV    | 54  | ARG  |
| 51  | BV    | 64  | ARG  |
| 52  | BW    | 13  | ASP  |
| 52  | BW    | 20  | LEU  |
| 52  | BW    | 36  | ARG  |
| 52  | BW    | 65  | ASN  |
| 52  | BW    | 71  | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 53  | BX    | 49  | ALA  |
| 53  | BX    | 56  | MET  |
| 53  | BX    | 68  | LYS  |
| 53  | BX    | 101 | GLY  |
| 53  | BX    | 102 | GLY  |
| 53  | BX    | 103 | GLY  |
| 54  | BY    | 7   | ARG  |
| 57  | BZ    | 13  | HIS  |
| 57  | BZ    | 54  | ILE  |
| 57  | BZ    | 62  | ALA  |
| 57  | BZ    | 84  | GLU  |
| 57  | BZ    | 91  | MET  |
| 57  | BZ    | 155 | ASP  |
| 57  | BZ    | 160 | PHE  |
| 57  | BZ    | 181 | GLU  |
| 57  | BZ    | 216 | SER  |
| 57  | BZ    | 217 | TYR  |
| 57  | BZ    | 218 | VAL  |
| 57  | BZ    | 236 | GLN  |
| 57  | BZ    | 246 | THR  |
| 57  | BZ    | 306 | THR  |
| 57  | BZ    | 316 | SER  |
| 57  | BZ    | 323 | GLY  |
| 57  | BZ    | 392 | ILE  |
| 57  | BZ    | 462 | THR  |
| 57  | BZ    | 468 | THR  |
| 57  | BZ    | 503 | GLY  |
| 57  | BZ    | 516 | ALA  |
| 57  | BZ    | 535 | VAL  |
| 57  | BZ    | 565 | LEU  |
| 57  | BZ    | 572 | ILE  |
| 57  | BZ    | 573 | ASP  |
| 3   | AC    | 59  | ARG  |
| 3   | AC    | 69  | GLY  |
| 3   | AC    | 78  | ALA  |
| 3   | AC    | 90  | GLY  |
| 3   | AC    | 167 | LYS  |
| 3   | AC    | 226 | PRO  |
| 4   | AD    | 56  | GLY  |
| 4   | AD    | 86  | PRO  |
| 4   | AD    | 226 | MET  |
| 4   | AD    | 227 | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 4   | AD    | 233 | HIS  |
| 4   | AD    | 245 | PRO  |
| 4   | AD    | 246 | PRO  |
| 4   | AD    | 259 | THR  |
| 5   | AE    | 51  | PHE  |
| 5   | AE    | 67  | PHE  |
| 5   | AE    | 75  | VAL  |
| 5   | AE    | 126 | PRO  |
| 6   | AF    | 21  | ALA  |
| 6   | AF    | 24  | LEU  |
| 6   | AF    | 72  | ARG  |
| 6   | AF    | 159 | GLY  |
| 7   | AG    | 30  | GLU  |
| 7   | AG    | 57  | ALA  |
| 7   | AG    | 81  | LYS  |
| 7   | AG    | 106 | LEU  |
| 7   | AG    | 125 | PHE  |
| 7   | AG    | 167 | GLU  |
| 7   | AG    | 178 | PHE  |
| 8   | AH    | 67  | LEU  |
| 8   | AH    | 94  | TYR  |
| 8   | AH    | 114 | VAL  |
| 9   | AK    | 18  | ALA  |
| 9   | AK    | 29  | LYS  |
| 9   | AK    | 109 | LYS  |
| 9   | AK    | 138 | LEU  |
| 10  | AL    | 10  | VAL  |
| 10  | AL    | 59  | LYS  |
| 10  | AL    | 91  | LEU  |
| 10  | AL    | 92  | GLU  |
| 10  | AL    | 109 | LYS  |
| 11  | AM    | 16  | ARG  |
| 11  | AM    | 26  | GLY  |
| 11  | AM    | 37  | GLY  |
| 11  | AM    | 81  | GLN  |
| 12  | AN    | 26  | TYR  |
| 12  | AN    | 31  | ASP  |
| 12  | AN    | 46  | GLN  |
| 12  | AN    | 73  | PRO  |
| 12  | AN    | 115 | MET  |
| 13  | AO    | 5   | LYS  |
| 13  | AO    | 49  | ASP  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 13  | AO    | 58  | GLY  |
| 13  | AO    | 100 | LEU  |
| 14  | AP    | 10  | ARG  |
| 14  | AP    | 60  | GLY  |
| 14  | AP    | 66  | ALA  |
| 14  | AP    | 72  | ALA  |
| 14  | AP    | 102 | ALA  |
| 15  | AQ    | 4   | GLY  |
| 15  | AQ    | 28  | VAL  |
| 15  | AQ    | 102 | ILE  |
| 16  | AR    | 6   | THR  |
| 16  | AR    | 96  | ALA  |
| 16  | AR    | 97  | ASP  |
| 17  | AS    | 29  | PRO  |
| 18  | AT    | 66  | GLU  |
| 18  | AT    | 67  | ASP  |
| 19  | AU    | 48  | LYS  |
| 20  | AV    | 16  | ALA  |
| 20  | AV    | 74  | PRO  |
| 21  | AW    | 64  | GLY  |
| 21  | AW    | 80  | ARG  |
| 21  | AW    | 82  | ARG  |
| 21  | AW    | 95  | PRO  |
| 21  | AW    | 131 | ARG  |
| 21  | AW    | 145 | GLU  |
| 21  | AW    | 160 | GLY  |
| 22  | AX    | 56  | ASP  |
| 22  | AX    | 83  | PRO  |
| 25  | Aa    | 27  | THR  |
| 25  | Aa    | 58  | ARG  |
| 25  | Aa    | 61  | ARG  |
| 26  | Ab    | 5   | PRO  |
| 26  | Ab    | 9   | LYS  |
| 26  | Ab    | 14  | ALA  |
| 26  | Ab    | 47  | PRO  |
| 26  | Ab    | 59  | GLU  |
| 27  | Ac    | 25  | LYS  |
| 27  | Ac    | 34  | LEU  |
| 28  | Ad    | 4   | THR  |
| 28  | Ad    | 11  | LYS  |
| 28  | Ad    | 31  | LEU  |
| 28  | Ad    | 39  | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 28  | Ad    | 40  | TRP  |
| 28  | Ad    | 46  | VAL  |
| 29  | Ae    | 13  | ARG  |
| 29  | Ae    | 18  | ALA  |
| 29  | Ae    | 41  | ILE  |
| 29  | Ae    | 53  | PRO  |
| 29  | Ae    | 57  | ARG  |
| 29  | Ae    | 61  | LEU  |
| 31  | AI    | 49  | ALA  |
| 31  | AI    | 104 | ILE  |
| 32  | AJ    | 22  | PRO  |
| 32  | AJ    | 32  | ALA  |
| 32  | AJ    | 117 | THR  |
| 35  | BF    | 88  | ALA  |
| 35  | BF    | 96  | ARG  |
| 35  | BF    | 110 | GLN  |
| 35  | BF    | 141 | GLU  |
| 35  | BF    | 157 | ARG  |
| 35  | BF    | 180 | LEU  |
| 35  | BF    | 183 | PRO  |
| 35  | BF    | 237 | ALA  |
| 36  | BG    | 7   | PRO  |
| 36  | BG    | 49  | SER  |
| 36  | BG    | 62  | ASP  |
| 36  | BG    | 81  | GLY  |
| 36  | BG    | 127 | ARG  |
| 36  | BG    | 139 | GLN  |
| 36  | BG    | 145 | GLY  |
| 36  | BG    | 178 | LEU  |
| 36  | BG    | 181 | ASN  |
| 37  | BH    | 7   | PRO  |
| 37  | BH    | 40  | PRO  |
| 37  | BH    | 51  | PRO  |
| 37  | BH    | 53  | ASP  |
| 37  | BH    | 153 | ARG  |
| 38  | BI    | 26  | PHE  |
| 38  | BI    | 96  | PRO  |
| 38  | BI    | 112 | LEU  |
| 39  | BJ    | 12  | PRO  |
| 39  | BJ    | 15  | ASP  |
| 39  | BJ    | 17  | SER  |
| 39  | BJ    | 69  | GLU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 40  | BK    | 6   | ARG  |
| 40  | BK    | 38  | LEU  |
| 40  | BK    | 103 | TRP  |
| 40  | BK    | 121 | ALA  |
| 41  | BL    | 24  | THR  |
| 41  | BL    | 39  | LEU  |
| 41  | BL    | 41  | ARG  |
| 41  | BL    | 44  | PHE  |
| 41  | BL    | 69  | ARG  |
| 41  | BL    | 73  | ASP  |
| 41  | BL    | 90  | GLY  |
| 42  | BM    | 43  | ALA  |
| 42  | BM    | 47  | LEU  |
| 42  | BM    | 102 | LEU  |
| 42  | BM    | 103 | THR  |
| 42  | BM    | 105 | ASP  |
| 42  | BM    | 117 | HIS  |
| 43  | BN    | 77  | PRO  |
| 44  | BO    | 37  | GLY  |
| 44  | BO    | 53  | SER  |
| 44  | BO    | 93  | GLN  |
| 44  | BO    | 123 | LYS  |
| 45  | BP    | 23  | LYS  |
| 45  | BP    | 26  | ALA  |
| 45  | BP    | 80  | HIS  |
| 45  | BP    | 100 | ILE  |
| 45  | BP    | 105 | TYR  |
| 45  | BP    | 106 | ASP  |
| 45  | BP    | 107 | ALA  |
| 45  | BP    | 121 | GLY  |
| 45  | BP    | 122 | THR  |
| 46  | BQ    | 11  | ARG  |
| 46  | BQ    | 14  | ARG  |
| 46  | BQ    | 38  | GLY  |
| 46  | BQ    | 67  | GLU  |
| 46  | BQ    | 72  | ALA  |
| 46  | BQ    | 96  | LEU  |
| 48  | BS    | 19  | PRO  |
| 48  | BS    | 33  | THR  |
| 48  | BS    | 88  | ARG  |
| 49  | BT    | 28  | ARG  |
| 49  | BT    | 44  | THR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 49  | BT    | 66  | PRO  |
| 50  | BU    | 14  | LYS  |
| 51  | BV    | 71  | LYS  |
| 51  | BV    | 72  | ARG  |
| 51  | BV    | 81  | PHE  |
| 52  | BW    | 25  | LYS  |
| 52  | BW    | 30  | LEU  |
| 52  | BW    | 52  | TYR  |
| 53  | BX    | 15  | ARG  |
| 53  | BX    | 24  | LEU  |
| 53  | BX    | 32  | ALA  |
| 53  | BX    | 50  | GLU  |
| 53  | BX    | 57  | ARG  |
| 53  | BX    | 59  | ALA  |
| 53  | BX    | 76  | ALA  |
| 53  | BX    | 84  | LEU  |
| 57  | BZ    | 37  | GLU  |
| 57  | BZ    | 64  | ILE  |
| 57  | BZ    | 110 | ARG  |
| 57  | BZ    | 118 | ALA  |
| 57  | BZ    | 178 | ASP  |
| 57  | BZ    | 185 | PRO  |
| 57  | BZ    | 230 | LYS  |
| 57  | BZ    | 243 | GLU  |
| 57  | BZ    | 244 | GLY  |
| 57  | BZ    | 245 | LYS  |
| 57  | BZ    | 257 | HIS  |
| 57  | BZ    | 267 | LEU  |
| 57  | BZ    | 292 | GLN  |
| 57  | BZ    | 315 | THR  |
| 57  | BZ    | 317 | PRO  |
| 57  | BZ    | 324 | LYS  |
| 57  | BZ    | 409 | GLU  |
| 57  | BZ    | 428 | ASN  |
| 57  | BZ    | 434 | LYS  |
| 57  | BZ    | 471 | HIS  |
| 57  | BZ    | 485 | ASN  |
| 57  | BZ    | 539 | THR  |
| 57  | BZ    | 552 | ASP  |
| 3   | AC    | 56  | GLN  |
| 3   | AC    | 71  | GLN  |
| 3   | AC    | 148 | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 4   | AD    | 37  | LEU  |
| 4   | AD    | 209 | ALA  |
| 4   | AD    | 248 | SER  |
| 4   | AD    | 257 | LEU  |
| 5   | AE    | 28  | ALA  |
| 5   | AE    | 32  | PRO  |
| 5   | AE    | 53  | PRO  |
| 5   | AE    | 89  | ASP  |
| 5   | AE    | 94  | GLU  |
| 5   | AE    | 119 | ARG  |
| 5   | AE    | 135 | HIS  |
| 5   | AE    | 143 | ASN  |
| 5   | AE    | 165 | VAL  |
| 6   | AF    | 64  | ILE  |
| 6   | AF    | 111 | ALA  |
| 6   | AF    | 137 | LYS  |
| 6   | AF    | 168 | ARG  |
| 6   | AF    | 183 | VAL  |
| 7   | AG    | 153 | ARG  |
| 7   | AG    | 166 | ASP  |
| 8   | AH    | 58  | GLU  |
| 8   | AH    | 138 | LYS  |
| 8   | AH    | 154 | PRO  |
| 9   | AK    | 28  | THR  |
| 9   | AK    | 90  | MET  |
| 9   | AK    | 108 | PRO  |
| 10  | AL    | 106 | LEU  |
| 11  | AM    | 9   | ASN  |
| 11  | AM    | 15  | ARG  |
| 11  | AM    | 25  | SER  |
| 11  | AM    | 35  | HIS  |
| 11  | AM    | 63  | PRO  |
| 11  | AM    | 89  | ALA  |
| 11  | AM    | 108 | LYS  |
| 12  | AN    | 22  | LYS  |
| 12  | AN    | 37  | LEU  |
| 12  | AN    | 79  | LEU  |
| 12  | AN    | 84  | GLY  |
| 12  | AN    | 89  | ASN  |
| 12  | AN    | 98  | LYS  |
| 13  | AO    | 12  | ARG  |
| 13  | AO    | 42  | LYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 14  | AP    | 59  | LYS  |
| 14  | AP    | 80  | LEU  |
| 14  | AP    | 89  | ARG  |
| 15  | AQ    | 9   | LEU  |
| 15  | AQ    | 77  | PRO  |
| 15  | AQ    | 96  | ARG  |
| 15  | AQ    | 110 | ILE  |
| 15  | AQ    | 111 | ARG  |
| 15  | AQ    | 112 | ARG  |
| 16  | AR    | 41  | ALA  |
| 16  | AR    | 60  | LEU  |
| 16  | AR    | 72  | HIS  |
| 16  | AR    | 111 | GLU  |
| 17  | AS    | 2   | PHE  |
| 19  | AU    | 32  | PRO  |
| 20  | AV    | 85  | VAL  |
| 21  | AW    | 47  | VAL  |
| 21  | AW    | 113 | ALA  |
| 23  | AY    | 36  | ILE  |
| 24  | AZ    | 23  | LEU  |
| 24  | AZ    | 42  | ALA  |
| 25  | Aa    | 26  | SER  |
| 25  | Aa    | 41  | PRO  |
| 25  | Aa    | 52  | THR  |
| 26  | Ab    | 24  | ALA  |
| 26  | Ab    | 48  | GLU  |
| 26  | Ab    | 56  | LYS  |
| 26  | Ab    | 58  | LEU  |
| 27  | Ac    | 40  | CYS  |
| 27  | Ac    | 47  | THR  |
| 28  | Ad    | 35  | ARG  |
| 30  | Af    | 4   | ARG  |
| 30  | Af    | 12  | ASP  |
| 30  | Af    | 29  | ASN  |
| 31  | AI    | 21  | GLN  |
| 31  | AI    | 129 | PRO  |
| 31  | AI    | 144 | ALA  |
| 32  | AJ    | 28  | GLY  |
| 32  | AJ    | 95  | LYS  |
| 35  | BF    | 74  | LYS  |
| 35  | BF    | 91  | PRO  |
| 35  | BF    | 98  | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 35  | BF    | 150 | SER  |
| 35  | BF    | 158 | LEU  |
| 35  | BF    | 167 | PRO  |
| 35  | BF    | 174 | VAL  |
| 35  | BF    | 193 | ASP  |
| 35  | BF    | 229 | VAL  |
| 36  | BG    | 3   | ASN  |
| 36  | BG    | 16  | ARG  |
| 36  | BG    | 109 | PRO  |
| 37  | BH    | 36  | ARG  |
| 37  | BH    | 147 | ALA  |
| 37  | BH    | 196 | LEU  |
| 38  | BI    | 53  | LEU  |
| 38  | BI    | 153 | LYS  |
| 40  | BK    | 32  | ARG  |
| 40  | BK    | 93  | PRO  |
| 40  | BK    | 97  | GLN  |
| 40  | BK    | 131 | LYS  |
| 40  | BK    | 155 | ARG  |
| 41  | BL    | 71  | GLY  |
| 42  | BM    | 55  | ALA  |
| 42  | BM    | 95  | LYS  |
| 42  | BM    | 110 | GLU  |
| 42  | BM    | 126 | SER  |
| 43  | BN    | 30  | SER  |
| 43  | BN    | 53  | PRO  |
| 43  | BN    | 54  | PHE  |
| 44  | BO    | 118 | GLY  |
| 45  | BP    | 16  | GLU  |
| 45  | BP    | 17  | LYS  |
| 45  | BP    | 70  | ILE  |
| 46  | BQ    | 5   | ALA  |
| 47  | BR    | 16  | PHE  |
| 48  | BS    | 5   | LYS  |
| 48  | BS    | 44  | LYS  |
| 49  | BT    | 54  | GLU  |
| 49  | BT    | 57  | ARG  |
| 49  | BT    | 64  | ALA  |
| 50  | BU    | 6   | LEU  |
| 50  | BU    | 53  | LEU  |
| 52  | BW    | 76  | PRO  |
| 53  | BX    | 58  | LYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 53  | BX    | 61  | SER  |
| 53  | BX    | 78  | ALA  |
| 53  | BX    | 97  | ALA  |
| 54  | BY    | 8   | THR  |
| 54  | BY    | 24  | ARG  |
| 57  | BZ    | 20  | THR  |
| 57  | BZ    | 24  | LYS  |
| 57  | BZ    | 51  | GLU  |
| 57  | BZ    | 76  | PRO  |
| 57  | BZ    | 269 | GLU  |
| 57  | BZ    | 286 | ASP  |
| 57  | BZ    | 427 | LYS  |
| 57  | BZ    | 544 | THR  |
| 57  | BZ    | 592 | LEU  |
| 3   | AC    | 20  | TYR  |
| 3   | AC    | 84  | LYS  |
| 3   | AC    | 117 | PRO  |
| 3   | AC    | 200 | LYS  |
| 4   | AD    | 88  | ARG  |
| 4   | AD    | 208 | LYS  |
| 4   | AD    | 210 | GLY  |
| 4   | AD    | 231 | HIS  |
| 5   | AE    | 8   | LYS  |
| 5   | AE    | 58  | ARG  |
| 5   | AE    | 129 | HIS  |
| 5   | AE    | 179 | GLU  |
| 6   | AF    | 178 | PRO  |
| 6   | AF    | 182 | ASN  |
| 6   | AF    | 185 | ASP  |
| 7   | AG    | 7   | LEU  |
| 7   | AG    | 113 | ARG  |
| 7   | AG    | 135 | LEU  |
| 8   | AH    | 75  | ALA  |
| 8   | AH    | 175 | LYS  |
| 9   | AK    | 78  | TYR  |
| 9   | AK    | 87  | LEU  |
| 9   | AK    | 112 | LEU  |
| 10  | AL    | 67  | LYS  |
| 11  | AM    | 19  | VAL  |
| 11  | AM    | 31  | ALA  |
| 11  | AM    | 120 | ALA  |
| 11  | AM    | 131 | SER  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 12  | AN    | 62  | GLY  |
| 12  | AN    | 119 | ARG  |
| 13  | AO    | 74  | LYS  |
| 15  | AQ    | 13  | ARG  |
| 16  | AR    | 9   | VAL  |
| 17  | AS    | 66  | ARG  |
| 19  | AU    | 24  | GLY  |
| 20  | AV    | 17  | SER  |
| 21  | AW    | 85  | HIS  |
| 21  | AW    | 168 | GLU  |
| 24  | AZ    | 17  | LYS  |
| 25  | Aa    | 24  | THR  |
| 26  | Ab    | 51  | TYR  |
| 31  | AI    | 51  | LEU  |
| 31  | AI    | 120 | LYS  |
| 31  | AI    | 128 | LEU  |
| 31  | AI    | 130 | THR  |
| 32  | AJ    | 12  | LEU  |
| 32  | AJ    | 100 | THR  |
| 35  | BF    | 75  | LYS  |
| 36  | BG    | 146 | ALA  |
| 36  | BG    | 174 | PRO  |
| 38  | BI    | 95  | ALA  |
| 38  | BI    | 113 | ALA  |
| 39  | BJ    | 36  | ARG  |
| 40  | BK    | 122 | HIS  |
| 41  | BL    | 65  | TYR  |
| 41  | BL    | 104 | ARG  |
| 42  | BM    | 52  | ALA  |
| 42  | BM    | 107 | ARG  |
| 43  | BN    | 73  | ASP  |
| 45  | BP    | 111 | LYS  |
| 45  | BP    | 123 | LYS  |
| 46  | BQ    | 45  | VAL  |
| 47  | BR    | 13  | THR  |
| 48  | BS    | 29  | VAL  |
| 49  | BT    | 36  | ILE  |
| 51  | BV    | 19  | LYS  |
| 52  | BW    | 11  | VAL  |
| 52  | BW    | 29  | ARG  |
| 52  | BW    | 67  | VAL  |
| 52  | BW    | 73  | GLU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 53  | BX    | 25  | ARG  |
| 53  | BX    | 60  | GLU  |
| 54  | BY    | 10  | ARG  |
| 54  | BY    | 22  | ARG  |
| 57  | BZ    | 25  | LEU  |
| 57  | BZ    | 29  | SER  |
| 57  | BZ    | 35  | ARG  |
| 57  | BZ    | 69  | ARG  |
| 57  | BZ    | 132 | ARG  |
| 57  | BZ    | 137 | PRO  |
| 57  | BZ    | 157 | GLN  |
| 57  | BZ    | 201 | LEU  |
| 57  | BZ    | 212 | LEU  |
| 57  | BZ    | 223 | ILE  |
| 57  | BZ    | 339 | LEU  |
| 57  | BZ    | 398 | GLU  |
| 57  | BZ    | 407 | VAL  |
| 57  | BZ    | 467 | SER  |
| 57  | BZ    | 469 | PHE  |
| 57  | BZ    | 482 | GLN  |
| 57  | BZ    | 518 | VAL  |
| 57  | BZ    | 537 | CYS  |
| 57  | BZ    | 549 | SER  |
| 57  | BZ    | 556 | VAL  |
| 3   | AC    | 49  | ILE  |
| 4   | AD    | 83  | GLU  |
| 4   | AD    | 238 | GLY  |
| 4   | AD    | 254 | THR  |
| 6   | AF    | 134 | GLY  |
| 7   | AG    | 44  | GLY  |
| 8   | AH    | 125 | VAL  |
| 8   | AH    | 131 | VAL  |
| 8   | AH    | 173 | PRO  |
| 10  | AL    | 115 | VAL  |
| 12  | AN    | 28  | ALA  |
| 12  | AN    | 47  | ILE  |
| 12  | AN    | 91  | GLU  |
| 13  | AO    | 61  | HIS  |
| 15  | AQ    | 80  | SER  |
| 16  | AR    | 7   | GLY  |
| 25  | Aa    | 2   | LYS  |
| 25  | Aa    | 22  | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 25  | Aa    | 29  | PRO  |
| 26  | Ab    | 27  | PRO  |
| 26  | Ab    | 31  | VAL  |
| 26  | Ab    | 49  | CYS  |
| 29  | Ae    | 8   | LYS  |
| 29  | Ae    | 14  | VAL  |
| 29  | Ae    | 20  | GLY  |
| 29  | Ae    | 31  | HIS  |
| 29  | Ae    | 33  | ASN  |
| 32  | AJ    | 19  | PRO  |
| 32  | AJ    | 52  | ILE  |
| 32  | AJ    | 89  | HIS  |
| 32  | AJ    | 91  | PRO  |
| 35  | BF    | 20  | GLU  |
| 35  | BF    | 118 | LEU  |
| 35  | BF    | 176 | GLU  |
| 36  | BG    | 87  | LEU  |
| 37  | BH    | 94  | LEU  |
| 37  | BH    | 117 | ALA  |
| 38  | BI    | 142 | LEU  |
| 39  | BJ    | 37  | VAL  |
| 40  | BK    | 18  | TYR  |
| 40  | BK    | 50  | ILE  |
| 40  | BK    | 96  | GLN  |
| 40  | BK    | 130 | GLY  |
| 41  | BL    | 80  | ILE  |
| 42  | BM    | 57  | GLY  |
| 43  | BN    | 37  | PRO  |
| 43  | BN    | 41  | PRO  |
| 44  | BO    | 34  | ASP  |
| 45  | BP    | 90  | VAL  |
| 46  | BQ    | 20  | THR  |
| 50  | BU    | 17  | LYS  |
| 50  | BU    | 80  | GLY  |
| 53  | BX    | 20  | LEU  |
| 53  | BX    | 67  | ALA  |
| 57  | BZ    | 41  | ARG  |
| 57  | BZ    | 66  | TRP  |
| 57  | BZ    | 198 | ASP  |
| 57  | BZ    | 251 | VAL  |
| 3   | AC    | 41  | VAL  |
| 4   | AD    | 127 | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 11  | AM    | 53  | GLY  |
| 12  | AN    | 19  | GLY  |
| 12  | AN    | 61  | GLY  |
| 16  | AR    | 87  | GLY  |
| 16  | AR    | 105 | VAL  |
| 20  | AV    | 24  | VAL  |
| 21  | AW    | 141 | VAL  |
| 24  | AZ    | 43  | ILE  |
| 31  | AI    | 31  | GLY  |
| 32  | AJ    | 96  | VAL  |
| 35  | BF    | 130 | ARG  |
| 36  | BG    | 70  | VAL  |
| 37  | BH    | 92  | VAL  |
| 44  | BO    | 49  | GLY  |
| 46  | BQ    | 60  | VAL  |
| 47  | BR    | 7   | ILE  |
| 48  | BS    | 82  | ILE  |
| 57  | BZ    | 162 | ILE  |
| 57  | BZ    | 222 | GLY  |
| 57  | BZ    | 435 | GLY  |
| 5   | AE    | 71  | GLY  |
| 5   | AE    | 116 | VAL  |
| 5   | AE    | 161 | GLY  |
| 8   | AH    | 76  | VAL  |
| 9   | AK    | 44  | PRO  |
| 11  | AM    | 97  | PRO  |
| 12  | AN    | 99  | PRO  |
| 19  | AU    | 43  | VAL  |
| 22  | AX    | 8   | GLY  |
| 22  | AX    | 73  | GLY  |
| 24  | AZ    | 45  | GLY  |
| 32  | AJ    | 49  | GLY  |
| 37  | BH    | 128 | VAL  |
| 37  | BH    | 143 | GLY  |
| 39  | BJ    | 26  | ILE  |
| 46  | BQ    | 95  | GLY  |
| 48  | BS    | 45  | VAL  |
| 51  | BV    | 51  | LEU  |
| 53  | BX    | 100 | ILE  |
| 57  | BZ    | 385 | PRO  |
| 4   | AD    | 142 | VAL  |
| 8   | AH    | 55  | PRO  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | AH    | 126 | PRO  |
| 12  | AN    | 106 | VAL  |
| 21  | AW    | 167 | PRO  |
| 36  | BG    | 197 | GLY  |
| 37  | BH    | 136 | PRO  |
| 45  | BP    | 104 | VAL  |
| 57  | BZ    | 191 | VAL  |
| 57  | BZ    | 450 | GLY  |
| 57  | BZ    | 480 | VAL  |
| 3   | AC    | 14  | VAL  |
| 8   | AH    | 115 | VAL  |
| 12  | AN    | 52  | VAL  |
| 14  | AP    | 69  | VAL  |
| 17  | AS    | 90  | PRO  |
| 20  | AV    | 44  | ILE  |
| 21  | AW    | 129 | SER  |
| 21  | AW    | 177 | PRO  |
| 25  | Aa    | 5   | ILE  |
| 25  | Aa    | 28  | LYS  |
| 25  | Aa    | 54  | GLY  |
| 32  | AJ    | 59  | ILE  |
| 32  | AJ    | 112 | MET  |
| 35  | BF    | 239 | VAL  |
| 39  | BJ    | 65  | VAL  |
| 43  | BN    | 91  | PRO  |
| 45  | BP    | 96  | VAL  |
| 53  | BX    | 41  | ILE  |
| 57  | BZ    | 134 | GLY  |
| 57  | BZ    | 233 | PRO  |
| 11  | AM    | 126 | VAL  |
| 14  | AP    | 70  | GLY  |
| 18  | AT    | 80  | PRO  |
| 20  | AV    | 18  | GLY  |
| 35  | BF    | 182 | ILE  |
| 42  | BM    | 90  | PRO  |
| 44  | BO    | 48  | ILE  |

### 5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

| Mol | Chain | Analysed       | Rotameric | Outliers | Percentiles |    |
|-----|-------|----------------|-----------|----------|-------------|----|
| 3   | AC    | 180/180 (100%) | 147 (82%) | 33 (18%) | 2           | 9  |
| 4   | AD    | 215/215 (100%) | 151 (70%) | 64 (30%) | 0           | 2  |
| 5   | AE    | 166/166 (100%) | 102 (61%) | 64 (39%) | 0           | 1  |
| 6   | AF    | 164/164 (100%) | 103 (63%) | 61 (37%) | 0           | 1  |
| 7   | AG    | 156/156 (100%) | 111 (71%) | 45 (29%) | 0           | 3  |
| 8   | AH    | 143/143 (100%) | 101 (71%) | 42 (29%) | 0           | 3  |
| 9   | AK    | 118/118 (100%) | 73 (62%)  | 45 (38%) | 0           | 1  |
| 10  | AL    | 100/100 (100%) | 62 (62%)  | 38 (38%) | 0           | 1  |
| 11  | AM    | 111/111 (100%) | 74 (67%)  | 37 (33%) | 0           | 2  |
| 12  | AN    | 106/106 (100%) | 65 (61%)  | 41 (39%) | 0           | 1  |
| 13  | AO    | 100/100 (100%) | 70 (70%)  | 30 (30%) | 0           | 2  |
| 14  | AP    | 87/87 (100%)   | 63 (72%)  | 24 (28%) | 0           | 3  |
| 15  | AQ    | 105/105 (100%) | 67 (64%)  | 38 (36%) | 0           | 1  |
| 16  | AR    | 93/93 (100%)   | 64 (69%)  | 29 (31%) | 0           | 2  |
| 17  | AS    | 82/82 (100%)   | 58 (71%)  | 24 (29%) | 0           | 3  |
| 18  | AT    | 90/90 (100%)   | 62 (69%)  | 28 (31%) | 0           | 2  |
| 19  | AU    | 76/76 (100%)   | 54 (71%)  | 22 (29%) | 0           | 3  |
| 20  | AV    | 91/91 (100%)   | 72 (79%)  | 19 (21%) | 1           | 6  |
| 21  | AW    | 159/159 (100%) | 116 (73%) | 43 (27%) | 0           | 3  |
| 22  | AX    | 67/67 (100%)   | 49 (73%)  | 18 (27%) | 0           | 3  |
| 23  | AY    | 62/62 (100%)   | 44 (71%)  | 18 (29%) | 0           | 3  |
| 24  | AZ    | 51/51 (100%)   | 36 (71%)  | 15 (29%) | 0           | 3  |
| 25  | Aa    | 63/63 (100%)   | 43 (68%)  | 20 (32%) | 0           | 2  |
| 26  | Ab    | 50/50 (100%)   | 33 (66%)  | 17 (34%) | 0           | 2  |
| 27  | Ac    | 48/48 (100%)   | 31 (65%)  | 17 (35%) | 0           | 1  |
| 28  | Ad    | 42/42 (100%)   | 30 (71%)  | 12 (29%) | 0           | 3  |
| 29  | Ae    | 54/54 (100%)   | 39 (72%)  | 15 (28%) | 0           | 3  |
| 30  | Af    | 34/34 (100%)   | 28 (82%)  | 6 (18%)  | 2           | 10 |
| 32  | AJ    | 101/101 (100%) | 68 (67%)  | 33 (33%) | 0           | 2  |
| 35  | BF    | 202/202 (100%) | 133 (66%) | 69 (34%) | 0           | 2  |

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| Mol | Chain | Analysed         | Rotameric  | Outliers   | Percentiles |    |
|-----|-------|------------------|------------|------------|-------------|----|
| 36  | BG    | 160/160 (100%)   | 121 (76%)  | 39 (24%)   | 1           | 4  |
| 37  | BH    | 180/180 (100%)   | 129 (72%)  | 51 (28%)   | 0           | 3  |
| 38  | BI    | 115/115 (100%)   | 76 (66%)   | 39 (34%)   | 0           | 2  |
| 39  | BJ    | 90/90 (100%)     | 62 (69%)   | 28 (31%)   | 0           | 2  |
| 40  | BK    | 126/126 (100%)   | 93 (74%)   | 33 (26%)   | 0           | 3  |
| 41  | BL    | 119/119 (100%)   | 85 (71%)   | 34 (29%)   | 0           | 3  |
| 42  | BM    | 98/98 (100%)     | 74 (76%)   | 24 (24%)   | 1           | 4  |
| 43  | BN    | 88/88 (100%)     | 67 (76%)   | 21 (24%)   | 1           | 5  |
| 44  | BO    | 90/90 (100%)     | 75 (83%)   | 15 (17%)   | 2           | 11 |
| 45  | BP    | 104/104 (100%)   | 79 (76%)   | 25 (24%)   | 1           | 5  |
| 46  | BQ    | 92/92 (100%)     | 66 (72%)   | 26 (28%)   | 0           | 3  |
| 47  | BR    | 49/49 (100%)     | 37 (76%)   | 12 (24%)   | 1           | 4  |
| 48  | BS    | 79/79 (100%)     | 62 (78%)   | 17 (22%)   | 1           | 6  |
| 49  | BT    | 72/72 (100%)     | 47 (65%)   | 25 (35%)   | 0           | 2  |
| 50  | BU    | 96/96 (100%)     | 69 (72%)   | 27 (28%)   | 0           | 3  |
| 51  | BV    | 64/64 (100%)     | 51 (80%)   | 13 (20%)   | 1           | 7  |
| 52  | BW    | 71/71 (100%)     | 53 (75%)   | 18 (25%)   | 0           | 4  |
| 53  | BX    | 76/76 (100%)     | 59 (78%)   | 17 (22%)   | 1           | 6  |
| 54  | BY    | 19/19 (100%)     | 17 (90%)   | 2 (10%)    | 6           | 22 |
| 57  | BZ    | 486/514 (95%)    | 340 (70%)  | 146 (30%)  | 0           | 2  |
| All | All   | 5390/5418 (100%) | 3811 (71%) | 1579 (29%) | 1           | 3  |

All (1579) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | AC    | 6   | ARG  |
| 3   | AC    | 15  | ASP  |
| 3   | AC    | 20  | TYR  |
| 3   | AC    | 27  | HIS  |
| 3   | AC    | 46  | LYS  |
| 3   | AC    | 58  | VAL  |
| 3   | AC    | 59  | ARG  |
| 3   | AC    | 70  | LYS  |
| 3   | AC    | 81  | GLU  |
| 3   | AC    | 83  | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | AC    | 92  | ASP  |
| 3   | AC    | 99  | ILE  |
| 3   | AC    | 101 | GLN  |
| 3   | AC    | 102 | LYS  |
| 3   | AC    | 108 | MET  |
| 3   | AC    | 125 | SER  |
| 3   | AC    | 130 | ILE  |
| 3   | AC    | 137 | LEU  |
| 3   | AC    | 144 | THR  |
| 3   | AC    | 155 | GLU  |
| 3   | AC    | 160 | ARG  |
| 3   | AC    | 161 | ILE  |
| 3   | AC    | 163 | PHE  |
| 3   | AC    | 164 | ARG  |
| 3   | AC    | 166 | ASP  |
| 3   | AC    | 180 | PHE  |
| 3   | AC    | 189 | ILE  |
| 3   | AC    | 190 | ARG  |
| 3   | AC    | 202 | GLU  |
| 3   | AC    | 209 | LEU  |
| 3   | AC    | 212 | VAL  |
| 3   | AC    | 213 | TYR  |
| 3   | AC    | 222 | VAL  |
| 4   | AD    | 17  | THR  |
| 4   | AD    | 23  | GLU  |
| 4   | AD    | 31  | LYS  |
| 4   | AD    | 34  | VAL  |
| 4   | AD    | 37  | LEU  |
| 4   | AD    | 39  | LYS  |
| 4   | AD    | 44  | ASN  |
| 4   | AD    | 46  | GLN  |
| 4   | AD    | 51  | VAL  |
| 4   | AD    | 53  | PHE  |
| 4   | AD    | 59  | LYS  |
| 4   | AD    | 63  | ARG  |
| 4   | AD    | 70  | TRP  |
| 4   | AD    | 73  | VAL  |
| 4   | AD    | 84  | TYR  |
| 4   | AD    | 87  | ASN  |
| 4   | AD    | 91  | ARG  |
| 4   | AD    | 92  | ILE  |
| 4   | AD    | 94  | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 4   | AD    | 95  | LEU  |
| 4   | AD    | 106 | ILE  |
| 4   | AD    | 109 | ASP  |
| 4   | AD    | 115 | GLN  |
| 4   | AD    | 116 | GLN  |
| 4   | AD    | 117 | VAL  |
| 4   | AD    | 118 | VAL  |
| 4   | AD    | 121 | PRO  |
| 4   | AD    | 131 | LEU  |
| 4   | AD    | 134 | ARG  |
| 4   | AD    | 145 | VAL  |
| 4   | AD    | 146 | GLU  |
| 4   | AD    | 147 | LEU  |
| 4   | AD    | 155 | LEU  |
| 4   | AD    | 164 | GLN  |
| 4   | AD    | 169 | GLU  |
| 4   | AD    | 175 | LEU  |
| 4   | AD    | 176 | ARG  |
| 4   | AD    | 179 | SER  |
| 4   | AD    | 181 | GLU  |
| 4   | AD    | 186 | HIS  |
| 4   | AD    | 188 | GLU  |
| 4   | AD    | 192 | THR  |
| 4   | AD    | 200 | ASP  |
| 4   | AD    | 202 | LYS  |
| 4   | AD    | 206 | LEU  |
| 4   | AD    | 217 | ARG  |
| 4   | AD    | 220 | HIS  |
| 4   | AD    | 226 | MET  |
| 4   | AD    | 229 | VAL  |
| 4   | AD    | 230 | ASP  |
| 4   | AD    | 232 | PRO  |
| 4   | AD    | 233 | HIS  |
| 4   | AD    | 239 | ARG  |
| 4   | AD    | 249 | PRO  |
| 4   | AD    | 250 | TRP  |
| 4   | AD    | 252 | TRP  |
| 4   | AD    | 253 | GLN  |
| 4   | AD    | 254 | THR  |
| 4   | AD    | 258 | LYS  |
| 4   | AD    | 259 | THR  |
| 4   | AD    | 260 | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 4   | AD    | 264 | LYS  |
| 4   | AD    | 270 | ILE  |
| 4   | AD    | 273 | ARG  |
| 5   | AE    | 2   | LYS  |
| 5   | AE    | 4   | ILE  |
| 5   | AE    | 5   | LEU  |
| 5   | AE    | 7   | VAL  |
| 5   | AE    | 8   | LYS  |
| 5   | AE    | 12  | THR  |
| 5   | AE    | 13  | ARG  |
| 5   | AE    | 14  | ILE  |
| 5   | AE    | 17  | ASP  |
| 5   | AE    | 22  | PRO  |
| 5   | AE    | 27  | LEU  |
| 5   | AE    | 33  | VAL  |
| 5   | AE    | 35  | GLN  |
| 5   | AE    | 38  | THR  |
| 5   | AE    | 41  | LYS  |
| 5   | AE    | 45  | THR  |
| 5   | AE    | 48  | GLN  |
| 5   | AE    | 49  | LEU  |
| 5   | AE    | 51  | PHE  |
| 5   | AE    | 53  | PRO  |
| 5   | AE    | 56  | PRO  |
| 5   | AE    | 66  | HIS  |
| 5   | AE    | 77  | ILE  |
| 5   | AE    | 78  | LEU  |
| 5   | AE    | 80  | GLU  |
| 5   | AE    | 91  | VAL  |
| 5   | AE    | 96  | PHE  |
| 5   | AE    | 102 | VAL  |
| 5   | AE    | 108 | SER  |
| 5   | AE    | 113 | PHE  |
| 5   | AE    | 116 | VAL  |
| 5   | AE    | 118 | LYS  |
| 5   | AE    | 119 | ARG  |
| 5   | AE    | 120 | TRP  |
| 5   | AE    | 121 | ASN  |
| 5   | AE    | 122 | PHE  |
| 5   | AE    | 126 | PRO  |
| 5   | AE    | 129 | HIS  |
| 5   | AE    | 134 | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 5   | AE    | 135 | HIS  |
| 5   | AE    | 136 | ARG  |
| 5   | AE    | 137 | HIS  |
| 5   | AE    | 141 | ILE  |
| 5   | AE    | 143 | ASN  |
| 5   | AE    | 149 | ARG  |
| 5   | AE    | 150 | VAL  |
| 5   | AE    | 152 | LYS  |
| 5   | AE    | 154 | LYS  |
| 5   | AE    | 163 | GLU  |
| 5   | AE    | 165 | VAL  |
| 5   | AE    | 170 | LEU  |
| 5   | AE    | 171 | GLU  |
| 5   | AE    | 173 | VAL  |
| 5   | AE    | 176 | ILE  |
| 5   | AE    | 179 | GLU  |
| 5   | AE    | 180 | ASN  |
| 5   | AE    | 181 | LEU  |
| 5   | AE    | 184 | VAL  |
| 5   | AE    | 185 | LYS  |
| 5   | AE    | 191 | PRO  |
| 5   | AE    | 195 | LEU  |
| 5   | AE    | 197 | ILE  |
| 5   | AE    | 199 | ARG  |
| 5   | AE    | 202 | LYS  |
| 6   | AF    | 8   | GLN  |
| 6   | AF    | 14  | PRO  |
| 6   | AF    | 17  | ARG  |
| 6   | AF    | 19  | GLU  |
| 6   | AF    | 20  | LEU  |
| 6   | AF    | 23  | ASP  |
| 6   | AF    | 27  | GLU  |
| 6   | AF    | 29  | ASN  |
| 6   | AF    | 30  | PRO  |
| 6   | AF    | 33  | LEU  |
| 6   | AF    | 34  | TRP  |
| 6   | AF    | 35  | GLU  |
| 6   | AF    | 39  | TRP  |
| 6   | AF    | 46  | ARG  |
| 6   | AF    | 60  | SER  |
| 6   | AF    | 64  | ILE  |
| 6   | AF    | 67  | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 6   | AF    | 69  | HIS  |
| 6   | AF    | 74  | ARG  |
| 6   | AF    | 75  | HIS  |
| 6   | AF    | 77  | ASP  |
| 6   | AF    | 78  | ILE  |
| 6   | AF    | 82  | ILE  |
| 6   | AF    | 83  | PHE  |
| 6   | AF    | 88  | VAL  |
| 6   | AF    | 95  | ARG  |
| 6   | AF    | 102 | PRO  |
| 6   | AF    | 105 | VAL  |
| 6   | AF    | 106 | ARG  |
| 6   | AF    | 108 | LYS  |
| 6   | AF    | 112 | MET  |
| 6   | AF    | 117 | ARG  |
| 6   | AF    | 119 | ARG  |
| 6   | AF    | 120 | GLU  |
| 6   | AF    | 122 | LYS  |
| 6   | AF    | 124 | LEU  |
| 6   | AF    | 126 | VAL  |
| 6   | AF    | 127 | GLU  |
| 6   | AF    | 133 | ASN  |
| 6   | AF    | 137 | LYS  |
| 6   | AF    | 138 | GLU  |
| 6   | AF    | 140 | LEU  |
| 6   | AF    | 152 | GLU  |
| 6   | AF    | 155 | LEU  |
| 6   | AF    | 156 | LEU  |
| 6   | AF    | 157 | VAL  |
| 6   | AF    | 158 | THR  |
| 6   | AF    | 168 | ARG  |
| 6   | AF    | 170 | LEU  |
| 6   | AF    | 175 | THR  |
| 6   | AF    | 178 | PRO  |
| 6   | AF    | 181 | LEU  |
| 6   | AF    | 183 | VAL  |
| 6   | AF    | 184 | TYR  |
| 6   | AF    | 188 | ARG  |
| 6   | AF    | 192 | LEU  |
| 6   | AF    | 197 | ASP  |
| 6   | AF    | 200 | GLU  |
| 6   | AF    | 203 | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 6   | AF    | 204 | ASN  |
| 6   | AF    | 206 | ILE  |
| 7   | AG    | 3   | LEU  |
| 7   | AG    | 8   | LYS  |
| 7   | AG    | 12  | TYR  |
| 7   | AG    | 13  | GLU  |
| 7   | AG    | 14  | GLU  |
| 7   | AG    | 16  | ARG  |
| 7   | AG    | 20  | ILE  |
| 7   | AG    | 22  | ARG  |
| 7   | AG    | 25  | TYR  |
| 7   | AG    | 32  | PRO  |
| 7   | AG    | 33  | ARG  |
| 7   | AG    | 34  | LEU  |
| 7   | AG    | 36  | LYS  |
| 7   | AG    | 39  | ILE  |
| 7   | AG    | 41  | GLN  |
| 7   | AG    | 51  | ARG  |
| 7   | AG    | 54  | GLU  |
| 7   | AG    | 55  | LYS  |
| 7   | AG    | 62  | LEU  |
| 7   | AG    | 63  | ILE  |
| 7   | AG    | 68  | PRO  |
| 7   | AG    | 77  | ILE  |
| 7   | AG    | 82  | LEU  |
| 7   | AG    | 91  | ARG  |
| 7   | AG    | 92  | VAL  |
| 7   | AG    | 94  | LEU  |
| 7   | AG    | 96  | ARG  |
| 7   | AG    | 101 | ILE  |
| 7   | AG    | 102 | PHE  |
| 7   | AG    | 103 | LEU  |
| 7   | AG    | 109 | VAL  |
| 7   | AG    | 117 | PHE  |
| 7   | AG    | 120 | LEU  |
| 7   | AG    | 126 | ASP  |
| 7   | AG    | 128 | ARG  |
| 7   | AG    | 133 | LEU  |
| 7   | AG    | 135 | LEU  |
| 7   | AG    | 139 | LEU  |
| 7   | AG    | 143 | GLU  |
| 7   | AG    | 144 | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 7   | AG    | 148 | MET  |
| 7   | AG    | 152 | LEU  |
| 7   | AG    | 153 | ARG  |
| 7   | AG    | 174 | GLU  |
| 7   | AG    | 181 | ARG  |
| 8   | AH    | 4   | ILE  |
| 8   | AH    | 7   | LEU  |
| 8   | AH    | 11  | VAL  |
| 8   | AH    | 13  | LYS  |
| 8   | AH    | 18  | GLU  |
| 8   | AH    | 25  | LYS  |
| 8   | AH    | 32  | GLU  |
| 8   | AH    | 35  | VAL  |
| 8   | AH    | 37  | VAL  |
| 8   | AH    | 40  | GLU  |
| 8   | AH    | 45  | VAL  |
| 8   | AH    | 46  | GLU  |
| 8   | AH    | 50  | VAL  |
| 8   | AH    | 52  | VAL  |
| 8   | AH    | 53  | GLU  |
| 8   | AH    | 68  | THR  |
| 8   | AH    | 69  | ARG  |
| 8   | AH    | 74  | ASN  |
| 8   | AH    | 83  | TYR  |
| 8   | AH    | 85  | LYS  |
| 8   | AH    | 89  | ILE  |
| 8   | AH    | 90  | LYS  |
| 8   | AH    | 94  | TYR  |
| 8   | AH    | 95  | ARG  |
| 8   | AH    | 103 | LEU  |
| 8   | AH    | 105 | LEU  |
| 8   | AH    | 111 | HIS  |
| 8   | AH    | 115 | VAL  |
| 8   | AH    | 116 | GLU  |
| 8   | AH    | 125 | VAL  |
| 8   | AH    | 131 | VAL  |
| 8   | AH    | 132 | ARG  |
| 8   | AH    | 136 | ILE  |
| 8   | AH    | 153 | LYS  |
| 8   | AH    | 157 | TYR  |
| 8   | AH    | 158 | HIS  |
| 8   | AH    | 162 | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | AH    | 164 | TYR  |
| 8   | AH    | 167 | GLU  |
| 8   | AH    | 168 | PRO  |
| 8   | AH    | 172 | LYS  |
| 8   | AH    | 175 | LYS  |
| 9   | AK    | 2   | LYS  |
| 9   | AK    | 5   | VAL  |
| 9   | AK    | 7   | LYS  |
| 9   | AK    | 8   | GLN  |
| 9   | AK    | 12  | ARG  |
| 9   | AK    | 13  | TRP  |
| 9   | AK    | 14  | VAL  |
| 9   | AK    | 15  | LEU  |
| 9   | AK    | 16  | ILE  |
| 9   | AK    | 17  | ASP  |
| 9   | AK    | 22  | THR  |
| 9   | AK    | 25  | ARG  |
| 9   | AK    | 28  | THR  |
| 9   | AK    | 32  | THR  |
| 9   | AK    | 33  | LEU  |
| 9   | AK    | 35  | ARG  |
| 9   | AK    | 37  | LYS  |
| 9   | AK    | 39  | ARG  |
| 9   | AK    | 42  | TRP  |
| 9   | AK    | 43  | THR  |
| 9   | AK    | 45  | ASN  |
| 9   | AK    | 48  | MET  |
| 9   | AK    | 52  | VAL  |
| 9   | AK    | 55  | VAL  |
| 9   | AK    | 59  | LYS  |
| 9   | AK    | 67  | LEU  |
| 9   | AK    | 69  | GLN  |
| 9   | AK    | 72  | TYR  |
| 9   | AK    | 75  | TYR  |
| 9   | AK    | 78  | TYR  |
| 9   | AK    | 79  | PRO  |
| 9   | AK    | 82  | LEU  |
| 9   | AK    | 85  | ILE  |
| 9   | AK    | 89  | LYS  |
| 9   | AK    | 90  | MET  |
| 9   | AK    | 91  | LEU  |
| 9   | AK    | 98  | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 9   | AK    | 101 | HIS  |
| 9   | AK    | 103 | VAL  |
| 9   | AK    | 109 | LYS  |
| 9   | AK    | 122 | VAL  |
| 9   | AK    | 127 | ASP  |
| 9   | AK    | 134 | ARG  |
| 9   | AK    | 135 | PRO  |
| 9   | AK    | 136 | GLU  |
| 10  | AL    | 3   | GLN  |
| 10  | AL    | 6   | THR  |
| 10  | AL    | 7   | TYR  |
| 10  | AL    | 8   | LEU  |
| 10  | AL    | 12  | ASP  |
| 10  | AL    | 14  | THR  |
| 10  | AL    | 19  | ILE  |
| 10  | AL    | 20  | MET  |
| 10  | AL    | 23  | ARG  |
| 10  | AL    | 24  | VAL  |
| 10  | AL    | 25  | LEU  |
| 10  | AL    | 28  | SER  |
| 10  | AL    | 29  | ASN  |
| 10  | AL    | 34  | THR  |
| 10  | AL    | 38  | VAL  |
| 10  | AL    | 39  | ILE  |
| 10  | AL    | 47  | ILE  |
| 10  | AL    | 52  | VAL  |
| 10  | AL    | 56  | ASP  |
| 10  | AL    | 58  | VAL  |
| 10  | AL    | 59  | LYS  |
| 10  | AL    | 62  | VAL  |
| 10  | AL    | 64  | ARG  |
| 10  | AL    | 65  | THR  |
| 10  | AL    | 77  | ILE  |
| 10  | AL    | 78  | ARG  |
| 10  | AL    | 82  | ASN  |
| 10  | AL    | 85  | VAL  |
| 10  | AL    | 87  | ILE  |
| 10  | AL    | 89  | ASN  |
| 10  | AL    | 92  | GLU  |
| 10  | AL    | 97  | ARG  |
| 10  | AL    | 98  | VAL  |
| 10  | AL    | 104 | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 10  | AL    | 113 | LYS  |
| 10  | AL    | 114 | ILE  |
| 10  | AL    | 116 | SER  |
| 10  | AL    | 121 | VAL  |
| 11  | AM    | 7   | ARG  |
| 11  | AM    | 13  | ASN  |
| 11  | AM    | 17  | LYS  |
| 11  | AM    | 29  | LYS  |
| 11  | AM    | 30  | THR  |
| 11  | AM    | 40  | SER  |
| 11  | AM    | 45  | LEU  |
| 11  | AM    | 46  | LYS  |
| 11  | AM    | 48  | PRO  |
| 11  | AM    | 52  | GLU  |
| 11  | AM    | 55  | ARG  |
| 11  | AM    | 59  | LEU  |
| 11  | AM    | 60  | MET  |
| 11  | AM    | 64  | LYS  |
| 11  | AM    | 65  | ARG  |
| 11  | AM    | 68  | GLN  |
| 11  | AM    | 74  | GLU  |
| 11  | AM    | 75  | ILE  |
| 11  | AM    | 79  | ARG  |
| 11  | AM    | 84  | ASN  |
| 11  | AM    | 88  | LEU  |
| 11  | AM    | 99  | LEU  |
| 11  | AM    | 100 | LEU  |
| 11  | AM    | 105 | LEU  |
| 11  | AM    | 108 | LYS  |
| 11  | AM    | 110 | TYR  |
| 11  | AM    | 114 | ILE  |
| 11  | AM    | 117 | GLU  |
| 11  | AM    | 122 | PRO  |
| 11  | AM    | 123 | LEU  |
| 11  | AM    | 126 | VAL  |
| 11  | AM    | 128 | HIS  |
| 11  | AM    | 130 | PHE  |
| 11  | AM    | 137 | LYS  |
| 11  | AM    | 138 | LEU  |
| 11  | AM    | 147 | LEU  |
| 11  | AM    | 149 | GLU  |
| 12  | AN    | 6   | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 12  | AN    | 8   | LYS  |
| 12  | AN    | 18  | LYS  |
| 12  | AN    | 32  | TYR  |
| 12  | AN    | 34  | LEU  |
| 12  | AN    | 41  | TRP  |
| 12  | AN    | 42  | ILE  |
| 12  | AN    | 43  | THR  |
| 12  | AN    | 45  | GLN  |
| 12  | AN    | 48  | GLU  |
| 12  | AN    | 51  | ARG  |
| 12  | AN    | 60  | ARG  |
| 12  | AN    | 63  | LYS  |
| 12  | AN    | 64  | ILE  |
| 12  | AN    | 65  | PHE  |
| 12  | AN    | 68  | ILE  |
| 12  | AN    | 71  | ASP  |
| 12  | AN    | 74  | TYR  |
| 12  | AN    | 78  | PRO  |
| 12  | AN    | 79  | LEU  |
| 12  | AN    | 80  | GLU  |
| 12  | AN    | 83  | MET  |
| 12  | AN    | 89  | ASN  |
| 12  | AN    | 91  | GLU  |
| 12  | AN    | 94  | VAL  |
| 12  | AN    | 97  | VAL  |
| 12  | AN    | 98  | LYS  |
| 12  | AN    | 101 | ARG  |
| 12  | AN    | 104 | PHE  |
| 12  | AN    | 105 | GLU  |
| 12  | AN    | 109 | VAL  |
| 12  | AN    | 112 | GLU  |
| 12  | AN    | 118 | LEU  |
| 12  | AN    | 124 | LYS  |
| 12  | AN    | 126 | PRO  |
| 12  | AN    | 127 | ILE  |
| 12  | AN    | 130 | LYS  |
| 12  | AN    | 133 | ARG  |
| 12  | AN    | 134 | ARG  |
| 12  | AN    | 135 | ASP  |
| 12  | AN    | 139 | GLU  |
| 13  | AO    | 4   | LEU  |
| 13  | AO    | 5   | LYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 13  | AO    | 10  | LEU  |
| 13  | AO    | 11  | ASN  |
| 13  | AO    | 13  | HIS  |
| 13  | AO    | 18  | LEU  |
| 13  | AO    | 23  | ASN  |
| 13  | AO    | 28  | LEU  |
| 13  | AO    | 37  | THR  |
| 13  | AO    | 49  | ASP  |
| 13  | AO    | 52  | ILE  |
| 13  | AO    | 56  | LYS  |
| 13  | AO    | 57  | ARG  |
| 13  | AO    | 59  | ASP  |
| 13  | AO    | 60  | LEU  |
| 13  | AO    | 64  | ARG  |
| 13  | AO    | 67  | LEU  |
| 13  | AO    | 70  | LEU  |
| 13  | AO    | 74  | LYS  |
| 13  | AO    | 77  | ARG  |
| 13  | AO    | 79  | LEU  |
| 13  | AO    | 82  | GLU  |
| 13  | AO    | 86  | ARG  |
| 13  | AO    | 88  | ARG  |
| 13  | AO    | 89  | ASP  |
| 13  | AO    | 99  | LYS  |
| 13  | AO    | 100 | LEU  |
| 13  | AO    | 105 | ARG  |
| 13  | AO    | 113 | LEU  |
| 13  | AO    | 116 | LEU  |
| 14  | AP    | 3   | ARG  |
| 14  | AP    | 9   | ARG  |
| 14  | AP    | 11  | LYS  |
| 14  | AP    | 12  | PHE  |
| 14  | AP    | 19  | LYS  |
| 14  | AP    | 20  | ARG  |
| 14  | AP    | 21  | THR  |
| 14  | AP    | 23  | ARG  |
| 14  | AP    | 24  | LEU  |
| 14  | AP    | 26  | LEU  |
| 14  | AP    | 27  | SER  |
| 14  | AP    | 36  | TYR  |
| 14  | AP    | 42  | ASP  |
| 14  | AP    | 57  | LYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 14  | AP    | 69  | VAL  |
| 14  | AP    | 73  | LEU  |
| 14  | AP    | 76  | LYS  |
| 14  | AP    | 78  | LEU  |
| 14  | AP    | 80  | LEU  |
| 14  | AP    | 88  | ASP  |
| 14  | AP    | 94  | TYR  |
| 14  | AP    | 97  | ARG  |
| 14  | AP    | 98  | VAL  |
| 14  | AP    | 112 | PHE  |
| 15  | AQ    | 1   | MET  |
| 15  | AQ    | 11  | GLU  |
| 15  | AQ    | 20  | PRO  |
| 15  | AQ    | 22  | PHE  |
| 15  | AQ    | 23  | ARG  |
| 15  | AQ    | 30  | VAL  |
| 15  | AQ    | 32  | TYR  |
| 15  | AQ    | 39  | ARG  |
| 15  | AQ    | 43  | GLN  |
| 15  | AQ    | 46  | GLU  |
| 15  | AQ    | 48  | ILE  |
| 15  | AQ    | 50  | ILE  |
| 15  | AQ    | 54  | ARG  |
| 15  | AQ    | 55  | ASN  |
| 15  | AQ    | 57  | PHE  |
| 15  | AQ    | 58  | ASN  |
| 15  | AQ    | 61  | PHE  |
| 15  | AQ    | 62  | THR  |
| 15  | AQ    | 64  | ARG  |
| 15  | AQ    | 66  | VAL  |
| 15  | AQ    | 68  | TYR  |
| 15  | AQ    | 75  | ILE  |
| 15  | AQ    | 78  | LEU  |
| 15  | AQ    | 79  | HIS  |
| 15  | AQ    | 82  | LEU  |
| 15  | AQ    | 85  | LYS  |
| 15  | AQ    | 86  | ILE  |
| 15  | AQ    | 88  | ILE  |
| 15  | AQ    | 93  | ARG  |
| 15  | AQ    | 95  | ARG  |
| 15  | AQ    | 96  | ARG  |
| 15  | AQ    | 101 | PHE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 15  | AQ    | 102 | ILE  |
| 15  | AQ    | 103 | ARG  |
| 15  | AQ    | 106 | SER  |
| 15  | AQ    | 107 | ASP  |
| 15  | AQ    | 108 | ARG  |
| 15  | AQ    | 109 | GLU  |
| 16  | AR    | 6   | THR  |
| 16  | AR    | 13  | LYS  |
| 16  | AR    | 16  | LYS  |
| 16  | AR    | 19  | LYS  |
| 16  | AR    | 25  | TRP  |
| 16  | AR    | 32  | PHE  |
| 16  | AR    | 38  | THR  |
| 16  | AR    | 50  | ARG  |
| 16  | AR    | 52  | ARG  |
| 16  | AR    | 53  | ARG  |
| 16  | AR    | 54  | LYS  |
| 16  | AR    | 55  | ARG  |
| 16  | AR    | 58  | ARG  |
| 16  | AR    | 62  | ILE  |
| 16  | AR    | 65  | ILE  |
| 16  | AR    | 71  | GLN  |
| 16  | AR    | 74  | LEU  |
| 16  | AR    | 75  | ASN  |
| 16  | AR    | 77  | SER  |
| 16  | AR    | 81  | HIS  |
| 16  | AR    | 83  | LEU  |
| 16  | AR    | 84  | LYS  |
| 16  | AR    | 88  | ILE  |
| 16  | AR    | 92  | ARG  |
| 16  | AR    | 93  | LYS  |
| 16  | AR    | 100 | VAL  |
| 16  | AR    | 105 | VAL  |
| 16  | AR    | 108 | GLU  |
| 16  | AR    | 114 | LYS  |
| 17  | AS    | 4   | ILE  |
| 17  | AS    | 13  | ARG  |
| 17  | AS    | 14  | VAL  |
| 17  | AS    | 15  | GLU  |
| 17  | AS    | 18  | LEU  |
| 17  | AS    | 29  | PRO  |
| 17  | AS    | 35  | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 17  | AS    | 36  | PRO  |
| 17  | AS    | 40  | LEU  |
| 17  | AS    | 43  | GLU  |
| 17  | AS    | 44  | LYS  |
| 17  | AS    | 45  | THR  |
| 17  | AS    | 49  | THR  |
| 17  | AS    | 52  | VAL  |
| 17  | AS    | 56  | SER  |
| 17  | AS    | 60  | GLU  |
| 17  | AS    | 62  | LEU  |
| 17  | AS    | 64  | HIS  |
| 17  | AS    | 78  | LYS  |
| 17  | AS    | 79  | VAL  |
| 17  | AS    | 83  | ARG  |
| 17  | AS    | 84  | LYS  |
| 17  | AS    | 87  | HIS  |
| 17  | AS    | 93  | GLU  |
| 18  | AT    | 4   | LYS  |
| 18  | AT    | 8   | ARG  |
| 18  | AT    | 10  | VAL  |
| 18  | AT    | 11  | ARG  |
| 18  | AT    | 12  | ILE  |
| 18  | AT    | 16  | LYS  |
| 18  | AT    | 18  | ARG  |
| 18  | AT    | 24  | ILE  |
| 18  | AT    | 31  | GLU  |
| 18  | AT    | 33  | ARG  |
| 18  | AT    | 40  | ASN  |
| 18  | AT    | 42  | ARG  |
| 18  | AT    | 45  | TYR  |
| 18  | AT    | 47  | VAL  |
| 18  | AT    | 51  | LEU  |
| 18  | AT    | 60  | ASN  |
| 18  | AT    | 66  | GLU  |
| 18  | AT    | 67  | ASP  |
| 18  | AT    | 71  | VAL  |
| 18  | AT    | 82  | LEU  |
| 18  | AT    | 87  | PRO  |
| 18  | AT    | 88  | ARG  |
| 18  | AT    | 90  | ARG  |
| 18  | AT    | 94  | ASP  |
| 18  | AT    | 95  | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 18  | AT    | 98  | LYS  |
| 18  | AT    | 103 | ILE  |
| 18  | AT    | 106 | ILE  |
| 19  | AU    | 8   | ILE  |
| 19  | AU    | 9   | LEU  |
| 19  | AU    | 13  | LEU  |
| 19  | AU    | 14  | SER  |
| 19  | AU    | 16  | LYS  |
| 19  | AU    | 23  | GLU  |
| 19  | AU    | 28  | PHE  |
| 19  | AU    | 33  | LYS  |
| 19  | AU    | 36  | LYS  |
| 19  | AU    | 37  | THR  |
| 19  | AU    | 38  | GLU  |
| 19  | AU    | 45  | THR  |
| 19  | AU    | 47  | PHE  |
| 19  | AU    | 50  | LYS  |
| 19  | AU    | 51  | VAL  |
| 19  | AU    | 55  | ASN  |
| 19  | AU    | 57  | LEU  |
| 19  | AU    | 63  | LYS  |
| 19  | AU    | 65  | ARG  |
| 19  | AU    | 73  | ARG  |
| 19  | AU    | 83  | VAL  |
| 19  | AU    | 92  | LEU  |
| 20  | AV    | 6   | HIS  |
| 20  | AV    | 12  | THR  |
| 20  | AV    | 13  | VAL  |
| 20  | AV    | 14  | LEU  |
| 20  | AV    | 19  | LYS  |
| 20  | AV    | 27  | VAL  |
| 20  | AV    | 28  | LYS  |
| 20  | AV    | 35  | TYR  |
| 20  | AV    | 42  | VAL  |
| 20  | AV    | 64  | GLU  |
| 20  | AV    | 72  | VAL  |
| 20  | AV    | 73  | ARG  |
| 20  | AV    | 75  | ILE  |
| 20  | AV    | 84  | ARG  |
| 20  | AV    | 90  | LEU  |
| 20  | AV    | 91  | GLU  |
| 20  | AV    | 96  | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 20  | AV    | 102 | CYS  |
| 20  | AV    | 107 | ASP  |
| 21  | AW    | 3   | TYR  |
| 21  | AW    | 8   | TYR  |
| 21  | AW    | 13  | GLU  |
| 21  | AW    | 14  | LYS  |
| 21  | AW    | 24  | LEU  |
| 21  | AW    | 28  | MET  |
| 21  | AW    | 30  | ASN  |
| 21  | AW    | 43  | GLU  |
| 21  | AW    | 44  | PHE  |
| 21  | AW    | 45  | ASP  |
| 21  | AW    | 47  | VAL  |
| 21  | AW    | 49  | ARG  |
| 21  | AW    | 50  | GLN  |
| 21  | AW    | 53  | ILE  |
| 21  | AW    | 58  | VAL  |
| 21  | AW    | 59  | LEU  |
| 21  | AW    | 60  | GLU  |
| 21  | AW    | 62  | PRO  |
| 21  | AW    | 63  | ASP  |
| 21  | AW    | 70  | LEU  |
| 21  | AW    | 78  | LYS  |
| 21  | AW    | 83  | PRO  |
| 21  | AW    | 86  | VAL  |
| 21  | AW    | 87  | ASP  |
| 21  | AW    | 89  | PHE  |
| 21  | AW    | 90  | VAL  |
| 21  | AW    | 95  | PRO  |
| 21  | AW    | 104 | PHE  |
| 21  | AW    | 108 | PRO  |
| 21  | AW    | 118 | GLN  |
| 21  | AW    | 120 | ILE  |
| 21  | AW    | 129 | SER  |
| 21  | AW    | 140 | ASP  |
| 21  | AW    | 141 | VAL  |
| 21  | AW    | 151 | HIS  |
| 21  | AW    | 155 | LEU  |
| 21  | AW    | 159 | PRO  |
| 21  | AW    | 163 | LEU  |
| 21  | AW    | 168 | GLU  |
| 21  | AW    | 171 | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 21  | AW    | 174 | VAL  |
| 21  | AW    | 175 | VAL  |
| 21  | AW    | 179 | ASP  |
| 22  | AX    | 10  | THR  |
| 22  | AX    | 20  | ARG  |
| 22  | AX    | 26  | TYR  |
| 22  | AX    | 29  | GLN  |
| 22  | AX    | 30  | VAL  |
| 22  | AX    | 32  | ARG  |
| 22  | AX    | 36  | ILE  |
| 22  | AX    | 37  | LEU  |
| 22  | AX    | 40  | GLN  |
| 22  | AX    | 41  | ARG  |
| 22  | AX    | 46  | LYS  |
| 22  | AX    | 55  | ARG  |
| 22  | AX    | 57  | PHE  |
| 22  | AX    | 58  | THR  |
| 22  | AX    | 64  | ASP  |
| 22  | AX    | 68  | GLU  |
| 22  | AX    | 74  | ARG  |
| 22  | AX    | 81  | VAL  |
| 23  | AY    | 1   | MET  |
| 23  | AY    | 6   | GLU  |
| 23  | AY    | 12  | SER  |
| 23  | AY    | 19  | LEU  |
| 23  | AY    | 22  | GLU  |
| 23  | AY    | 30  | LEU  |
| 23  | AY    | 32  | PHE  |
| 23  | AY    | 33  | GLN  |
| 23  | AY    | 35  | SER  |
| 23  | AY    | 45  | ILE  |
| 23  | AY    | 48  | LEU  |
| 23  | AY    | 50  | ARG  |
| 23  | AY    | 54  | ARG  |
| 23  | AY    | 56  | LEU  |
| 23  | AY    | 58  | VAL  |
| 23  | AY    | 64  | ARG  |
| 23  | AY    | 65  | GLN  |
| 23  | AY    | 66  | ASN  |
| 24  | AZ    | 3   | ARG  |
| 24  | AZ    | 5   | LYS  |
| 24  | AZ    | 6   | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 24  | AZ    | 12  | PRO  |
| 24  | AZ    | 15  | TYR  |
| 24  | AZ    | 26  | LEU  |
| 24  | AZ    | 28  | LEU  |
| 24  | AZ    | 30  | ARG  |
| 24  | AZ    | 31  | LEU  |
| 24  | AZ    | 32  | GLN  |
| 24  | AZ    | 37  | LEU  |
| 24  | AZ    | 41  | PRO  |
| 24  | AZ    | 50  | VAL  |
| 24  | AZ    | 55  | ARG  |
| 24  | AZ    | 59  | VAL  |
| 25  | Aa    | 3   | GLU  |
| 25  | Aa    | 11  | PRO  |
| 25  | Aa    | 14  | ILE  |
| 25  | Aa    | 15  | ILE  |
| 25  | Aa    | 16  | CYS  |
| 25  | Aa    | 23  | GLU  |
| 25  | Aa    | 24  | THR  |
| 25  | Aa    | 27  | THR  |
| 25  | Aa    | 29  | PRO  |
| 25  | Aa    | 31  | ILE  |
| 25  | Aa    | 37  | SER  |
| 25  | Aa    | 46  | GLN  |
| 25  | Aa    | 47  | GLN  |
| 25  | Aa    | 49  | PHE  |
| 25  | Aa    | 56  | VAL  |
| 25  | Aa    | 57  | GLU  |
| 25  | Aa    | 59  | PHE  |
| 25  | Aa    | 60  | GLN  |
| 25  | Aa    | 62  | ARG  |
| 25  | Aa    | 68  | ARG  |
| 26  | Ab    | 4   | HIS  |
| 26  | Ab    | 9   | LYS  |
| 26  | Ab    | 11  | THR  |
| 26  | Ab    | 15  | ARG  |
| 26  | Ab    | 17  | ASP  |
| 26  | Ab    | 20  | ARG  |
| 26  | Ab    | 25  | LEU  |
| 26  | Ab    | 26  | THR  |
| 26  | Ab    | 30  | LEU  |
| 26  | Ab    | 33  | CYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 26  | Ab    | 36  | CYS  |
| 26  | Ab    | 37  | LYS  |
| 26  | Ab    | 39  | MET  |
| 26  | Ab    | 49  | CYS  |
| 26  | Ab    | 51  | TYR  |
| 26  | Ab    | 58  | LEU  |
| 26  | Ab    | 59  | GLU  |
| 27  | Ac    | 7   | ILE  |
| 27  | Ac    | 10  | LEU  |
| 27  | Ac    | 11  | LEU  |
| 27  | Ac    | 13  | CYS  |
| 27  | Ac    | 15  | GLU  |
| 27  | Ac    | 19  | ARG  |
| 27  | Ac    | 29  | ASN  |
| 27  | Ac    | 30  | THR  |
| 27  | Ac    | 31  | PRO  |
| 27  | Ac    | 32  | ASN  |
| 27  | Ac    | 33  | LYS  |
| 27  | Ac    | 38  | LYS  |
| 27  | Ac    | 43  | CYS  |
| 27  | Ac    | 46  | HIS  |
| 27  | Ac    | 48  | VAL  |
| 27  | Ac    | 51  | GLU  |
| 27  | Ac    | 54  | ILE  |
| 28  | Ad    | 5   | TRP  |
| 28  | Ad    | 6   | GLN  |
| 28  | Ad    | 8   | ASN  |
| 28  | Ad    | 12  | ARG  |
| 28  | Ad    | 19  | ARG  |
| 28  | Ad    | 21  | ARG  |
| 28  | Ad    | 24  | THR  |
| 28  | Ad    | 34  | ARG  |
| 28  | Ad    | 36  | GLN  |
| 28  | Ad    | 41  | ARG  |
| 28  | Ad    | 46  | VAL  |
| 28  | Ad    | 48  | LYS  |
| 29  | Ae    | 5   | LYS  |
| 29  | Ae    | 16  | ILE  |
| 29  | Ae    | 21  | LYS  |
| 29  | Ae    | 23  | VAL  |
| 29  | Ae    | 33  | ASN  |
| 29  | Ae    | 39  | LYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 29  | Ae    | 41  | ILE  |
| 29  | Ae    | 42  | ARG  |
| 29  | Ae    | 44  | LYS  |
| 29  | Ae    | 50  | LEU  |
| 29  | Ae    | 52  | LYS  |
| 29  | Ae    | 56  | GLU  |
| 29  | Ae    | 58  | ILE  |
| 29  | Ae    | 59  | LYS  |
| 29  | Ae    | 62  | LEU  |
| 30  | Af    | 3   | VAL  |
| 30  | Af    | 10  | ILE  |
| 30  | Af    | 17  | ILE  |
| 30  | Af    | 19  | ARG  |
| 30  | Af    | 23  | VAL  |
| 30  | Af    | 27  | CYS  |
| 32  | AJ    | 5   | VAL  |
| 32  | AJ    | 10  | LEU  |
| 32  | AJ    | 16  | LYS  |
| 32  | AJ    | 18  | THR  |
| 32  | AJ    | 29  | GLN  |
| 32  | AJ    | 30  | HIS  |
| 32  | AJ    | 34  | ILE  |
| 32  | AJ    | 35  | MET  |
| 32  | AJ    | 39  | LYS  |
| 32  | AJ    | 50  | ASP  |
| 32  | AJ    | 56  | GLU  |
| 32  | AJ    | 59  | ILE  |
| 32  | AJ    | 62  | ASP  |
| 32  | AJ    | 63  | ARG  |
| 32  | AJ    | 64  | SER  |
| 32  | AJ    | 65  | PHE  |
| 32  | AJ    | 66  | THR  |
| 32  | AJ    | 69  | THR  |
| 32  | AJ    | 70  | LYS  |
| 32  | AJ    | 76  | TYR  |
| 32  | AJ    | 77  | LEU  |
| 32  | AJ    | 79  | ARG  |
| 32  | AJ    | 85  | GLU  |
| 32  | AJ    | 86  | LYS  |
| 32  | AJ    | 95  | LYS  |
| 32  | AJ    | 96  | VAL  |
| 32  | AJ    | 109 | LYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 32  | AJ    | 111 | LYS  |
| 32  | AJ    | 114 | ASP  |
| 32  | AJ    | 117 | THR  |
| 32  | AJ    | 120 | LEU  |
| 32  | AJ    | 121 | GLU  |
| 32  | AJ    | 137 | GLU  |
| 35  | BF    | 10  | LEU  |
| 35  | BF    | 11  | LEU  |
| 35  | BF    | 17  | PHE  |
| 35  | BF    | 20  | GLU  |
| 35  | BF    | 21  | ARG  |
| 35  | BF    | 23  | ARG  |
| 35  | BF    | 25  | ASN  |
| 35  | BF    | 26  | PRO  |
| 35  | BF    | 32  | ILE  |
| 35  | BF    | 35  | GLU  |
| 35  | BF    | 36  | ARG  |
| 35  | BF    | 40  | HIS  |
| 35  | BF    | 44  | LEU  |
| 35  | BF    | 47  | THR  |
| 35  | BF    | 48  | MET  |
| 35  | BF    | 49  | GLU  |
| 35  | BF    | 52  | GLU  |
| 35  | BF    | 56  | ARG  |
| 35  | BF    | 57  | PHE  |
| 35  | BF    | 61  | LEU  |
| 35  | BF    | 64  | ARG  |
| 35  | BF    | 68  | ILE  |
| 35  | BF    | 69  | LEU  |
| 35  | BF    | 70  | PHE  |
| 35  | BF    | 74  | LYS  |
| 35  | BF    | 75  | LYS  |
| 35  | BF    | 80  | ILE  |
| 35  | BF    | 84  | GLU  |
| 35  | BF    | 91  | PRO  |
| 35  | BF    | 92  | TYR  |
| 35  | BF    | 101 | MET  |
| 35  | BF    | 102 | LEU  |
| 35  | BF    | 105 | PHE  |
| 35  | BF    | 111 | ARG  |
| 35  | BF    | 114 | ARG  |
| 35  | BF    | 116 | GLU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 35  | BF    | 118 | LEU  |
| 35  | BF    | 122 | PHE  |
| 35  | BF    | 131 | PRO  |
| 35  | BF    | 132 | LYS  |
| 35  | BF    | 134 | GLU  |
| 35  | BF    | 135 | GLN  |
| 35  | BF    | 137 | ARG  |
| 35  | BF    | 147 | LYS  |
| 35  | BF    | 148 | TYR  |
| 35  | BF    | 152 | PHE  |
| 35  | BF    | 153 | ARG  |
| 35  | BF    | 154 | LEU  |
| 35  | BF    | 158 | LEU  |
| 35  | BF    | 162 | ILE  |
| 35  | BF    | 168 | THR  |
| 35  | BF    | 169 | LYS  |
| 35  | BF    | 172 | ILE  |
| 35  | BF    | 181 | PHE  |
| 35  | BF    | 182 | ILE  |
| 35  | BF    | 185 | ILE  |
| 35  | BF    | 187 | LEU  |
| 35  | BF    | 189 | ASP  |
| 35  | BF    | 191 | ASP  |
| 35  | BF    | 194 | PRO  |
| 35  | BF    | 195 | ASP  |
| 35  | BF    | 196 | LEU  |
| 35  | BF    | 208 | ILE  |
| 35  | BF    | 209 | ARG  |
| 35  | BF    | 212 | GLN  |
| 35  | BF    | 217 | ARG  |
| 35  | BF    | 221 | LEU  |
| 35  | BF    | 222 | ILE  |
| 35  | BF    | 229 | VAL  |
| 36  | BG    | 5   | ILE  |
| 36  | BG    | 8   | ILE  |
| 36  | BG    | 10  | PHE  |
| 36  | BG    | 15  | THR  |
| 36  | BG    | 29  | TYR  |
| 36  | BG    | 33  | LEU  |
| 36  | BG    | 34  | LEU  |
| 36  | BG    | 35  | GLU  |
| 36  | BG    | 38  | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 36  | BG    | 46  | GLU  |
| 36  | BG    | 48  | TYR  |
| 36  | BG    | 52  | LEU  |
| 36  | BG    | 67  | THR  |
| 36  | BG    | 76  | VAL  |
| 36  | BG    | 82  | GLU  |
| 36  | BG    | 89  | GLU  |
| 36  | BG    | 91  | LEU  |
| 36  | BG    | 95  | THR  |
| 36  | BG    | 97  | LYS  |
| 36  | BG    | 99  | VAL  |
| 36  | BG    | 107 | GLN  |
| 36  | BG    | 125 | GLU  |
| 36  | BG    | 136 | GLN  |
| 36  | BG    | 139 | GLN  |
| 36  | BG    | 140 | ARG  |
| 36  | BG    | 142 | MET  |
| 36  | BG    | 164 | ARG  |
| 36  | BG    | 165 | THR  |
| 36  | BG    | 176 | HIS  |
| 36  | BG    | 178 | LEU  |
| 36  | BG    | 186 | PHE  |
| 36  | BG    | 188 | LEU  |
| 36  | BG    | 190 | ARG  |
| 36  | BG    | 193 | TYR  |
| 36  | BG    | 195 | VAL  |
| 36  | BG    | 196 | LEU  |
| 36  | BG    | 198 | VAL  |
| 36  | BG    | 201 | TYR  |
| 36  | BG    | 204 | LEU  |
| 37  | BH    | 5   | ILE  |
| 37  | BH    | 8   | VAL  |
| 37  | BH    | 9   | CYS  |
| 37  | BH    | 14  | ARG  |
| 37  | BH    | 15  | GLU  |
| 37  | BH    | 20  | TYR  |
| 37  | BH    | 25  | ARG  |
| 37  | BH    | 26  | CYS  |
| 37  | BH    | 29  | PRO  |
| 37  | BH    | 31  | CYS  |
| 37  | BH    | 33  | MET  |
| 37  | BH    | 47  | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 37  | BH    | 51  | PRO  |
| 37  | BH    | 58  | LEU  |
| 37  | BH    | 59  | ARG  |
| 37  | BH    | 61  | LYS  |
| 37  | BH    | 62  | GLN  |
| 37  | BH    | 63  | LYS  |
| 37  | BH    | 64  | LEU  |
| 37  | BH    | 68  | TYR  |
| 37  | BH    | 78  | LEU  |
| 37  | BH    | 83  | SER  |
| 37  | BH    | 85  | LYS  |
| 37  | BH    | 101 | LEU  |
| 37  | BH    | 104 | VAL  |
| 37  | BH    | 107 | ARG  |
| 37  | BH    | 108 | LEU  |
| 37  | BH    | 112 | VAL  |
| 37  | BH    | 114 | ARG  |
| 37  | BH    | 116 | GLN  |
| 37  | BH    | 120 | LEU  |
| 37  | BH    | 131 | ARG  |
| 37  | BH    | 132 | ARG  |
| 37  | BH    | 135 | LEU  |
| 37  | BH    | 141 | ARG  |
| 37  | BH    | 142 | PRO  |
| 37  | BH    | 146 | ILE  |
| 37  | BH    | 154 | ASN  |
| 37  | BH    | 155 | LEU  |
| 37  | BH    | 168 | ARG  |
| 37  | BH    | 173 | TRP  |
| 37  | BH    | 175 | SER  |
| 37  | BH    | 178 | VAL  |
| 37  | BH    | 181 | MET  |
| 37  | BH    | 182 | LYS  |
| 37  | BH    | 190 | ASP  |
| 37  | BH    | 191 | ARG  |
| 37  | BH    | 193 | ASP  |
| 37  | BH    | 194 | LEU  |
| 37  | BH    | 196 | LEU  |
| 37  | BH    | 198 | VAL  |
| 38  | BI    | 5   | ASP  |
| 38  | BI    | 6   | PHE  |
| 38  | BI    | 7   | GLU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 38  | BI    | 15  | ARG  |
| 38  | BI    | 16  | THR  |
| 38  | BI    | 25  | ARG  |
| 38  | BI    | 26  | PHE  |
| 38  | BI    | 27  | ARG  |
| 38  | BI    | 28  | PHE  |
| 38  | BI    | 31  | LEU  |
| 38  | BI    | 34  | VAL  |
| 38  | BI    | 41  | VAL  |
| 38  | BI    | 56  | GLN  |
| 38  | BI    | 60  | TYR  |
| 38  | BI    | 63  | ARG  |
| 38  | BI    | 64  | ARG  |
| 38  | BI    | 67  | VAL  |
| 38  | BI    | 78  | HIS  |
| 38  | BI    | 79  | GLU  |
| 38  | BI    | 80  | ILE  |
| 38  | BI    | 81  | GLU  |
| 38  | BI    | 89  | ILE  |
| 38  | BI    | 91  | LEU  |
| 38  | BI    | 101 | ILE  |
| 38  | BI    | 105 | VAL  |
| 38  | BI    | 111 | GLU  |
| 38  | BI    | 112 | LEU  |
| 38  | BI    | 119 | LEU  |
| 38  | BI    | 121 | LYS  |
| 38  | BI    | 128 | PRO  |
| 38  | BI    | 129 | ILE  |
| 38  | BI    | 131 | ILE  |
| 38  | BI    | 133 | TYR  |
| 38  | BI    | 139 | LEU  |
| 38  | BI    | 141 | GLN  |
| 38  | BI    | 142 | LEU  |
| 38  | BI    | 143 | ARG  |
| 38  | BI    | 145 | LYS  |
| 38  | BI    | 150 | ARG  |
| 39  | BJ    | 2   | ARG  |
| 39  | BJ    | 4   | TYR  |
| 39  | BJ    | 5   | GLU  |
| 39  | BJ    | 6   | VAL  |
| 39  | BJ    | 8   | ILE  |
| 39  | BJ    | 10  | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 39  | BJ    | 13  | ASN  |
| 39  | BJ    | 14  | LEU  |
| 39  | BJ    | 37  | VAL  |
| 39  | BJ    | 40  | VAL  |
| 39  | BJ    | 42  | GLU  |
| 39  | BJ    | 47  | ARG  |
| 39  | BJ    | 48  | LEU  |
| 39  | BJ    | 50  | TYR  |
| 39  | BJ    | 55  | ASP  |
| 39  | BJ    | 57  | GLN  |
| 39  | BJ    | 60  | PHE  |
| 39  | BJ    | 65  | VAL  |
| 39  | BJ    | 66  | GLU  |
| 39  | BJ    | 69  | GLU  |
| 39  | BJ    | 74  | ASP  |
| 39  | BJ    | 75  | LEU  |
| 39  | BJ    | 79  | LEU  |
| 39  | BJ    | 83  | ASP  |
| 39  | BJ    | 88  | VAL  |
| 39  | BJ    | 94  | GLN  |
| 39  | BJ    | 95  | GLU  |
| 39  | BJ    | 98  | LEU  |
| 40  | BK    | 5   | ARG  |
| 40  | BK    | 6   | ARG  |
| 40  | BK    | 12  | LEU  |
| 40  | BK    | 14  | PRO  |
| 40  | BK    | 17  | VAL  |
| 40  | BK    | 22  | LEU  |
| 40  | BK    | 36  | LYS  |
| 40  | BK    | 41  | ARG  |
| 40  | BK    | 47  | CYS  |
| 40  | BK    | 51  | GLN  |
| 40  | BK    | 54  | THR  |
| 40  | BK    | 56  | GLN  |
| 40  | BK    | 69  | VAL  |
| 40  | BK    | 72  | ARG  |
| 40  | BK    | 74  | GLU  |
| 40  | BK    | 76  | ARG  |
| 40  | BK    | 80  | VAL  |
| 40  | BK    | 99  | LEU  |
| 40  | BK    | 101 | LEU  |
| 40  | BK    | 103 | TRP  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 40  | BK    | 106 | GLN  |
| 40  | BK    | 111 | ARG  |
| 40  | BK    | 113 | GLU  |
| 40  | BK    | 123 | GLU  |
| 40  | BK    | 124 | LEU  |
| 40  | BK    | 126 | ASP  |
| 40  | BK    | 139 | GLU  |
| 40  | BK    | 140 | ASP  |
| 40  | BK    | 143 | ARG  |
| 40  | BK    | 146 | GLU  |
| 40  | BK    | 149 | ARG  |
| 40  | BK    | 155 | ARG  |
| 40  | BK    | 156 | TRP  |
| 41  | BL    | 1   | MET  |
| 41  | BL    | 4   | ASP  |
| 41  | BL    | 6   | ILE  |
| 41  | BL    | 14  | ARG  |
| 41  | BL    | 15  | ASN  |
| 41  | BL    | 18  | ARG  |
| 41  | BL    | 25  | ASP  |
| 41  | BL    | 26  | VAL  |
| 41  | BL    | 31  | PHE  |
| 41  | BL    | 32  | LYS  |
| 41  | BL    | 33  | GLU  |
| 41  | BL    | 36  | LEU  |
| 41  | BL    | 37  | ARG  |
| 41  | BL    | 38  | ILE  |
| 41  | BL    | 39  | LEU  |
| 41  | BL    | 45  | ILE  |
| 41  | BL    | 49  | GLU  |
| 41  | BL    | 50  | ARG  |
| 41  | BL    | 63  | LEU  |
| 41  | BL    | 70  | GLN  |
| 41  | BL    | 80  | ILE  |
| 41  | BL    | 84  | ARG  |
| 41  | BL    | 88  | LYS  |
| 41  | BL    | 92  | ARG  |
| 41  | BL    | 98  | LYS  |
| 41  | BL    | 100 | ILE  |
| 41  | BL    | 102 | ARG  |
| 41  | BL    | 103 | VAL  |
| 41  | BL    | 104 | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 41  | BL    | 107 | LEU  |
| 41  | BL    | 111 | ILE  |
| 41  | BL    | 119 | LEU  |
| 41  | BL    | 122 | ARG  |
| 41  | BL    | 136 | GLU  |
| 42  | BM    | 4   | TYR  |
| 42  | BM    | 7   | THR  |
| 42  | BM    | 11  | LYS  |
| 42  | BM    | 12  | GLU  |
| 42  | BM    | 19  | LEU  |
| 42  | BM    | 21  | PRO  |
| 42  | BM    | 28  | VAL  |
| 42  | BM    | 32  | ASP  |
| 42  | BM    | 37  | PHE  |
| 42  | BM    | 47  | LEU  |
| 42  | BM    | 54  | ASP  |
| 42  | BM    | 63  | ILE  |
| 42  | BM    | 64  | THR  |
| 42  | BM    | 75  | ASP  |
| 42  | BM    | 79  | LEU  |
| 42  | BM    | 89  | ASN  |
| 42  | BM    | 98  | PRO  |
| 42  | BM    | 99  | LEU  |
| 42  | BM    | 101 | PHE  |
| 42  | BM    | 102 | LEU  |
| 42  | BM    | 105 | ASP  |
| 42  | BM    | 110 | GLU  |
| 42  | BM    | 116 | LYS  |
| 42  | BM    | 117 | HIS  |
| 43  | BN    | 3   | LYS  |
| 43  | BN    | 4   | ILE  |
| 43  | BN    | 5   | ARG  |
| 43  | BN    | 8   | LEU  |
| 43  | BN    | 9   | ARG  |
| 43  | BN    | 11  | PHE  |
| 43  | BN    | 14  | LYS  |
| 43  | BN    | 33  | GLN  |
| 43  | BN    | 45  | ARG  |
| 43  | BN    | 47  | PHE  |
| 43  | BN    | 49  | VAL  |
| 43  | BN    | 60  | ARG  |
| 43  | BN    | 62  | HIS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 43  | BN    | 63  | PHE  |
| 43  | BN    | 79  | ARG  |
| 43  | BN    | 81  | THR  |
| 43  | BN    | 82  | ILE  |
| 43  | BN    | 83  | GLU  |
| 43  | BN    | 84  | GLN  |
| 43  | BN    | 85  | LEU  |
| 43  | BN    | 95  | GLU  |
| 44  | BO    | 13  | GLN  |
| 44  | BO    | 18  | ARG  |
| 44  | BO    | 22  | HIS  |
| 44  | BO    | 39  | PRO  |
| 44  | BO    | 40  | ILE  |
| 44  | BO    | 42  | TRP  |
| 44  | BO    | 50  | TYR  |
| 44  | BO    | 54  | ARG  |
| 44  | BO    | 62  | GLN  |
| 44  | BO    | 67  | ASP  |
| 44  | BO    | 78  | GLN  |
| 44  | BO    | 82  | VAL  |
| 44  | BO    | 99  | GLN  |
| 44  | BO    | 116 | HIS  |
| 44  | BO    | 125 | PHE  |
| 45  | BP    | 8   | ASN  |
| 45  | BP    | 10  | LEU  |
| 45  | BP    | 16  | GLU  |
| 45  | BP    | 23  | LYS  |
| 45  | BP    | 24  | VAL  |
| 45  | BP    | 32  | PHE  |
| 45  | BP    | 38  | THR  |
| 45  | BP    | 42  | THR  |
| 45  | BP    | 53  | ARG  |
| 45  | BP    | 60  | LEU  |
| 45  | BP    | 64  | TYR  |
| 45  | BP    | 65  | GLU  |
| 45  | BP    | 66  | VAL  |
| 45  | BP    | 73  | GLU  |
| 45  | BP    | 79  | GLU  |
| 45  | BP    | 84  | LEU  |
| 45  | BP    | 85  | ILE  |
| 45  | BP    | 93  | LEU  |
| 45  | BP    | 98  | TYR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 45  | BP    | 100 | ILE  |
| 45  | BP    | 101 | VAL  |
| 45  | BP    | 113 | ARG  |
| 45  | BP    | 119 | LYS  |
| 45  | BP    | 126 | LYS  |
| 45  | BP    | 127 | GLU  |
| 46  | BQ    | 3   | ARG  |
| 46  | BQ    | 11  | ARG  |
| 46  | BQ    | 13  | LYS  |
| 46  | BQ    | 17  | VAL  |
| 46  | BQ    | 19  | LEU  |
| 46  | BQ    | 27  | LYS  |
| 46  | BQ    | 35  | GLU  |
| 46  | BQ    | 39  | ILE  |
| 46  | BQ    | 44  | ARG  |
| 46  | BQ    | 48  | LEU  |
| 46  | BQ    | 49  | THR  |
| 46  | BQ    | 56  | LEU  |
| 46  | BQ    | 58  | GLU  |
| 46  | BQ    | 60  | VAL  |
| 46  | BQ    | 65  | LYS  |
| 46  | BQ    | 66  | LEU  |
| 46  | BQ    | 67  | GLU  |
| 46  | BQ    | 70  | LEU  |
| 46  | BQ    | 71  | ARG  |
| 46  | BQ    | 73  | GLU  |
| 46  | BQ    | 81  | LEU  |
| 46  | BQ    | 88  | ARG  |
| 46  | BQ    | 102 | ARG  |
| 46  | BQ    | 108 | ARG  |
| 46  | BQ    | 110 | ARG  |
| 46  | BQ    | 115 | LYS  |
| 47  | BR    | 11  | LYS  |
| 47  | BR    | 18  | VAL  |
| 47  | BR    | 22  | THR  |
| 47  | BR    | 24  | CYS  |
| 47  | BR    | 29  | ARG  |
| 47  | BR    | 34  | TYR  |
| 47  | BR    | 40  | CYS  |
| 47  | BR    | 43  | CYS  |
| 47  | BR    | 45  | ARG  |
| 47  | BR    | 49  | HIS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 47  | BR    | 54  | PRO  |
| 47  | BR    | 56  | VAL  |
| 48  | BS    | 3   | ILE  |
| 48  | BS    | 4   | THR  |
| 48  | BS    | 5   | LYS  |
| 48  | BS    | 13  | GLN  |
| 48  | BS    | 14  | GLU  |
| 48  | BS    | 26  | GLU  |
| 48  | BS    | 36  | ILE  |
| 48  | BS    | 39  | LEU  |
| 48  | BS    | 41  | GLU  |
| 48  | BS    | 42  | HIS  |
| 48  | BS    | 44  | LYS  |
| 48  | BS    | 49  | ASP  |
| 48  | BS    | 64  | ARG  |
| 48  | BS    | 66  | LEU  |
| 48  | BS    | 73  | GLU  |
| 48  | BS    | 78  | TYR  |
| 48  | BS    | 79  | ARG  |
| 49  | BT    | 2   | VAL  |
| 49  | BT    | 3   | LYS  |
| 49  | BT    | 4   | ILE  |
| 49  | BT    | 6   | LEU  |
| 49  | BT    | 14  | ASN  |
| 49  | BT    | 15  | PRO  |
| 49  | BT    | 18  | ARG  |
| 49  | BT    | 27  | LYS  |
| 49  | BT    | 31  | LYS  |
| 49  | BT    | 32  | TYR  |
| 49  | BT    | 36  | ILE  |
| 49  | BT    | 39  | TYR  |
| 49  | BT    | 40  | ASP  |
| 49  | BT    | 51  | VAL  |
| 49  | BT    | 52  | ASP  |
| 49  | BT    | 54  | GLU  |
| 49  | BT    | 55  | ARG  |
| 49  | BT    | 59  | TRP  |
| 49  | BT    | 62  | VAL  |
| 49  | BT    | 65  | GLN  |
| 49  | BT    | 66  | PRO  |
| 49  | BT    | 69  | THR  |
| 49  | BT    | 72  | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 49  | BT    | 75  | ARG  |
| 49  | BT    | 82  | GLN  |
| 50  | BU    | 12  | SER  |
| 50  | BU    | 15  | MET  |
| 50  | BU    | 18  | THR  |
| 50  | BU    | 24  | GLU  |
| 50  | BU    | 25  | ARG  |
| 50  | BU    | 27  | PHE  |
| 50  | BU    | 28  | PRO  |
| 50  | BU    | 36  | ILE  |
| 50  | BU    | 40  | LYS  |
| 50  | BU    | 43  | LEU  |
| 50  | BU    | 48  | GLU  |
| 50  | BU    | 51  | TYR  |
| 50  | BU    | 57  | VAL  |
| 50  | BU    | 58  | GLU  |
| 50  | BU    | 60  | ILE  |
| 50  | BU    | 62  | SER  |
| 50  | BU    | 67  | LYS  |
| 50  | BU    | 69  | LYS  |
| 50  | BU    | 84  | LEU  |
| 50  | BU    | 86  | GLU  |
| 50  | BU    | 87  | LYS  |
| 50  | BU    | 93  | GLN  |
| 50  | BU    | 95  | TYR  |
| 50  | BU    | 96  | GLN  |
| 50  | BU    | 98  | LEU  |
| 50  | BU    | 100 | LYS  |
| 50  | BU    | 101 | ARG  |
| 51  | BV    | 28  | GLU  |
| 51  | BV    | 36  | ASN  |
| 51  | BV    | 37  | VAL  |
| 51  | BV    | 38  | GLU  |
| 51  | BV    | 49  | LYS  |
| 51  | BV    | 55  | ARG  |
| 51  | BV    | 62  | GLU  |
| 51  | BV    | 63  | GLN  |
| 51  | BV    | 72  | ARG  |
| 51  | BV    | 79  | LEU  |
| 51  | BV    | 80  | PRO  |
| 51  | BV    | 81  | PHE  |
| 51  | BV    | 83  | GLU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 52  | BW    | 3   | ARG  |
| 52  | BW    | 6   | LYS  |
| 52  | BW    | 7   | LYS  |
| 52  | BW    | 11  | VAL  |
| 52  | BW    | 12  | ASP  |
| 52  | BW    | 14  | HIS  |
| 52  | BW    | 15  | LEU  |
| 52  | BW    | 17  | GLU  |
| 52  | BW    | 18  | LYS  |
| 52  | BW    | 19  | VAL  |
| 52  | BW    | 25  | LYS  |
| 52  | BW    | 37  | ARG  |
| 52  | BW    | 41  | VAL  |
| 52  | BW    | 42  | PRO  |
| 52  | BW    | 43  | GLU  |
| 52  | BW    | 52  | TYR  |
| 52  | BW    | 57  | HIS  |
| 52  | BW    | 74  | PHE  |
| 53  | BX    | 13  | LEU  |
| 53  | BX    | 23  | ARG  |
| 53  | BX    | 25  | ARG  |
| 53  | BX    | 30  | LYS  |
| 53  | BX    | 35  | THR  |
| 53  | BX    | 42  | GLN  |
| 53  | BX    | 46  | GLU  |
| 53  | BX    | 51  | GLU  |
| 53  | BX    | 56  | MET  |
| 53  | BX    | 63  | ILE  |
| 53  | BX    | 71  | THR  |
| 53  | BX    | 73  | HIS  |
| 53  | BX    | 79  | ARG  |
| 53  | BX    | 84  | LEU  |
| 53  | BX    | 87  | LYS  |
| 53  | BX    | 88  | VAL  |
| 53  | BX    | 91  | LEU  |
| 54  | BY    | 9   | ARG  |
| 54  | BY    | 10  | ARG  |
| 57  | BZ    | 3   | GLU  |
| 57  | BZ    | 4   | LYS  |
| 57  | BZ    | 13  | HIS  |
| 57  | BZ    | 20  | THR  |
| 57  | BZ    | 24  | LYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 57  | BZ    | 26  | LEU  |
| 57  | BZ    | 27  | GLN  |
| 57  | BZ    | 28  | GLN  |
| 57  | BZ    | 29  | SER  |
| 57  | BZ    | 31  | THR  |
| 57  | BZ    | 33  | ASP  |
| 57  | BZ    | 34  | SER  |
| 57  | BZ    | 35  | ARG  |
| 57  | BZ    | 37  | GLU  |
| 57  | BZ    | 40  | GLU  |
| 57  | BZ    | 42  | VAL  |
| 57  | BZ    | 48  | LEU  |
| 57  | BZ    | 50  | LYS  |
| 57  | BZ    | 52  | ARG  |
| 57  | BZ    | 54  | ILE  |
| 57  | BZ    | 57  | LEU  |
| 57  | BZ    | 59  | LYS  |
| 57  | BZ    | 61  | THR  |
| 57  | BZ    | 65  | LYS  |
| 57  | BZ    | 67  | ASP  |
| 57  | BZ    | 68  | TYR  |
| 57  | BZ    | 72  | ILE  |
| 57  | BZ    | 75  | THR  |
| 57  | BZ    | 78  | HIS  |
| 57  | BZ    | 84  | GLU  |
| 57  | BZ    | 87  | ARG  |
| 57  | BZ    | 91  | MET  |
| 57  | BZ    | 94  | SER  |
| 57  | BZ    | 95  | VAL  |
| 57  | BZ    | 108 | GLN  |
| 57  | BZ    | 110 | ARG  |
| 57  | BZ    | 115 | LYS  |
| 57  | BZ    | 117 | PHE  |
| 57  | BZ    | 119 | TYR  |
| 57  | BZ    | 122 | LYS  |
| 57  | BZ    | 131 | ASP  |
| 57  | BZ    | 136 | ARG  |
| 57  | BZ    | 142 | ASP  |
| 57  | BZ    | 148 | PHE  |
| 57  | BZ    | 150 | ASN  |
| 57  | BZ    | 151 | LEU  |
| 57  | BZ    | 155 | ASP  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 57  | BZ    | 174 | LEU  |
| 57  | BZ    | 176 | HIS  |
| 57  | BZ    | 182 | ASP  |
| 57  | BZ    | 186 | LEU  |
| 57  | BZ    | 192 | ASP  |
| 57  | BZ    | 201 | LEU  |
| 57  | BZ    | 202 | ASP  |
| 57  | BZ    | 207 | MET  |
| 57  | BZ    | 208 | GLN  |
| 57  | BZ    | 216 | SER  |
| 57  | BZ    | 221 | ILE  |
| 57  | BZ    | 225 | ARG  |
| 57  | BZ    | 230 | LYS  |
| 57  | BZ    | 232 | LYS  |
| 57  | BZ    | 234 | ASN  |
| 57  | BZ    | 235 | GLN  |
| 57  | BZ    | 242 | SER  |
| 57  | BZ    | 245 | LYS  |
| 57  | BZ    | 247 | ARG  |
| 57  | BZ    | 253 | LYS  |
| 57  | BZ    | 255 | LEU  |
| 57  | BZ    | 260 | LEU  |
| 57  | BZ    | 262 | ARG  |
| 57  | BZ    | 265 | THR  |
| 57  | BZ    | 274 | VAL  |
| 57  | BZ    | 276 | ILE  |
| 57  | BZ    | 291 | THR  |
| 57  | BZ    | 292 | GLN  |
| 57  | BZ    | 293 | ASN  |
| 57  | BZ    | 295 | GLU  |
| 57  | BZ    | 297 | LEU  |
| 57  | BZ    | 300 | LEU  |
| 57  | BZ    | 301 | SER  |
| 57  | BZ    | 307 | VAL  |
| 57  | BZ    | 308 | SER  |
| 57  | BZ    | 315 | THR  |
| 57  | BZ    | 316 | SER  |
| 57  | BZ    | 321 | LYS  |
| 57  | BZ    | 324 | LYS  |
| 57  | BZ    | 329 | ARG  |
| 57  | BZ    | 332 | LEU  |
| 57  | BZ    | 333 | ASP  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 57  | BZ    | 346 | ARG  |
| 57  | BZ    | 359 | SER  |
| 57  | BZ    | 363 | GLU  |
| 57  | BZ    | 373 | MET  |
| 57  | BZ    | 380 | LEU  |
| 57  | BZ    | 382 | VAL  |
| 57  | BZ    | 384 | ARG  |
| 57  | BZ    | 387 | VAL  |
| 57  | BZ    | 390 | ARG  |
| 57  | BZ    | 393 | ASP  |
| 57  | BZ    | 398 | GLU  |
| 57  | BZ    | 404 | THR  |
| 57  | BZ    | 405 | LEU  |
| 57  | BZ    | 407 | VAL  |
| 57  | BZ    | 410 | GLN  |
| 57  | BZ    | 411 | HIS  |
| 57  | BZ    | 419 | LEU  |
| 57  | BZ    | 434 | LYS  |
| 57  | BZ    | 443 | ILE  |
| 57  | BZ    | 445 | SER  |
| 57  | BZ    | 448 | LEU  |
| 57  | BZ    | 460 | SER  |
| 57  | BZ    | 464 | LEU  |
| 57  | BZ    | 465 | LEU  |
| 57  | BZ    | 466 | TYR  |
| 57  | BZ    | 472 | TYR  |
| 57  | BZ    | 475 | VAL  |
| 57  | BZ    | 482 | GLN  |
| 57  | BZ    | 483 | ARG  |
| 57  | BZ    | 488 | LEU  |
| 57  | BZ    | 489 | ILE  |
| 57  | BZ    | 491 | ASN  |
| 57  | BZ    | 493 | GLN  |
| 57  | BZ    | 499 | PHE  |
| 57  | BZ    | 502 | PHE  |
| 57  | BZ    | 506 | ASP  |
| 57  | BZ    | 509 | LYS  |
| 57  | BZ    | 520 | GLU  |
| 57  | BZ    | 526 | ILE  |
| 57  | BZ    | 539 | THR  |
| 57  | BZ    | 541 | LYS  |
| 57  | BZ    | 542 | LYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 57  | BZ    | 544 | THR  |
| 57  | BZ    | 546 | MET  |
| 57  | BZ    | 547 | ARG  |
| 57  | BZ    | 549 | SER  |
| 57  | BZ    | 552 | ASP  |
| 57  | BZ    | 555 | VAL  |
| 57  | BZ    | 563 | MET  |
| 57  | BZ    | 570 | GLU  |
| 57  | BZ    | 578 | VAL  |
| 57  | BZ    | 586 | ARG  |
| 57  | BZ    | 588 | ARG  |
| 57  | BZ    | 589 | LYS  |
| 57  | BZ    | 593 | THR  |
| 57  | BZ    | 597 | ARG  |
| 57  | BZ    | 605 | LYS  |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (191) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | AC    | 56  | GLN  |
| 3   | AC    | 57  | ASN  |
| 3   | AC    | 71  | GLN  |
| 3   | AC    | 148 | ASN  |
| 3   | AC    | 172 | HIS  |
| 3   | AC    | 188 | ASN  |
| 3   | AC    | 225 | ASN  |
| 4   | AD    | 45  | ASN  |
| 4   | AD    | 87  | ASN  |
| 4   | AD    | 115 | GLN  |
| 4   | AD    | 166 | GLN  |
| 4   | AD    | 198 | ASN  |
| 4   | AD    | 201 | HIS  |
| 4   | AD    | 203 | ASN  |
| 5   | AE    | 35  | GLN  |
| 5   | AE    | 85  | ASN  |
| 5   | AE    | 121 | ASN  |
| 5   | AE    | 129 | HIS  |
| 5   | AE    | 135 | HIS  |
| 6   | AF    | 67  | GLN  |
| 6   | AF    | 133 | ASN  |
| 7   | AG    | 26  | GLN  |
| 7   | AG    | 40  | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 7   | AG    | 41  | GLN  |
| 7   | AG    | 123 | ASN  |
| 7   | AG    | 130 | ASN  |
| 8   | AH    | 74  | ASN  |
| 8   | AH    | 143 | GLN  |
| 9   | AK    | 38  | HIS  |
| 9   | AK    | 94  | HIS  |
| 10  | AL    | 5   | GLN  |
| 10  | AL    | 89  | ASN  |
| 10  | AL    | 90  | GLN  |
| 11  | AM    | 13  | ASN  |
| 11  | AM    | 35  | HIS  |
| 11  | AM    | 38  | GLN  |
| 11  | AM    | 68  | GLN  |
| 11  | AM    | 81  | GLN  |
| 11  | AM    | 84  | ASN  |
| 12  | AN    | 12  | GLN  |
| 12  | AN    | 89  | ASN  |
| 12  | AN    | 113 | GLN  |
| 13  | AO    | 24  | GLN  |
| 13  | AO    | 31  | HIS  |
| 14  | AP    | 38  | GLN  |
| 14  | AP    | 84  | GLN  |
| 15  | AQ    | 55  | ASN  |
| 15  | AQ    | 58  | ASN  |
| 15  | AQ    | 90  | GLN  |
| 16  | AR    | 44  | ASN  |
| 16  | AR    | 66  | ASN  |
| 16  | AR    | 71  | GLN  |
| 16  | AR    | 94  | ASN  |
| 16  | AR    | 117 | GLN  |
| 17  | AS    | 11  | GLN  |
| 17  | AS    | 87  | HIS  |
| 17  | AS    | 89  | GLN  |
| 18  | AT    | 34  | ASN  |
| 18  | AT    | 61  | ASN  |
| 18  | AT    | 62  | HIS  |
| 18  | AT    | 102 | HIS  |
| 19  | AU    | 31  | HIS  |
| 19  | AU    | 55  | ASN  |
| 19  | AU    | 82  | GLN  |
| 19  | AU    | 87  | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 20  | AV    | 6   | HIS  |
| 21  | AW    | 32  | HIS  |
| 21  | AW    | 34  | ASN  |
| 21  | AW    | 75  | ASN  |
| 21  | AW    | 118 | GLN  |
| 21  | AW    | 121 | HIS  |
| 22  | AX    | 3   | HIS  |
| 22  | AX    | 17  | GLN  |
| 22  | AX    | 35  | ASN  |
| 23  | AY    | 33  | GLN  |
| 23  | AY    | 41  | GLN  |
| 23  | AY    | 51  | GLN  |
| 23  | AY    | 65  | GLN  |
| 25  | Aa    | 46  | GLN  |
| 26  | Ab    | 23  | HIS  |
| 26  | Ab    | 43  | HIS  |
| 27  | Ac    | 20  | ASN  |
| 27  | Ac    | 29  | ASN  |
| 27  | Ac    | 32  | ASN  |
| 28  | Ad    | 6   | GLN  |
| 28  | Ad    | 16  | HIS  |
| 28  | Ad    | 36  | GLN  |
| 29  | Ae    | 31  | HIS  |
| 29  | Ae    | 33  | ASN  |
| 29  | Ae    | 35  | GLN  |
| 29  | Ae    | 43  | GLN  |
| 30  | Af    | 29  | ASN  |
| 30  | Af    | 32  | HIS  |
| 30  | Af    | 36  | GLN  |
| 32  | AJ    | 11  | GLN  |
| 32  | AJ    | 116 | ASN  |
| 35  | BF    | 40  | HIS  |
| 35  | BF    | 78  | GLN  |
| 35  | BF    | 94  | ASN  |
| 35  | BF    | 135 | GLN  |
| 35  | BF    | 146 | GLN  |
| 35  | BF    | 204 | ASN  |
| 35  | BF    | 224 | GLN  |
| 36  | BG    | 6   | HIS  |
| 36  | BG    | 28  | GLN  |
| 36  | BG    | 102 | ASN  |
| 36  | BG    | 108 | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 36  | BG    | 110 | ASN  |
| 36  | BG    | 136 | GLN  |
| 36  | BG    | 139 | GLN  |
| 36  | BG    | 170 | GLN  |
| 37  | BH    | 42  | GLN  |
| 37  | BH    | 62  | GLN  |
| 37  | BH    | 74  | GLN  |
| 37  | BH    | 77  | ASN  |
| 37  | BH    | 154 | ASN  |
| 37  | BH    | 161 | ASN  |
| 37  | BH    | 201 | GLN  |
| 38  | BI    | 56  | GLN  |
| 38  | BI    | 65  | ASN  |
| 38  | BI    | 72  | GLN  |
| 39  | BJ    | 13  | ASN  |
| 39  | BJ    | 18  | GLN  |
| 39  | BJ    | 32  | ASN  |
| 39  | BJ    | 64  | GLN  |
| 39  | BJ    | 84  | ASN  |
| 39  | BJ    | 100 | ASN  |
| 40  | BK    | 68  | ASN  |
| 40  | BK    | 96  | GLN  |
| 40  | BK    | 97  | GLN  |
| 40  | BK    | 106 | GLN  |
| 40  | BK    | 109 | ASN  |
| 40  | BK    | 110 | GLN  |
| 40  | BK    | 148 | ASN  |
| 40  | BK    | 153 | HIS  |
| 41  | BL    | 15  | ASN  |
| 41  | BL    | 70  | GLN  |
| 42  | BM    | 23  | ASN  |
| 42  | BM    | 58  | HIS  |
| 42  | BM    | 73  | GLN  |
| 42  | BM    | 87  | GLN  |
| 42  | BM    | 89  | ASN  |
| 42  | BM    | 117 | HIS  |
| 43  | BN    | 56  | HIS  |
| 43  | BN    | 62  | HIS  |
| 43  | BN    | 68  | HIS  |
| 43  | BN    | 76  | ASN  |
| 43  | BN    | 78  | ASN  |
| 44  | BO    | 26  | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 44  | BO    | 27  | ASN  |
| 44  | BO    | 38  | ASN  |
| 44  | BO    | 104 | GLN  |
| 44  | BO    | 117 | ASN  |
| 45  | BP    | 49  | ASN  |
| 45  | BP    | 99  | HIS  |
| 46  | BQ    | 40  | ASN  |
| 46  | BQ    | 101 | GLN  |
| 48  | BS    | 9   | GLN  |
| 48  | BS    | 13  | GLN  |
| 48  | BS    | 37  | ASN  |
| 48  | BS    | 62  | GLN  |
| 49  | BT    | 82  | GLN  |
| 50  | BU    | 93  | GLN  |
| 52  | BW    | 53  | ASN  |
| 52  | BW    | 65  | ASN  |
| 52  | BW    | 69  | HIS  |
| 53  | BX    | 16  | HIS  |
| 53  | BX    | 42  | GLN  |
| 53  | BX    | 45  | GLN  |
| 53  | BX    | 73  | HIS  |
| 53  | BX    | 75  | ASN  |
| 57  | BZ    | 16  | HIS  |
| 57  | BZ    | 28  | GLN  |
| 57  | BZ    | 78  | HIS  |
| 57  | BZ    | 128 | ASN  |
| 57  | BZ    | 143 | GLN  |
| 57  | BZ    | 150 | ASN  |
| 57  | BZ    | 157 | GLN  |
| 57  | BZ    | 193 | HIS  |
| 57  | BZ    | 206 | GLN  |
| 57  | BZ    | 211 | GLN  |
| 57  | BZ    | 215 | ASN  |
| 57  | BZ    | 257 | HIS  |
| 57  | BZ    | 283 | ASN  |
| 57  | BZ    | 292 | GLN  |
| 57  | BZ    | 314 | ASN  |
| 57  | BZ    | 365 | HIS  |
| 57  | BZ    | 410 | GLN  |
| 57  | BZ    | 412 | GLN  |
| 57  | BZ    | 417 | GLN  |
| 57  | BZ    | 527 | HIS  |

## 5.3.3 RNA ⓘ

| Mol | Chain | Analysed        | Backbone Outliers | Pucker Outliers |
|-----|-------|-----------------|-------------------|-----------------|
| 1   | AA    | 2883/2889 (99%) | 1269 (44%)        | 254 (8%)        |
| 2   | AB    | 122/123 (99%)   | 46 (37%)          | 3 (2%)          |
| 34  | BA    | 1514/1515 (99%) | 484 (31%)         | 140 (9%)        |
| 55  | BC    | 75/76 (98%)     | 26 (34%)          | 0               |
| 56  | BD    | 74/75 (98%)     | 31 (41%)          | 2 (2%)          |
| 56  | BE    | 74/75 (98%)     | 23 (31%)          | 1 (1%)          |
| All | All   | 4742/4753 (99%) | 1879 (39%)        | 400 (8%)        |

All (1879) RNA backbone outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | AA    | 13  | A    |
| 1   | AA    | 14  | A    |
| 1   | AA    | 15  | G    |
| 1   | AA    | 20  | C    |
| 1   | AA    | 26  | G    |
| 1   | AA    | 29  | U    |
| 1   | AA    | 34  | C    |
| 1   | AA    | 35  | G    |
| 1   | AA    | 46  | C    |
| 1   | AA    | 49  | A    |
| 1   | AA    | 50  | U    |
| 1   | AA    | 52  | A    |
| 1   | AA    | 60  | G    |
| 1   | AA    | 61  | G    |
| 1   | AA    | 63  | U    |
| 1   | AA    | 64  | A    |
| 1   | AA    | 68  | G    |
| 1   | AA    | 71  | A    |
| 1   | AA    | 72  | U    |
| 1   | AA    | 73  | A    |
| 1   | AA    | 74  | A    |
| 1   | AA    | 75  | G    |
| 1   | AA    | 76  | C    |
| 1   | AA    | 77  | C    |
| 1   | AA    | 82  | G    |
| 1   | AA    | 84  | A    |
| 1   | AA    | 88  | G    |
| 1   | AA    | 90  | U    |
| 1   | AA    | 91  | A    |
| 1   | AA    | 92  | G    |

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| Mol | Chain | Res    | Type |
|-----|-------|--------|------|
| 1   | AA    | 96     | G    |
| 1   | AA    | 101    | G    |
| 1   | AA    | 102    | G    |
| 1   | AA    | 104    | U    |
| 1   | AA    | 105    | C    |
| 1   | AA    | 109    | G    |
| 1   | AA    | 112    | U    |
| 1   | AA    | 113    | G    |
| 1   | AA    | 119    | A    |
| 1   | AA    | 120    | U    |
| 1   | AA    | 121    | G    |
| 1   | AA    | 125    | G    |
| 1   | AA    | 126    | A    |
| 1   | AA    | 131    | G    |
| 1   | AA    | 132    | G    |
| 1   | AA    | 136    | G    |
| 1   | AA    | 138    | G    |
| 1   | AA    | 139    | G    |
| 1   | AA    | 140    | A    |
| 1   | AA    | 141(A) | C    |
| 1   | AA    | 147    | U    |
| 1   | AA    | 149    | A    |
| 1   | AA    | 153    | C    |
| 1   | AA    | 154    | G    |
| 1   | AA    | 155    | C    |
| 1   | AA    | 161    | U    |
| 1   | AA    | 162    | U    |
| 1   | AA    | 163    | U    |
| 1   | AA    | 164    | U    |
| 1   | AA    | 172    | C    |
| 1   | AA    | 178    | G    |
| 1   | AA    | 180    | G    |
| 1   | AA    | 181    | A    |
| 1   | AA    | 182    | A    |
| 1   | AA    | 192    | C    |
| 1   | AA    | 193    | U    |
| 1   | AA    | 196    | A    |
| 1   | AA    | 197    | A    |
| 1   | AA    | 199    | A    |
| 1   | AA    | 200    | U    |
| 1   | AA    | 201    | C    |
| 1   | AA    | 204    | A    |

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| Mol | Chain | Res    | Type |
|-----|-------|--------|------|
| 1   | AA    | 205    | G    |
| 1   | AA    | 206    | U    |
| 1   | AA    | 216    | A    |
| 1   | AA    | 218    | A    |
| 1   | AA    | 221    | A    |
| 1   | AA    | 222    | A    |
| 1   | AA    | 223    | A    |
| 1   | AA    | 228    | A    |
| 1   | AA    | 229    | A    |
| 1   | AA    | 230    | U    |
| 1   | AA    | 232    | G    |
| 1   | AA    | 233    | A    |
| 1   | AA    | 234    | C    |
| 1   | AA    | 241    | A    |
| 1   | AA    | 242    | G    |
| 1   | AA    | 244    | A    |
| 1   | AA    | 245    | G    |
| 1   | AA    | 247    | G    |
| 1   | AA    | 248    | G    |
| 1   | AA    | 249    | C    |
| 1   | AA    | 250    | G    |
| 1   | AA    | 251    | A    |
| 1   | AA    | 252    | G    |
| 1   | AA    | 254    | G    |
| 1   | AA    | 264    | C    |
| 1   | AA    | 265    | A    |
| 1   | AA    | 266    | G    |
| 1   | AA    | 270    | A    |
| 1   | AA    | 270(A) | A    |
| 1   | AA    | 270(B) | A    |
| 1   | AA    | 270(C) | C    |
| 1   | AA    | 270(E) | G    |
| 1   | AA    | 270(G) | C    |
| 1   | AA    | 270(K) | C    |
| 1   | AA    | 270(L) | U    |
| 1   | AA    | 270(M) | U    |
| 1   | AA    | 270(N) | G    |
| 1   | AA    | 270(V) | G    |
| 1   | AA    | 270(Z) | U    |
| 1   | AA    | 271(A) | C    |
| 1   | AA    | 271(B) | G    |
| 1   | AA    | 271(C) | U    |

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| Mol | Chain | Res    | Type |
|-----|-------|--------|------|
| 1   | AA    | 271    | G    |
| 1   | AA    | 272    | G    |
| 1   | AA    | 273(F) | C    |
| 1   | AA    | 275    | G    |
| 1   | AA    | 276    | A    |
| 1   | AA    | 277    | C    |
| 1   | AA    | 278    | A    |
| 1   | AA    | 279    | C    |
| 1   | AA    | 280    | C    |
| 1   | AA    | 281    | G    |
| 1   | AA    | 282    | A    |
| 1   | AA    | 283    | A    |
| 1   | AA    | 284    | U    |
| 1   | AA    | 286    | C    |
| 1   | AA    | 287    | C    |
| 1   | AA    | 289    | A    |
| 1   | AA    | 290    | G    |
| 1   | AA    | 293    | U    |
| 1   | AA    | 300    | A    |
| 1   | AA    | 302    | C    |
| 1   | AA    | 310    | A    |
| 1   | AA    | 311    | A    |
| 1   | AA    | 312    | G    |
| 1   | AA    | 316    | C    |
| 1   | AA    | 322    | A    |
| 1   | AA    | 323    | G    |
| 1   | AA    | 324    | A    |
| 1   | AA    | 329    | G    |
| 1   | AA    | 330    | A    |
| 1   | AA    | 332    | A    |
| 1   | AA    | 333    | G    |
| 1   | AA    | 339    | U    |
| 1   | AA    | 341    | G    |
| 1   | AA    | 342    | G    |
| 1   | AA    | 345    | A    |
| 1   | AA    | 347    | A    |
| 1   | AA    | 348    | G    |
| 1   | AA    | 349    | G    |
| 1   | AA    | 350    | U    |
| 1   | AA    | 351    | G    |
| 1   | AA    | 352    | G    |
| 1   | AA    | 354    | G    |

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| Mol | Chain | Res    | Type |
|-----|-------|--------|------|
| 1   | AA    | 356    | G    |
| 1   | AA    | 359    | A    |
| 1   | AA    | 360    | G    |
| 1   | AA    | 361    | G    |
| 1   | AA    | 363(A) | A    |
| 1   | AA    | 363(B) | G    |
| 1   | AA    | 364    | C    |
| 1   | AA    | 365    | C    |
| 1   | AA    | 366    | C    |
| 1   | AA    | 370    | G    |
| 1   | AA    | 372    | G    |
| 1   | AA    | 373    | U    |
| 1   | AA    | 374    | A    |
| 1   | AA    | 377    | C    |
| 1   | AA    | 382    | G    |
| 1   | AA    | 386    | G    |
| 1   | AA    | 387    | U    |
| 1   | AA    | 388    | G    |
| 1   | AA    | 390    | A    |
| 1   | AA    | 391    | G    |
| 1   | AA    | 395    | U    |
| 1   | AA    | 397    | G    |
| 1   | AA    | 401    | A    |
| 1   | AA    | 404    | C    |
| 1   | AA    | 405    | U    |
| 1   | AA    | 406    | G    |
| 1   | AA    | 408    | G    |
| 1   | AA    | 411    | G    |
| 1   | AA    | 412    | A    |
| 1   | AA    | 413    | C    |
| 1   | AA    | 421    | U    |
| 1   | AA    | 422    | A    |
| 1   | AA    | 423    | A    |
| 1   | AA    | 424    | G    |
| 1   | AA    | 428    | A    |
| 1   | AA    | 429    | A    |
| 1   | AA    | 443    | A    |
| 1   | AA    | 444    | C    |
| 1   | AA    | 446    | G    |
| 1   | AA    | 447    | A    |
| 1   | AA    | 448    | U    |
| 1   | AA    | 449    | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | AA    | 451 | C    |
| 1   | AA    | 452 | G    |
| 1   | AA    | 453 | C    |
| 1   | AA    | 454 | A    |
| 1   | AA    | 455 | C    |
| 1   | AA    | 456 | C    |
| 1   | AA    | 457 | A    |
| 1   | AA    | 470 | A    |
| 1   | AA    | 471 | A    |
| 1   | AA    | 475 | U    |
| 1   | AA    | 479 | A    |
| 1   | AA    | 480 | A    |
| 1   | AA    | 481 | G    |
| 1   | AA    | 484 | C    |
| 1   | AA    | 492 | A    |
| 1   | AA    | 503 | A    |
| 1   | AA    | 504 | U    |
| 1   | AA    | 505 | A    |
| 1   | AA    | 506 | G    |
| 1   | AA    | 507 | A    |
| 1   | AA    | 508 | G    |
| 1   | AA    | 509 | C    |
| 1   | AA    | 510 | C    |
| 1   | AA    | 512 | G    |
| 1   | AA    | 519 | U    |
| 1   | AA    | 525 | U    |
| 1   | AA    | 527 | C    |
| 1   | AA    | 528 | A    |
| 1   | AA    | 529 | A    |
| 1   | AA    | 530 | G    |
| 1   | AA    | 531 | C    |
| 1   | AA    | 532 | A    |
| 1   | AA    | 533 | G    |
| 1   | AA    | 541 | C    |
| 1   | AA    | 549 | G    |
| 1   | AA    | 554 | U    |
| 1   | AA    | 556 | G    |
| 1   | AA    | 559 | G    |
| 1   | AA    | 560 | C    |
| 1   | AA    | 563 | G    |
| 1   | AA    | 567 | A    |
| 1   | AA    | 568 | U    |

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| Mol | Chain | Res    | Type |
|-----|-------|--------|------|
| 1   | AA    | 572    | A    |
| 1   | AA    | 573    | G    |
| 1   | AA    | 574    | C    |
| 1   | AA    | 575    | A    |
| 1   | AA    | 579    | G    |
| 1   | AA    | 580    | C    |
| 1   | AA    | 583    | G    |
| 1   | AA    | 586    | A    |
| 1   | AA    | 588    | U    |
| 1   | AA    | 591    | C    |
| 1   | AA    | 593    | G    |
| 1   | AA    | 599    | G    |
| 1   | AA    | 600    | G    |
| 1   | AA    | 601    | C    |
| 1   | AA    | 603    | A    |
| 1   | AA    | 604    | G    |
| 1   | AA    | 605    | C    |
| 1   | AA    | 607    | U    |
| 1   | AA    | 612    | G    |
| 1   | AA    | 613    | U    |
| 1   | AA    | 614    | U    |
| 1   | AA    | 615    | G    |
| 1   | AA    | 616    | A    |
| 1   | AA    | 617    | G    |
| 1   | AA    | 618(A) | C    |
| 1   | AA    | 620    | G    |
| 1   | AA    | 621    | A    |
| 1   | AA    | 622    | G    |
| 1   | AA    | 624    | C    |
| 1   | AA    | 625    | G    |
| 1   | AA    | 626    | U    |
| 1   | AA    | 627    | A    |
| 1   | AA    | 629    | G    |
| 1   | AA    | 631    | A    |
| 1   | AA    | 634    | C    |
| 1   | AA    | 637    | A    |
| 1   | AA    | 641    | C    |
| 1   | AA    | 643    | A    |
| 1   | AA    | 644    | A    |
| 1   | AA    | 646    | A    |
| 1   | AA    | 650    | C    |
| 1   | AA    | 651    | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | AA    | 653 | A    |
| 1   | AA    | 654 | A    |
| 1   | AA    | 655 | A    |
| 1   | AA    | 656 | G    |
| 1   | AA    | 657 | U    |
| 1   | AA    | 665 | C    |
| 1   | AA    | 666 | G    |
| 1   | AA    | 668 | G    |
| 1   | AA    | 669 | G    |
| 1   | AA    | 670 | A    |
| 1   | AA    | 671 | C    |
| 1   | AA    | 674 | G    |
| 1   | AA    | 684 | G    |
| 1   | AA    | 686 | G    |
| 1   | AA    | 687 | C    |
| 1   | AA    | 698 | C    |
| 1   | AA    | 704 | G    |
| 1   | AA    | 705 | A    |
| 1   | AA    | 713 | G    |
| 1   | AA    | 714 | U    |
| 1   | AA    | 715 | G    |
| 1   | AA    | 716 | A    |
| 1   | AA    | 718 | A    |
| 1   | AA    | 723 | G    |
| 1   | AA    | 727 | A    |
| 1   | AA    | 728 | G    |
| 1   | AA    | 729 | G    |
| 1   | AA    | 730 | C    |
| 1   | AA    | 731 | C    |
| 1   | AA    | 734 | A    |
| 1   | AA    | 735 | A    |
| 1   | AA    | 736 | C    |
| 1   | AA    | 739 | G    |
| 1   | AA    | 740 | U    |
| 1   | AA    | 741 | G    |
| 1   | AA    | 744 | G    |
| 1   | AA    | 745 | G    |
| 1   | AA    | 746 | A    |
| 1   | AA    | 747 | U    |
| 1   | AA    | 748 | G    |
| 1   | AA    | 749 | C    |
| 1   | AA    | 750 | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | AA    | 751 | A    |
| 1   | AA    | 752 | A    |
| 1   | AA    | 758 | C    |
| 1   | AA    | 759 | G    |
| 1   | AA    | 762 | U    |
| 1   | AA    | 763 | G    |
| 1   | AA    | 764 | A    |
| 1   | AA    | 765 | G    |
| 1   | AA    | 774 | A    |
| 1   | AA    | 775 | G    |
| 1   | AA    | 776 | G    |
| 1   | AA    | 777 | A    |
| 1   | AA    | 779 | U    |
| 1   | AA    | 781 | A    |
| 1   | AA    | 782 | A    |
| 1   | AA    | 783 | A    |
| 1   | AA    | 784 | A    |
| 1   | AA    | 785 | G    |
| 1   | AA    | 786 | C    |
| 1   | AA    | 789 | A    |
| 1   | AA    | 790 | C    |
| 1   | AA    | 791 | C    |
| 1   | AA    | 792 | G    |
| 1   | AA    | 793 | A    |
| 1   | AA    | 794 | G    |
| 1   | AA    | 799 | G    |
| 1   | AA    | 800 | A    |
| 1   | AA    | 801 | G    |
| 1   | AA    | 802 | A    |
| 1   | AA    | 803 | U    |
| 1   | AA    | 805 | G    |
| 1   | AA    | 806 | C    |
| 1   | AA    | 812 | C    |
| 1   | AA    | 816 | C    |
| 1   | AA    | 819 | A    |
| 1   | AA    | 821 | A    |
| 1   | AA    | 823 | G    |
| 1   | AA    | 824 | A    |
| 1   | AA    | 827 | U    |
| 1   | AA    | 829 | A    |
| 1   | AA    | 830 | G    |
| 1   | AA    | 831 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | AA    | 833 | U    |
| 1   | AA    | 844 | C    |
| 1   | AA    | 846 | C    |
| 1   | AA    | 847 | U    |
| 1   | AA    | 858 | U    |
| 1   | AA    | 859 | G    |
| 1   | AA    | 860 | U    |
| 1   | AA    | 861 | A    |
| 1   | AA    | 865 | C    |
| 1   | AA    | 868 | U    |
| 1   | AA    | 870 | A    |
| 1   | AA    | 874 | G    |
| 1   | AA    | 875 | G    |
| 1   | AA    | 878 | A    |
| 1   | AA    | 879 | G    |
| 1   | AA    | 881 | G    |
| 1   | AA    | 882 | G    |
| 1   | AA    | 883 | G    |
| 1   | AA    | 884 | C    |
| 1   | AA    | 885 | C    |
| 1   | AA    | 886 | C    |
| 1   | AA    | 887 | A    |
| 1   | AA    | 888 | C    |
| 1   | AA    | 889 | C    |
| 1   | AA    | 890 | A    |
| 1   | AA    | 892 | G    |
| 1   | AA    | 894 | C    |
| 1   | AA    | 895 | U    |
| 1   | AA    | 896 | A    |
| 1   | AA    | 897 | C    |
| 1   | AA    | 898 | C    |
| 1   | AA    | 899 | A    |
| 1   | AA    | 900 | A    |
| 1   | AA    | 901 | A    |
| 1   | AA    | 902 | C    |
| 1   | AA    | 904 | C    |
| 1   | AA    | 905 | U    |
| 1   | AA    | 906 | G    |
| 1   | AA    | 907 | U    |
| 1   | AA    | 909 | A    |
| 1   | AA    | 910 | A    |
| 1   | AA    | 914 | C    |

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| Mol | Chain | Res    | Type |
|-----|-------|--------|------|
| 1   | AA    | 918    | A    |
| 1   | AA    | 919    | G    |
| 1   | AA    | 920    | G    |
| 1   | AA    | 930    | U    |
| 1   | AA    | 931    | G    |
| 1   | AA    | 932    | G    |
| 1   | AA    | 933    | A    |
| 1   | AA    | 939    | G    |
| 1   | AA    | 941    | A    |
| 1   | AA    | 943    | U    |
| 1   | AA    | 944    | G    |
| 1   | AA    | 945    | A    |
| 1   | AA    | 946    | G    |
| 1   | AA    | 956    | G    |
| 1   | AA    | 957    | A    |
| 1   | AA    | 958    | U    |
| 1   | AA    | 959    | A    |
| 1   | AA    | 961    | C    |
| 1   | AA    | 962    | G    |
| 1   | AA    | 965    | C    |
| 1   | AA    | 972    | G    |
| 1   | AA    | 973    | A    |
| 1   | AA    | 974    | G    |
| 1   | AA    | 974(A) | C    |
| 1   | AA    | 976    | C    |
| 1   | AA    | 982    | C    |
| 1   | AA    | 983    | A    |
| 1   | AA    | 987    | G    |
| 1   | AA    | 990    | A    |
| 1   | AA    | 995    | C    |
| 1   | AA    | 996    | A    |
| 1   | AA    | 997    | G    |
| 1   | AA    | 1008   | C    |
| 1   | AA    | 1009   | A    |
| 1   | AA    | 1011   | G    |
| 1   | AA    | 1012   | U    |
| 1   | AA    | 1013   | C    |
| 1   | AA    | 1021   | A    |
| 1   | AA    | 1022   | G    |
| 1   | AA    | 1023   | U    |
| 1   | AA    | 1024   | G    |
| 1   | AA    | 1025   | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 1026 | U    |
| 1   | AA    | 1027 | A    |
| 1   | AA    | 1031 | G    |
| 1   | AA    | 1032 | A    |
| 1   | AA    | 1033 | U    |
| 1   | AA    | 1034 | G    |
| 1   | AA    | 1039 | G    |
| 1   | AA    | 1040 | C    |
| 1   | AA    | 1042 | G    |
| 1   | AA    | 1043 | C    |
| 1   | AA    | 1044 | G    |
| 1   | AA    | 1045 | A    |
| 1   | AA    | 1046 | A    |
| 1   | AA    | 1047 | G    |
| 1   | AA    | 1048 | A    |
| 1   | AA    | 1050 | A    |
| 1   | AA    | 1052 | C    |
| 1   | AA    | 1053 | C    |
| 1   | AA    | 1056 | G    |
| 1   | AA    | 1057 | A    |
| 1   | AA    | 1058 | G    |
| 1   | AA    | 1059 | G    |
| 1   | AA    | 1060 | U    |
| 1   | AA    | 1061 | U    |
| 1   | AA    | 1062 | G    |
| 1   | AA    | 1063 | G    |
| 1   | AA    | 1065 | U    |
| 1   | AA    | 1066 | U    |
| 1   | AA    | 1067 | A    |
| 1   | AA    | 1068 | G    |
| 1   | AA    | 1069 | A    |
| 1   | AA    | 1070 | A    |
| 1   | AA    | 1071 | G    |
| 1   | AA    | 1072 | C    |
| 1   | AA    | 1073 | A    |
| 1   | AA    | 1074 | G    |
| 1   | AA    | 1075 | C    |
| 1   | AA    | 1076 | C    |
| 1   | AA    | 1077 | A    |
| 1   | AA    | 1078 | U    |
| 1   | AA    | 1079 | C    |
| 1   | AA    | 1080 | C    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 1083 | U    |
| 1   | AA    | 1084 | A    |
| 1   | AA    | 1085 | A    |
| 1   | AA    | 1086 | A    |
| 1   | AA    | 1087 | G    |
| 1   | AA    | 1088 | A    |
| 1   | AA    | 1090 | U    |
| 1   | AA    | 1093 | G    |
| 1   | AA    | 1099 | G    |
| 1   | AA    | 1101 | U    |
| 1   | AA    | 1103 | A    |
| 1   | AA    | 1104 | C    |
| 1   | AA    | 1108 | U    |
| 1   | AA    | 1109 | C    |
| 1   | AA    | 1110 | G    |
| 1   | AA    | 1111 | A    |
| 1   | AA    | 1112 | G    |
| 1   | AA    | 1116 | C    |
| 1   | AA    | 1126 | A    |
| 1   | AA    | 1127 | A    |
| 1   | AA    | 1128 | A    |
| 1   | AA    | 1130 | U    |
| 1   | AA    | 1131 | G    |
| 1   | AA    | 1132 | A    |
| 1   | AA    | 1134 | G    |
| 1   | AA    | 1135 | C    |
| 1   | AA    | 1140 | C    |
| 1   | AA    | 1141 | U    |
| 1   | AA    | 1143 | A    |
| 1   | AA    | 1154 | G    |
| 1   | AA    | 1155 | A    |
| 1   | AA    | 1156 | A    |
| 1   | AA    | 1157 | G    |
| 1   | AA    | 1160 | G    |
| 1   | AA    | 1162 | G    |
| 1   | AA    | 1171 | G    |
| 1   | AA    | 1173 | G    |
| 1   | AA    | 1174 | A    |
| 1   | AA    | 1175 | U    |
| 1   | AA    | 1176 | G    |
| 1   | AA    | 1177 | A    |
| 1   | AA    | 1179 | C    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 1180 | C    |
| 1   | AA    | 1182 | A    |
| 1   | AA    | 1183 | G    |
| 1   | AA    | 1184 | G    |
| 1   | AA    | 1185 | C    |
| 1   | AA    | 1186 | G    |
| 1   | AA    | 1190 | G    |
| 1   | AA    | 1199 | U    |
| 1   | AA    | 1201 | C    |
| 1   | AA    | 1203 | G    |
| 1   | AA    | 1204 | A    |
| 1   | AA    | 1205 | U    |
| 1   | AA    | 1207 | C    |
| 1   | AA    | 1209 | G    |
| 1   | AA    | 1211 | U    |
| 1   | AA    | 1212 | G    |
| 1   | AA    | 1213 | A    |
| 1   | AA    | 1220 | A    |
| 1   | AA    | 1221 | C    |
| 1   | AA    | 1222 | C    |
| 1   | AA    | 1225 | C    |
| 1   | AA    | 1228 | G    |
| 1   | AA    | 1238 | G    |
| 1   | AA    | 1241 | A    |
| 1   | AA    | 1242 | A    |
| 1   | AA    | 1244 | G    |
| 1   | AA    | 1247 | A    |
| 1   | AA    | 1248 | G    |
| 1   | AA    | 1249 | U    |
| 1   | AA    | 1251 | C    |
| 1   | AA    | 1252 | G    |
| 1   | AA    | 1253 | A    |
| 1   | AA    | 1254 | A    |
| 1   | AA    | 1255 | U    |
| 1   | AA    | 1256 | G    |
| 1   | AA    | 1258 | C    |
| 1   | AA    | 1260 | G    |
| 1   | AA    | 1264 | G    |
| 1   | AA    | 1265 | A    |
| 1   | AA    | 1266 | G    |
| 1   | AA    | 1267 | U    |
| 1   | AA    | 1268 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 1271 | G    |
| 1   | AA    | 1272 | A    |
| 1   | AA    | 1273 | U    |
| 1   | AA    | 1274 | A    |
| 1   | AA    | 1275 | A    |
| 1   | AA    | 1286 | A    |
| 1   | AA    | 1289 | C    |
| 1   | AA    | 1296 | G    |
| 1   | AA    | 1297 | C    |
| 1   | AA    | 1301 | A    |
| 1   | AA    | 1302 | A    |
| 1   | AA    | 1303 | G    |
| 1   | AA    | 1304 | C    |
| 1   | AA    | 1311 | G    |
| 1   | AA    | 1312 | U    |
| 1   | AA    | 1321 | A    |
| 1   | AA    | 1324 | G    |
| 1   | AA    | 1325 | G    |
| 1   | AA    | 1326 | U    |
| 1   | AA    | 1327 | C    |
| 1   | AA    | 1329 | U    |
| 1   | AA    | 1330 | C    |
| 1   | AA    | 1335 | U    |
| 1   | AA    | 1340 | U    |
| 1   | AA    | 1341 | U    |
| 1   | AA    | 1342 | A    |
| 1   | AA    | 1343 | G    |
| 1   | AA    | 1344 | G    |
| 1   | AA    | 1345 | C    |
| 1   | AA    | 1347 | G    |
| 1   | AA    | 1350 | C    |
| 1   | AA    | 1364 | G    |
| 1   | AA    | 1365 | A    |
| 1   | AA    | 1366 | A    |
| 1   | AA    | 1368 | G    |
| 1   | AA    | 1378 | A    |
| 1   | AA    | 1379 | A    |
| 1   | AA    | 1388 | G    |
| 1   | AA    | 1394 | U    |
| 1   | AA    | 1395 | A    |
| 1   | AA    | 1397 | U    |
| 1   | AA    | 1398 | C    |

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| Mol | Chain | Res     | Type |
|-----|-------|---------|------|
| 1   | AA    | 1403    | C    |
| 1   | AA    | 1407    | C    |
| 1   | AA    | 1416    | G    |
| 1   | AA    | 1418    | G    |
| 1   | AA    | 1419    | A    |
| 1   | AA    | 1420    | U    |
| 1   | AA    | 1421    | G    |
| 1   | AA    | 1424    | G    |
| 1   | AA    | 1425    | G    |
| 1   | AA    | 1427    | A    |
| 1   | AA    | 1428    | C    |
| 1   | AA    | 1429    | G    |
| 1   | AA    | 1438    | U    |
| 1   | AA    | 1444(A) | A    |
| 1   | AA    | 1445    | C    |
| 1   | AA    | 1451    | C    |
| 1   | AA    | 1453    | A    |
| 1   | AA    | 1455    | G    |
| 1   | AA    | 1456    | G    |
| 1   | AA    | 1459    | G    |
| 1   | AA    | 1460    | A    |
| 1   | AA    | 1462    | C    |
| 1   | AA    | 1463    | C    |
| 1   | AA    | 1467    | C    |
| 1   | AA    | 1468    | C    |
| 1   | AA    | 1471    | A    |
| 1   | AA    | 1477    | A    |
| 1   | AA    | 1478    | G    |
| 1   | AA    | 1480    | G    |
| 1   | AA    | 1482    | U    |
| 1   | AA    | 1485    | G    |
| 1   | AA    | 1489    | U    |
| 1   | AA    | 1490    | A    |
| 1   | AA    | 1491    | G    |
| 1   | AA    | 1492    | G    |
| 1   | AA    | 1493    | C    |
| 1   | AA    | 1494    | A    |
| 1   | AA    | 1495    | A    |
| 1   | AA    | 1496    | A    |
| 1   | AA    | 1497    | U    |
| 1   | AA    | 1498    | C    |
| 1   | AA    | 1499    | C    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 1507 | A    |
| 1   | AA    | 1508 | A    |
| 1   | AA    | 1509 | C    |
| 1   | AA    | 1510 | A    |
| 1   | AA    | 1511 | A    |
| 1   | AA    | 1512 | G    |
| 1   | AA    | 1513 | C    |
| 1   | AA    | 1514 | U    |
| 1   | AA    | 1515 | C    |
| 1   | AA    | 1516 | U    |
| 1   | AA    | 1517 | G    |
| 1   | AA    | 1519 | G    |
| 1   | AA    | 1521 | G    |
| 1   | AA    | 1526 | G    |
| 1   | AA    | 1527 | G    |
| 1   | AA    | 1529 | A    |
| 1   | AA    | 1530 | G    |
| 1   | AA    | 1532 | C    |
| 1   | AA    | 1537 | C    |
| 1   | AA    | 1540 | G    |
| 1   | AA    | 1542 | G    |
| 1   | AA    | 1544 | C    |
| 1   | AA    | 1552 | G    |
| 1   | AA    | 1553 | A    |
| 1   | AA    | 1554 | A    |
| 1   | AA    | 1555 | G    |
| 1   | AA    | 1558 | A    |
| 1   | AA    | 1559 | G    |
| 1   | AA    | 1560 | G    |
| 1   | AA    | 1561 | G    |
| 1   | AA    | 1566 | A    |
| 1   | AA    | 1567 | A    |
| 1   | AA    | 1569 | A    |
| 1   | AA    | 1570 | A    |
| 1   | AA    | 1571 | A    |
| 1   | AA    | 1572 | A    |
| 1   | AA    | 1573 | G    |
| 1   | AA    | 1576 | U    |
| 1   | AA    | 1577 | C    |
| 1   | AA    | 1578 | U    |
| 1   | AA    | 1579 | A    |
| 1   | AA    | 1580 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 1581 | G    |
| 1   | AA    | 1583 | A    |
| 1   | AA    | 1585 | C    |
| 1   | AA    | 1586 | A    |
| 1   | AA    | 1587 | A    |
| 1   | AA    | 1591 | G    |
| 1   | AA    | 1602 | U    |
| 1   | AA    | 1603 | A    |
| 1   | AA    | 1607 | C    |
| 1   | AA    | 1608 | A    |
| 1   | AA    | 1609 | A    |
| 1   | AA    | 1610 | A    |
| 1   | AA    | 1612 | C    |
| 1   | AA    | 1614 | A    |
| 1   | AA    | 1615 | C    |
| 1   | AA    | 1617 | C    |
| 1   | AA    | 1618 | A    |
| 1   | AA    | 1619 | G    |
| 1   | AA    | 1623 | G    |
| 1   | AA    | 1625 | C    |
| 1   | AA    | 1626 | G    |
| 1   | AA    | 1627 | G    |
| 1   | AA    | 1631 | A    |
| 1   | AA    | 1634 | A    |
| 1   | AA    | 1635 | G    |
| 1   | AA    | 1640 | C    |
| 1   | AA    | 1641 | A    |
| 1   | AA    | 1644 | C    |
| 1   | AA    | 1645 | G    |
| 1   | AA    | 1647 | G    |
| 1   | AA    | 1648 | C    |
| 1   | AA    | 1649 | G    |
| 1   | AA    | 1651 | G    |
| 1   | AA    | 1652 | A    |
| 1   | AA    | 1653 | G    |
| 1   | AA    | 1654 | A    |
| 1   | AA    | 1655 | A    |
| 1   | AA    | 1656 | C    |
| 1   | AA    | 1657 | C    |
| 1   | AA    | 1664 | A    |
| 1   | AA    | 1667 | G    |
| 1   | AA    | 1668 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 1670 | C    |
| 1   | AA    | 1673 | U    |
| 1   | AA    | 1674 | G    |
| 1   | AA    | 1675 | C    |
| 1   | AA    | 1678 | G    |
| 1   | AA    | 1681 | G    |
| 1   | AA    | 1682 | G    |
| 1   | AA    | 1683 | C    |
| 1   | AA    | 1684 | C    |
| 1   | AA    | 1688 | U    |
| 1   | AA    | 1694 | C    |
| 1   | AA    | 1698 | A    |
| 1   | AA    | 1699 | G    |
| 1   | AA    | 1700 | A    |
| 1   | AA    | 1701 | A    |
| 1   | AA    | 1703 | G    |
| 1   | AA    | 1706 | U    |
| 1   | AA    | 1707 | G    |
| 1   | AA    | 1709 | U    |
| 1   | AA    | 1710 | C    |
| 1   | AA    | 1725 | G    |
| 1   | AA    | 1728 | G    |
| 1   | AA    | 1729 | A    |
| 1   | AA    | 1731 | G    |
| 1   | AA    | 1732 | A    |
| 1   | AA    | 1733 | G    |
| 1   | AA    | 1734 | C    |
| 1   | AA    | 1741 | C    |
| 1   | AA    | 1742 | C    |
| 1   | AA    | 1743 | G    |
| 1   | AA    | 1746 | G    |
| 1   | AA    | 1747 | G    |
| 1   | AA    | 1755 | A    |
| 1   | AA    | 1757 | U    |
| 1   | AA    | 1758 | G    |
| 1   | AA    | 1759 | A    |
| 1   | AA    | 1762 | A    |
| 1   | AA    | 1763 | G    |
| 1   | AA    | 1764 | G    |
| 1   | AA    | 1773 | A    |
| 1   | AA    | 1775 | U    |
| 1   | AA    | 1779 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 1780 | A    |
| 1   | AA    | 1781 | C    |
| 1   | AA    | 1782 | C    |
| 1   | AA    | 1783 | A    |
| 1   | AA    | 1784 | A    |
| 1   | AA    | 1785 | A    |
| 1   | AA    | 1790 | C    |
| 1   | AA    | 1791 | A    |
| 1   | AA    | 1798 | U    |
| 1   | AA    | 1799 | G    |
| 1   | AA    | 1800 | C    |
| 1   | AA    | 1801 | G    |
| 1   | AA    | 1802 | A    |
| 1   | AA    | 1803 | A    |
| 1   | AA    | 1805 | U    |
| 1   | AA    | 1809 | A    |
| 1   | AA    | 1810 | A    |
| 1   | AA    | 1815 | A    |
| 1   | AA    | 1816 | G    |
| 1   | AA    | 1817 | G    |
| 1   | AA    | 1819 | A    |
| 1   | AA    | 1820 | U    |
| 1   | AA    | 1821 | A    |
| 1   | AA    | 1826 | G    |
| 1   | AA    | 1828 | G    |
| 1   | AA    | 1829 | A    |
| 1   | AA    | 1834 | U    |
| 1   | AA    | 1839 | G    |
| 1   | AA    | 1840 | G    |
| 1   | AA    | 1847 | A    |
| 1   | AA    | 1848 | A    |
| 1   | AA    | 1852 | C    |
| 1   | AA    | 1853 | A    |
| 1   | AA    | 1857 | G    |
| 1   | AA    | 1858 | G    |
| 1   | AA    | 1878 | G    |
| 1   | AA    | 1880 | C    |
| 1   | AA    | 1881 | C    |
| 1   | AA    | 1884 | A    |
| 1   | AA    | 1901 | A    |
| 1   | AA    | 1903 | G    |
| 1   | AA    | 1904 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 1905 | C    |
| 1   | AA    | 1907 | G    |
| 1   | AA    | 1911 | U    |
| 1   | AA    | 1912 | A    |
| 1   | AA    | 1913 | A    |
| 1   | AA    | 1914 | C    |
| 1   | AA    | 1915 | U    |
| 1   | AA    | 1916 | A    |
| 1   | AA    | 1917 | U    |
| 1   | AA    | 1919 | A    |
| 1   | AA    | 1920 | C    |
| 1   | AA    | 1921 | G    |
| 1   | AA    | 1922 | G    |
| 1   | AA    | 1924 | C    |
| 1   | AA    | 1927 | A    |
| 1   | AA    | 1929 | G    |
| 1   | AA    | 1930 | G    |
| 1   | AA    | 1931 | U    |
| 1   | AA    | 1932 | A    |
| 1   | AA    | 1934 | C    |
| 1   | AA    | 1936 | A    |
| 1   | AA    | 1937 | A    |
| 1   | AA    | 1938 | A    |
| 1   | AA    | 1939 | U    |
| 1   | AA    | 1940 | U    |
| 1   | AA    | 1941 | C    |
| 1   | AA    | 1942 | C    |
| 1   | AA    | 1943 | U    |
| 1   | AA    | 1944 | U    |
| 1   | AA    | 1945 | G    |
| 1   | AA    | 1946 | U    |
| 1   | AA    | 1953 | A    |
| 1   | AA    | 1954 | G    |
| 1   | AA    | 1955 | U    |
| 1   | AA    | 1956 | U    |
| 1   | AA    | 1958 | C    |
| 1   | AA    | 1962 | C    |
| 1   | AA    | 1964 | G    |
| 1   | AA    | 1965 | C    |
| 1   | AA    | 1966 | A    |
| 1   | AA    | 1967 | C    |
| 1   | AA    | 1968 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 1970 | A    |
| 1   | AA    | 1971 | A    |
| 1   | AA    | 1972 | A    |
| 1   | AA    | 1977 | A    |
| 1   | AA    | 1978 | A    |
| 1   | AA    | 1981 | A    |
| 1   | AA    | 1982 | C    |
| 1   | AA    | 1989 | G    |
| 1   | AA    | 1992 | G    |
| 1   | AA    | 1993 | U    |
| 1   | AA    | 1995 | U    |
| 1   | AA    | 1996 | C    |
| 1   | AA    | 1997 | G    |
| 1   | AA    | 2000 | G    |
| 1   | AA    | 2005 | A    |
| 1   | AA    | 2014 | A    |
| 1   | AA    | 2015 | A    |
| 1   | AA    | 2016 | U    |
| 1   | AA    | 2018 | G    |
| 1   | AA    | 2019 | A    |
| 1   | AA    | 2020 | A    |
| 1   | AA    | 2021 | C    |
| 1   | AA    | 2022 | U    |
| 1   | AA    | 2023 | G    |
| 1   | AA    | 2030 | A    |
| 1   | AA    | 2031 | A    |
| 1   | AA    | 2032 | G    |
| 1   | AA    | 2033 | A    |
| 1   | AA    | 2034 | U    |
| 1   | AA    | 2035 | G    |
| 1   | AA    | 2041 | U    |
| 1   | AA    | 2043 | C    |
| 1   | AA    | 2044 | C    |
| 1   | AA    | 2048 | G    |
| 1   | AA    | 2050 | C    |
| 1   | AA    | 2051 | A    |
| 1   | AA    | 2052 | G    |
| 1   | AA    | 2055 | C    |
| 1   | AA    | 2056 | G    |
| 1   | AA    | 2060 | A    |
| 1   | AA    | 2061 | G    |
| 1   | AA    | 2062 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 2063 | C    |
| 1   | AA    | 2064 | C    |
| 1   | AA    | 2068 | U    |
| 1   | AA    | 2069 | G    |
| 1   | AA    | 2073 | C    |
| 1   | AA    | 2074 | U    |
| 1   | AA    | 2075 | U    |
| 1   | AA    | 2076 | U    |
| 1   | AA    | 2077 | A    |
| 1   | AA    | 2080 | G    |
| 1   | AA    | 2092 | U    |
| 1   | AA    | 2093 | G    |
| 1   | AA    | 2094 | G    |
| 1   | AA    | 2110 | G    |
| 1   | AA    | 2111 | C    |
| 1   | AA    | 2114 | A    |
| 1   | AA    | 2116 | G    |
| 1   | AA    | 2117 | A    |
| 1   | AA    | 2119 | A    |
| 1   | AA    | 2120 | G    |
| 1   | AA    | 2123 | G    |
| 1   | AA    | 2126 | A    |
| 1   | AA    | 2127 | G    |
| 1   | AA    | 2132 | U    |
| 1   | AA    | 2133 | G    |
| 1   | AA    | 2134 | A    |
| 1   | AA    | 2135 | A    |
| 1   | AA    | 2136 | C    |
| 1   | AA    | 2144 | U    |
| 1   | AA    | 2148 | G    |
| 1   | AA    | 2156 | G    |
| 1   | AA    | 2157 | G    |
| 1   | AA    | 2158 | A    |
| 1   | AA    | 2159 | G    |
| 1   | AA    | 2165 | G    |
| 1   | AA    | 2172 | U    |
| 1   | AA    | 2173 | A    |
| 1   | AA    | 2185 | C    |
| 1   | AA    | 2194 | G    |
| 1   | AA    | 2195 | C    |
| 1   | AA    | 2196 | C    |
| 1   | AA    | 2197 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 2198 | A    |
| 1   | AA    | 2205 | C    |
| 1   | AA    | 2206 | C    |
| 1   | AA    | 2208 | U    |
| 1   | AA    | 2209 | C    |
| 1   | AA    | 2210 | G    |
| 1   | AA    | 2211 | G    |
| 1   | AA    | 2212 | A    |
| 1   | AA    | 2213 | U    |
| 1   | AA    | 2215 | G    |
| 1   | AA    | 2224 | G    |
| 1   | AA    | 2225 | A    |
| 1   | AA    | 2226 | C    |
| 1   | AA    | 2227 | A    |
| 1   | AA    | 2228 | G    |
| 1   | AA    | 2238 | G    |
| 1   | AA    | 2239 | G    |
| 1   | AA    | 2240 | C    |
| 1   | AA    | 2241 | A    |
| 1   | AA    | 2245 | U    |
| 1   | AA    | 2250 | G    |
| 1   | AA    | 2251 | G    |
| 1   | AA    | 2254 | C    |
| 1   | AA    | 2257 | U    |
| 1   | AA    | 2258 | C    |
| 1   | AA    | 2265 | U    |
| 1   | AA    | 2266 | A    |
| 1   | AA    | 2267 | A    |
| 1   | AA    | 2268 | A    |
| 1   | AA    | 2269 | A    |
| 1   | AA    | 2274 | A    |
| 1   | AA    | 2275 | C    |
| 1   | AA    | 2276 | G    |
| 1   | AA    | 2278 | A    |
| 1   | AA    | 2281 | C    |
| 1   | AA    | 2283 | C    |
| 1   | AA    | 2284 | C    |
| 1   | AA    | 2286 | A    |
| 1   | AA    | 2287 | A    |
| 1   | AA    | 2288 | A    |
| 1   | AA    | 2289 | G    |
| 1   | AA    | 2290 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 2291 | U    |
| 1   | AA    | 2297 | C    |
| 1   | AA    | 2305 | A    |
| 1   | AA    | 2306 | C    |
| 1   | AA    | 2307 | G    |
| 1   | AA    | 2308 | G    |
| 1   | AA    | 2309 | A    |
| 1   | AA    | 2310 | A    |
| 1   | AA    | 2311 | A    |
| 1   | AA    | 2312 | U    |
| 1   | AA    | 2316 | C    |
| 1   | AA    | 2318 | G    |
| 1   | AA    | 2319 | G    |
| 1   | AA    | 2320 | A    |
| 1   | AA    | 2321 | G    |
| 1   | AA    | 2322 | A    |
| 1   | AA    | 2323 | G    |
| 1   | AA    | 2325 | G    |
| 1   | AA    | 2327 | A    |
| 1   | AA    | 2333 | A    |
| 1   | AA    | 2334 | G    |
| 1   | AA    | 2337 | G    |
| 1   | AA    | 2344 | U    |
| 1   | AA    | 2345 | G    |
| 1   | AA    | 2346 | A    |
| 1   | AA    | 2347 | C    |
| 1   | AA    | 2349 | G    |
| 1   | AA    | 2350 | C    |
| 1   | AA    | 2351 | G    |
| 1   | AA    | 2356 | C    |
| 1   | AA    | 2357 | U    |
| 1   | AA    | 2358 | G    |
| 1   | AA    | 2360 | A    |
| 1   | AA    | 2361 | A    |
| 1   | AA    | 2362 | G    |
| 1   | AA    | 2372 | G    |
| 1   | AA    | 2373 | G    |
| 1   | AA    | 2374 | C    |
| 1   | AA    | 2377 | A    |
| 1   | AA    | 2379 | G    |
| 1   | AA    | 2382 | G    |
| 1   | AA    | 2383 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 2384 | G    |
| 1   | AA    | 2385 | C    |
| 1   | AA    | 2387 | U    |
| 1   | AA    | 2389 | G    |
| 1   | AA    | 2390 | U    |
| 1   | AA    | 2393 | A    |
| 1   | AA    | 2402 | C    |
| 1   | AA    | 2403 | C    |
| 1   | AA    | 2406 | U    |
| 1   | AA    | 2407 | G    |
| 1   | AA    | 2416 | C    |
| 1   | AA    | 2417 | C    |
| 1   | AA    | 2423 | U    |
| 1   | AA    | 2424 | C    |
| 1   | AA    | 2425 | A    |
| 1   | AA    | 2426 | A    |
| 1   | AA    | 2427 | C    |
| 1   | AA    | 2428 | G    |
| 1   | AA    | 2429 | G    |
| 1   | AA    | 2430 | A    |
| 1   | AA    | 2431 | U    |
| 1   | AA    | 2432 | A    |
| 1   | AA    | 2433 | A    |
| 1   | AA    | 2434 | A    |
| 1   | AA    | 2435 | A    |
| 1   | AA    | 2437 | U    |
| 1   | AA    | 2439 | A    |
| 1   | AA    | 2440 | C    |
| 1   | AA    | 2441 | C    |
| 1   | AA    | 2444 | G    |
| 1   | AA    | 2445 | G    |
| 1   | AA    | 2447 | G    |
| 1   | AA    | 2448 | A    |
| 1   | AA    | 2449 | U    |
| 1   | AA    | 2460 | U    |
| 1   | AA    | 2469 | A    |
| 1   | AA    | 2475 | C    |
| 1   | AA    | 2476 | A    |
| 1   | AA    | 2480 | C    |
| 1   | AA    | 2490 | G    |
| 1   | AA    | 2491 | U    |
| 1   | AA    | 2492 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 2493 | U    |
| 1   | AA    | 2496 | C    |
| 1   | AA    | 2497 | A    |
| 1   | AA    | 2498 | C    |
| 1   | AA    | 2499 | C    |
| 1   | AA    | 2500 | U    |
| 1   | AA    | 2501 | C    |
| 1   | AA    | 2502 | G    |
| 1   | AA    | 2503 | A    |
| 1   | AA    | 2504 | U    |
| 1   | AA    | 2505 | G    |
| 1   | AA    | 2510 | C    |
| 1   | AA    | 2513 | G    |
| 1   | AA    | 2518 | A    |
| 1   | AA    | 2519 | U    |
| 1   | AA    | 2520 | C    |
| 1   | AA    | 2523 | G    |
| 1   | AA    | 2526 | G    |
| 1   | AA    | 2527 | C    |
| 1   | AA    | 2529 | G    |
| 1   | AA    | 2531 | A    |
| 1   | AA    | 2532 | G    |
| 1   | AA    | 2535 | G    |
| 1   | AA    | 2539 | C    |
| 1   | AA    | 2542 | A    |
| 1   | AA    | 2543 | G    |
| 1   | AA    | 2547 | U    |
| 1   | AA    | 2548 | G    |
| 1   | AA    | 2551 | C    |
| 1   | AA    | 2554 | U    |
| 1   | AA    | 2555 | U    |
| 1   | AA    | 2556 | C    |
| 1   | AA    | 2563 | U    |
| 1   | AA    | 2566 | A    |
| 1   | AA    | 2567 | G    |
| 1   | AA    | 2572 | A    |
| 1   | AA    | 2573 | C    |
| 1   | AA    | 2575 | C    |
| 1   | AA    | 2576 | G    |
| 1   | AA    | 2577 | A    |
| 1   | AA    | 2578 | G    |
| 1   | AA    | 2580 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 2582 | G    |
| 1   | AA    | 2585 | U    |
| 1   | AA    | 2586 | C    |
| 1   | AA    | 2593 | U    |
| 1   | AA    | 2602 | A    |
| 1   | AA    | 2603 | G    |
| 1   | AA    | 2606 | C    |
| 1   | AA    | 2609 | U    |
| 1   | AA    | 2610 | C    |
| 1   | AA    | 2611 | U    |
| 1   | AA    | 2613 | U    |
| 1   | AA    | 2614 | A    |
| 1   | AA    | 2615 | U    |
| 1   | AA    | 2616 | C    |
| 1   | AA    | 2617 | C    |
| 1   | AA    | 2620 | C    |
| 1   | AA    | 2625 | G    |
| 1   | AA    | 2626 | C    |
| 1   | AA    | 2628 | C    |
| 1   | AA    | 2629 | A    |
| 1   | AA    | 2630 | G    |
| 1   | AA    | 2637 | U    |
| 1   | AA    | 2638 | G    |
| 1   | AA    | 2640 | G    |
| 1   | AA    | 2644 | G    |
| 1   | AA    | 2645 | G    |
| 1   | AA    | 2646 | C    |
| 1   | AA    | 2648 | C    |
| 1   | AA    | 2650 | U    |
| 1   | AA    | 2651 | C    |
| 1   | AA    | 2652 | C    |
| 1   | AA    | 2653 | U    |
| 1   | AA    | 2654 | A    |
| 1   | AA    | 2656 | U    |
| 1   | AA    | 2657 | A    |
| 1   | AA    | 2658 | C    |
| 1   | AA    | 2659 | G    |
| 1   | AA    | 2662 | A    |
| 1   | AA    | 2663 | G    |
| 1   | AA    | 2664 | G    |
| 1   | AA    | 2667 | C    |
| 1   | AA    | 2668 | G    |

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| Mol | Chain | Res     | Type |
|-----|-------|---------|------|
| 1   | AA    | 2669    | G    |
| 1   | AA    | 2670    | A    |
| 1   | AA    | 2671    | A    |
| 1   | AA    | 2673    | G    |
| 1   | AA    | 2674    | G    |
| 1   | AA    | 2675    | A    |
| 1   | AA    | 2676    | C    |
| 1   | AA    | 2682    | U    |
| 1   | AA    | 2683    | C    |
| 1   | AA    | 2685    | G    |
| 1   | AA    | 2689    | U    |
| 1   | AA    | 2690    | C    |
| 1   | AA    | 2691    | C    |
| 1   | AA    | 2699    | C    |
| 1   | AA    | 2701    | C    |
| 1   | AA    | 2702    | U    |
| 1   | AA    | 2704    | C    |
| 1   | AA    | 2706    | G    |
| 1   | AA    | 2708    | G    |
| 1   | AA    | 2709    | G    |
| 1   | AA    | 2710    | C    |
| 1   | AA    | 2711    | A    |
| 1   | AA    | 2712    | U    |
| 1   | AA    | 2712(A) | A    |
| 1   | AA    | 2714    | G    |
| 1   | AA    | 2715    | C    |
| 1   | AA    | 2717    | G    |
| 1   | AA    | 2719    | G    |
| 1   | AA    | 2720    | U    |
| 1   | AA    | 2725    | A    |
| 1   | AA    | 2726    | U    |
| 1   | AA    | 2727    | G    |
| 1   | AA    | 2732    | G    |
| 1   | AA    | 2733    | A    |
| 1   | AA    | 2734    | A    |
| 1   | AA    | 2748    | A    |
| 1   | AA    | 2749    | A    |
| 1   | AA    | 2750    | A    |
| 1   | AA    | 2751    | G    |
| 1   | AA    | 2754    | U    |
| 1   | AA    | 2756    | U    |
| 1   | AA    | 2757    | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 2758 | A    |
| 1   | AA    | 2766 | G    |
| 1   | AA    | 2772 | C    |
| 1   | AA    | 2777 | G    |
| 1   | AA    | 2778 | A    |
| 1   | AA    | 2779 | U    |
| 1   | AA    | 2780 | G    |
| 1   | AA    | 2781 | A    |
| 1   | AA    | 2782 | G    |
| 1   | AA    | 2783 | G    |
| 1   | AA    | 2787 | C    |
| 1   | AA    | 2789 | C    |
| 1   | AA    | 2790 | A    |
| 1   | AA    | 2791 | C    |
| 1   | AA    | 2794 | C    |
| 1   | AA    | 2797 | U    |
| 1   | AA    | 2798 | C    |
| 1   | AA    | 2799 | A    |
| 1   | AA    | 2801 | A    |
| 1   | AA    | 2802 | G    |
| 1   | AA    | 2803 | C    |
| 1   | AA    | 2804 | C    |
| 1   | AA    | 2805 | G    |
| 1   | AA    | 2807 | G    |
| 1   | AA    | 2808 | U    |
| 1   | AA    | 2809 | A    |
| 1   | AA    | 2810 | A    |
| 1   | AA    | 2812 | G    |
| 1   | AA    | 2814 | C    |
| 1   | AA    | 2815 | C    |
| 1   | AA    | 2820 | A    |
| 1   | AA    | 2821 | A    |
| 1   | AA    | 2822 | G    |
| 1   | AA    | 2823 | A    |
| 1   | AA    | 2832 | U    |
| 1   | AA    | 2833 | G    |
| 1   | AA    | 2834 | G    |
| 1   | AA    | 2835 | A    |
| 1   | AA    | 2836 | U    |
| 1   | AA    | 2843 | G    |
| 1   | AA    | 2844 | G    |
| 1   | AA    | 2845 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 2847 | U    |
| 1   | AA    | 2849 | U    |
| 1   | AA    | 2850 | A    |
| 1   | AA    | 2851 | A    |
| 1   | AA    | 2852 | G    |
| 1   | AA    | 2858 | C    |
| 1   | AA    | 2861 | G    |
| 1   | AA    | 2866 | U    |
| 1   | AA    | 2867 | G    |
| 1   | AA    | 2868 | A    |
| 1   | AA    | 2872 | G    |
| 1   | AA    | 2874 | C    |
| 1   | AA    | 2877 | G    |
| 1   | AA    | 2878 | U    |
| 1   | AA    | 2879 | C    |
| 1   | AA    | 2880 | C    |
| 1   | AA    | 2883 | A    |
| 1   | AA    | 2891 | G    |
| 1   | AA    | 2892 | A    |
| 1   | AA    | 2893 | G    |
| 1   | AA    | 2899 | G    |
| 2   | AB    | 0    | A    |
| 2   | AB    | 1    | U    |
| 2   | AB    | 2    | C    |
| 2   | AB    | 3    | C    |
| 2   | AB    | 5    | C    |
| 2   | AB    | 6    | C    |
| 2   | AB    | 8    | U    |
| 2   | AB    | 12   | C    |
| 2   | AB    | 13   | A    |
| 2   | AB    | 15   | A    |
| 2   | AB    | 16   | G    |
| 2   | AB    | 25   | A    |
| 2   | AB    | 32   | C    |
| 2   | AB    | 35   | U    |
| 2   | AB    | 36   | C    |
| 2   | AB    | 41   | U    |
| 2   | AB    | 42   | C    |
| 2   | AB    | 45   | A    |
| 2   | AB    | 46   | A    |
| 2   | AB    | 51   | G    |
| 2   | AB    | 52   | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | AB    | 54  | G    |
| 2   | AB    | 57  | A    |
| 2   | AB    | 66  | A    |
| 2   | AB    | 67  | G    |
| 2   | AB    | 69  | G    |
| 2   | AB    | 73  | A    |
| 2   | AB    | 74  | U    |
| 2   | AB    | 75  | G    |
| 2   | AB    | 83  | G    |
| 2   | AB    | 85  | G    |
| 2   | AB    | 87  | G    |
| 2   | AB    | 88  | C    |
| 2   | AB    | 89  | G    |
| 2   | AB    | 90  | C    |
| 2   | AB    | 99  | A    |
| 2   | AB    | 101 | A    |
| 2   | AB    | 103 | U    |
| 2   | AB    | 105 | G    |
| 2   | AB    | 109 | G    |
| 2   | AB    | 111 | U    |
| 2   | AB    | 116 | G    |
| 2   | AB    | 117 | G    |
| 2   | AB    | 118 | G    |
| 2   | AB    | 119 | A    |
| 2   | AB    | 120 | U    |
| 34  | BA    | 6   | G    |
| 34  | BA    | 8   | A    |
| 34  | BA    | 9   | G    |
| 34  | BA    | 14  | U    |
| 34  | BA    | 19  | C    |
| 34  | BA    | 20  | U    |
| 34  | BA    | 31  | G    |
| 34  | BA    | 32  | A    |
| 34  | BA    | 39  | G    |
| 34  | BA    | 44  | G    |
| 34  | BA    | 45  | U    |
| 34  | BA    | 48  | C    |
| 34  | BA    | 50  | A    |
| 34  | BA    | 51  | A    |
| 34  | BA    | 52  | G    |
| 34  | BA    | 61  | G    |
| 34  | BA    | 65  | U    |

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| Mol | Chain | Res    | Type |
|-----|-------|--------|------|
| 34  | BA    | 66     | G    |
| 34  | BA    | 78     | G    |
| 34  | BA    | 82     | U    |
| 34  | BA    | 89     | U    |
| 34  | BA    | 101    | A    |
| 34  | BA    | 103    | C    |
| 34  | BA    | 108    | G    |
| 34  | BA    | 110    | C    |
| 34  | BA    | 115    | G    |
| 34  | BA    | 116    | A    |
| 34  | BA    | 120    | A    |
| 34  | BA    | 121    | C    |
| 34  | BA    | 122    | G    |
| 34  | BA    | 124    | G    |
| 34  | BA    | 127    | G    |
| 34  | BA    | 129(A) | G    |
| 34  | BA    | 130    | A    |
| 34  | BA    | 131    | C    |
| 34  | BA    | 132    | C    |
| 34  | BA    | 134    | A    |
| 34  | BA    | 163    | C    |
| 34  | BA    | 182    | U    |
| 34  | BA    | 188    | U    |
| 34  | BA    | 189    | U    |
| 34  | BA    | 190    | G    |
| 34  | BA    | 191(A) | G    |
| 34  | BA    | 195    | A    |
| 34  | BA    | 197    | A    |
| 34  | BA    | 198    | G    |
| 34  | BA    | 209    | U    |
| 34  | BA    | 210    | U    |
| 34  | BA    | 216    | G    |
| 34  | BA    | 236    | G    |
| 34  | BA    | 243    | A    |
| 34  | BA    | 244    | U    |
| 34  | BA    | 245    | C    |
| 34  | BA    | 247    | G    |
| 34  | BA    | 251    | G    |
| 34  | BA    | 252    | U    |
| 34  | BA    | 253    | U    |
| 34  | BA    | 262    | A    |
| 34  | BA    | 264    | U    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 34  | BA    | 265 | G    |
| 34  | BA    | 266 | G    |
| 34  | BA    | 267 | C    |
| 34  | BA    | 270 | A    |
| 34  | BA    | 275 | G    |
| 34  | BA    | 279 | A    |
| 34  | BA    | 280 | C    |
| 34  | BA    | 281 | G    |
| 34  | BA    | 282 | A    |
| 34  | BA    | 289 | G    |
| 34  | BA    | 293 | G    |
| 34  | BA    | 295 | C    |
| 34  | BA    | 296 | U    |
| 34  | BA    | 306 | G    |
| 34  | BA    | 308 | C    |
| 34  | BA    | 309 | G    |
| 34  | BA    | 313 | A    |
| 34  | BA    | 314 | C    |
| 34  | BA    | 315 | A    |
| 34  | BA    | 316 | G    |
| 34  | BA    | 326 | G    |
| 34  | BA    | 328 | C    |
| 34  | BA    | 329 | A    |
| 34  | BA    | 330 | C    |
| 34  | BA    | 332 | G    |
| 34  | BA    | 336 | C    |
| 34  | BA    | 345 | C    |
| 34  | BA    | 346 | G    |
| 34  | BA    | 348 | G    |
| 34  | BA    | 351 | G    |
| 34  | BA    | 352 | C    |
| 34  | BA    | 353 | A    |
| 34  | BA    | 354 | G    |
| 34  | BA    | 364 | A    |
| 34  | BA    | 367 | U    |
| 34  | BA    | 368 | U    |
| 34  | BA    | 372 | C    |
| 34  | BA    | 373 | A    |
| 34  | BA    | 378 | G    |
| 34  | BA    | 379 | C    |
| 34  | BA    | 382 | A    |
| 34  | BA    | 383 | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 34  | BA    | 388 | G    |
| 34  | BA    | 389 | A    |
| 34  | BA    | 390 | C    |
| 34  | BA    | 392 | G    |
| 34  | BA    | 397 | A    |
| 34  | BA    | 398 | C    |
| 34  | BA    | 410 | G    |
| 34  | BA    | 412 | A    |
| 34  | BA    | 413 | G    |
| 34  | BA    | 414 | A    |
| 34  | BA    | 422 | C    |
| 34  | BA    | 423 | G    |
| 34  | BA    | 428 | G    |
| 34  | BA    | 429 | U    |
| 34  | BA    | 430 | A    |
| 34  | BA    | 438 | G    |
| 34  | BA    | 439 | A    |
| 34  | BA    | 451 | A    |
| 34  | BA    | 452 | A    |
| 34  | BA    | 454 | C    |
| 34  | BA    | 465 | A    |
| 34  | BA    | 466 | C    |
| 34  | BA    | 467 | G    |
| 34  | BA    | 474 | G    |
| 34  | BA    | 481 | G    |
| 34  | BA    | 482 | A    |
| 34  | BA    | 483 | C    |
| 34  | BA    | 484 | G    |
| 34  | BA    | 485 | G    |
| 34  | BA    | 486 | U    |
| 34  | BA    | 487 | A    |
| 34  | BA    | 496 | A    |
| 34  | BA    | 497 | U    |
| 34  | BA    | 500 | G    |
| 34  | BA    | 508 | C    |
| 34  | BA    | 509 | A    |
| 34  | BA    | 511 | C    |
| 34  | BA    | 518 | C    |
| 34  | BA    | 519 | C    |
| 34  | BA    | 521 | G    |
| 34  | BA    | 522 | C    |
| 34  | BA    | 524 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 34  | BA    | 527 | G    |
| 34  | BA    | 528 | C    |
| 34  | BA    | 530 | G    |
| 34  | BA    | 531 | U    |
| 34  | BA    | 532 | A    |
| 34  | BA    | 533 | A    |
| 34  | BA    | 534 | U    |
| 34  | BA    | 535 | A    |
| 34  | BA    | 536 | C    |
| 34  | BA    | 541 | G    |
| 34  | BA    | 548 | G    |
| 34  | BA    | 553 | A    |
| 34  | BA    | 555 | C    |
| 34  | BA    | 559 | A    |
| 34  | BA    | 560 | U    |
| 34  | BA    | 561 | U    |
| 34  | BA    | 563 | A    |
| 34  | BA    | 565 | U    |
| 34  | BA    | 566 | G    |
| 34  | BA    | 567 | G    |
| 34  | BA    | 572 | A    |
| 34  | BA    | 573 | A    |
| 34  | BA    | 575 | G    |
| 34  | BA    | 577 | G    |
| 34  | BA    | 579 | G    |
| 34  | BA    | 585 | G    |
| 34  | BA    | 595 | G    |
| 34  | BA    | 596 | C    |
| 34  | BA    | 598 | U    |
| 34  | BA    | 607 | A    |
| 34  | BA    | 609 | A    |
| 34  | BA    | 623 | C    |
| 34  | BA    | 642 | A    |
| 34  | BA    | 650 | G    |
| 34  | BA    | 653 | A    |
| 34  | BA    | 655 | A    |
| 34  | BA    | 665 | A    |
| 34  | BA    | 672 | U    |
| 34  | BA    | 673 | G    |
| 34  | BA    | 679 | C    |
| 34  | BA    | 687 | A    |
| 34  | BA    | 688 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 34  | BA    | 690 | G    |
| 34  | BA    | 691 | G    |
| 34  | BA    | 693 | G    |
| 34  | BA    | 694 | A    |
| 34  | BA    | 697 | U    |
| 34  | BA    | 702 | A    |
| 34  | BA    | 703 | G    |
| 34  | BA    | 704 | A    |
| 34  | BA    | 718 | G    |
| 34  | BA    | 719 | C    |
| 34  | BA    | 721 | G    |
| 34  | BA    | 723 | U    |
| 34  | BA    | 724 | G    |
| 34  | BA    | 728 | A    |
| 34  | BA    | 730 | G    |
| 34  | BA    | 731 | G    |
| 34  | BA    | 733 | A    |
| 34  | BA    | 749 | C    |
| 34  | BA    | 752 | G    |
| 34  | BA    | 753 | A    |
| 34  | BA    | 754 | C    |
| 34  | BA    | 763 | G    |
| 34  | BA    | 764 | C    |
| 34  | BA    | 766 | A    |
| 34  | BA    | 776 | G    |
| 34  | BA    | 777 | A    |
| 34  | BA    | 781 | A    |
| 34  | BA    | 782 | A    |
| 34  | BA    | 785 | G    |
| 34  | BA    | 788 | U    |
| 34  | BA    | 790 | A    |
| 34  | BA    | 791 | G    |
| 34  | BA    | 793 | U    |
| 34  | BA    | 794 | A    |
| 34  | BA    | 801 | U    |
| 34  | BA    | 812 | C    |
| 34  | BA    | 813 | U    |
| 34  | BA    | 815 | A    |
| 34  | BA    | 816 | A    |
| 34  | BA    | 817 | C    |
| 34  | BA    | 818 | G    |
| 34  | BA    | 819 | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 34  | BA    | 820 | U    |
| 34  | BA    | 821 | G    |
| 34  | BA    | 828 | A    |
| 34  | BA    | 841 | U    |
| 34  | BA    | 843 | U    |
| 34  | BA    | 848 | C    |
| 34  | BA    | 854 | G    |
| 34  | BA    | 860 | A    |
| 34  | BA    | 865 | A    |
| 34  | BA    | 870 | U    |
| 34  | BA    | 871 | U    |
| 34  | BA    | 872 | A    |
| 34  | BA    | 873 | A    |
| 34  | BA    | 874 | G    |
| 34  | BA    | 884 | U    |
| 34  | BA    | 885 | G    |
| 34  | BA    | 889 | A    |
| 34  | BA    | 890 | G    |
| 34  | BA    | 891 | U    |
| 34  | BA    | 901 | A    |
| 34  | BA    | 902 | G    |
| 34  | BA    | 907 | A    |
| 34  | BA    | 910 | C    |
| 34  | BA    | 913 | A    |
| 34  | BA    | 914 | A    |
| 34  | BA    | 917 | G    |
| 34  | BA    | 919 | A    |
| 34  | BA    | 920 | U    |
| 34  | BA    | 926 | G    |
| 34  | BA    | 927 | G    |
| 34  | BA    | 932 | C    |
| 34  | BA    | 934 | C    |
| 34  | BA    | 935 | A    |
| 34  | BA    | 945 | G    |
| 34  | BA    | 949 | A    |
| 34  | BA    | 950 | U    |
| 34  | BA    | 956 | U    |
| 34  | BA    | 958 | A    |
| 34  | BA    | 960 | U    |
| 34  | BA    | 961 | U    |
| 34  | BA    | 963 | G    |
| 34  | BA    | 965 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 34  | BA    | 966  | G    |
| 34  | BA    | 967  | C    |
| 34  | BA    | 968  | A    |
| 34  | BA    | 969  | A    |
| 34  | BA    | 971  | G    |
| 34  | BA    | 972  | C    |
| 34  | BA    | 974  | A    |
| 34  | BA    | 975  | A    |
| 34  | BA    | 976  | G    |
| 34  | BA    | 977  | A    |
| 34  | BA    | 980  | C    |
| 34  | BA    | 982  | U    |
| 34  | BA    | 991  | U    |
| 34  | BA    | 993  | G    |
| 34  | BA    | 994  | A    |
| 34  | BA    | 995  | C    |
| 34  | BA    | 997  | U    |
| 34  | BA    | 998  | G    |
| 34  | BA    | 1000 | A    |
| 34  | BA    | 1001 | G    |
| 34  | BA    | 1002 | G    |
| 34  | BA    | 1003 | G    |
| 34  | BA    | 1004 | A    |
| 34  | BA    | 1005 | A    |
| 34  | BA    | 1006 | C    |
| 34  | BA    | 1007 | C    |
| 34  | BA    | 1016 | A    |
| 34  | BA    | 1023 | G    |
| 34  | BA    | 1024 | G    |
| 34  | BA    | 1026 | G    |
| 34  | BA    | 1027 | C    |
| 34  | BA    | 1029 | G    |
| 34  | BA    | 1049 | U    |
| 34  | BA    | 1050 | G    |
| 34  | BA    | 1054 | C    |
| 34  | BA    | 1056 | U    |
| 34  | BA    | 1057 | G    |
| 34  | BA    | 1063 | C    |
| 34  | BA    | 1064 | G    |
| 34  | BA    | 1065 | U    |
| 34  | BA    | 1066 | C    |
| 34  | BA    | 1067 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 34  | BA    | 1068 | G    |
| 34  | BA    | 1081 | G    |
| 34  | BA    | 1084 | G    |
| 34  | BA    | 1085 | U    |
| 34  | BA    | 1086 | U    |
| 34  | BA    | 1089 | G    |
| 34  | BA    | 1094 | G    |
| 34  | BA    | 1096 | C    |
| 34  | BA    | 1097 | C    |
| 34  | BA    | 1100 | C    |
| 34  | BA    | 1101 | A    |
| 34  | BA    | 1102 | A    |
| 34  | BA    | 1103 | C    |
| 34  | BA    | 1106 | G    |
| 34  | BA    | 1107 | C    |
| 34  | BA    | 1108 | G    |
| 34  | BA    | 1109 | C    |
| 34  | BA    | 1111 | A    |
| 34  | BA    | 1112 | C    |
| 34  | BA    | 1115 | C    |
| 34  | BA    | 1118 | C    |
| 34  | BA    | 1123 | A    |
| 34  | BA    | 1125 | U    |
| 34  | BA    | 1126 | U    |
| 34  | BA    | 1129 | C    |
| 34  | BA    | 1130 | A    |
| 34  | BA    | 1131 | G    |
| 34  | BA    | 1132 | C    |
| 34  | BA    | 1136 | U    |
| 34  | BA    | 1138 | G    |
| 34  | BA    | 1139 | G    |
| 34  | BA    | 1140 | C    |
| 34  | BA    | 1145 | C    |
| 34  | BA    | 1146 | A    |
| 34  | BA    | 1147 | C    |
| 34  | BA    | 1148 | U    |
| 34  | BA    | 1152 | A    |
| 34  | BA    | 1153 | C    |
| 34  | BA    | 1154 | G    |
| 34  | BA    | 1157 | A    |
| 34  | BA    | 1158 | C    |
| 34  | BA    | 1159 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 34  | BA    | 1161 | C    |
| 34  | BA    | 1162 | C    |
| 34  | BA    | 1164 | G    |
| 34  | BA    | 1174 | G    |
| 34  | BA    | 1182 | G    |
| 34  | BA    | 1183 | A    |
| 34  | BA    | 1184 | G    |
| 34  | BA    | 1185 | G    |
| 34  | BA    | 1188 | A    |
| 34  | BA    | 1189 | C    |
| 34  | BA    | 1190 | G    |
| 34  | BA    | 1195 | C    |
| 34  | BA    | 1196 | U    |
| 34  | BA    | 1197 | G    |
| 34  | BA    | 1200 | C    |
| 34  | BA    | 1201 | A    |
| 34  | BA    | 1202 | G    |
| 34  | BA    | 1203 | C    |
| 34  | BA    | 1211 | U    |
| 34  | BA    | 1212 | U    |
| 34  | BA    | 1213 | A    |
| 34  | BA    | 1215 | G    |
| 34  | BA    | 1225 | A    |
| 34  | BA    | 1226 | C    |
| 34  | BA    | 1227 | A    |
| 34  | BA    | 1229 | A    |
| 34  | BA    | 1240 | U    |
| 34  | BA    | 1241 | G    |
| 34  | BA    | 1249 | C    |
| 34  | BA    | 1256 | A    |
| 34  | BA    | 1257 | U    |
| 34  | BA    | 1263 | C    |
| 34  | BA    | 1269 | A    |
| 34  | BA    | 1270 | C    |
| 34  | BA    | 1278 | U    |
| 34  | BA    | 1279 | A    |
| 34  | BA    | 1280 | A    |
| 34  | BA    | 1281 | U    |
| 34  | BA    | 1282 | C    |
| 34  | BA    | 1283 | G    |
| 34  | BA    | 1285 | A    |
| 34  | BA    | 1286 | A    |

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| Mol | Chain | Res     | Type |
|-----|-------|---------|------|
| 34  | BA    | 1287    | A    |
| 34  | BA    | 1289    | A    |
| 34  | BA    | 1292    | U    |
| 34  | BA    | 1297    | C    |
| 34  | BA    | 1298    | C    |
| 34  | BA    | 1301    | U    |
| 34  | BA    | 1302    | U    |
| 34  | BA    | 1303    | C    |
| 34  | BA    | 1305    | G    |
| 34  | BA    | 1317    | C    |
| 34  | BA    | 1318    | A    |
| 34  | BA    | 1319    | A    |
| 34  | BA    | 1320    | C    |
| 34  | BA    | 1322    | C    |
| 34  | BA    | 1323    | G    |
| 34  | BA    | 1331    | G    |
| 34  | BA    | 1332    | A    |
| 34  | BA    | 1333    | A    |
| 34  | BA    | 1345    | U    |
| 34  | BA    | 1346    | A    |
| 34  | BA    | 1347    | G    |
| 34  | BA    | 1348    | U    |
| 34  | BA    | 1353    | G    |
| 34  | BA    | 1362(A) | C    |
| 34  | BA    | 1363    | A    |
| 34  | BA    | 1364    | U    |
| 34  | BA    | 1365    | G    |
| 34  | BA    | 1375    | A    |
| 34  | BA    | 1378    | C    |
| 34  | BA    | 1379    | G    |
| 34  | BA    | 1381    | U    |
| 34  | BA    | 1393    | U    |
| 34  | BA    | 1394    | A    |
| 34  | BA    | 1395    | C    |
| 34  | BA    | 1396    | A    |
| 34  | BA    | 1397    | C    |
| 34  | BA    | 1398    | A    |
| 34  | BA    | 1399    | C    |
| 34  | BA    | 1400    | C    |
| 34  | BA    | 1401    | G    |
| 34  | BA    | 1404    | C    |
| 34  | BA    | 1413    | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 34  | BA    | 1419 | G    |
| 34  | BA    | 1430 | C    |
| 34  | BA    | 1431 | C    |
| 34  | BA    | 1432 | G    |
| 34  | BA    | 1435 | G    |
| 34  | BA    | 1439 | C    |
| 34  | BA    | 1440 | C    |
| 34  | BA    | 1442 | G    |
| 34  | BA    | 1443 | G    |
| 34  | BA    | 1446 | A    |
| 34  | BA    | 1447 | G    |
| 34  | BA    | 1449 | C    |
| 34  | BA    | 1450 | U    |
| 34  | BA    | 1451 | A    |
| 34  | BA    | 1454 | G    |
| 34  | BA    | 1455 | G    |
| 34  | BA    | 1459 | C    |
| 34  | BA    | 1461 | G    |
| 34  | BA    | 1462 | G    |
| 34  | BA    | 1463 | C    |
| 34  | BA    | 1464 | G    |
| 34  | BA    | 1465 | C    |
| 34  | BA    | 1467 | G    |
| 34  | BA    | 1469 | G    |
| 34  | BA    | 1481 | U    |
| 34  | BA    | 1484 | C    |
| 34  | BA    | 1487 | G    |
| 34  | BA    | 1489 | G    |
| 34  | BA    | 1491 | G    |
| 34  | BA    | 1492 | A    |
| 34  | BA    | 1494 | G    |
| 34  | BA    | 1495 | U    |
| 34  | BA    | 1496 | C    |
| 34  | BA    | 1500 | A    |
| 34  | BA    | 1502 | A    |
| 34  | BA    | 1503 | A    |
| 34  | BA    | 1504 | G    |
| 34  | BA    | 1505 | G    |
| 34  | BA    | 1506 | U    |
| 34  | BA    | 1507 | A    |
| 34  | BA    | 1517 | G    |
| 34  | BA    | 1520 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 34  | BA    | 1527 | C    |
| 34  | BA    | 1530 | G    |
| 34  | BA    | 1531 | A    |
| 34  | BA    | 1532 | U    |
| 34  | BA    | 1534 | A    |
| 55  | BC    | 3    | C    |
| 55  | BC    | 5    | G    |
| 55  | BC    | 6    | G    |
| 55  | BC    | 7    | A    |
| 55  | BC    | 15   | G    |
| 55  | BC    | 16   | U    |
| 55  | BC    | 17   | C    |
| 55  | BC    | 18   | G    |
| 55  | BC    | 19   | G    |
| 55  | BC    | 21   | A    |
| 55  | BC    | 27   | G    |
| 55  | BC    | 30   | G    |
| 55  | BC    | 33   | U    |
| 55  | BC    | 34   | G    |
| 55  | BC    | 35   | A    |
| 55  | BC    | 37   | A    |
| 55  | BC    | 39   | U    |
| 55  | BC    | 40   | C    |
| 55  | BC    | 41   | C    |
| 55  | BC    | 42   | C    |
| 55  | BC    | 47   | U    |
| 55  | BC    | 57   | G    |
| 55  | BC    | 58   | A    |
| 55  | BC    | 61   | C    |
| 55  | BC    | 70   | G    |
| 55  | BC    | 76   | A    |
| 56  | BD    | 2    | C    |
| 56  | BD    | 4    | C    |
| 56  | BD    | 5    | G    |
| 56  | BD    | 9    | A    |
| 56  | BD    | 16   | U    |
| 56  | BD    | 17   | C    |
| 56  | BD    | 18   | G    |
| 56  | BD    | 19   | G    |
| 56  | BD    | 21   | A    |
| 56  | BD    | 23   | A    |
| 56  | BD    | 34   | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 56  | BD    | 42  | C    |
| 56  | BD    | 43  | C    |
| 56  | BD    | 46  | G    |
| 56  | BD    | 47  | U    |
| 56  | BD    | 48  | C    |
| 56  | BD    | 49  | C    |
| 56  | BD    | 52  | G    |
| 56  | BD    | 53  | G    |
| 56  | BD    | 55  | U    |
| 56  | BD    | 61  | C    |
| 56  | BD    | 64  | A    |
| 56  | BD    | 65  | G    |
| 56  | BD    | 67  | C    |
| 56  | BD    | 68  | C    |
| 56  | BD    | 70  | G    |
| 56  | BD    | 71  | G    |
| 56  | BD    | 72  | C    |
| 56  | BD    | 73  | A    |
| 56  | BD    | 74  | C    |
| 56  | BD    | 75  | C    |
| 56  | BE    | 2   | C    |
| 56  | BE    | 4   | C    |
| 56  | BE    | 6   | G    |
| 56  | BE    | 7   | A    |
| 56  | BE    | 9   | A    |
| 56  | BE    | 15  | G    |
| 56  | BE    | 16  | U    |
| 56  | BE    | 18  | G    |
| 56  | BE    | 19  | G    |
| 56  | BE    | 20  | U    |
| 56  | BE    | 21  | A    |
| 56  | BE    | 22  | G    |
| 56  | BE    | 42  | C    |
| 56  | BE    | 46  | G    |
| 56  | BE    | 47  | U    |
| 56  | BE    | 48  | C    |
| 56  | BE    | 52  | G    |
| 56  | BE    | 61  | C    |
| 56  | BE    | 69  | G    |
| 56  | BE    | 71  | G    |
| 56  | BE    | 73  | A    |
| 56  | BE    | 74  | C    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 56  | BE    | 75  | C    |

All (400) RNA pucker outliers are listed below:

| Mol | Chain | Res    | Type |
|-----|-------|--------|------|
| 1   | AA    | 13     | A    |
| 1   | AA    | 60     | G    |
| 1   | AA    | 67     | U    |
| 1   | AA    | 70     | G    |
| 1   | AA    | 71     | A    |
| 1   | AA    | 83     | G    |
| 1   | AA    | 90     | U    |
| 1   | AA    | 119    | A    |
| 1   | AA    | 125    | G    |
| 1   | AA    | 196    | A    |
| 1   | AA    | 199    | A    |
| 1   | AA    | 204    | A    |
| 1   | AA    | 205    | G    |
| 1   | AA    | 215    | G    |
| 1   | AA    | 221    | A    |
| 1   | AA    | 227    | A    |
| 1   | AA    | 251    | A    |
| 1   | AA    | 270(B) | A    |
| 1   | AA    | 270(L) | U    |
| 1   | AA    | 270(M) | U    |
| 1   | AA    | 270(Z) | U    |
| 1   | AA    | 271(B) | G    |
| 1   | AA    | 280    | C    |
| 1   | AA    | 283    | A    |
| 1   | AA    | 311    | A    |
| 1   | AA    | 323    | G    |
| 1   | AA    | 329    | G    |
| 1   | AA    | 331    | A    |
| 1   | AA    | 332    | A    |
| 1   | AA    | 351    | G    |
| 1   | AA    | 371    | A    |
| 1   | AA    | 403    | U    |
| 1   | AA    | 442    | G    |
| 1   | AA    | 455    | C    |
| 1   | AA    | 470    | A    |
| 1   | AA    | 503    | A    |
| 1   | AA    | 504    | U    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | AA    | 506 | G    |
| 1   | AA    | 508 | G    |
| 1   | AA    | 526 | A    |
| 1   | AA    | 530 | G    |
| 1   | AA    | 559 | G    |
| 1   | AA    | 573 | G    |
| 1   | AA    | 574 | C    |
| 1   | AA    | 587 | C    |
| 1   | AA    | 602 | G    |
| 1   | AA    | 616 | A    |
| 1   | AA    | 620 | G    |
| 1   | AA    | 637 | A    |
| 1   | AA    | 643 | A    |
| 1   | AA    | 645 | C    |
| 1   | AA    | 669 | G    |
| 1   | AA    | 670 | A    |
| 1   | AA    | 685 | A    |
| 1   | AA    | 686 | G    |
| 1   | AA    | 730 | C    |
| 1   | AA    | 740 | U    |
| 1   | AA    | 745 | G    |
| 1   | AA    | 746 | A    |
| 1   | AA    | 747 | U    |
| 1   | AA    | 750 | A    |
| 1   | AA    | 762 | U    |
| 1   | AA    | 773 | U    |
| 1   | AA    | 774 | A    |
| 1   | AA    | 776 | G    |
| 1   | AA    | 782 | A    |
| 1   | AA    | 783 | A    |
| 1   | AA    | 785 | G    |
| 1   | AA    | 788 | A    |
| 1   | AA    | 789 | A    |
| 1   | AA    | 800 | A    |
| 1   | AA    | 801 | G    |
| 1   | AA    | 811 | U    |
| 1   | AA    | 829 | A    |
| 1   | AA    | 830 | G    |
| 1   | AA    | 846 | C    |
| 1   | AA    | 858 | U    |
| 1   | AA    | 884 | C    |
| 1   | AA    | 897 | C    |

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| Mol | Chain | Res    | Type |
|-----|-------|--------|------|
| 1   | AA    | 930    | U    |
| 1   | AA    | 944    | G    |
| 1   | AA    | 945    | A    |
| 1   | AA    | 957    | A    |
| 1   | AA    | 958    | U    |
| 1   | AA    | 960    | A    |
| 1   | AA    | 961    | C    |
| 1   | AA    | 973    | A    |
| 1   | AA    | 974(A) | C    |
| 1   | AA    | 989    | G    |
| 1   | AA    | 1008   | C    |
| 1   | AA    | 1011   | G    |
| 1   | AA    | 1022   | G    |
| 1   | AA    | 1024   | G    |
| 1   | AA    | 1038   | C    |
| 1   | AA    | 1047   | G    |
| 1   | AA    | 1062   | G    |
| 1   | AA    | 1069   | A    |
| 1   | AA    | 1085   | A    |
| 1   | AA    | 1100   | C    |
| 1   | AA    | 1126   | A    |
| 1   | AA    | 1130   | U    |
| 1   | AA    | 1131   | G    |
| 1   | AA    | 1154   | G    |
| 1   | AA    | 1178   | C    |
| 1   | AA    | 1179   | C    |
| 1   | AA    | 1183   | G    |
| 1   | AA    | 1203   | G    |
| 1   | AA    | 1204   | A    |
| 1   | AA    | 1210   | A    |
| 1   | AA    | 1212   | G    |
| 1   | AA    | 1221   | C    |
| 1   | AA    | 1237   | A    |
| 1   | AA    | 1241   | A    |
| 1   | AA    | 1247   | A    |
| 1   | AA    | 1248   | G    |
| 1   | AA    | 1250   | G    |
| 1   | AA    | 1253   | A    |
| 1   | AA    | 1267   | U    |
| 1   | AA    | 1272   | A    |
| 1   | AA    | 1288   | U    |
| 1   | AA    | 1300   | U    |

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| Mol | Chain | Res     | Type |
|-----|-------|---------|------|
| 1   | AA    | 1302    | A    |
| 1   | AA    | 1323    | U    |
| 1   | AA    | 1342    | A    |
| 1   | AA    | 1349    | A    |
| 1   | AA    | 1378    | A    |
| 1   | AA    | 1379    | A    |
| 1   | AA    | 1406    | U    |
| 1   | AA    | 1420    | U    |
| 1   | AA    | 1427    | A    |
| 1   | AA    | 1428    | C    |
| 1   | AA    | 1444(A) | A    |
| 1   | AA    | 1477    | A    |
| 1   | AA    | 1489    | U    |
| 1   | AA    | 1515    | C    |
| 1   | AA    | 1554    | A    |
| 1   | AA    | 1558    | A    |
| 1   | AA    | 1566    | A    |
| 1   | AA    | 1568    | G    |
| 1   | AA    | 1572    | A    |
| 1   | AA    | 1585    | C    |
| 1   | AA    | 1603    | A    |
| 1   | AA    | 1608    | A    |
| 1   | AA    | 1610    | A    |
| 1   | AA    | 1625    | C    |
| 1   | AA    | 1626    | G    |
| 1   | AA    | 1634    | A    |
| 1   | AA    | 1647    | G    |
| 1   | AA    | 1650    | G    |
| 1   | AA    | 1693    | U    |
| 1   | AA    | 1694    | C    |
| 1   | AA    | 1698    | A    |
| 1   | AA    | 1699    | G    |
| 1   | AA    | 1727    | U    |
| 1   | AA    | 1758    | G    |
| 1   | AA    | 1778    | U    |
| 1   | AA    | 1780    | A    |
| 1   | AA    | 1784    | A    |
| 1   | AA    | 1791    | A    |
| 1   | AA    | 1800    | C    |
| 1   | AA    | 1801    | G    |
| 1   | AA    | 1819    | A    |
| 1   | AA    | 1820    | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 1828 | G    |
| 1   | AA    | 1919 | A    |
| 1   | AA    | 1920 | C    |
| 1   | AA    | 1936 | A    |
| 1   | AA    | 1937 | A    |
| 1   | AA    | 1938 | A    |
| 1   | AA    | 1940 | U    |
| 1   | AA    | 1943 | U    |
| 1   | AA    | 1962 | C    |
| 1   | AA    | 1964 | G    |
| 1   | AA    | 1966 | A    |
| 1   | AA    | 1970 | A    |
| 1   | AA    | 1977 | A    |
| 1   | AA    | 1980 | G    |
| 1   | AA    | 1981 | A    |
| 1   | AA    | 1992 | G    |
| 1   | AA    | 1996 | C    |
| 1   | AA    | 2017 | U    |
| 1   | AA    | 2021 | C    |
| 1   | AA    | 2022 | U    |
| 1   | AA    | 2030 | A    |
| 1   | AA    | 2032 | G    |
| 1   | AA    | 2033 | A    |
| 1   | AA    | 2047 | U    |
| 1   | AA    | 2049 | G    |
| 1   | AA    | 2051 | A    |
| 1   | AA    | 2055 | C    |
| 1   | AA    | 2073 | C    |
| 1   | AA    | 2076 | U    |
| 1   | AA    | 2110 | G    |
| 1   | AA    | 2111 | C    |
| 1   | AA    | 2118 | U    |
| 1   | AA    | 2126 | A    |
| 1   | AA    | 2157 | G    |
| 1   | AA    | 2158 | A    |
| 1   | AA    | 2171 | A    |
| 1   | AA    | 2172 | U    |
| 1   | AA    | 2210 | G    |
| 1   | AA    | 2213 | U    |
| 1   | AA    | 2225 | A    |
| 1   | AA    | 2240 | C    |
| 1   | AA    | 2275 | C    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 2282 | G    |
| 1   | AA    | 2319 | G    |
| 1   | AA    | 2324 | C    |
| 1   | AA    | 2345 | G    |
| 1   | AA    | 2350 | C    |
| 1   | AA    | 2384 | G    |
| 1   | AA    | 2392 | A    |
| 1   | AA    | 2416 | C    |
| 1   | AA    | 2422 | A    |
| 1   | AA    | 2427 | C    |
| 1   | AA    | 2428 | G    |
| 1   | AA    | 2436 | G    |
| 1   | AA    | 2439 | A    |
| 1   | AA    | 2447 | G    |
| 1   | AA    | 2490 | G    |
| 1   | AA    | 2491 | U    |
| 1   | AA    | 2497 | A    |
| 1   | AA    | 2500 | U    |
| 1   | AA    | 2501 | C    |
| 1   | AA    | 2503 | A    |
| 1   | AA    | 2517 | C    |
| 1   | AA    | 2519 | U    |
| 1   | AA    | 2542 | A    |
| 1   | AA    | 2571 | C    |
| 1   | AA    | 2572 | A    |
| 1   | AA    | 2602 | A    |
| 1   | AA    | 2609 | U    |
| 1   | AA    | 2610 | C    |
| 1   | AA    | 2613 | U    |
| 1   | AA    | 2615 | U    |
| 1   | AA    | 2637 | U    |
| 1   | AA    | 2652 | C    |
| 1   | AA    | 2688 | U    |
| 1   | AA    | 2689 | U    |
| 1   | AA    | 2690 | C    |
| 1   | AA    | 2705 | A    |
| 1   | AA    | 2707 | G    |
| 1   | AA    | 2726 | U    |
| 1   | AA    | 2755 | C    |
| 1   | AA    | 2756 | U    |
| 1   | AA    | 2776 | A    |
| 1   | AA    | 2777 | G    |

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| Mol | Chain | Res    | Type |
|-----|-------|--------|------|
| 1   | AA    | 2778   | A    |
| 1   | AA    | 2790   | A    |
| 1   | AA    | 2835   | A    |
| 1   | AA    | 2848   | G    |
| 1   | AA    | 2849   | U    |
| 1   | AA    | 2866   | U    |
| 1   | AA    | 2879   | C    |
| 2   | AB    | 7      | G    |
| 2   | AB    | 15     | A    |
| 2   | AB    | 56     | G    |
| 34  | BA    | 5      | U    |
| 34  | BA    | 8      | A    |
| 34  | BA    | 30     | U    |
| 34  | BA    | 31     | G    |
| 34  | BA    | 47     | C    |
| 34  | BA    | 51     | A    |
| 34  | BA    | 60     | A    |
| 34  | BA    | 65     | U    |
| 34  | BA    | 88     | C    |
| 34  | BA    | 99     | C    |
| 34  | BA    | 109    | A    |
| 34  | BA    | 115    | G    |
| 34  | BA    | 119    | A    |
| 34  | BA    | 129(A) | G    |
| 34  | BA    | 181    | G    |
| 34  | BA    | 190    | G    |
| 34  | BA    | 208    | U    |
| 34  | BA    | 210    | U    |
| 34  | BA    | 243    | A    |
| 34  | BA    | 244    | U    |
| 34  | BA    | 246    | A    |
| 34  | BA    | 250    | A    |
| 34  | BA    | 251    | G    |
| 34  | BA    | 266    | G    |
| 34  | BA    | 274    | A    |
| 34  | BA    | 279    | A    |
| 34  | BA    | 280    | C    |
| 34  | BA    | 281    | G    |
| 34  | BA    | 305    | G    |
| 34  | BA    | 308    | C    |
| 34  | BA    | 327    | A    |
| 34  | BA    | 328    | C    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 34  | BA    | 329 | A    |
| 34  | BA    | 344 | A    |
| 34  | BA    | 345 | C    |
| 34  | BA    | 351 | G    |
| 34  | BA    | 366 | C    |
| 34  | BA    | 367 | U    |
| 34  | BA    | 372 | C    |
| 34  | BA    | 413 | G    |
| 34  | BA    | 428 | G    |
| 34  | BA    | 429 | U    |
| 34  | BA    | 451 | A    |
| 34  | BA    | 484 | G    |
| 34  | BA    | 495 | A    |
| 34  | BA    | 496 | A    |
| 34  | BA    | 498 | A    |
| 34  | BA    | 508 | C    |
| 34  | BA    | 518 | C    |
| 34  | BA    | 531 | U    |
| 34  | BA    | 535 | A    |
| 34  | BA    | 547 | A    |
| 34  | BA    | 559 | A    |
| 34  | BA    | 560 | U    |
| 34  | BA    | 562 | C    |
| 34  | BA    | 563 | A    |
| 34  | BA    | 566 | G    |
| 34  | BA    | 576 | G    |
| 34  | BA    | 652 | U    |
| 34  | BA    | 686 | U    |
| 34  | BA    | 687 | A    |
| 34  | BA    | 701 | C    |
| 34  | BA    | 702 | A    |
| 34  | BA    | 703 | G    |
| 34  | BA    | 717 | C    |
| 34  | BA    | 721 | G    |
| 34  | BA    | 723 | U    |
| 34  | BA    | 748 | C    |
| 34  | BA    | 753 | A    |
| 34  | BA    | 781 | A    |
| 34  | BA    | 792 | A    |
| 34  | BA    | 793 | U    |
| 34  | BA    | 812 | C    |
| 34  | BA    | 815 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 34  | BA    | 816  | A    |
| 34  | BA    | 817  | C    |
| 34  | BA    | 818  | G    |
| 34  | BA    | 819  | A    |
| 34  | BA    | 820  | U    |
| 34  | BA    | 871  | U    |
| 34  | BA    | 872  | A    |
| 34  | BA    | 873  | A    |
| 34  | BA    | 889  | A    |
| 34  | BA    | 890  | G    |
| 34  | BA    | 901  | A    |
| 34  | BA    | 913  | A    |
| 34  | BA    | 918  | A    |
| 34  | BA    | 960  | U    |
| 34  | BA    | 965  | A    |
| 34  | BA    | 968  | A    |
| 34  | BA    | 974  | A    |
| 34  | BA    | 975  | A    |
| 34  | BA    | 992  | U    |
| 34  | BA    | 993  | G    |
| 34  | BA    | 1004 | A    |
| 34  | BA    | 1049 | U    |
| 34  | BA    | 1055 | A    |
| 34  | BA    | 1065 | U    |
| 34  | BA    | 1067 | A    |
| 34  | BA    | 1084 | G    |
| 34  | BA    | 1085 | U    |
| 34  | BA    | 1101 | A    |
| 34  | BA    | 1129 | C    |
| 34  | BA    | 1145 | C    |
| 34  | BA    | 1157 | A    |
| 34  | BA    | 1182 | G    |
| 34  | BA    | 1183 | A    |
| 34  | BA    | 1196 | U    |
| 34  | BA    | 1212 | U    |
| 34  | BA    | 1214 | C    |
| 34  | BA    | 1224 | G    |
| 34  | BA    | 1226 | C    |
| 34  | BA    | 1239 | A    |
| 34  | BA    | 1240 | U    |
| 34  | BA    | 1285 | A    |
| 34  | BA    | 1297 | C    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 34  | BA    | 1300 | G    |
| 34  | BA    | 1302 | U    |
| 34  | BA    | 1317 | C    |
| 34  | BA    | 1322 | C    |
| 34  | BA    | 1331 | G    |
| 34  | BA    | 1345 | U    |
| 34  | BA    | 1346 | A    |
| 34  | BA    | 1347 | G    |
| 34  | BA    | 1363 | A    |
| 34  | BA    | 1364 | U    |
| 34  | BA    | 1377 | A    |
| 34  | BA    | 1394 | A    |
| 34  | BA    | 1399 | C    |
| 34  | BA    | 1400 | C    |
| 34  | BA    | 1442 | G    |
| 34  | BA    | 1443 | G    |
| 34  | BA    | 1446 | A    |
| 34  | BA    | 1468 | A    |
| 34  | BA    | 1494 | G    |
| 34  | BA    | 1504 | G    |
| 34  | BA    | 1506 | U    |
| 34  | BA    | 1528 | U    |
| 34  | BA    | 1529 | G    |
| 34  | BA    | 1531 | A    |
| 56  | BD    | 15   | G    |
| 56  | BD    | 74   | C    |
| 56  | BE    | 5    | G    |

## 5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

## 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

5 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Type | Chain | Res  | Link | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|------|------|--------------|------|----------|-------------|------|----------|
|     |      |       |      |      | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 58  | NMY  | AA    | 3001 | -    | 43,45,45     | 0.49 | 0        | 62,67,67    | 1.21 | 7 (11%)  |
| 59  | 8AN  | AA    | 3003 | 56   | 21,24,25     | 1.59 | 4 (19%)  | 26,35,38    | 2.30 | 10 (38%) |
| 60  | GCP  | BZ    | 701  | -    | 32,34,34     | 1.76 | 8 (25%)  | 49,54,54    | 1.83 | 8 (16%)  |
| 59  | 8AN  | AA    | 3002 | -    | 21,24,25     | 1.58 | 4 (19%)  | 26,35,38    | 2.28 | 10 (38%) |
| 58  | NMY  | BA    | 1601 | -    | 43,45,45     | 0.48 | 0        | 62,67,67    | 1.07 | 6 (9%)   |

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

| Mol | Type | Chain | Res  | Link | Chirals | Torsions   | Rings   |
|-----|------|-------|------|------|---------|------------|---------|
| 58  | NMY  | AA    | 3001 | -    | -       | 4/18/94/94 | 1/4/4/4 |
| 59  | 8AN  | AA    | 3003 | 56   | -       | 3/7/25/26  | 0/3/3/3 |
| 60  | GCP  | BZ    | 701  | -    | -       | 4/19/38/38 | 0/3/3/3 |
| 59  | 8AN  | AA    | 3002 | -    | -       | 4/7/25/26  | 0/3/3/3 |
| 58  | NMY  | BA    | 1601 | -    | -       | 5/18/94/94 | 0/4/4/4 |

All (16) bond length outliers are listed below:

| Mol | Chain | Res  | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|--------|-------|-------------|----------|
| 60  | BZ    | 701  | GCP  | PG-O1G | 5.57  | 1.61        | 1.50     |
| 59  | AA    | 3003 | 8AN  | C5-C4  | 4.75  | 1.47        | 1.39     |
| 59  | AA    | 3002 | 8AN  | C5-C4  | 4.68  | 1.47        | 1.39     |
| 60  | BZ    | 701  | GCP  | C5-C4  | 3.22  | 1.47        | 1.38     |
| 60  | BZ    | 701  | GCP  | PG-O2G | -2.94 | 1.48        | 1.55     |
| 60  | BZ    | 701  | GCP  | PG-O3G | 2.90  | 1.61        | 1.55     |
| 59  | AA    | 3002 | 8AN  | C5-C6  | 2.76  | 1.48        | 1.41     |
| 59  | AA    | 3003 | 8AN  | C5-C6  | 2.75  | 1.48        | 1.41     |
| 60  | BZ    | 701  | GCP  | PB-O3A | 2.69  | 1.61        | 1.58     |
| 60  | BZ    | 701  | GCP  | C6-N1  | -2.42 | 1.34        | 1.38     |
| 59  | AA    | 3002 | 8AN  | C8-N7  | 2.35  | 1.36        | 1.31     |

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| Mol | Chain | Res  | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|--------|-------|-------------|----------|
| 59  | AA    | 3003 | 8AN  | C8-N7  | 2.34  | 1.36        | 1.31     |
| 59  | AA    | 3003 | 8AN  | C5-N7  | -2.24 | 1.35        | 1.39     |
| 59  | AA    | 3002 | 8AN  | C5-N7  | -2.19 | 1.35        | 1.39     |
| 60  | BZ    | 701  | GCP  | PB-O2B | 2.08  | 1.61        | 1.56     |
| 60  | BZ    | 701  | GCP  | C5-N7  | -2.04 | 1.35        | 1.39     |

All (41) bond angle outliers are listed below:

| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 60  | BZ    | 701  | GCP  | C5-C4-N3    | -6.20 | 118.52      | 128.39   |
| 59  | AA    | 3003 | 8AN  | C5-C4-N3    | -5.84 | 118.68      | 126.72   |
| 59  | AA    | 3002 | 8AN  | C5-C4-N3    | -5.83 | 118.68      | 126.72   |
| 60  | BZ    | 701  | GCP  | C2-N3-C4    | 5.10  | 121.09      | 112.30   |
| 59  | AA    | 3003 | 8AN  | N3-C4-N9    | 4.62  | 135.02      | 127.17   |
| 60  | BZ    | 701  | GCP  | N9-C4-N3    | 4.62  | 135.18      | 125.95   |
| 59  | AA    | 3002 | 8AN  | N3-C4-N9    | 4.59  | 134.97      | 127.17   |
| 59  | AA    | 3003 | 8AN  | C2-N3-C4    | 3.71  | 120.88      | 111.83   |
| 59  | AA    | 3002 | 8AN  | C2-N3-C4    | 3.69  | 120.84      | 111.83   |
| 60  | BZ    | 701  | GCP  | PB-O3A-PA   | -3.63 | 120.51      | 132.37   |
| 58  | BA    | 1601 | NMY  | C13-C14-C15 | 3.50  | 106.31      | 102.10   |
| 58  | AA    | 3001 | NMY  | C13-C14-C15 | 3.49  | 106.30      | 102.10   |
| 59  | AA    | 3003 | 8AN  | C4-C5-N7    | -3.48 | 106.61      | 110.58   |
| 59  | AA    | 3002 | 8AN  | C4-C5-N7    | -3.46 | 106.62      | 110.58   |
| 60  | BZ    | 701  | GCP  | C6-C5-N7    | 3.26  | 136.23      | 130.29   |
| 59  | AA    | 3003 | 8AN  | N1-C2-N3    | -3.23 | 123.69      | 128.58   |
| 59  | AA    | 3002 | 8AN  | N1-C2-N3    | -3.21 | 123.73      | 128.58   |
| 58  | AA    | 3001 | NMY  | C13-O11-C11 | -2.62 | 111.77      | 117.98   |
| 59  | AA    | 3002 | 8AN  | C2'-C3'-C4' | 2.62  | 106.29      | 102.70   |
| 59  | AA    | 3003 | 8AN  | C2'-C3'-C4' | 2.62  | 106.28      | 102.70   |
| 59  | AA    | 3003 | 8AN  | C4-N9-C8    | 2.61  | 108.48      | 105.74   |
| 58  | BA    | 1601 | NMY  | C13-O11-C11 | -2.61 | 111.79      | 117.98   |
| 58  | AA    | 3001 | NMY  | C1-O1-C10   | -2.60 | 111.81      | 117.98   |
| 58  | AA    | 3001 | NMY  | C18-O18-C15 | -2.60 | 111.81      | 117.98   |
| 58  | BA    | 1601 | NMY  | C18-O18-C15 | -2.60 | 111.81      | 117.98   |
| 60  | BZ    | 701  | GCP  | C4-C5-N7    | -2.60 | 106.55      | 110.67   |
| 58  | BA    | 1601 | NMY  | C1-O1-C10   | -2.60 | 111.82      | 117.98   |
| 59  | AA    | 3002 | 8AN  | C4-N9-C8    | 2.57  | 108.44      | 105.74   |
| 59  | AA    | 3003 | 8AN  | C5-N7-C8    | 2.55  | 107.46      | 103.45   |
| 60  | BZ    | 701  | GCP  | C3'-C2'-C1' | 2.52  | 106.23      | 101.46   |
| 59  | AA    | 3002 | 8AN  | C5-N7-C8    | 2.50  | 107.39      | 103.45   |
| 59  | AA    | 3003 | 8AN  | O4'-C4'-C3' | 2.50  | 107.85      | 104.22   |
| 59  | AA    | 3002 | 8AN  | O4'-C4'-C3' | 2.48  | 107.82      | 104.22   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 58  | AA    | 3001 | NMY  | C9-C8-C7    | 2.42  | 115.16      | 111.02   |
| 58  | AA    | 3001 | NMY  | O22-C22-C23 | 2.38  | 110.65      | 106.07   |
| 58  | BA    | 1601 | NMY  | O22-C22-C23 | 2.38  | 110.64      | 106.07   |
| 58  | AA    | 3001 | NMY  | O16-C13-C14 | 2.25  | 107.84      | 104.98   |
| 58  | BA    | 1601 | NMY  | O16-C13-C14 | 2.24  | 107.83      | 104.98   |
| 60  | BZ    | 701  | GCP  | O6-C6-C5    | -2.09 | 121.01      | 126.53   |
| 59  | AA    | 3003 | 8AN  | C6-C5-N7    | 2.08  | 136.11      | 132.09   |
| 59  | AA    | 3002 | 8AN  | C6-C5-N7    | 2.05  | 136.05      | 132.09   |

There are no chirality outliers.

All (20) torsion outliers are listed below:

| Mol | Chain | Res  | Type | Atoms           |
|-----|-------|------|------|-----------------|
| 58  | AA    | 3001 | NMY  | C19-C18-O18-C15 |
| 58  | BA    | 1601 | NMY  | O5-C5-C6-N6     |
| 58  | BA    | 1601 | NMY  | C14-C13-O11-C11 |
| 59  | AA    | 3003 | 8AN  | C4'-C5'-O5'-P   |
| 59  | AA    | 3003 | 8AN  | O4'-C4'-C5'-O5' |
| 60  | BZ    | 701  | GCP  | PG-C3B-PB-O1B   |
| 60  | BZ    | 701  | GCP  | PG-C3B-PB-O2B   |
| 60  | BZ    | 701  | GCP  | PG-C3B-PB-O3A   |
| 58  | BA    | 1601 | NMY  | O16-C16-C17-O17 |
| 58  | BA    | 1601 | NMY  | C15-C16-C17-O17 |
| 59  | AA    | 3002 | 8AN  | C3'-C4'-C5'-O5' |
| 59  | AA    | 3003 | 8AN  | C3'-C4'-C5'-O5' |
| 59  | AA    | 3002 | 8AN  | O4'-C4'-C5'-O5' |
| 58  | AA    | 3001 | NMY  | O22-C18-O18-C15 |
| 58  | BA    | 1601 | NMY  | O16-C13-O11-C11 |
| 59  | AA    | 3002 | 8AN  | C2'-C1'-N9-C8   |
| 58  | AA    | 3001 | NMY  | O22-C22-C23-N19 |
| 60  | BZ    | 701  | GCP  | C5'-O5'-PA-O3A  |
| 59  | AA    | 3002 | 8AN  | O4'-C1'-N9-C8   |
| 58  | AA    | 3001 | NMY  | C2-C1-O1-C10    |

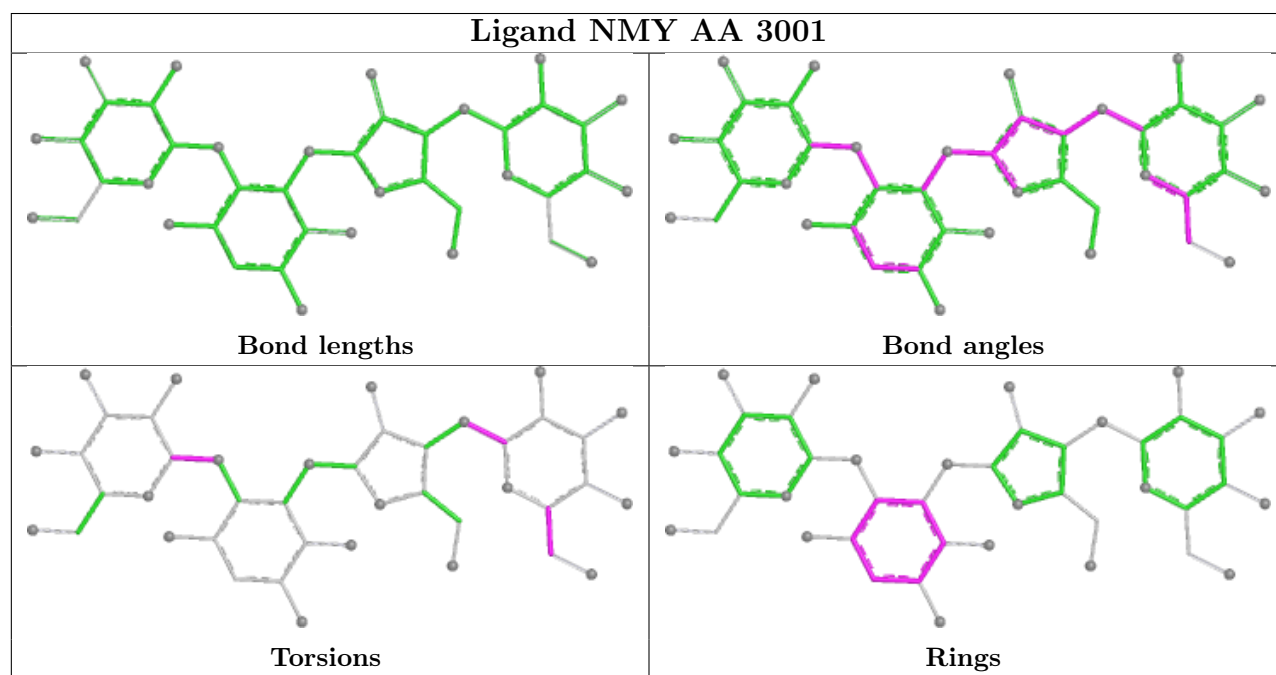
All (1) ring outliers are listed below:

| Mol | Chain | Res  | Type | Atoms                |
|-----|-------|------|------|----------------------|
| 58  | AA    | 3001 | NMY  | C10-C11-C12-C7-C8-C9 |

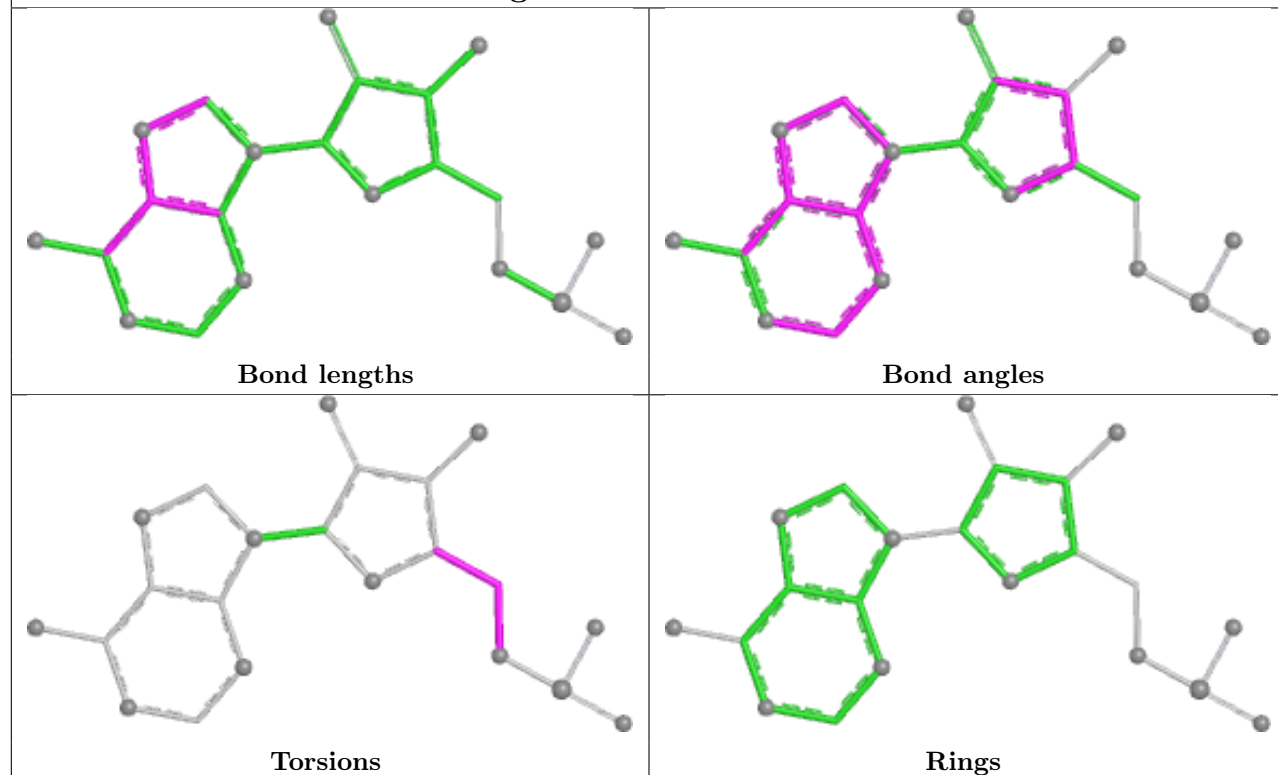
5 monomers are involved in 154 short contacts:

| Mol | Chain | Res  | Type | Clashes | Symm-Clashes |
|-----|-------|------|------|---------|--------------|
| 58  | AA    | 3001 | NMY  | 20      | 0            |
| 59  | AA    | 3003 | 8AN  | 35      | 0            |
| 60  | BZ    | 701  | GCP  | 39      | 0            |
| 59  | AA    | 3002 | 8AN  | 45      | 0            |
| 58  | BA    | 1601 | NMY  | 15      | 0            |

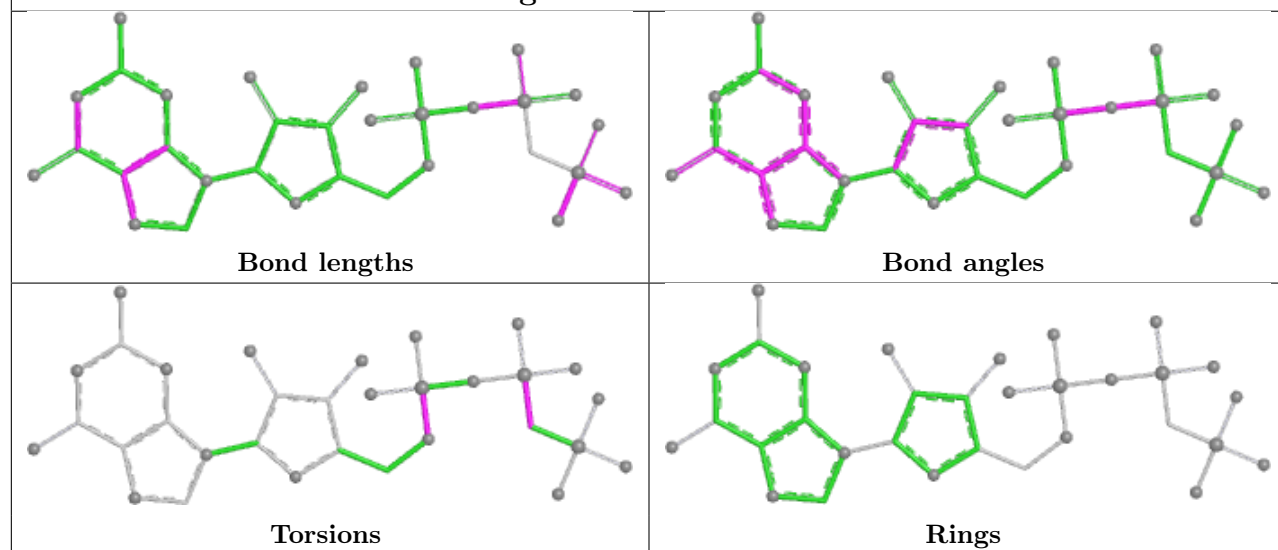
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

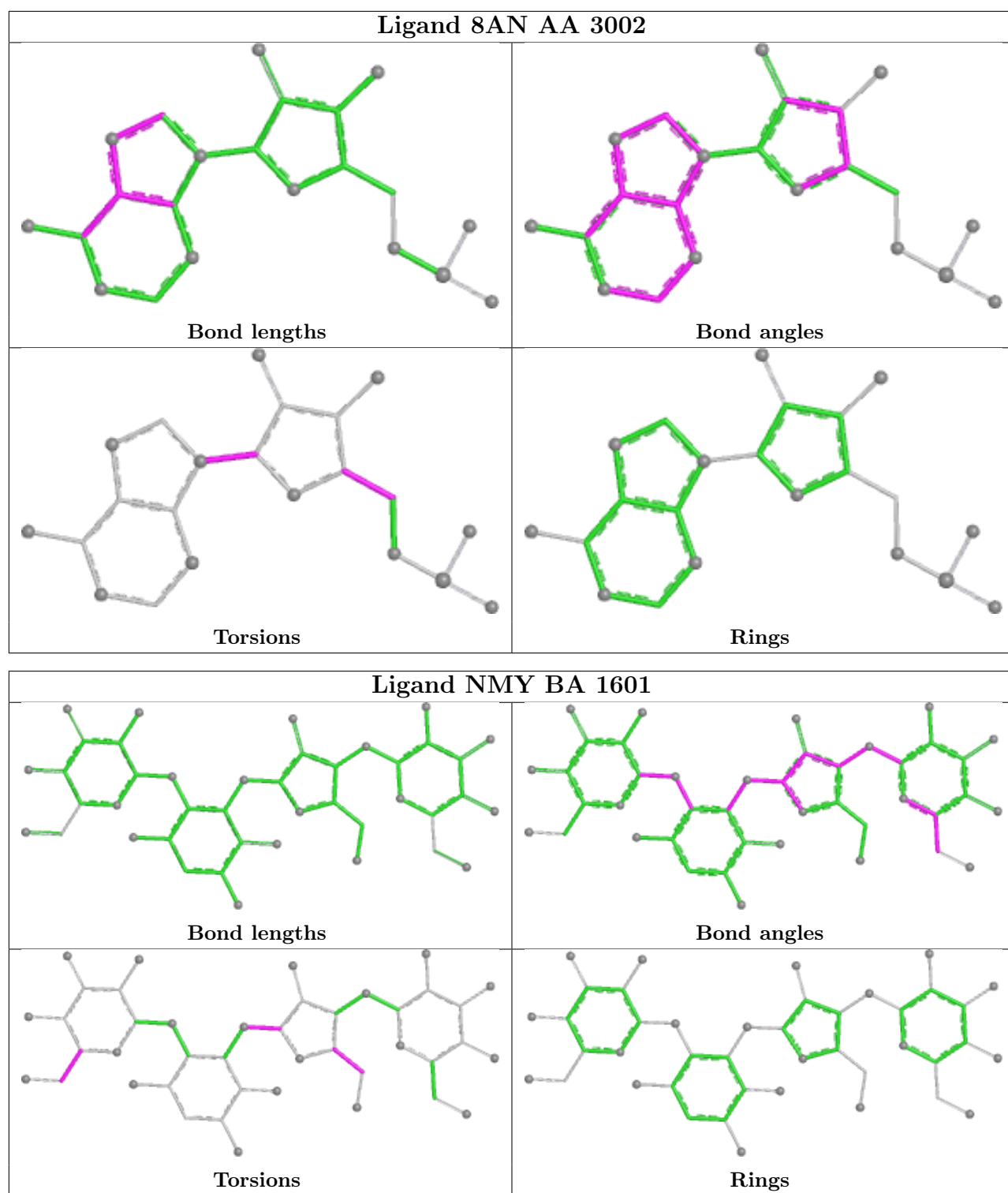


## Ligand 8AN AA 3003



## Ligand GCP BZ 701





## 5.7 Other polymers ⓘ

There are no such residues in this entry.

## 5.8 Polymer linkage issues

The following chains have linkage breaks:

| Mol | Chain | Number of breaks |
|-----|-------|------------------|
| 1   | AA    | 10               |
| 3   | AC    | 3                |
| 34  | BA    | 3                |
| 33  | Ag    | 2                |
| 31  | AI    | 1                |

All chain breaks are listed below:

| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|-------|-------|-----------|--------|-----------|--------|--------------|
| 1     | Ag    | 30:UNK    | C      | 123:UNK   | N      | 31.39        |
| 1     | AA    | 164:U     | O3'    | 171:G     | P      | 7.68         |
| 1     | AA    | 2893:G    | O3'    | 2894:G    | P      | 5.34         |
| 1     | AA    | 2107:C    | O3'    | 2108:C    | P      | 4.97         |
| 1     | AC    | 180:PHE   | C      | 181:PRO   | N      | 4.62         |
| 1     | AA    | 1105:U    | O3'    | 1106:G    | P      | 4.46         |
| 1     | AA    | 2181:G    | O3'    | 2182:G    | P      | 4.08         |
| 1     | BA    | 1308:U    | O3'    | 1309:G    | P      | 3.99         |
| 1     | Ag    | 153:UNK   | C      | 154:UNK   | N      | 3.23         |
| 1     | AC    | 158:ALA   | C      | 159:GLY   | N      | 3.01         |
| 1     | AC    | 66:HIS    | C      | 67:GLY    | N      | 2.81         |
| 1     | AA    | 1073:A    | O3'    | 1074:G    | P      | 2.79         |
| 1     | AA    | 1033:U    | O3'    | 1034:G    | P      | 2.34         |
| 1     | BA    | 1167:A    | O3'    | 1169:A    | P      | 1.86         |
| 1     | AA    | 2756:U    | O3'    | 2757:A    | P      | 1.77         |
| 1     | AA    | 1203:G    | O3'    | 1204:A    | P      | 1.19         |
| 1     | AI    | 153:LEU   | C      | 154:GLY   | N      | 1.11         |
| 1     | BA    | 1317:C    | O3'    | 1318:A    | P      | 0.77         |
| 1     | AA    | 1060:U    | O3'    | 1061:U    | P      | 0.64         |

## 6 Map visualisation

This section contains visualisations of the EMDB entry EMD-6397. These allow visual inspection of the internal detail of the map and identification of artifacts.

No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

### 6.1 Orthogonal projections

This section was not generated.

### 6.2 Central slices

This section was not generated.

### 6.3 Largest variance slices

This section was not generated.

### 6.4 Orthogonal standard-deviation projections (False-color)

This section was not generated.

### 6.5 Orthogonal surface views

This section was not generated.

### 6.6 Mask visualisation

This section was not generated. No masks/segmentation were deposited.

## 7 Map analysis ⓘ

This section contains the results of statistical analysis of the map.

### 7.1 Map-value distribution ⓘ

This section was not generated.

### 7.2 Volume estimate versus contour level ⓘ

This section was not generated.

### 7.3 Rotationally averaged power spectrum ⓘ

This section was not generated. The rotationally averaged power spectrum had issues being displayed.

## 8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

## 9 Map-model fit

This section was not generated.