



Full wwPDB EM Validation Report ⓘ

Apr 15, 2026 – 02:33 AM UTC

PDB ID : 7K53 / pdb_00007k53
EMDB ID : EMD-22672
Title : Pre-translocation +1-frameshifting(CCC-A) complex (Structure I-FS)
Authors : Demo, G.; Loveland, A.B.; Svidritskiy, E.; Gamper, H.B.; Hou, Y.M.; Korostelev, A.A.
Deposited on : 2020-09-16
Resolution : 3.20 Å(reported)
Based on initial models : 5UYM, 6ENJ

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

We welcome your comments at 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>.

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

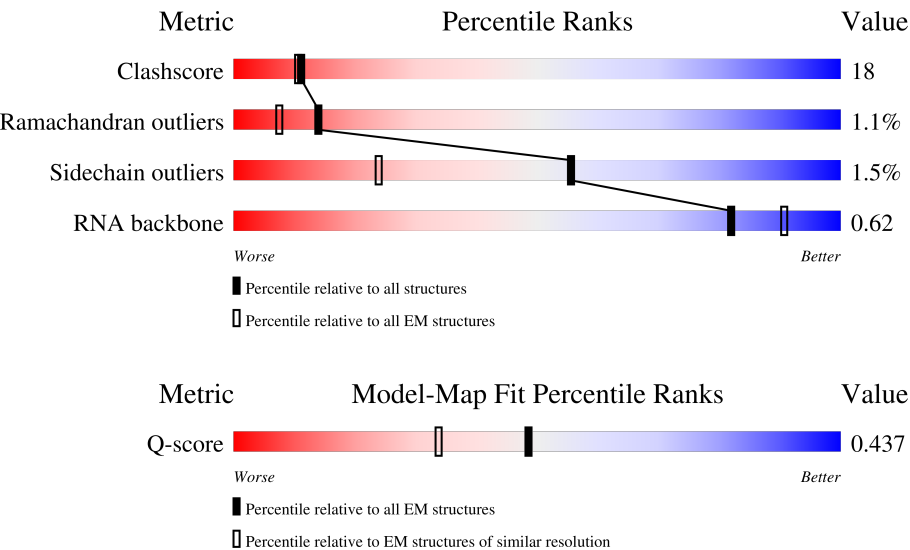
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDb archive up until May 2025)
MapQ : 1.9.13
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 i

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 3.20 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 (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	15020 (2.70 - 3.70)

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 ≥ 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 $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	b	271	
2	c	209	
3	d	201	

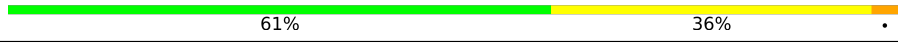
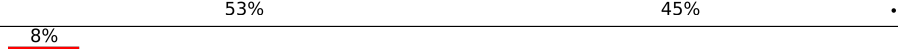
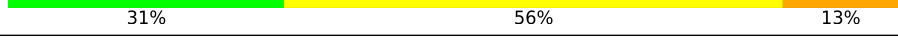
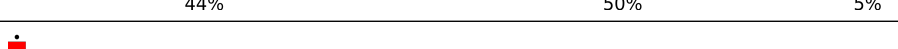
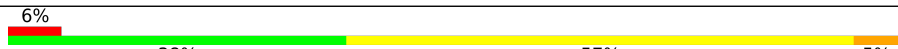
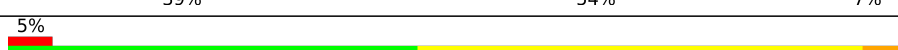
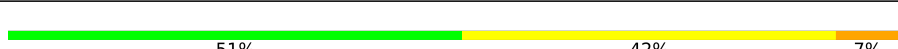
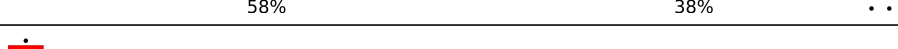
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Mol	Chain	Length	Quality of chain
4	e	177	
5	f	176	
6	g	149	
7	h	131	
8	i	141	
9	j	142	
10	k	122	
11	l	143	
12	m	136	
13	n	120	
14	o	116	
15	p	114	
16	q	117	
17	r	103	
18	s	110	
19	t	93	
20	u	102	
21	v	94	
22	w	75	
23	x	77	
24	y	63	
25	z	58	
26	A	66	
27	B	56	
28	C	50	

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Mol	Chain	Length	Quality of chain
29	D	46	
30	E	64	
31	F	38	
32	G	225	
33	H	206	
34	I	205	
35	J	157	
36	K	100	
37	L	151	
38	M	129	
39	N	127	
40	O	98	
41	P	116	
42	Q	123	
43	R	114	
44	S	100	
45	T	88	
46	U	82	
47	V	80	
48	W	65	
49	X	79	
50	Y	85	
51	Z	65	
52	a	223	
53	3	1539	

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Mol	Chain	Length	Quality of chain
54	1	2903	47% 45% 7%
55	2	120	53% 38% 7%
56	5	77	56% 36% 8%
56	6	77	35% 40% 47% 13%
57	4	18	11% 33% 56% 11%
58	7	77	8% 55% 36% 8%

2 Entry composition

There are 59 unique types of molecules in this entry. The entry contains 149698 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 protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	b	271	Total	C	N	O	S	0	0
			2083	1288	423	365	7		

- Molecule 2 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	c	209	Total	C	N	O	S	0	0
			1565	979	288	294	4		

- Molecule 3 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	d	201	Total	C	N	O	S	0	0
			1552	974	283	290	5		

- Molecule 4 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	e	177	Total	C	N	O	S	0	0
			1411	899	249	257	6		

- Molecule 5 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	f	176	Total	C	N	O	S	0	0
			1323	832	243	246	2		

- Molecule 6 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	g	125	Total	C	N	O	S	0	0
			936	590	166	179	1		

- Molecule 7 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	h	84	Total	C	N	O	S	0	0
			633	397	114	118	4		

- Molecule 8 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	i	74	Total	C	N	O	S	0	0
			551	358	91	99	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
9	j	142	Total	C	N	O	S	0	0
			1129	714	212	199	4		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
10	k	122	Total	C	N	O	S	0	0
			939	587	180	166	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
11	l	143	Total	C	N	O	S	0	0
			1045	649	206	189	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
12	m	136	Total	C	N	O	S	0	0
			1074	686	205	177	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
13	n	120	Total	C	N	O	S	0	0
			961	593	196	167	5		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
14	o	116	Total	C	N	O	0	0
			892	552	178	162		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
15	p	114	Total	C	N	O	S	0
			917	574	179	163	1	0

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

Mol	Chain	Residues	Atoms				AltConf	Trace
16	q	117	Total	C	N	O		0
			947	604	192	151		0

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

Mol	Chain	Residues	Atoms				AltConf	Trace
17	r	103	Total	C	N	O	S	0
			816	516	153	145	2	0

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

Mol	Chain	Residues	Atoms				AltConf	Trace
18	s	110	Total	C	N	O	S	0
			857	532	166	156	3	0

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

Mol	Chain	Residues	Atoms				AltConf	Trace
19	t	93	Total	C	N	O	S	0
			739	466	139	132	2	0

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

Mol	Chain	Residues	Atoms				AltConf	Trace
20	u	102	Total	C	N	O		0
			780	492	146	142		0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
21	v	94	Total	C	N	O	S	0	0
			753	479	137	134	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
22	w	75	Total	C	N	O	S	0	0
			575	356	116	102	1		

- Molecule 23 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	x	77	Total	C	N	O	S	0	0
			625	388	129	106	2		

- Molecule 24 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	y	63	Total	C	N	O	S	0	0
			509	313	99	95	2		

- Molecule 25 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	z	58	Total	C	N	O	S	0	0
			449	281	87	79	2		

- Molecule 26 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	A	66	Total	C	N	O	S	0	0
			523	323	99	95	6		

- Molecule 27 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	B	56	Total	C	N	O	S	0	0
			444	269	94	80	1		

- Molecule 28 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	C	50	Total	C	N	O	0	0
			410	263	75	72		

- Molecule 29 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	D	46	Total	C	N	O	S	0	0
			377	228	90	57	2		

- Molecule 30 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	E	64	Total	C	N	O	S	0	0
			504	323	105	74	2		

- Molecule 31 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	F	38	Total	C	N	O	S	0	0
			302	185	65	48	4		

- Molecule 32 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	G	218	Total	C	N	O	S	0	0
			1705	1081	305	312	7		

- Molecule 33 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	H	206	Total	C	N	O	S	0	0
			1625	1028	305	289	3		

- Molecule 34 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	I	205	Total	C	N	O	S	0	0
			1643	1026	315	298	4		

- Molecule 35 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	J	157	Total	C	N	O	S	0	0
			1157	719	218	214	6		

- Molecule 36 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	K	100	Total	C	N	O	S	0	0
			818	515	148	149	6		

- Molecule 37 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	L	151	Total	C	N	O	S	0	0
			1182	735	227	216	4		

- Molecule 38 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	M	129	Total	C	N	O	S	0	0
			979	616	173	184	6		

- Molecule 39 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	N	127	Total	C	N	O	S	0	0
			1022	634	206	179	3		

- Molecule 40 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	O	98	Total	C	N	O	S	0	0
			787	493	150	143	1		

- Molecule 41 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	P	116	Total	C	N	O	S	0	0
			870	535	173	159	3		

- Molecule 42 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	Q	123	Total	C	N	O	S	0	0
			955	590	196	165	4		

- Molecule 43 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	R	114	Total	C	N	O	S	0	0
			884	546	178	157	3		

- Molecule 44 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	S	100	Total	C	N	O	S	0	0
			805	499	164	139	3		

- Molecule 45 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	T	88	Total	C	N	O	S	0	0
			714	439	144	130	1		

- Molecule 46 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	U	82	Total	C	N	O	S	0	0
			649	406	128	114	1		

- Molecule 47 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	V	80	Total	C	N	O	S	0	0
			649	411	121	114	3		

- Molecule 48 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	W	65	Total	C	N	O	S	0	0
			536	339	100	96	1		

- Molecule 49 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	X	79	Total	C	N	O	S	0	0
			638	408	120	108	2		

- Molecule 50 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	Y	85	Total	C	N	O	S	0	0
			665	411	137	114	3		

- Molecule 51 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	Z	65	Total	C	N	O	S	0	0
			545	335	117	92	1		

- Molecule 52 is a protein called 50S ribosomal protein L1.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	a	134	Total	C	N	O	S	0	0
			1027	645	186	194	2		

- Molecule 53 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	3	1539	Total	C	N	O	P	0	0
			33012	14725	6052	10697	1538		

- Molecule 54 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	1	2903	Total	C	N	O	P	0	0
			62317	27801	11468	20146	2902		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
1	747	C	U	conflict	GB 802133627

- Molecule 55 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	2	120	Total	C	N	O	P	0	0
			2568	1145	471	833	119		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
2	120	A	-	insertion	GB 1266961702

- Molecule 56 is a RNA chain called tRNAfMet.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	5	77	Total	C	N	O	P	0	0
			1640	732	297	535	76		
56	6	77	Total	C	N	O	P	0	0
			1640	732	297	535	76		

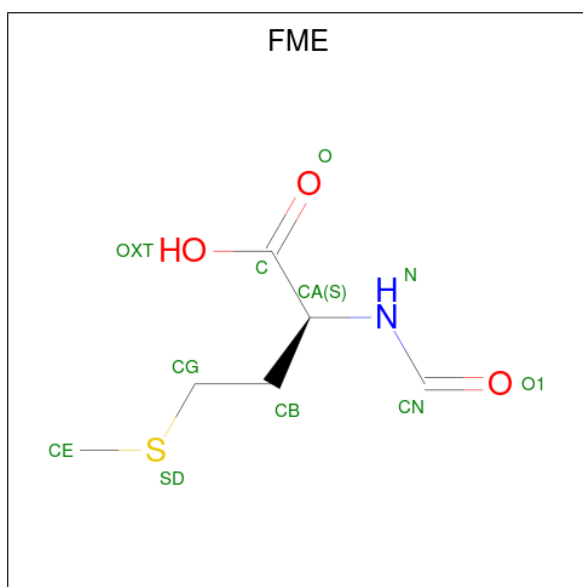
- Molecule 57 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	4	18	Total	C	N	O	P	0	0
			388	175	78	118	17		

- Molecule 58 is a RNA chain called tRNAPro.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	7	77	Total	C	N	O	P	0	0
			1647	733	295	542	77		

- Molecule 59 is N-FORMYLMETHIONINE (CCD ID: FME) (formula: C₆H₁₁NO₃S) (labeled as "Ligand of Interest" by depositor).

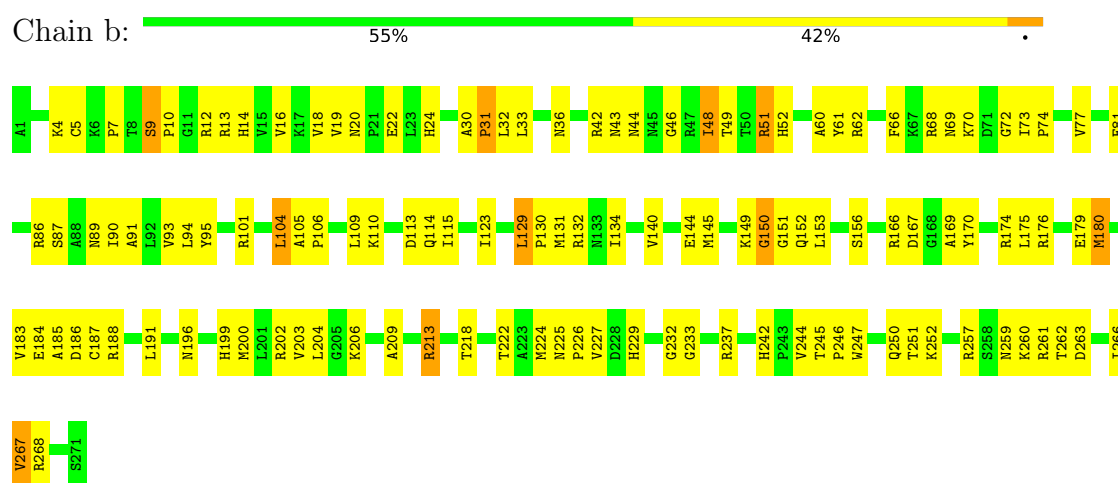


Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	S	
59	5	1	10	6	1	2	1	0

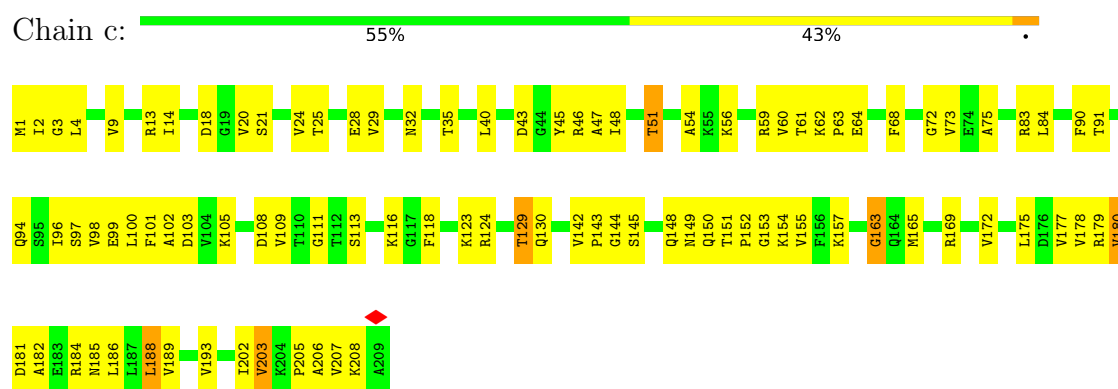
3 Residue-property plots

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 and atom inclusion in map density. 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. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). 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.

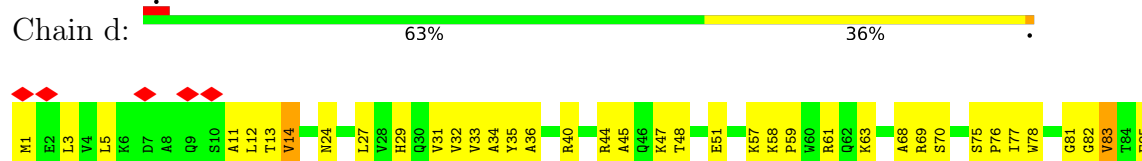
• Molecule 1: 50S ribosomal protein L2

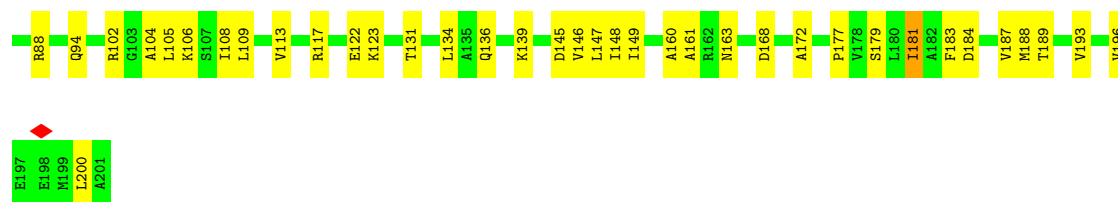


• Molecule 2: 50S ribosomal protein L3

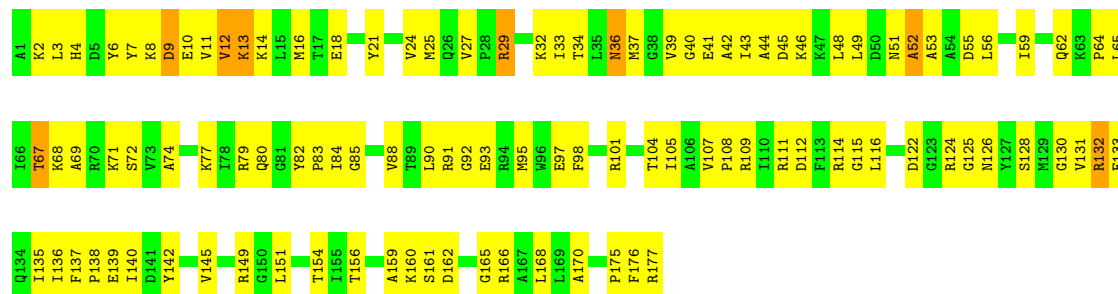


• Molecule 3: 50S ribosomal protein L4

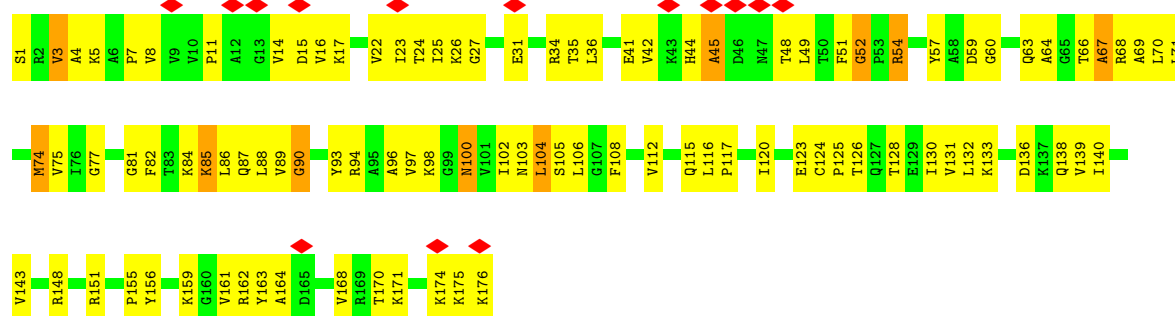




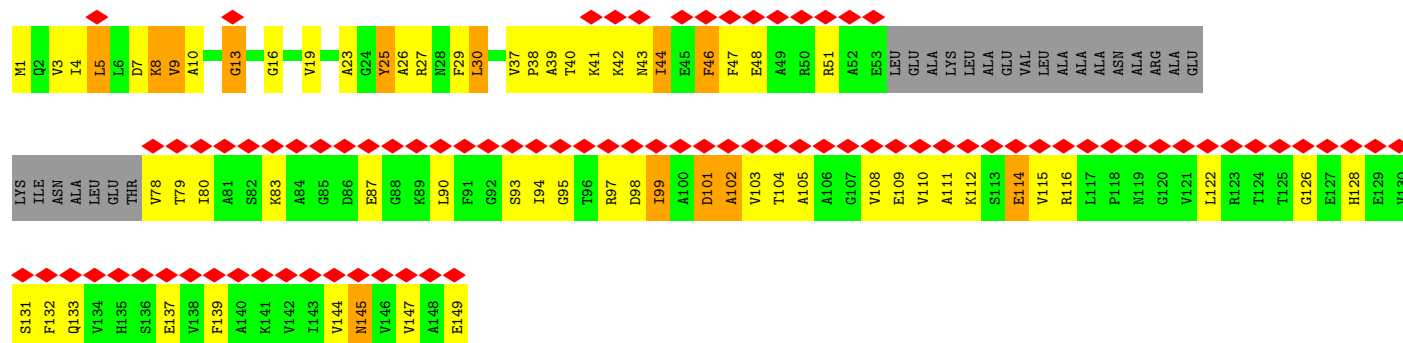
• Molecule 4: 50S ribosomal protein L5



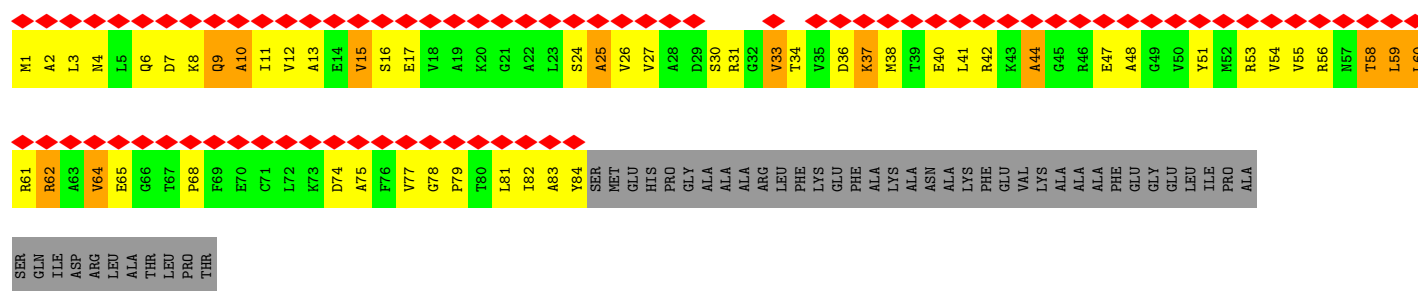
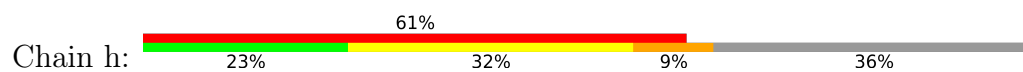
• Molecule 5: 50S ribosomal protein L6



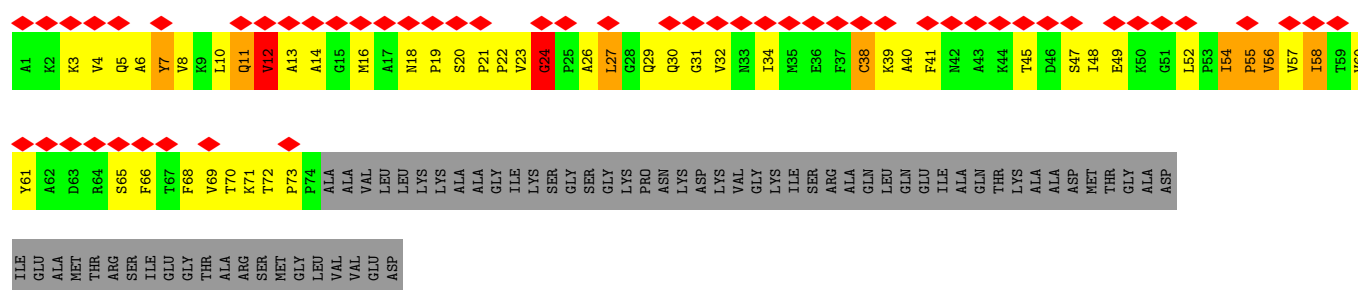
• Molecule 6: 50S ribosomal protein L9



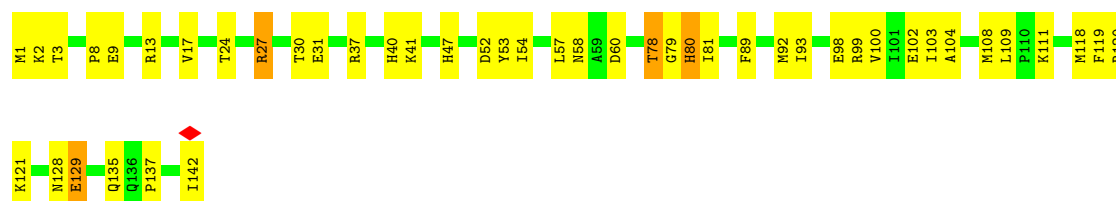
• Molecule 7: 50S ribosomal protein L10



• Molecule 8: 50S ribosomal protein L11



• Molecule 9: 50S ribosomal protein L13

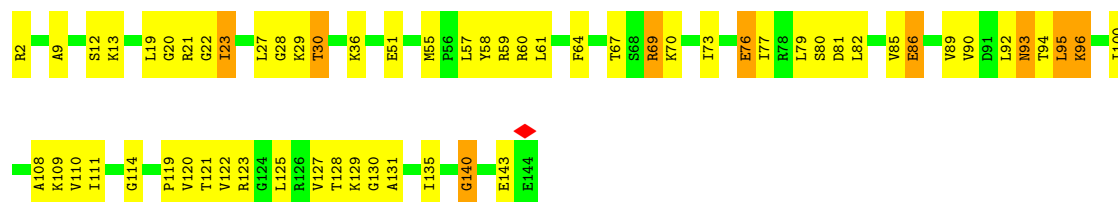


• Molecule 10: 50S ribosomal protein L14

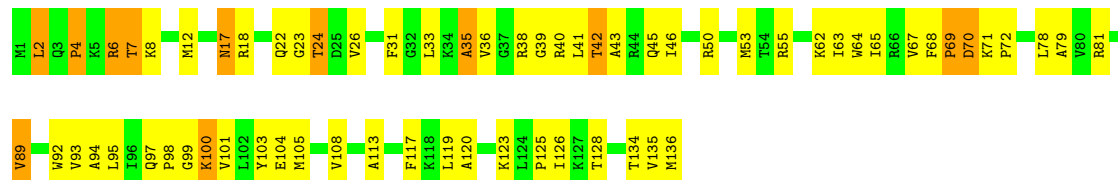


• Molecule 11: 50S ribosomal protein L15

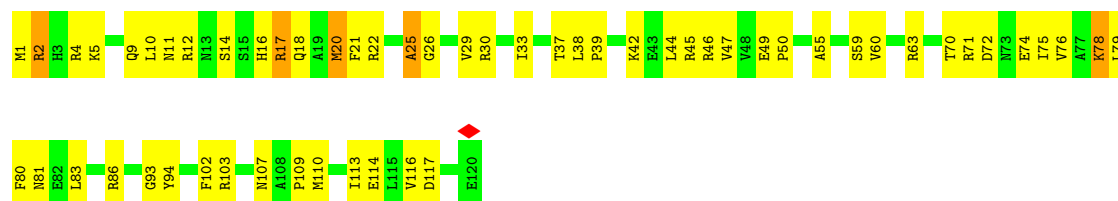




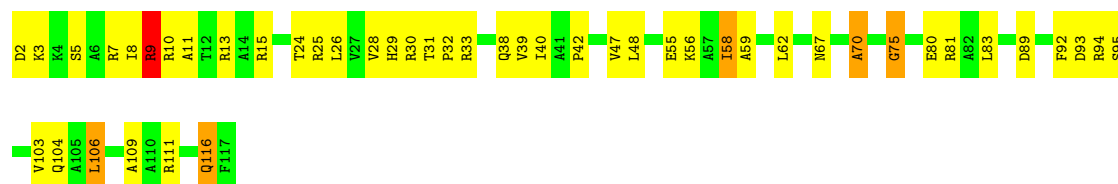
• Molecule 12: 50S ribosomal protein L16



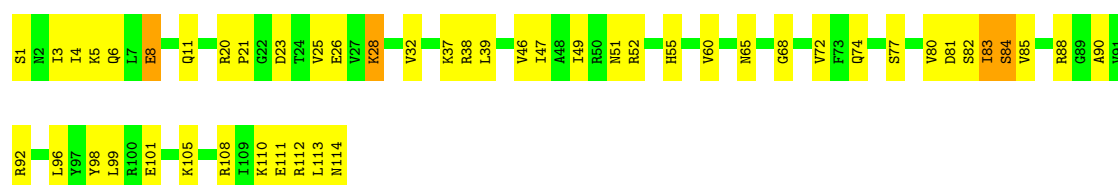
• Molecule 13: 50S ribosomal protein L17



• Molecule 14: 50S ribosomal protein L18

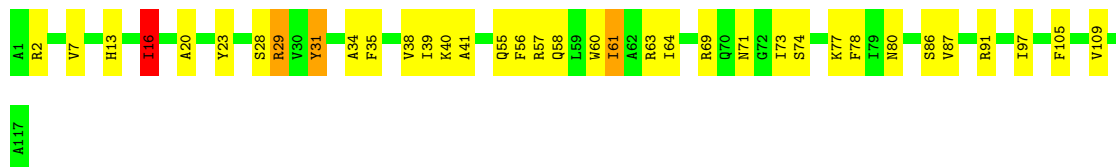


• Molecule 15: 50S ribosomal protein L19



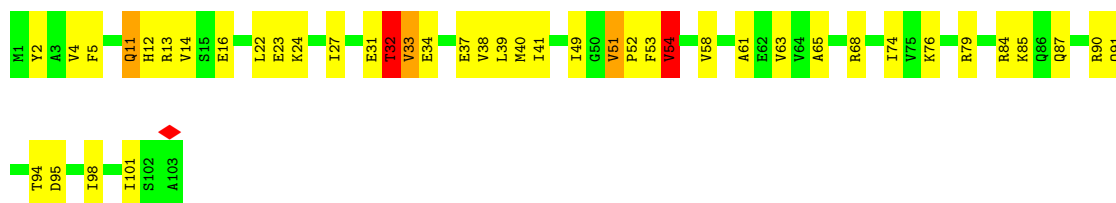
• Molecule 16: 50S ribosomal protein L20

Chain q:  69% 27% ..



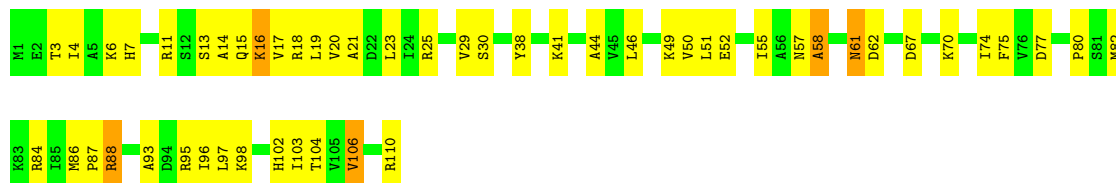
- Molecule 17: 50S ribosomal protein L21

Chain r:  58% 37% ..



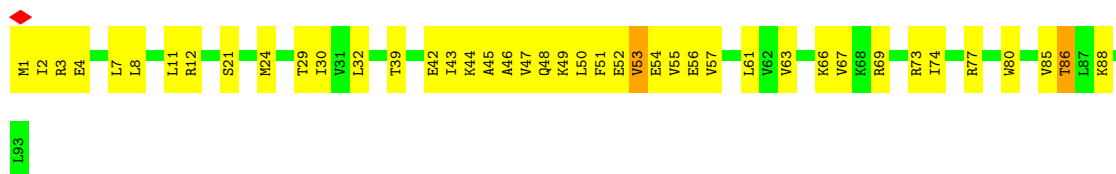
- Molecule 18: 50S ribosomal protein L22

Chain s:  53% 43% 5%



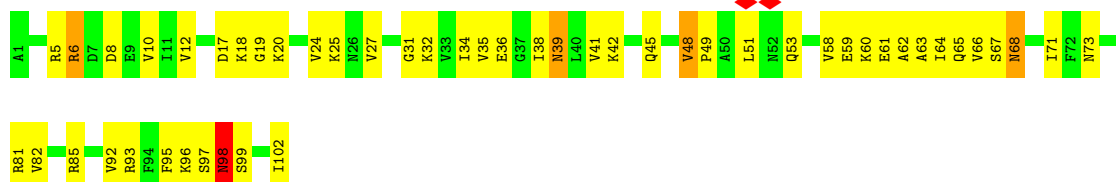
- Molecule 19: 50S ribosomal protein L23

Chain t:  55% 43% .

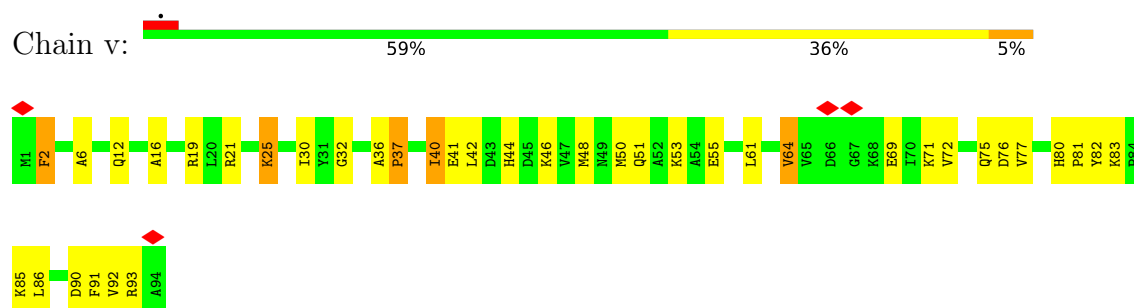


- Molecule 20: 50S ribosomal protein L24

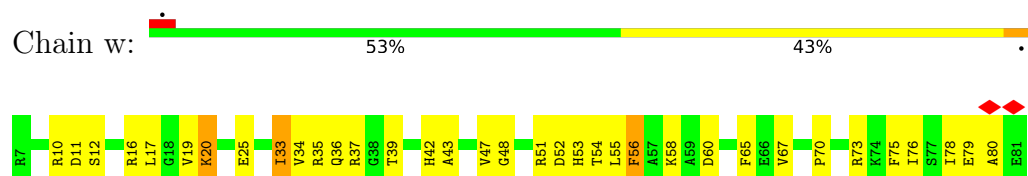
Chain u:  50% 45% ..



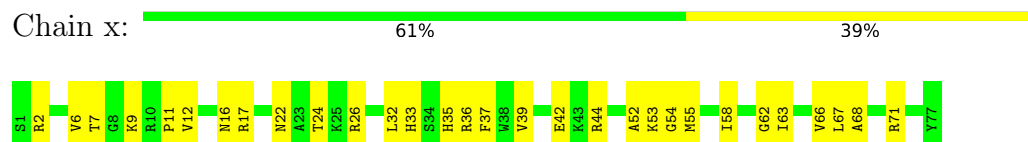
- Molecule 21: 50S ribosomal protein L25



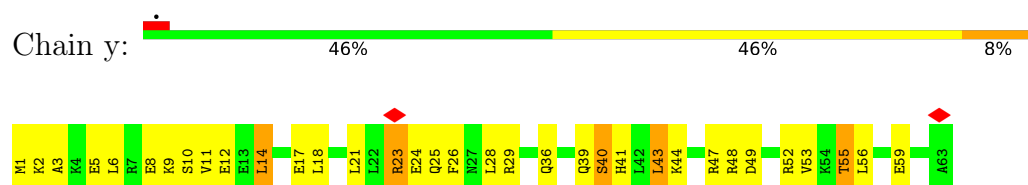
- Molecule 22: 50S ribosomal protein L27



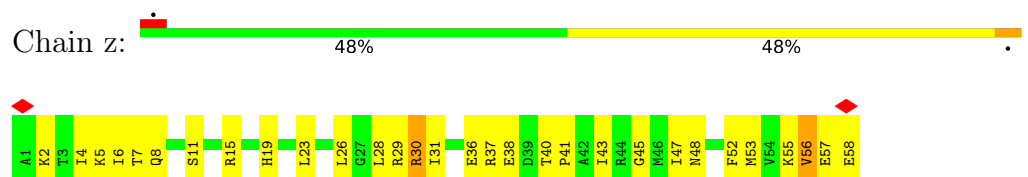
- Molecule 23: 50S ribosomal protein L28



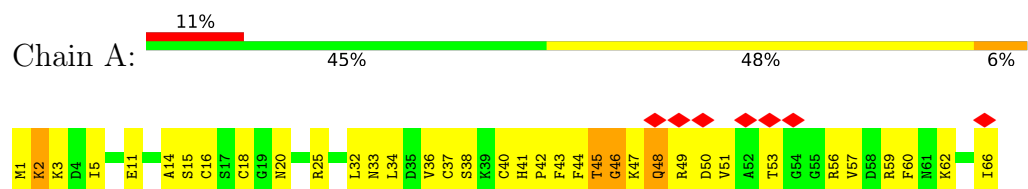
- Molecule 24: 50S ribosomal protein L29



- Molecule 25: 50S ribosomal protein L30



- Molecule 26: 50S ribosomal protein L31



- Molecule 27: 50S ribosomal protein L32

Chain B:  70% 29% .



- Molecule 28: 50S ribosomal protein L33

Chain C:  68% 30% .



- Molecule 29: 50S ribosomal protein L34

Chain D:  65% 33% .



- Molecule 30: 50S ribosomal protein L35

Chain E:  61% 36% .

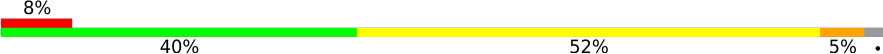


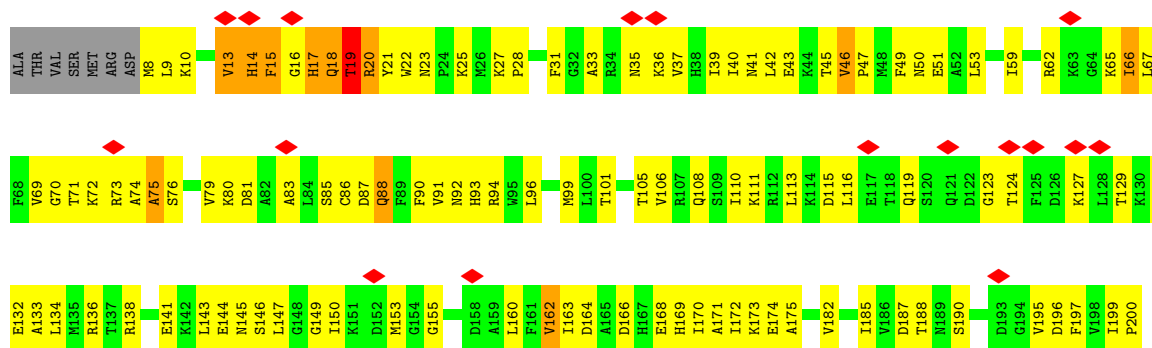
- Molecule 31: 50S ribosomal protein L36

Chain F:  53% 45% .



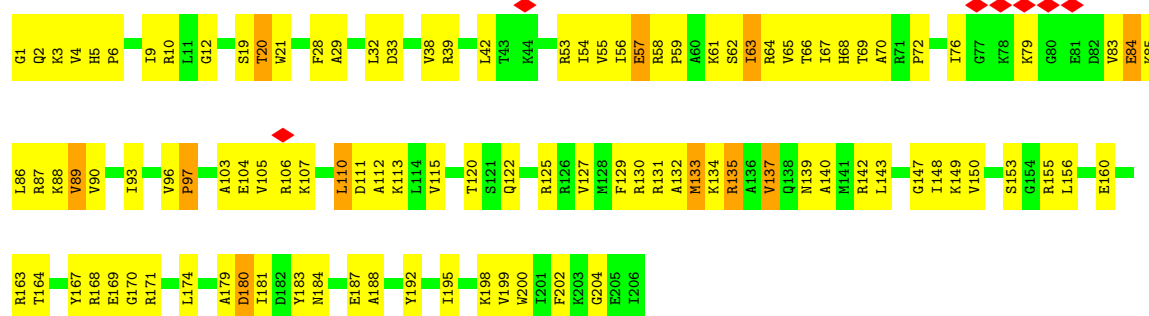
- Molecule 32: 30S ribosomal protein S2

Chain G:  8% 40% 52% 5% .





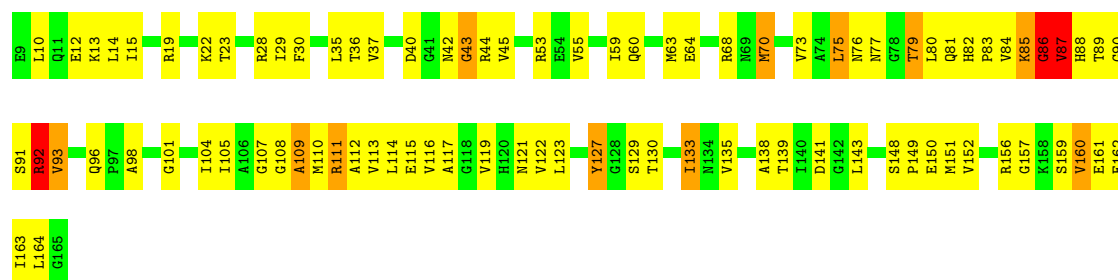
• Molecule 33: 30S ribosomal protein S3



• Molecule 34: 30S ribosomal protein S4

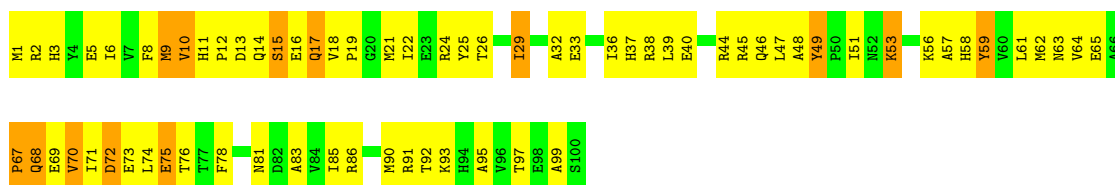


• Molecule 35: 30S ribosomal protein S5



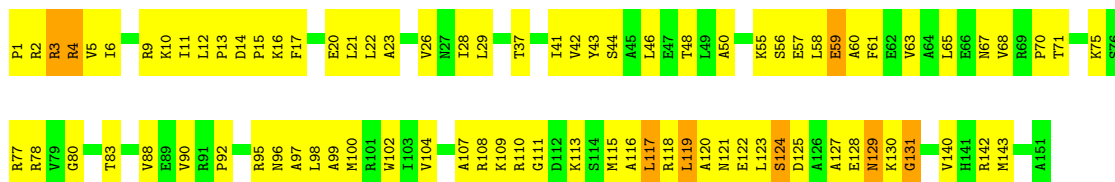
• Molecule 36: 30S ribosomal protein S6





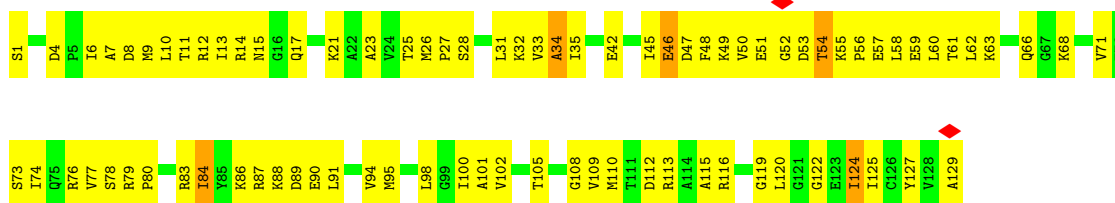
• Molecule 37: 30S ribosomal protein S7

Chain L: 44% 50% 5%



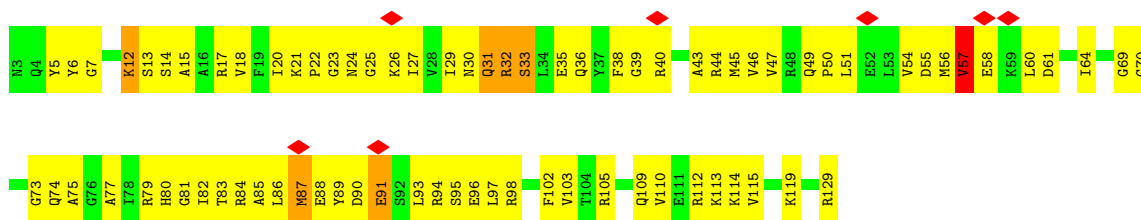
• Molecule 38: 30S ribosomal protein S8

Chain M: 36% 60%



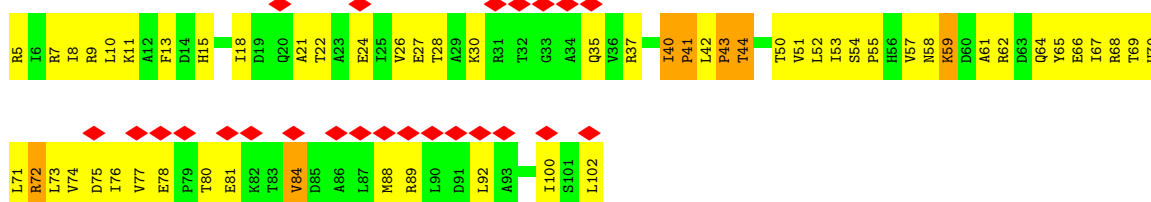
• Molecule 39: 30S ribosomal protein S9

Chain N: 6% 38% 57% 5%

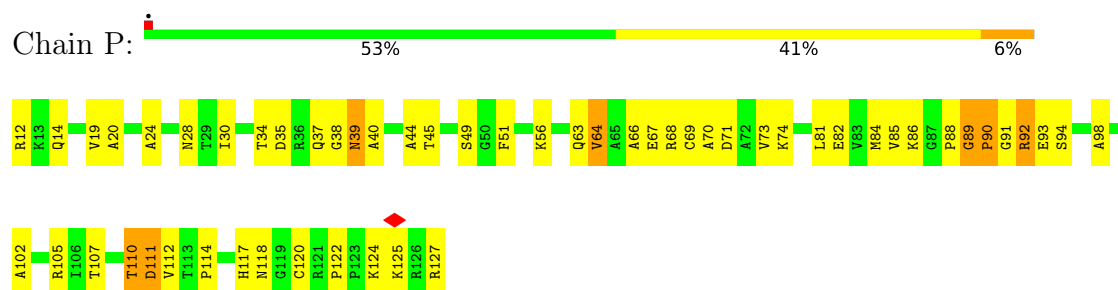


• Molecule 40: 30S ribosomal protein S10

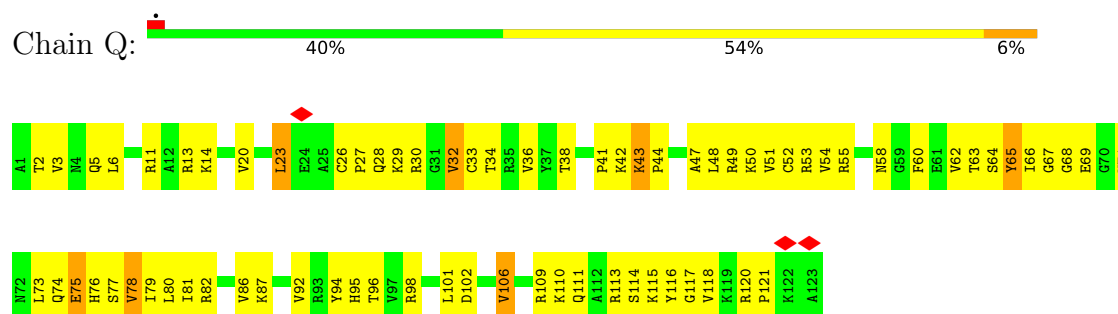
Chain O: 24% 42% 51% 7%



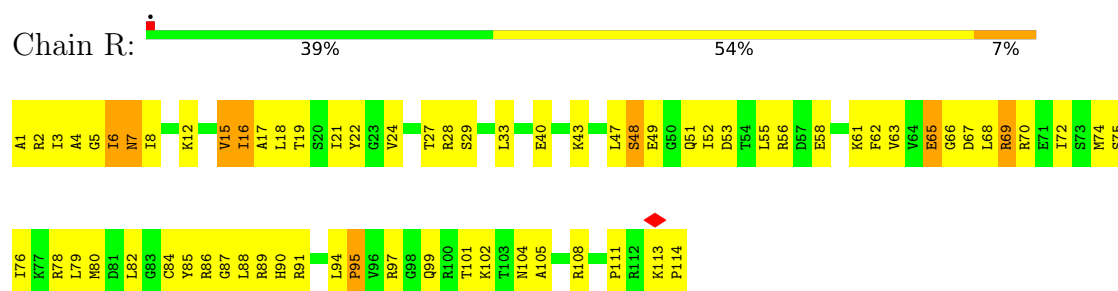
- Molecule 41: 30S ribosomal protein S11



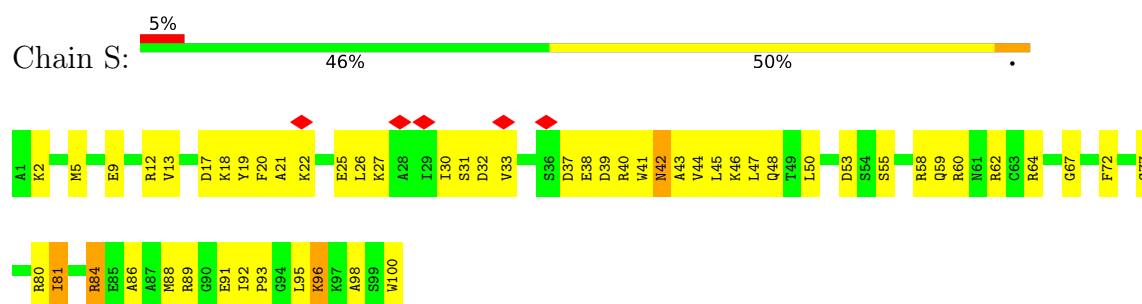
- Molecule 42: 30S ribosomal protein S12



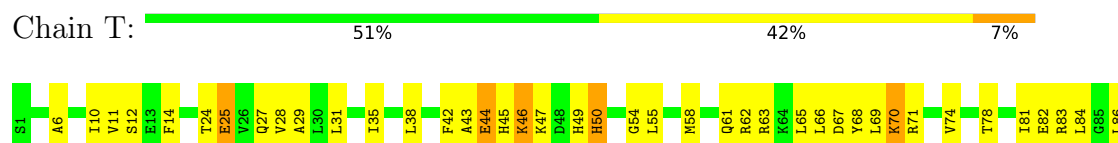
- Molecule 43: 30S ribosomal protein S13



- Molecule 44: 30S ribosomal protein S14



- Molecule 45: 30S ribosomal protein S15

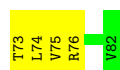




- Molecule 46: 30S ribosomal protein S16



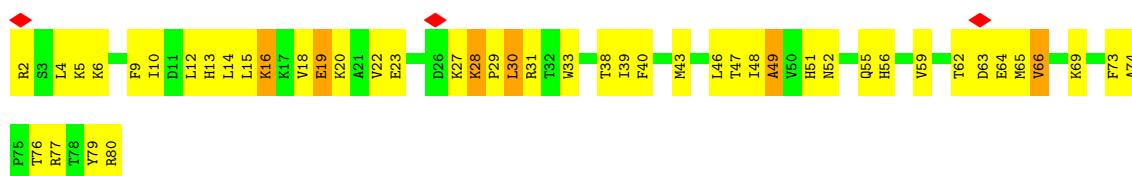
- Molecule 47: 30S ribosomal protein S17



- Molecule 48: 30S ribosomal protein S18

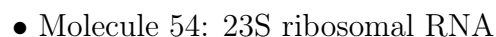


- Molecule 49: 30S ribosomal protein S19

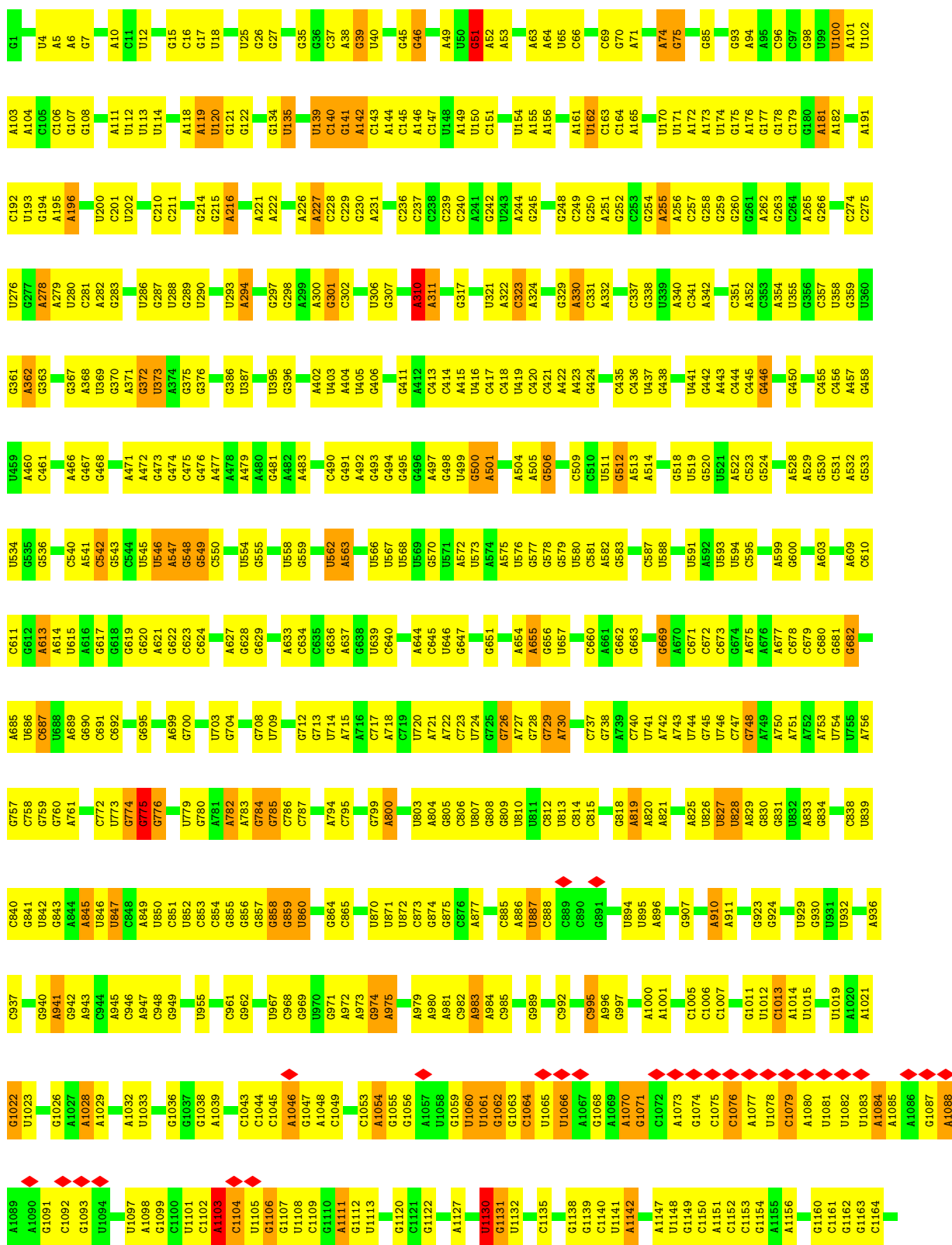


- Molecule 50: 30S ribosomal protein S20

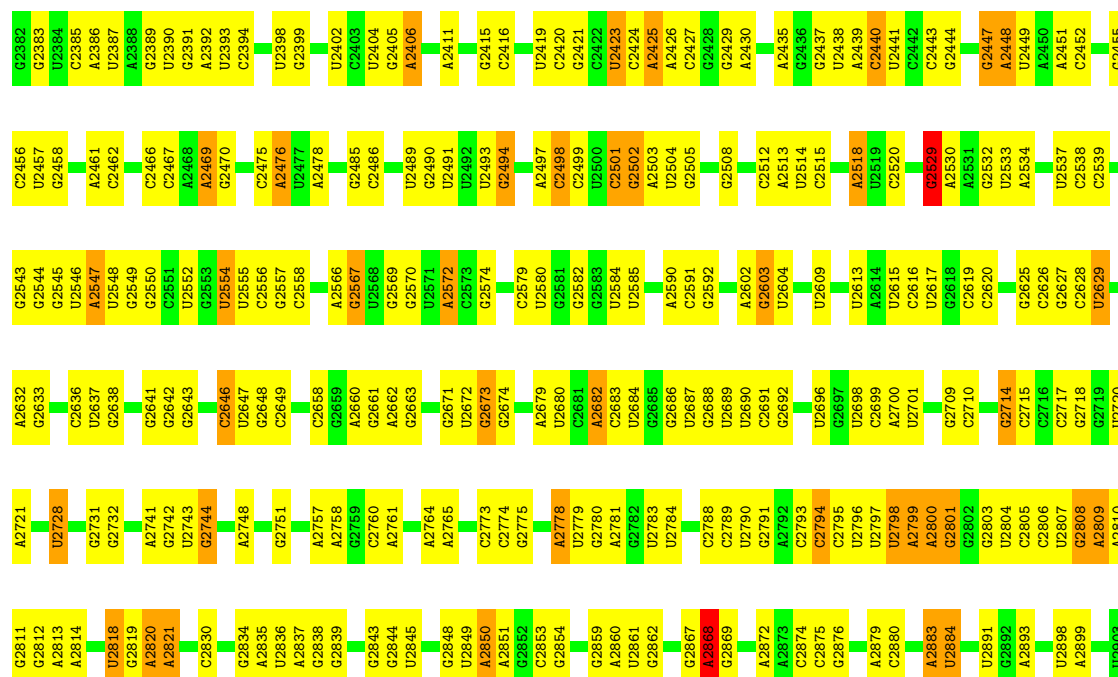




Chain 1:

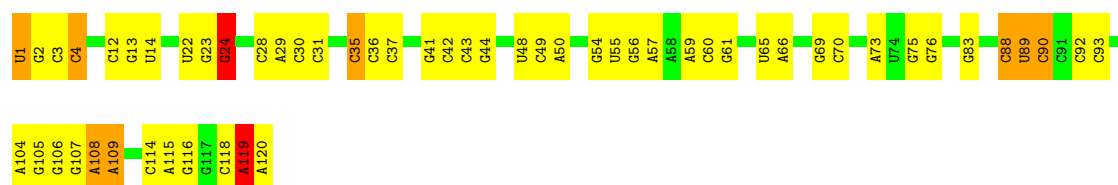






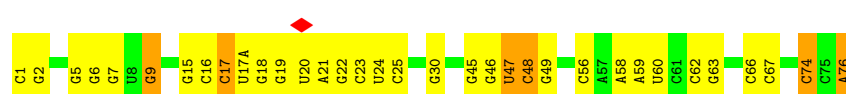
• Molecule 55: 5S ribosomal RNA

Chain 2: 53% 38% 7%



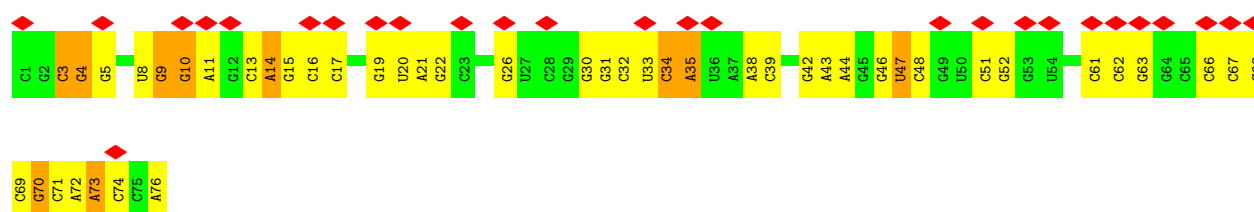
• Molecule 56: tRNA^{fMet}

Chain 5: 56% 36% 8%

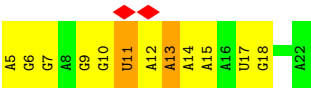


• Molecule 56: tRNA^{fMet}

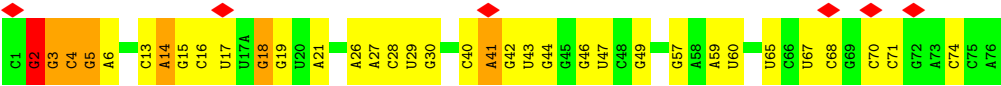
Chain 6: 35% 40% 47% 13%



• Molecule 57: mRNA



● Molecule 58: tRNAPro



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	12108	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	47.5	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	130000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	24.420	Depositor
Minimum map value	-6.345	Depositor
Average map value	0.018	Depositor
Map value standard deviation	1.346	Depositor
Recommended contour level	3.7	Depositor
Map size (Å)	419.99997, 419.99997, 419.99997	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.05, 1.05, 1.05	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: FME

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	b	0.76	5/2122 (0.2%)	1.04	6/2852 (0.2%)
2	c	0.79	4/1586 (0.3%)	1.07	9/2134 (0.4%)
3	d	0.81	3/1571 (0.2%)	1.00	8/2113 (0.4%)
4	e	0.92	10/1435 (0.7%)	1.11	12/1926 (0.6%)
5	f	0.99	11/1343 (0.8%)	1.22	13/1816 (0.7%)
6	g	1.20	10/946 (1.1%)	1.26	12/1275 (0.9%)
7	h	1.78	17/638 (2.7%)	1.71	21/860 (2.4%)
8	i	1.50	11/564 (2.0%)	1.47	13/768 (1.7%)
9	j	0.72	2/1152 (0.2%)	1.06	4/1551 (0.3%)
10	k	0.85	3/948 (0.3%)	1.21	11/1268 (0.9%)
11	l	0.71	2/1054 (0.2%)	1.06	5/1403 (0.4%)
12	m	0.87	7/1093 (0.6%)	1.11	7/1460 (0.5%)
13	n	0.70	2/974 (0.2%)	1.00	5/1301 (0.4%)
14	o	1.07	9/902 (1.0%)	1.10	4/1209 (0.3%)
15	p	0.79	5/929 (0.5%)	1.12	9/1242 (0.7%)
16	q	0.80	2/960 (0.2%)	1.08	3/1278 (0.2%)
17	r	0.79	2/829 (0.2%)	1.09	5/1107 (0.5%)
18	s	1.07	9/864 (1.0%)	1.19	5/1156 (0.4%)
19	t	0.77	3/745 (0.4%)	1.05	3/994 (0.3%)
20	u	0.72	1/788 (0.1%)	1.03	3/1051 (0.3%)
21	v	0.67	2/766 (0.3%)	0.93	2/1025 (0.2%)
22	w	0.74	2/582 (0.3%)	1.09	2/769 (0.3%)
23	x	0.63	1/635 (0.2%)	0.98	2/848 (0.2%)
24	y	1.14	7/510 (1.4%)	1.28	5/677 (0.7%)
25	z	0.76	2/453 (0.4%)	0.95	2/605 (0.3%)
26	A	1.04	5/532 (0.9%)	1.08	8/709 (1.1%)
27	B	0.63	1/450 (0.2%)	0.98	4/599 (0.7%)
28	C	0.74	1/417 (0.2%)	0.92	3/554 (0.5%)
29	D	0.62	0/380	0.92	0/498
30	E	0.59	1/513 (0.2%)	0.84	0/676
31	F	0.73	0/303	1.05	2/397 (0.5%)
32	G	0.91	8/1736 (0.5%)	1.13	15/2338 (0.6%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	H	0.94	10/1652 (0.6%)	1.04	10/2225 (0.4%)
34	I	0.89	10/1665 (0.6%)	1.08	6/2227 (0.3%)
35	J	0.99	10/1170 (0.9%)	1.24	16/1573 (1.0%)
36	K	1.54	19/836 (2.3%)	1.37	14/1128 (1.2%)
37	L	0.92	5/1196 (0.4%)	1.12	10/1602 (0.6%)
38	M	0.93	9/989 (0.9%)	1.10	13/1326 (1.0%)
39	N	0.92	7/1034 (0.7%)	1.15	7/1375 (0.5%)
40	O	0.84	4/797 (0.5%)	1.08	6/1077 (0.6%)
41	P	0.79	3/886 (0.3%)	1.04	4/1195 (0.3%)
42	Q	0.90	3/969 (0.3%)	1.23	9/1300 (0.7%)
43	R	0.97	6/893 (0.7%)	1.13	7/1193 (0.6%)
44	S	0.79	3/817 (0.4%)	1.00	1/1088 (0.1%)
45	T	0.83	4/722 (0.6%)	1.02	1/964 (0.1%)
46	U	0.74	1/659 (0.2%)	0.97	3/884 (0.3%)
47	V	0.84	5/658 (0.8%)	1.04	2/881 (0.2%)
48	W	0.74	1/545 (0.2%)	0.93	3/731 (0.4%)
49	X	1.05	4/653 (0.6%)	1.20	7/877 (0.8%)
50	Y	1.08	5/671 (0.7%)	1.17	5/888 (0.6%)
51	Z	0.95	3/551 (0.5%)	1.23	7/728 (1.0%)
52	a	1.39	15/1034 (1.5%)	1.43	27/1387 (1.9%)
53	3	0.51	0/36963	0.56	10/57662 (0.0%)
54	1	0.48	0/69796	0.57	20/108888 (0.0%)
55	2	0.48	0/2872	0.54	1/4479 (0.0%)
56	5	0.47	0/1832	0.54	0/2855
56	6	0.51	0/1832	0.60	0/2855
57	4	0.52	0/436	0.62	0/679
58	7	0.50	0/1840	0.65	2/2868 (0.1%)
All	All	0.65	275/162688 (0.2%)	0.75	394/243394 (0.2%)

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
35	J	0	2
53	3	0	14
54	1	0	45
55	2	0	3
All	All	0	64

All (275) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
36	K	13	ASP	C-O	16.89	1.45	1.24
7	h	44	ALA	C-O	16.07	1.44	1.24
7	h	12	VAL	C-O	15.94	1.42	1.24
52	a	26	ALA	C-O	15.13	1.41	1.24
6	g	114	GLU	C-O	14.11	1.42	1.24
7	h	13	ALA	C-O	13.54	1.41	1.24
36	K	12	PRO	C-O	13.39	1.42	1.24
8	i	54	ILE	C-O	13.38	1.38	1.23
33	H	85	LYS	C-O	13.23	1.39	1.24
26	A	46	GLY	C-O	12.77	1.39	1.23
2	c	157	LYS	C-O	12.56	1.39	1.23
36	K	17	GLN	N-CA	12.45	1.60	1.46
3	d	179	SER	C-O	12.40	1.38	1.24
5	f	85	LYS	C-O	11.47	1.37	1.23
41	P	73	VAL	C-O	11.27	1.37	1.24
52	a	5	THR	C-O	11.06	1.38	1.24
6	g	102	ALA	C-O	10.79	1.36	1.24
4	e	9	ASP	C-O	10.78	1.32	1.23
37	L	117	LEU	C-O	10.49	1.36	1.24
32	G	14	HIS	C-O	10.43	1.35	1.23
43	R	7	ASN	C-O	10.36	1.36	1.23
18	s	30	SER	C-O	10.35	1.35	1.24
8	i	40	ALA	C-O	10.33	1.36	1.24
8	i	58	ILE	C-O	10.24	1.37	1.24
37	L	116	ALA	C-O	10.04	1.35	1.24
36	K	69	GLU	C-O	9.92	1.35	1.24
8	i	27	LEU	C-O	9.92	1.37	1.24
49	X	19	GLU	C-O	9.88	1.35	1.24
36	K	16	GLU	N-CA	9.82	1.58	1.46
52	a	184	LYS	C-O	9.72	1.35	1.24
39	N	33	SER	N-CA	9.72	1.58	1.46
34	I	199	ILE	C-O	9.64	1.35	1.24
32	G	206	ILE	C-O	9.57	1.34	1.24
32	G	83	ALA	C-O	9.56	1.35	1.24
5	f	164	ALA	N-CA	9.38	1.57	1.46
36	K	67	PRO	C-O	9.18	1.34	1.23
49	X	66	VAL	C-O	9.16	1.34	1.24
34	I	156	ALA	C-O	9.08	1.34	1.24
9	j	27	ARG	C-O	9.04	1.34	1.24
4	e	36	ASN	N-CA	9.01	1.57	1.45
28	C	33	LEU	C-O	8.87	1.35	1.23
52	a	42	VAL	C-O	8.76	1.33	1.24
26	A	45	THR	C-O	8.66	1.35	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
15	p	6	GLN	C-O	8.64	1.34	1.24
14	o	3	LYS	C-O	8.53	1.33	1.24
39	N	15	ALA	N-CA	8.50	1.57	1.46
14	o	81	ARG	C-O	8.48	1.34	1.24
3	d	14	VAL	N-CA	8.46	1.55	1.46
1	b	185	ALA	C-O	8.39	1.34	1.24
35	J	77	ASN	N-CA	8.36	1.56	1.46
34	I	154	VAL	C-O	8.35	1.34	1.24
7	h	16	SER	N-CA	8.30	1.56	1.46
33	H	132	ALA	C-O	8.29	1.33	1.24
43	R	66	GLY	C-O	8.24	1.33	1.23
18	s	106	VAL	C-O	8.22	1.33	1.24
18	s	15	GLN	C-O	8.21	1.33	1.24
24	y	43	LEU	C-O	8.21	1.33	1.24
43	R	16	ILE	C-O	8.21	1.33	1.24
51	Z	51	ALA	C-O	8.12	1.33	1.24
38	M	124	ILE	C-O	8.05	1.32	1.24
45	T	54	GLY	C-O	8.02	1.33	1.23
45	T	70	LYS	C-O	8.00	1.33	1.24
48	W	12	PHE	C-O	7.99	1.34	1.24
4	e	52	ALA	C-O	7.99	1.33	1.24
52	a	10	VAL	N-CA	7.94	1.56	1.46
33	H	63	ILE	C-O	7.92	1.32	1.23
50	Y	54	GLN	C-O	7.92	1.32	1.24
14	o	58	ILE	C-O	7.88	1.32	1.24
38	M	47	ASP	N-CA	7.87	1.57	1.46
6	g	126	GLY	C-O	7.86	1.34	1.23
34	I	200	VAL	C-O	7.81	1.33	1.24
24	y	40	SER	C-O	7.79	1.33	1.24
15	p	85	VAL	N-CA	7.79	1.55	1.46
52	a	201	PRO	C-O	7.75	1.32	1.23
33	H	133	MET	C-O	7.73	1.32	1.24
35	J	92	ARG	C-O	-7.73	1.13	1.24
45	T	25	GLU	C-O	7.70	1.32	1.24
14	o	70	ALA	C-O	7.69	1.32	1.24
18	s	16	LYS	C-O	7.59	1.33	1.24
36	K	59	TYR	C-O	7.57	1.33	1.23
51	Z	49	ALA	C-O	7.56	1.32	1.24
6	g	99	ILE	C-O	7.49	1.33	1.24
52	a	23	ILE	C-O	7.48	1.32	1.24
14	o	13	ARG	C-O	7.46	1.32	1.24
1	b	9	SER	C-O	7.41	1.31	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
47	V	72	TRP	C-O	7.37	1.33	1.24
37	L	57	GLU	C-O	7.35	1.29	1.23
36	K	68	GLN	C-O	7.31	1.33	1.24
14	o	75	GLY	C-O	7.31	1.32	1.23
8	i	12	VAL	C-O	7.29	1.32	1.24
8	i	7	TYR	C-N	7.27	1.41	1.33
13	n	78	LYS	C-O	7.24	1.33	1.24
4	e	93	GLU	C-O	7.22	1.32	1.24
50	Y	23	ARG	C-O	7.20	1.32	1.24
44	S	42	ASN	C-O	7.20	1.32	1.24
34	I	201	GLU	C-O	7.20	1.33	1.24
52	a	190	GLU	C-O	7.19	1.32	1.24
35	J	87	VAL	N-CA	7.19	1.55	1.46
47	V	21	VAL	C-O	7.06	1.31	1.24
12	m	120	ALA	C-O	7.05	1.32	1.24
33	H	89	VAL	N-CA	7.05	1.54	1.46
22	w	33	ILE	C-O	7.03	1.31	1.23
38	M	102	VAL	C-O	7.01	1.30	1.23
36	K	10	VAL	N-CA	7.01	1.53	1.46
6	g	41	LYS	C-O	6.99	1.32	1.24
24	y	44	LYS	C-O	6.95	1.32	1.24
9	j	81	ILE	N-CA	6.94	1.54	1.46
1	b	263	ASP	N-CA	6.94	1.55	1.46
35	J	85	LYS	C-N	6.93	1.43	1.33
24	y	47	ARG	C-O	6.93	1.32	1.24
36	K	70	VAL	C-O	6.91	1.32	1.24
12	m	42	THR	N-CA	6.89	1.54	1.45
32	G	50	ASN	C-O	6.89	1.32	1.24
7	h	15	VAL	C-O	6.88	1.31	1.24
51	Z	41	THR	C-O	6.87	1.32	1.24
7	h	8	LYS	C-N	6.82	1.43	1.33
38	M	84	ILE	C-O	6.81	1.30	1.24
6	g	25	TYR	C-O	6.80	1.31	1.24
7	h	25	ALA	C-O	6.79	1.32	1.23
52	a	65	LEU	N-CA	6.79	1.54	1.45
12	m	6	ARG	N-CA	6.76	1.54	1.46
38	M	63	LYS	C-O	6.73	1.31	1.23
6	g	46	PHE	C-O	6.72	1.32	1.24
43	R	48	SER	C-O	6.69	1.34	1.23
7	h	16	SER	C-O	6.67	1.31	1.24
39	N	75	ALA	C-O	6.66	1.31	1.24
14	o	106	LEU	C-O	6.65	1.31	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
52	a	45	ALA	C-O	6.65	1.31	1.24
7	h	9	GLN	N-CA	6.64	1.55	1.46
3	d	36	ALA	C-O	6.62	1.31	1.24
5	f	67	ALA	C-O	6.61	1.31	1.24
8	i	39	LYS	C-O	6.54	1.32	1.24
42	Q	23	LEU	C-O	6.54	1.32	1.24
46	U	72	ALA	C-O	6.52	1.31	1.24
34	I	155	LYS	N-CA	6.52	1.54	1.46
42	Q	67	GLY	N-CA	6.52	1.52	1.45
17	r	54	VAL	N-CA	6.50	1.54	1.46
14	o	80	GLU	C-O	6.45	1.31	1.24
39	N	87	MET	C-O	6.37	1.30	1.24
24	y	14	LEU	C-O	6.37	1.31	1.24
33	H	97	PRO	C-O	6.37	1.31	1.23
22	w	56	PHE	N-CA	6.35	1.53	1.45
42	Q	78	VAL	C-O	6.29	1.31	1.24
33	H	137	VAL	C-O	6.28	1.31	1.24
7	h	36	ASP	C-O	6.24	1.31	1.24
32	G	80	LYS	C-O	6.23	1.31	1.24
52	a	59	VAL	C-O	6.21	1.30	1.24
36	K	86	ARG	C-O	6.20	1.31	1.24
7	h	59	LEU	C-O	6.17	1.31	1.23
36	K	53	LYS	C-O	6.17	1.31	1.24
18	s	51	LEU	C-O	6.14	1.31	1.24
7	h	17	GLU	N-CA	6.12	1.53	1.46
50	Y	56	ILE	C-O	6.12	1.31	1.24
4	e	12	VAL	C-N	6.07	1.41	1.33
36	K	29	ILE	C-O	6.06	1.30	1.24
33	H	20	THR	C-O	6.06	1.31	1.24
18	s	41	LYS	C-O	6.05	1.31	1.23
24	y	44	LYS	N-CA	6.04	1.53	1.46
37	L	59	GLU	C-O	6.04	1.31	1.24
5	f	74	MET	C-O	6.04	1.31	1.24
34	I	197	HIS	C-O	6.02	1.31	1.24
37	L	44	SER	C-O	6.02	1.31	1.24
50	Y	27	MET	C-O	6.00	1.30	1.24
23	x	24	THR	N-CA	5.99	1.53	1.46
6	g	101	ASP	C-O	5.99	1.31	1.24
19	t	21	SER	C-O	5.97	1.30	1.24
36	K	12	PRO	CA-C	5.96	1.60	1.52
7	h	75	ALA	C-O	5.96	1.31	1.24
8	i	56	VAL	C-O	5.95	1.30	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
40	O	40	ILE	C-O	5.93	1.31	1.24
2	c	189	VAL	N-CA	5.92	1.53	1.46
7	h	10	ALA	C-O	5.91	1.30	1.24
41	P	94	SER	N-CA	5.91	1.53	1.46
39	N	74	GLN	C-O	5.90	1.31	1.24
2	c	182	ALA	N-CA	5.88	1.53	1.46
5	f	11	PRO	C-O	5.88	1.30	1.23
8	i	55	PRO	C-N	5.88	1.41	1.33
4	e	51	ASN	C-O	5.86	1.30	1.24
19	t	86	THR	C-O	5.84	1.31	1.24
39	N	32	ARG	C-N	-5.82	1.25	1.33
35	J	85	LYS	C-O	5.82	1.30	1.23
50	Y	46	ALA	C-O	5.79	1.30	1.24
10	k	63	VAL	N-CA	5.76	1.51	1.46
35	J	127	TYR	N-CA	5.75	1.53	1.45
47	V	46	HIS	C-O	5.75	1.31	1.23
35	J	133	ILE	C-O	5.75	1.30	1.24
36	K	13	ASP	CA-C	5.74	1.60	1.52
12	m	119	LEU	C-O	5.72	1.30	1.24
8	i	54	ILE	N-CA	5.71	1.51	1.46
40	O	40	ILE	N-CA	5.70	1.53	1.46
12	m	35	ALA	C-O	5.69	1.31	1.24
8	i	24	GLY	C-O	5.67	1.31	1.24
36	K	73	GLU	N-CA	5.65	1.53	1.46
26	A	43	PHE	C-O	5.60	1.31	1.24
47	V	45	VAL	N-CA	5.58	1.52	1.46
5	f	90	GLY	N-CA	5.58	1.53	1.45
4	e	149	ARG	C-O	5.57	1.31	1.24
18	s	80	PRO	C-O	5.56	1.30	1.23
33	H	180	ASP	C-O	5.56	1.30	1.24
12	m	100	LYS	N-CA	5.55	1.52	1.46
43	R	79	LEU	C-O	5.51	1.30	1.24
49	X	49	ALA	N-CA	5.51	1.53	1.46
38	M	34	ALA	C-O	5.51	1.30	1.24
38	M	91	LEU	N-CA	5.51	1.53	1.45
7	h	33	VAL	C-O	5.50	1.30	1.24
7	h	37	LYS	C-O	5.50	1.30	1.24
4	e	2	LYS	C-O	5.50	1.30	1.24
2	c	203	VAL	N-CA	5.46	1.52	1.46
44	S	81	ILE	C-O	5.44	1.30	1.24
35	J	64	GLU	C-O	5.44	1.30	1.24
24	y	55	THR	C-O	5.41	1.30	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	h	24	SER	C-O	5.41	1.30	1.23
4	e	132	ARG	C-O	5.40	1.32	1.23
11	l	129	LYS	C-O	5.38	1.30	1.24
32	G	105	THR	C-O	5.38	1.31	1.24
43	R	49	GLU	C-O	5.37	1.30	1.24
6	g	105	ALA	C-N	5.36	1.41	1.33
32	G	65	LYS	C-O	5.35	1.30	1.24
35	J	109	ALA	C-O	5.35	1.30	1.24
36	K	72	ASP	C-O	5.34	1.30	1.24
10	k	114	LYS	C-O	5.33	1.30	1.24
52	a	189	LEU	C-O	5.32	1.30	1.24
32	G	66	ILE	C-O	5.31	1.29	1.24
38	M	87	ARG	C-O	5.31	1.31	1.23
52	a	46	VAL	C-O	5.30	1.30	1.23
14	o	11	ALA	C-O	5.30	1.30	1.23
45	T	50	HIS	C-O	5.30	1.30	1.24
26	A	47	LYS	N-CA	5.30	1.53	1.46
6	g	13	GLY	C-N	-5.28	1.25	1.34
34	I	155	LYS	C-O	5.27	1.30	1.24
10	k	113	MET	N-CA	5.27	1.53	1.46
18	s	88	ARG	C-O	5.27	1.30	1.24
16	q	31	TYR	N-CA	5.25	1.52	1.46
11	l	130	GLY	C-O	5.24	1.30	1.23
19	t	55	VAL	N-CA	5.23	1.52	1.46
49	X	47	THR	CA-C	5.22	1.59	1.53
12	m	97	GLN	C-O	5.22	1.30	1.23
39	N	73	GLY	C-O	5.21	1.30	1.23
52	a	44	VAL	C-O	5.21	1.29	1.24
17	r	33	VAL	N-CA	5.21	1.54	1.45
5	f	54	ARG	N-CA	5.21	1.52	1.45
5	f	69	ALA	C-O	5.20	1.30	1.24
21	v	2	PHE	C-O	5.20	1.30	1.24
15	p	85	VAL	CA-C	5.18	1.58	1.52
38	M	86	LYS	C-O	5.18	1.30	1.23
41	P	111	ASP	N-CA	5.18	1.53	1.46
35	J	160	VAL	C-O	5.17	1.30	1.24
1	b	180	MET	C-O	5.17	1.30	1.23
5	f	77	GLY	C-O	5.17	1.30	1.23
36	K	16	GLU	C-O	5.16	1.30	1.24
52	a	187	GLU	C-N	5.16	1.40	1.33
4	e	12	VAL	C-O	5.16	1.29	1.24
13	n	17	ARG	C-O	5.16	1.30	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
36	K	9	MET	N-CA	5.14	1.52	1.45
26	A	50	ASP	N-CA	5.14	1.52	1.46
20	u	41	VAL	N-CA	5.14	1.52	1.46
25	z	2	LYS	C-O	5.14	1.30	1.23
34	I	60	VAL	C-O	5.14	1.30	1.24
18	s	70	LYS	C-O	5.13	1.30	1.23
34	I	154	VAL	C-N	5.12	1.41	1.33
40	O	73	LEU	N-CA	5.12	1.51	1.45
40	O	51	VAL	C-O	5.12	1.29	1.24
27	B	8	THR	C-O	5.11	1.30	1.23
25	z	19	HIS	C-O	5.10	1.29	1.24
1	b	225	ASN	C-O	5.10	1.30	1.23
15	p	8	GLU	C-O	5.10	1.30	1.24
30	E	39	ARG	C-O	5.08	1.30	1.24
15	p	28	LYS	C-O	5.07	1.30	1.24
44	S	84	ARG	C-O	5.07	1.29	1.24
5	f	89	VAL	N-CA	5.06	1.52	1.46
5	f	104	LEU	C-O	5.05	1.30	1.23
21	v	25	LYS	C-O	5.03	1.30	1.23
33	H	135	ARG	C-O	5.03	1.30	1.24
16	q	16	ILE	C-O	5.01	1.29	1.24
47	V	76	ARG	C-O	5.00	1.30	1.23

All (394) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
37	L	29	LEU	N-CA-C	-13.79	98.90	114.62
9	j	81	ILE	N-CA-C	12.99	125.43	110.62
36	K	13	ASP	CA-C-O	10.33	131.78	120.10
5	f	163	TYR	CA-C-N	-10.00	107.44	120.44
5	f	163	TYR	C-N-CA	-10.00	107.44	120.44
39	N	31	GLN	O-C-N	-9.85	111.53	121.87
36	K	16	GLU	CA-C-N	-9.69	107.26	122.67
36	K	16	GLU	C-N-CA	-9.69	107.26	122.67
39	N	31	GLN	CA-C-O	9.64	131.99	119.16
34	I	154	VAL	CA-C-N	-9.54	104.47	120.68
34	I	154	VAL	C-N-CA	-9.54	104.47	120.68
5	f	88	LEU	CA-C-N	-9.42	110.30	123.11
5	f	88	LEU	C-N-CA	-9.42	110.30	123.11
7	h	8	LYS	CA-C-N	-9.39	105.04	120.72
7	h	8	LYS	C-N-CA	-9.39	105.04	120.72
8	i	31	GLY	CA-C-N	-9.36	112.86	121.65

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	i	31	GLY	C-N-CA	-9.36	112.86	121.65
1	b	262	THR	CA-C-N	-9.33	106.13	120.31
1	b	262	THR	C-N-CA	-9.33	106.13	120.31
35	J	92	ARG	O-C-N	-9.32	110.89	122.35
35	J	87	VAL	N-CA-C	9.28	128.64	109.34
4	e	12	VAL	CA-C-N	-9.11	108.08	120.28
4	e	12	VAL	C-N-CA	-9.11	108.08	120.28
52	a	65	LEU	N-CA-C	8.99	121.05	109.64
52	a	26	ALA	CA-C-N	-8.84	111.30	122.26
52	a	26	ALA	C-N-CA	-8.84	111.30	122.26
17	r	32	THR	CA-C-N	-8.68	112.98	122.27
17	r	32	THR	C-N-CA	-8.68	112.98	122.27
42	Q	106	VAL	N-CA-C	8.56	119.53	107.37
42	Q	114	SER	N-CA-C	-8.46	101.75	110.97
4	e	34	THR	CA-C-O	8.38	129.51	120.38
5	f	52	GLY	CA-C-N	-8.33	112.14	120.31
5	f	52	GLY	C-N-CA	-8.33	112.14	120.31
7	h	15	VAL	CA-C-N	-8.24	109.24	120.28
7	h	15	VAL	C-N-CA	-8.24	109.24	120.28
53	3	1201	A	C2'-C3'-O3'	8.22	121.83	109.50
9	j	80	HIS	CA-C-N	-8.20	108.97	120.53
9	j	80	HIS	C-N-CA	-8.20	108.97	120.53
45	T	43	ALA	N-CA-C	-8.20	102.31	111.82
32	G	75	ALA	CA-C-N	-8.09	108.01	120.31
32	G	75	ALA	C-N-CA	-8.09	108.01	120.31
42	Q	20	VAL	N-CA-C	7.97	116.82	107.73
7	h	16	SER	CA-C-N	-7.93	109.65	120.28
7	h	16	SER	C-N-CA	-7.93	109.65	120.28
6	g	102	ALA	CA-C-N	-7.91	110.30	122.09
6	g	102	ALA	C-N-CA	-7.91	110.30	122.09
8	i	55	PRO	CA-C-N	-7.88	111.50	122.69
8	i	55	PRO	C-N-CA	-7.88	111.50	122.69
35	J	85	LYS	CA-C-N	-7.88	105.97	121.41
35	J	85	LYS	C-N-CA	-7.88	105.97	121.41
52	a	187	GLU	CA-C-N	-7.87	110.21	120.44
52	a	187	GLU	C-N-CA	-7.87	110.21	120.44
18	s	58	ALA	N-CA-C	-7.82	102.07	111.69
15	p	83	ILE	O-C-N	-7.80	115.46	123.03
38	M	47	ASP	N-CA-C	7.77	120.73	111.02
5	f	3	VAL	N-CA-C	-7.75	105.62	111.90
24	y	43	LEU	CA-C-N	-7.68	110.45	120.44
24	y	43	LEU	C-N-CA	-7.68	110.45	120.44

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
38	M	45	ILE	CA-C-O	7.65	129.20	121.63
6	g	132	PHE	CA-C-N	-7.65	110.29	122.76
6	g	132	PHE	C-N-CA	-7.65	110.29	122.76
15	p	83	ILE	CA-C-O	7.61	127.77	120.31
53	3	1190	G	C2'-C3'-O3'	7.53	120.80	109.50
38	M	45	ILE	O-C-N	-7.45	114.60	123.02
32	G	133	ALA	N-CA-C	-7.44	103.17	111.28
7	h	58	THR	N-CA-C	7.40	120.81	112.97
20	u	96	LYS	N-CA-C	-7.35	101.05	110.53
14	o	9	ARG	N-CA-C	-7.33	104.33	113.20
50	Y	52	GLU	N-CA-C	-7.29	106.31	114.62
5	f	88	LEU	CA-C-O	7.24	128.07	120.54
34	I	7	LYS	N-CA-C	7.20	119.75	111.11
27	B	54	ILE	CA-C-N	-7.20	112.60	122.82
27	B	54	ILE	C-N-CA	-7.20	112.60	122.82
51	Z	21	SER	N-CA-C	-7.13	104.32	113.16
37	L	119	LEU	CA-C-N	-7.08	110.79	120.28
37	L	119	LEU	C-N-CA	-7.08	110.79	120.28
12	m	4	PRO	CA-C-O	7.07	129.40	121.34
1	b	105	ALA	N-CA-C	7.07	125.42	109.81
26	A	43	PHE	N-CA-C	-7.06	104.80	113.41
33	H	88	LYS	CA-C-N	-7.05	110.80	120.46
33	H	88	LYS	C-N-CA	-7.05	110.80	120.46
7	h	25	ALA	O-C-N	7.01	131.12	122.92
49	X	30	LEU	N-CA-C	7.01	119.53	108.67
51	Z	11	PHE	N-CA-C	-7.00	106.63	114.62
3	d	81	GLY	N-CA-C	-6.96	100.98	111.14
52	a	200	LYS	N-CA-C	6.92	125.10	109.81
6	g	102	ALA	CA-C-O	6.90	128.07	120.82
52	a	8	MET	N-CA-C	-6.89	103.84	111.36
7	h	25	ALA	CA-C-O	-6.87	114.07	121.36
36	K	15	SER	CA-C-N	-6.85	110.38	120.38
36	K	15	SER	C-N-CA	-6.85	110.38	120.38
7	h	12	VAL	CA-C-N	-6.82	109.08	120.68
7	h	12	VAL	C-N-CA	-6.82	109.08	120.68
36	K	99	ALA	N-CA-C	6.82	118.89	110.91
5	f	81	GLY	N-CA-C	-6.80	105.48	111.95
52	a	54	LYS	N-CA-C	-6.80	100.12	109.71
7	h	13	ALA	CA-C-O	6.79	127.80	119.79
8	i	7	TYR	CA-C-N	-6.79	111.57	121.95
8	i	7	TYR	C-N-CA	-6.79	111.57	121.95
35	J	111	ARG	CA-C-N	-6.77	109.01	120.58

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
35	J	111	ARG	C-N-CA	-6.77	109.01	120.58
16	q	29	ARG	CA-C-O	6.75	126.87	118.43
32	G	14	HIS	O-C-N	6.75	128.80	121.85
52	a	197	LYS	CA-C-N	-6.74	112.09	122.60
52	a	197	LYS	C-N-CA	-6.74	112.09	122.60
19	t	55	VAL	N-CA-C	6.74	118.75	108.71
32	G	20	ARG	N-CA-C	-6.73	103.72	112.68
43	R	7	ASN	N-CA-C	6.70	120.20	110.42
54	l	1130	U	C2'-C3'-O3'	6.66	119.49	109.50
28	C	26	LYS	N-CA-C	6.65	118.18	111.07
49	X	73	PHE	CA-C-N	-6.64	113.88	122.98
49	X	73	PHE	C-N-CA	-6.64	113.88	122.98
12	m	40	ARG	CA-C-O	6.63	128.29	120.66
4	e	36	ASN	N-CA-C	6.61	119.48	109.23
8	i	54	ILE	CA-C-O	6.61	125.66	119.98
12	m	99	GLY	CA-C-N	-6.60	113.62	122.72
12	m	99	GLY	C-N-CA	-6.60	113.62	122.72
42	Q	65	TYR	CA-C-N	-6.59	115.01	123.19
42	Q	65	TYR	C-N-CA	-6.59	115.01	123.19
6	g	8	LYS	N-CA-C	6.54	120.52	112.54
6	g	145	ASN	CA-C-N	-6.53	114.42	123.10
6	g	145	ASN	C-N-CA	-6.53	114.42	123.10
50	Y	70	LYS	N-CA-C	-6.52	104.21	111.71
53	3	1301	U	N1-C1'-C2'	6.52	121.78	112.00
11	l	93	ASN	N-CA-C	-6.51	101.76	110.55
52	a	9	ARG	CA-C-N	-6.49	110.22	120.47
52	a	9	ARG	C-N-CA	-6.49	110.22	120.47
35	J	112	ALA	CA-C-N	-6.47	110.93	121.54
35	J	112	ALA	C-N-CA	-6.47	110.93	121.54
51	Z	49	ALA	N-CA-C	-6.47	104.15	111.07
4	e	9	ASP	CA-C-O	6.41	127.76	120.71
52	a	199	ALA	N-CA-C	-6.41	105.04	112.92
35	J	86	GLY	CA-C-N	-6.40	110.44	121.97
35	J	86	GLY	C-N-CA	-6.40	110.44	121.97
32	G	13	VAL	N-CA-C	6.40	116.61	106.88
25	z	38	GLU	CA-C-N	-6.38	112.38	121.50
25	z	38	GLU	C-N-CA	-6.38	112.38	121.50
27	B	53	VAL	N-CA-C	6.37	117.94	111.00
8	i	5	GLN	N-CA-C	-6.35	104.59	112.72
2	c	163	GLY	CA-C-O	6.34	126.05	121.04
15	p	81	ASP	CA-C-N	-6.33	112.65	122.59
15	p	81	ASP	C-N-CA	-6.33	112.65	122.59

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	y	23	ARG	O-C-N	-6.32	115.56	122.38
33	H	110	LEU	CA-C-N	-6.30	114.02	122.72
33	H	110	LEU	C-N-CA	-6.30	114.02	122.72
4	e	34	THR	O-C-N	-6.25	115.91	123.29
11	l	95	LEU	N-CA-C	-6.21	104.76	112.90
37	L	143	MET	N-CA-C	-6.21	105.74	113.38
7	h	78	GLY	N-CA-C	6.19	124.96	112.34
20	u	39	ASN	CA-C-N	-6.18	113.47	122.19
20	u	39	ASN	C-N-CA	-6.18	113.47	122.19
5	f	100	ASN	N-CA-C	-6.18	107.58	114.62
51	Z	17	ARG	N-CA-C	-6.18	105.73	113.20
34	I	125	ASN	N-CA-C	6.17	119.69	111.30
3	d	13	THR	CA-C-N	-6.15	112.91	122.69
3	d	13	THR	C-N-CA	-6.15	112.91	122.69
33	H	129	PHE	N-CA-C	6.14	117.97	111.28
47	V	45	VAL	N-CA-C	6.14	117.32	108.48
2	c	188	LEU	CA-C-N	-6.13	113.62	122.45
2	c	188	LEU	C-N-CA	-6.13	113.62	122.45
36	K	9	MET	CA-C-N	-6.12	114.00	122.69
36	K	9	MET	C-N-CA	-6.12	114.00	122.69
32	G	201	GLY	CA-C-N	-6.10	111.37	120.94
32	G	201	GLY	C-N-CA	-6.10	111.37	120.94
50	Y	3	ILE	N-CA-C	-6.09	106.57	112.29
49	X	47	THR	CA-C-O	6.08	127.41	120.84
6	g	13	GLY	CA-C-O	6.06	126.58	120.64
47	V	15	LYS	N-CA-C	6.06	119.07	108.52
36	K	72	ASP	CA-C-N	-6.05	111.11	120.31
36	K	72	ASP	C-N-CA	-6.05	111.11	120.31
38	M	54	THR	N-CA-C	-6.04	105.46	114.64
12	m	24	THR	N-CA-C	6.02	120.71	112.04
31	F	20	ASP	CA-C-N	-6.01	109.19	122.00
31	F	20	ASP	C-N-CA	-6.01	109.19	122.00
2	c	157	LYS	O-C-N	6.01	130.22	122.89
11	l	96	LYS	N-CA-C	-6.01	104.85	111.82
37	L	131	GLY	N-CA-C	6.01	121.10	112.81
10	k	112	PHE	CA-C-N	-6.01	110.96	120.63
10	k	112	PHE	C-N-CA	-6.01	110.96	120.63
54	l	1064	C	N1-C1'-C2'	6.00	121.00	112.00
52	a	28	ALA	CA-C-N	-6.00	110.49	120.68
52	a	28	ALA	C-N-CA	-6.00	110.49	120.68
38	M	90	GLU	CA-C-N	-5.99	111.43	120.60
38	M	90	GLU	C-N-CA	-5.99	111.43	120.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
58	7	2	G	C2'-C3'-O3'	5.99	118.49	109.50
39	N	13	SER	CA-C-N	-5.99	114.56	123.00
39	N	13	SER	C-N-CA	-5.99	114.56	123.00
41	P	112	VAL	N-CA-C	5.99	112.62	106.21
34	I	152	SER	O-C-N	-5.98	114.64	122.59
14	o	116	GLN	N-CA-C	5.97	118.19	108.63
18	s	67	ASP	N-CA-C	5.96	120.86	112.93
15	p	68	GLY	N-CA-C	5.92	118.29	111.36
53	3	413	G	N9-C1'-C2'	5.91	120.86	112.00
41	P	110	THR	CA-C-N	-5.90	114.04	122.77
41	P	110	THR	C-N-CA	-5.90	114.04	122.77
26	A	46	GLY	CA-C-N	-5.90	110.02	120.99
26	A	46	GLY	C-N-CA	-5.90	110.02	120.99
7	h	62	ARG	N-CA-C	-5.90	104.05	112.13
36	K	8	PHE	CA-C-N	-5.89	112.92	122.81
36	K	8	PHE	C-N-CA	-5.89	112.92	122.81
42	Q	43	LYS	N-CA-C	5.87	122.78	109.81
54	1	774	G	C2'-C3'-O3'	5.86	122.50	113.70
2	c	180	VAL	CA-C-O	5.85	126.48	120.39
10	k	61	VAL	CA-C-O	5.85	126.53	120.39
53	3	563	A	N9-C1'-C2'	5.84	120.76	112.00
52	a	174	THR	CA-C-N	-5.84	113.34	122.56
52	a	174	THR	C-N-CA	-5.84	113.34	122.56
54	1	1328	A	N9-C1'-C2'	5.82	120.74	112.00
21	v	40	ILE	N-CA-C	5.82	117.14	108.46
7	h	64	VAL	CA-C-N	-5.81	110.80	120.68
7	h	64	VAL	C-N-CA	-5.81	110.80	120.68
10	k	63	VAL	N-CA-C	5.81	119.22	113.53
1	b	267	VAL	CA-C-N	-5.80	113.07	122.81
1	b	267	VAL	C-N-CA	-5.80	113.07	122.81
6	g	48	GLU	N-CA-C	-5.78	103.49	111.81
54	1	1103	A	N9-C1'-C2'	5.78	120.66	112.00
35	J	55	VAL	CB-CA-C	-5.77	108.22	113.70
46	U	71	VAL	N-CA-C	-5.77	104.89	110.72
37	L	29	LEU	CA-C-O	5.76	125.80	118.54
53	3	95	C	N1-C1'-C2'	5.74	120.60	112.00
40	O	44	THR	N-CA-C	5.73	118.87	109.76
44	S	96	LYS	N-CA-C	5.73	115.96	107.88
54	1	1178	C	N1-C1'-C2'	5.73	120.59	112.00
33	H	57	GLU	CA-C-N	-5.71	115.16	122.98
33	H	57	GLU	C-N-CA	-5.71	115.16	122.98
3	d	82	GLY	N-CA-C	5.71	126.71	113.18

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
54	1	2324	U	N1-C1'-C2'	5.70	120.54	112.00
4	e	67	THR	N-CA-C	5.69	117.41	110.41
38	M	91	LEU	N-CA-C	5.69	117.75	109.84
3	d	181	ILE	CA-C-N	-5.69	112.71	120.44
3	d	181	ILE	C-N-CA	-5.69	112.71	120.44
52	a	28	ALA	N-CA-C	-5.68	106.89	113.88
28	C	50	GLU	N-CA-C	5.68	118.88	110.48
26	A	45	THR	CA-C-N	-5.67	113.76	120.00
26	A	45	THR	C-N-CA	-5.67	113.76	120.00
19	t	53	VAL	CA-C-O	5.66	127.18	121.64
48	W	12	PHE	CA-C-O	5.66	128.60	120.51
28	C	41	VAL	N-CA-C	-5.64	107.16	111.62
49	X	28	LYS	CA-C-O	5.64	124.49	119.59
55	2	119	A	N9-C1'-C2'	5.63	120.45	112.00
49	X	16	LYS	N-CA-C	-5.63	105.05	111.07
5	f	45	ALA	N-CA-C	-5.61	104.98	113.51
35	J	109	ALA	O-C-N	-5.61	115.12	122.59
5	f	52	GLY	O-C-N	-5.61	116.16	121.77
54	1	2273	A	N9-C1'-C2'	5.61	120.42	112.00
52	a	26	ALA	CA-C-O	5.60	126.88	121.00
2	c	180	VAL	O-C-N	-5.60	117.27	123.20
54	1	501	A	N9-C1'-C2'	5.59	120.39	112.00
2	c	129	THR	N-CA-C	5.58	118.11	110.24
53	3	1167	A	N9-C1'-C2'	5.57	120.36	112.00
19	t	53	VAL	O-C-N	-5.56	116.78	122.95
10	k	2	ILE	N-CA-C	5.55	116.75	109.58
42	Q	32	VAL	N-CA-C	5.55	116.29	110.62
7	h	48	ALA	N-CA-C	-5.55	107.76	114.75
8	i	38	CYS	CA-C-N	-5.54	111.11	120.58
8	i	38	CYS	C-N-CA	-5.54	111.11	120.58
32	G	46	VAL	CB-CA-C	-5.54	108.44	113.70
54	1	310	A	N9-C1'-C2'	5.53	120.29	112.00
35	J	70	MET	N-CA-C	5.53	118.49	110.42
12	m	40	ARG	O-C-N	-5.52	116.54	123.27
32	G	18	GLN	N-CA-C	5.52	122.55	110.80
52	a	5	THR	CA-C-O	5.50	128.38	120.51
32	G	88	GLN	N-CA-C	5.50	117.94	110.35
17	r	51	VAL	CA-C-N	-5.50	114.04	119.92
17	r	51	VAL	C-N-CA	-5.50	114.04	119.92
40	O	40	ILE	CA-C-N	5.50	126.71	119.84
40	O	40	ILE	C-N-CA	5.50	126.71	119.84
32	G	15	PHE	N-CA-C	5.49	117.97	111.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
51	Z	51	ALA	CA-C-N	-5.47	110.87	120.29
51	Z	51	ALA	C-N-CA	-5.47	110.87	120.29
39	N	12	LYS	N-CA-C	5.47	117.86	111.02
46	U	75	ILE	CA-C-N	-5.47	112.52	120.29
46	U	75	ILE	C-N-CA	-5.47	112.52	120.29
23	x	6	VAL	N-CA-C	5.46	115.71	110.74
18	s	38	TYR	CA-C-N	-5.45	113.70	121.50
18	s	38	TYR	C-N-CA	-5.45	113.70	121.50
33	H	135	ARG	CA-C-N	-5.45	112.98	120.28
33	H	135	ARG	C-N-CA	-5.45	112.98	120.28
35	J	160	VAL	N-CA-C	5.44	116.07	110.36
10	k	106	GLU	CA-C-N	-5.44	113.62	122.26
10	k	106	GLU	C-N-CA	-5.44	113.62	122.26
34	I	44	LYS	N-CA-C	5.43	113.11	108.22
40	O	84	VAL	N-CA-C	5.43	116.81	110.62
48	W	15	GLU	CA-C-N	-5.43	110.76	121.41
48	W	15	GLU	C-N-CA	-5.43	110.76	121.41
2	c	113	SER	N-CA-C	5.43	117.54	110.43
26	A	3	LYS	N-CA-C	5.43	118.19	110.10
14	o	83	LEU	CA-C-N	-5.41	112.09	120.31
14	o	83	LEU	C-N-CA	-5.41	112.09	120.31
43	R	1	ALA	CA-C-N	5.40	131.33	123.12
43	R	1	ALA	C-N-CA	5.40	131.33	123.12
37	L	4	ARG	N-CA-C	5.38	117.48	109.25
1	b	213	ARG	N-CA-C	-5.36	105.60	111.82
9	j	78	THR	N-CA-C	5.36	119.52	111.81
21	v	64	VAL	N-CA-C	5.36	115.49	107.51
6	g	30	LEU	N-CA-C	5.34	116.79	110.97
43	R	102	LYS	N-CA-C	5.33	117.78	111.33
7	h	17	GLU	N-CA-C	5.32	117.08	111.28
8	i	6	ALA	N-CA-C	-5.31	104.43	112.99
27	B	13	GLY	N-CA-C	-5.31	106.06	112.49
54	l	1331	G	N9-C1'-C2'	5.31	119.97	112.00
4	e	29	ARG	CA-C-O	5.30	126.97	120.60
24	y	23	ARG	CA-C-O	5.30	126.54	120.71
10	k	9	ASN	CA-C-N	-5.30	114.34	121.66
10	k	9	ASN	C-N-CA	-5.30	114.34	121.66
4	e	176	PHE	N-CA-C	5.30	117.11	110.91
10	k	87	LEU	CA-C-N	-5.29	113.54	120.95
10	k	87	LEU	C-N-CA	-5.29	113.54	120.95
7	h	47	GLU	CA-C-N	-5.29	112.31	121.52
7	h	47	GLU	C-N-CA	-5.29	112.31	121.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
54	1	1313	U	N1-C1'-C2'	5.29	119.94	112.00
38	M	71	VAL	CA-C-N	-5.29	111.88	121.14
38	M	71	VAL	C-N-CA	-5.29	111.88	121.14
35	J	75	LEU	O-C-N	-5.29	115.15	122.76
32	G	19	THR	N-CA-C	5.28	122.04	110.80
8	i	47	SER	CA-C-N	-5.26	115.46	122.77
8	i	47	SER	C-N-CA	-5.26	115.46	122.77
54	1	2343	U	N1-C1'-C2'	5.26	119.89	112.00
32	G	162	VAL	N-CA-C	5.26	115.53	108.17
36	K	49	TYR	CA-C-O	5.25	126.40	120.46
16	q	61	ILE	N-CA-C	-5.25	105.42	110.72
37	L	117	LEU	CA-C-O	5.25	126.33	120.82
17	r	91	GLN	CA-C-O	5.25	125.98	120.36
54	1	669	G	N9-C1'-C2'	5.25	119.87	112.00
54	1	100	U	N1-C1'-C2'	5.24	119.85	112.00
50	Y	65	LEU	CA-C-N	-5.23	113.95	122.57
50	Y	65	LEU	C-N-CA	-5.23	113.95	122.57
49	X	47	THR	O-C-N	-5.22	116.44	122.87
22	w	20	LYS	CA-C-N	-5.22	115.45	122.86
22	w	20	LYS	C-N-CA	-5.22	115.45	122.86
13	n	20	MET	CA-C-N	-5.22	113.29	120.28
13	n	20	MET	C-N-CA	-5.22	113.29	120.28
52	a	44	VAL	CA-C-N	-5.21	115.71	123.11
52	a	44	VAL	C-N-CA	-5.21	115.71	123.11
13	n	25	ALA	CA-C-N	-5.20	113.64	120.14
13	n	25	ALA	C-N-CA	-5.20	113.64	120.14
3	d	145	ASP	CA-C-N	-5.20	114.47	122.68
3	d	145	ASP	C-N-CA	-5.20	114.47	122.68
52	a	53	ARG	N-CA-C	-5.20	105.69	111.36
12	m	4	PRO	O-C-N	-5.18	116.76	123.03
36	K	17	GLN	N-CA-C	5.18	118.91	112.59
54	1	748	G	N9-C1'-C2'	5.18	119.78	112.00
13	n	18	GLN	N-CA-C	-5.17	106.24	112.54
42	Q	115	LYS	N-CA-C	-5.17	103.22	110.50
39	N	14	SER	CA-C-N	-5.16	114.91	122.19
39	N	14	SER	C-N-CA	-5.16	114.91	122.19
23	x	22	ASN	CA-C-O	5.16	126.63	120.70
51	Z	8	ASN	N-CA-C	5.16	121.78	110.80
33	H	85	LYS	CA-C-O	5.15	126.00	120.70
53	3	1347	G	N9-C1'-C2'	5.14	119.71	112.00
38	M	45	ILE	CA-C-N	-5.14	115.76	123.00
38	M	45	ILE	C-N-CA	-5.14	115.76	123.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
54	1	2501	C	N1-C1'-C2'	5.14	119.71	112.00
26	A	2	LYS	N-CA-C	-5.13	102.31	109.96
6	g	44	ILE	N-CA-C	-5.13	105.54	110.72
43	R	7	ASN	CA-C-O	5.13	126.08	120.95
52	a	201	PRO	N-CA-C	-5.13	103.14	111.19
37	L	3	ARG	CA-C-O	5.12	124.31	118.47
15	p	84	SER	CA-C-N	-5.12	113.80	120.91
15	p	84	SER	C-N-CA	-5.12	113.80	120.91
11	l	69	ARG	N-CA-C	5.12	117.52	111.33
41	P	125	LYS	N-CA-C	5.12	116.53	110.19
53	3	1151	A	N9-C1'-C2'	5.11	119.66	112.00
18	s	61	ASN	N-CA-C	-5.09	104.70	112.04
16	q	7	VAL	N-CA-C	5.09	115.31	110.42
4	e	13	LYS	N-CA-C	5.08	116.82	111.28
43	R	69	ARG	CA-C-N	-5.08	113.84	120.44
43	R	69	ARG	C-N-CA	-5.08	113.84	120.44
52	a	11	ILE	N-CA-C	-5.08	105.44	110.62
54	1	887	U	N1-C1'-C2'	5.08	119.61	112.00
7	h	15	VAL	O-C-N	5.08	126.88	121.91
54	1	729	G	N9-C1'-C2'	5.07	119.60	112.00
15	p	83	ILE	CA-C-N	-5.06	115.97	123.05
15	p	83	ILE	C-N-CA	-5.06	115.97	123.05
2	c	111	GLY	CA-C-O	5.05	126.50	121.60
52	a	68	GLY	N-CA-C	5.05	121.91	112.77
32	G	17	HIS	N-CA-C	5.04	115.19	108.23
35	J	109	ALA	CA-C-O	5.04	127.72	120.51
4	e	62	GLN	N-CA-C	5.04	117.20	110.35
37	L	124	SER	N-CA-C	-5.04	105.68	111.07
40	O	72	ARG	CA-C-N	-5.04	114.76	122.87
40	O	72	ARG	C-N-CA	-5.04	114.76	122.87
58	7	41	A	C2'-C3'-O3'	5.03	121.25	113.70
38	M	46	GLU	CA-C-N	-5.03	115.13	122.78
38	M	46	GLU	C-N-CA	-5.03	115.13	122.78
52	a	4	LEU	N-CA-C	5.03	117.91	109.96
4	e	12	VAL	N-CA-C	-5.03	105.59	110.42
11	l	67	THR	CA-C-O	5.03	126.33	120.20
5	f	52	GLY	CA-C-O	5.02	128.70	121.52
42	Q	117	GLY	O-C-N	-5.02	118.45	122.51
26	A	48	GLN	N-CA-C	-5.02	105.89	111.36
24	y	36	GLN	CA-C-O	5.01	124.70	119.03
54	1	2529	G	N9-C1'-C2'	5.01	119.52	112.00
53	3	572	A	N9-C1'-C2'	5.00	119.51	112.00

There are no chirality outliers.

All (64) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
54	1	1028	A	Sidechain
54	1	1064	C	Sidechain
54	1	1154	G	Sidechain
54	1	1178	C	Sidechain
54	1	1204	A	Sidechain
54	1	1241	A	Sidechain
54	1	1271	G	Sidechain
54	1	1328	A	Sidechain
54	1	1431	A	Sidechain
54	1	1432	G	Sidechain
54	1	1433	A	Sidechain
54	1	1645	G	Sidechain
54	1	1647	U	Sidechain
54	1	1666	G	Sidechain
54	1	1828	G	Sidechain
54	1	1834	U	Sidechain
54	1	196	A	Sidechain
54	1	2061	G	Sidechain
54	1	2266	A	Sidechain
54	1	2273	A	Sidechain
54	1	2447	G	Sidechain
54	1	2529	G	Sidechain
54	1	2532	G	Sidechain
54	1	2684	U	Sidechain
54	1	27	G	Sidechain
54	1	2728	U	Sidechain
54	1	2848	G	Sidechain
54	1	2868	A	Sidechain
54	1	310	A	Sidechain
54	1	446	G	Sidechain
54	1	450	G	Sidechain
54	1	476	G	Sidechain
54	1	477	A	Sidechain
54	1	500	G	Sidechain
54	1	501	A	Sidechain
54	1	506	G	Sidechain
54	1	51	G	Sidechain
54	1	512	G	Sidechain
54	1	562	U	Sidechain
54	1	682	G	Sidechain

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Mol	Chain	Res	Type	Group
54	1	726	G	Sidechain
54	1	775	G	Sidechain
54	1	800	A	Sidechain
54	1	827	U	Sidechain
54	1	975	A	Sidechain
55	2	1	U	Sidechain
55	2	119	A	Sidechain
55	2	24	G	Sidechain
53	3	1064	G	Sidechain
53	3	1191	A	Sidechain
53	3	1301	U	Sidechain
53	3	1316	G	Sidechain
53	3	159	G	Sidechain
53	3	324	G	Sidechain
53	3	405	U	Sidechain
53	3	413	G	Sidechain
53	3	428	G	Sidechain
53	3	532	A	Sidechain
53	3	872	A	Sidechain
53	3	884	U	Sidechain
53	3	917	G	Sidechain
53	3	938	A	Sidechain
35	J	86	GLY	Mainchain
35	J	92	ARG	Mainchain

5.2 Too-close contacts [i](#)

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	b	2083	0	2157	109	0
2	c	1565	0	1616	87	0
3	d	1552	0	1619	60	0
4	e	1411	0	1447	102	0
5	f	1323	0	1374	87	0
6	g	936	0	961	58	0
7	h	633	0	666	57	0
8	i	551	0	577	45	0
9	j	1129	0	1162	44	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
10	k	939	0	1012	62	0
11	l	1045	0	1117	56	0
12	m	1074	0	1157	62	0
13	n	961	0	1000	59	0
14	o	892	0	923	38	0
15	p	917	0	965	42	0
16	q	947	0	1022	30	0
17	r	816	0	839	40	0
18	s	857	0	922	44	0
19	t	739	0	807	42	0
20	u	780	0	834	40	0
21	v	753	0	780	31	0
22	w	575	0	592	28	0
23	x	625	0	655	25	0
24	y	509	0	543	30	0
25	z	449	0	491	31	0
26	A	523	0	524	30	0
27	B	444	0	461	15	0
28	C	410	0	440	14	0
29	D	377	0	418	21	0
30	E	504	0	574	21	0
31	F	302	0	343	20	0
32	G	1705	0	1732	110	0
33	H	1625	0	1699	104	0
34	I	1643	0	1710	99	0
35	J	1157	0	1199	90	0
36	K	818	0	808	67	0
37	L	1182	0	1240	80	0
38	M	979	0	1034	77	0
39	N	1022	0	1070	70	0
40	O	787	0	828	64	0
41	P	870	0	878	53	0
42	Q	955	0	1019	81	0
43	R	884	0	944	78	0
44	S	805	0	847	74	0
45	T	714	0	737	38	0
46	U	649	0	666	52	0
47	V	649	0	691	49	0
48	W	536	0	552	26	0
49	X	638	0	665	55	0
50	Y	665	0	714	37	0
51	Z	545	0	579	65	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
52	a	1027	0	1092	100	0
53	3	33012	0	16618	688	0
54	1	62317	0	31346	1208	0
55	2	2568	0	1303	63	0
56	5	1640	0	836	22	0
56	6	1640	0	837	47	0
57	4	388	0	198	14	0
58	7	1647	0	832	27	0
59	5	10	0	10	1	0
All	All	149698	0	100682	4562	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 18.

All (4562) 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)
54:1:45:G:H5''	54:1:46:G:H5'	1.25	1.17
55:2:119:A:C2	55:2:120:A:H1'	1.88	1.09
10:k:104:THR:HG22	10:k:106:GLU:H	1.18	1.08
52:a:6:LYS:O	52:a:8:MET:N	1.86	1.08
45:T:88:ARG:H	45:T:88:ARG:HD3	1.20	1.07
41:P:114:PRO:HA	48:W:72:ARG:HH12	1.12	1.06
54:1:1063:G:H22	54:1:1075:C:N4	1.54	1.06
54:1:1906:G:H2'	54:1:1907:G:H5''	1.35	1.06
58:7:13:C:H2'	58:7:14:A:H5''	1.38	1.05
53:3:405:U:H3'	53:3:406:G:H5'	1.38	1.04
53:3:835:U:H2'	53:3:836:G:H5''	1.40	1.04
4:e:45:ASP:HB3	4:e:48:LEU:HB3	1.37	1.03
41:P:110:THR:HG22	51:Z:4:LYS:HA	1.43	1.00
56:5:17:C:H5''	56:5:17(A):U:H2'	1.44	0.99
40:O:35:GLN:HG2	40:O:78:GLU:HG2	1.45	0.99
56:6:13:C:H2'	56:6:14:A:H5''	1.42	0.99
43:R:89:ARG:HH21	43:R:94:LEU:HD22	1.28	0.99
29:D:1:MET:HE3	29:D:3:ARG:HD3	1.46	0.98
53:3:1235:U:H2'	53:3:1236:A:H5''	1.45	0.98
33:H:133:MET:HE2	33:H:167:TYR:HB2	1.46	0.96
54:1:1702:G:H2'	54:1:1703:G:H5''	1.45	0.95
54:1:134:G:H2'	54:1:135:U:H5''	1.46	0.95
32:G:13:VAL:H	32:G:207:ARG:HH22	1.14	0.94
36:K:38:ARG:HB2	36:K:63:ASN:HB2	1.49	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:1936:A:H2	54:1:1943:U:H3	1.06	0.94
9:j:31:GLU:HG3	9:j:142:ILE:HG12	1.49	0.94
54:1:1063:G:H22	54:1:1075:C:H41	1.14	0.94
2:c:13:ARG:HH11	15:p:55:HIS:HA	1.31	0.93
21:v:72:VAL:HG12	21:v:93:ARG:HA	1.49	0.93
33:H:70:ALA:HA	33:H:105:VAL:HG12	1.50	0.93
32:G:76:SER:HB2	32:G:92:ASN:HB2	1.51	0.93
56:6:35:A:H62	57:4:14:A:H62	1.06	0.92
37:L:113:LYS:HB2	37:L:117:LEU:HD13	1.50	0.91
53:3:1378:C:H3'	53:3:1379:G:H5''	1.51	0.91
8:i:57:VAL:HB	8:i:69:VAL:HB	1.53	0.90
46:U:67:ILE:H	46:U:67:ILE:HD12	1.35	0.90
54:1:1171:G:H2'	54:1:1172:C:H4'	1.52	0.90
21:v:75:GLN:HB2	21:v:92:VAL:HG23	1.52	0.90
7:h:3:LEU:HA	54:1:1044:C:OP2	1.72	0.90
54:1:2800:A:H3'	54:1:2801:G:H5'	1.52	0.89
32:G:33:ALA:HB2	32:G:39:ILE:HG13	1.51	0.89
48:W:56:ARG:HB3	48:W:60:ARG:HH12	1.36	0.89
1:b:257:ARG:HH12	1:b:266:ILE:HD12	1.34	0.89
9:j:1:MET:HG3	9:j:2:LYS:H	1.38	0.89
56:6:47:U:H5''	56:6:48:C:H5'	1.55	0.89
10:k:103:VAL:HG23	10:k:104:THR:H	1.34	0.88
36:K:9:MET:HG3	36:K:85:ILE:HG23	1.55	0.88
6:g:79:THR:HA	6:g:145:ASN:HB3	1.55	0.88
47:V:18:LYS:HG2	47:V:49:ASN:HA	1.53	0.88
51:Z:32:ARG:HD3	51:Z:33:ARG:HG3	1.52	0.88
42:Q:81:ILE:HD11	42:Q:94:TYR:HB3	1.57	0.87
32:G:18:GLN:HG3	32:G:187:ASP:OD1	1.75	0.87
58:7:26:A:H61	58:7:44:G:H1	0.89	0.87
1:b:104:LEU:HD23	1:b:104:LEU:H	1.38	0.87
5:f:3:VAL:HG23	54:1:2751:G:H4'	1.55	0.87
33:H:188:ALA:HB3	33:H:195:ILE:HB	1.56	0.87
37:L:56:SER:HB3	37:L:59:GLU:HG2	1.57	0.87
7:h:3:LEU:H	54:1:1043:C:H5'	1.40	0.86
43:R:15:VAL:HG23	43:R:16:ILE:HD12	1.56	0.86
53:3:373:A:H61	53:3:391:G:H1'	1.39	0.86
3:d:3:LEU:HD12	3:d:12:LEU:HB2	1.57	0.86
42:Q:36:VAL:HG23	42:Q:75:GLU:H	1.36	0.86
53:3:328:C:H4'	53:3:329:A:H5'	1.58	0.86
53:3:1513:A:H2'	53:3:1514:G:H8	1.40	0.86
10:k:108:ARG:HG3	10:k:113:MET:HE1	1.57	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:h:33:VAL:HA	54:1:1055:G:H4'	1.58	0.86
58:7:26:A:N6	58:7:44:G:H1	1.72	0.85
54:1:2297:A:N1	54:1:2321:U:H5	1.74	0.85
30:E:31:ILE:HD11	30:E:34:LYS:HE3	1.57	0.85
53:3:212:G:H2'	53:3:213:G:H8	1.41	0.85
6:g:97:ARG:HH21	54:1:2220:U:H4'	1.40	0.85
32:G:13:VAL:N	32:G:207:ARG:HH22	1.75	0.85
6:g:1:MET:HE3	6:g:26:ALA:HB3	1.59	0.85
4:e:116:LEU:HD12	4:e:175:PRO:HD2	1.58	0.84
24:y:9:LYS:HD3	24:y:10:SER:N	1.92	0.84
1:b:145:MET:HE1	54:1:1800:C:H2'	1.60	0.84
15:p:88:ARG:HD2	15:p:112:ARG:HH21	1.42	0.84
56:5:21:A:H61	56:5:46:G:H2'	1.42	0.84
39:N:54:VAL:HG23	39:N:55:ASP:H	1.39	0.84
32:G:16:GLY:HA3	32:G:40:ILE:H	1.43	0.84
12:m:31:PHE:HB2	12:m:105:MET:HB2	1.58	0.84
53:3:664:G:H22	53:3:741:G:H1	1.26	0.84
3:d:149:ILE:HD11	3:d:172:ALA:HA	1.60	0.84
43:R:47:LEU:HD21	43:R:51:GLN:HB2	1.56	0.84
28:C:4:ILE:H	28:C:4:ILE:HD12	1.43	0.83
14:o:40:ILE:HG22	14:o:47:VAL:HG12	1.58	0.83
41:P:114:PRO:HA	48:W:72:ARG:NH1	1.93	0.83
49:X:5:LYS:HZ2	49:X:6:LYS:HG3	1.42	0.83
35:J:15:ILE:HD13	35:J:35:LEU:HG	1.60	0.82
34:I:34:GLU:HB3	34:I:35:GLN:NE2	1.94	0.82
54:1:2273:A:H2'	54:1:2274:A:C8	2.14	0.82
52:a:38:PHE:HB3	54:1:2127:G:H4'	1.62	0.82
54:1:1906:G:C2'	54:1:1907:G:H5''	2.09	0.82
1:b:106:PRO:HD2	1:b:109:LEU:HD22	1.62	0.81
10:k:104:THR:HG22	10:k:106:GLU:N	1.95	0.81
7:h:26:VAL:HA	7:h:82:ILE:HG23	1.60	0.81
13:n:22:ARG:HG3	13:n:70:THR:HA	1.61	0.81
13:n:63:ARG:HH22	54:1:1454:C:H5'	1.45	0.81
35:J:107:GLY:HA3	53:3:9:G:H5'	1.62	0.81
55:2:65:U:H3'	55:2:108:A:H61	1.45	0.81
33:H:55:VAL:HB	33:H:66:THR:HB	1.62	0.81
54:1:2672:U:H2'	54:1:2673:G:H5''	1.61	0.81
38:M:10:LEU:HD22	38:M:74:ILE:HD11	1.63	0.81
54:1:2452:C:H42	54:1:2504:U:H3	1.28	0.81
52:a:59:VAL:HB	52:a:165:ASN:HD22	1.45	0.81
26:A:11:GLU:HA	26:A:25:ARG:HA	1.63	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:G:71:THR:HG22	32:G:72:LYS:H	1.44	0.81
1:b:104:LEU:H	1:b:104:LEU:CD2	1.94	0.81
42:Q:32:VAL:HG12	42:Q:55:ARG:H	1.46	0.81
51:Z:23:GLU:HG2	51:Z:24:LYS:H	1.44	0.81
28:C:40:PRO:HG3	54:1:2348:U:H4'	1.62	0.81
50:Y:56:ILE:HA	50:Y:59:ARG:HH12	1.45	0.80
54:1:134:G:C2'	54:1:135:U:H5''	2.11	0.80
54:1:1821:A:H2'	54:1:1822:C:C6	2.15	0.80
53:3:350:G:H2'	53:3:351:G:C8	2.16	0.80
54:1:717:C:H2'	54:1:718:A:H5'	1.61	0.80
17:r:41:ILE:HD11	17:r:101:ILE:HG22	1.64	0.80
29:D:12:ARG:HH11	29:D:44:VAL:HG21	1.45	0.80
39:N:98:ARG:HG3	39:N:103:VAL:HG21	1.63	0.80
49:X:27:LYS:HG2	49:X:28:LYS:H	1.46	0.80
42:Q:43:LYS:HD3	42:Q:44:PRO:N	1.97	0.80
54:1:1173:U:H1'	54:1:1177:G:H22	1.44	0.80
53:3:1502:A:H8	53:3:1505:G:H22	1.28	0.79
56:6:3:C:H2'	56:6:4:G:H5''	1.64	0.79
41:P:44:ALA:HB3	41:P:69:CYS:HB2	1.65	0.79
5:f:96:ALA:HB3	5:f:103:ASN:HB3	1.64	0.79
51:Z:53:LYS:HE2	51:Z:53:LYS:HA	1.64	0.79
18:s:57:ASN:HB2	18:s:61:ASN:HD22	1.46	0.79
43:R:18:LEU:HD12	43:R:33:LEU:HD11	1.64	0.79
36:K:29:ILE:HD13	36:K:64:VAL:HG21	1.65	0.79
39:N:20:ILE:HD11	39:N:60:LEU:HD22	1.63	0.79
50:Y:66:ILE:HD12	50:Y:70:LYS:HD3	1.63	0.79
53:3:1513:A:H2'	53:3:1514:G:C8	2.17	0.79
34:I:190:LEU:HD23	34:I:190:LEU:H	1.47	0.79
54:1:1659:G:H2'	54:1:1660:G:H5''	1.62	0.79
54:1:1141:U:H4'	54:1:1142:A:O4'	1.83	0.79
54:1:2327:A:H2'	54:1:2328:A:C8	2.18	0.79
18:s:82:MET:HB2	18:s:98:LYS:HB2	1.64	0.79
34:I:8:LEU:HD22	53:3:429:U:H3'	1.65	0.78
52:a:15:VAL:HG21	52:a:220:ALA:HB3	1.64	0.78
8:i:12:VAL:HG23	8:i:13:ALA:H	1.49	0.78
54:1:1503:A:H2'	54:1:1504:A:H5''	1.63	0.78
1:b:131:MET:HE2	1:b:187:CYS:HB2	1.66	0.78
15:p:113:LEU:HD21	53:3:1441:A:C2	2.18	0.78
22:w:36:GLN:NE2	22:w:39:THR:HA	1.97	0.78
53:3:112:G:H21	53:3:354:G:H5'	1.47	0.78
41:P:34:THR:HG22	41:P:40:ALA:HA	1.65	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:6:72:A:H2'	56:6:73:A:H4'	1.64	0.78
43:R:15:VAL:HG13	43:R:33:LEU:HD22	1.65	0.78
54:1:1702:G:C2'	54:1:1703:G:H5''	2.14	0.78
46:U:26:ASN:ND2	46:U:31:ARG:HB3	1.99	0.78
54:1:1060:U:H5'	54:1:1062:G:H5'	1.66	0.78
2:c:2:ILE:HD13	2:c:48:ILE:HD11	1.66	0.77
2:c:108:ASP:OD2	2:c:206:ALA:HA	1.83	0.77
58:7:13:C:C2'	58:7:14:A:H5''	2.13	0.77
42:Q:113:ARG:HB2	42:Q:118:VAL:HB	1.67	0.77
43:R:89:ARG:NH2	43:R:94:LEU:HD22	1.97	0.77
7:h:1:MET:HG2	7:h:2:ALA:H	1.49	0.77
54:1:1175:A:H3'	54:1:1176:U:H5'	1.65	0.77
34:I:123:MET:HE2	34:I:145:ARG:HA	1.65	0.77
54:1:2328:A:H2'	54:1:2329:U:C6	2.20	0.77
3:d:122:GLU:HG3	3:d:123:LYS:H	1.48	0.77
25:z:30:ARG:HB3	25:z:30:ARG:HH11	1.49	0.77
32:G:108:GLN:HA	32:G:111:LYS:HD3	1.65	0.77
11:l:82:LEU:HD21	11:l:120:VAL:HG21	1.67	0.77
34:I:49:ASP:O	34:I:52:VAL:HG22	1.84	0.77
53:3:1540:U:O4	57:4:5:A:H2	1.66	0.77
55:2:3:C:H2'	55:2:4:C:H5''	1.65	0.77
32:G:13:VAL:H	32:G:207:ARG:NH2	1.82	0.76
53:3:835:U:C2'	53:3:836:G:H5''	2.15	0.76
54:1:1174:U:H4'	54:1:1176:U:O2	1.85	0.76
45:T:81:ILE:HG22	45:T:86:LEU:HD11	1.68	0.76
53:3:1235:U:C2'	53:3:1236:A:H5''	2.14	0.76
9:j:37:ARG:HA	9:j:118:MET:SD	2.26	0.76
38:M:101:ALA:HB3	38:M:112:ASP:HB3	1.68	0.76
39:N:35:GLU:HA	39:N:39:GLY:HA3	1.67	0.76
52:a:5:THR:O	52:a:6:LYS:O	2.04	0.76
12:m:64:TRP:HB2	12:m:104:GLU:HB2	1.68	0.76
52:a:210:LYS:HG2	52:a:211:LYS:H	1.51	0.76
10:k:102:PRO:HB3	10:k:121:GLU:HB3	1.67	0.76
32:G:69:VAL:HG12	32:G:91:VAL:HB	1.65	0.76
53:3:35:G:H2'	53:3:36:C:H6	1.51	0.76
55:2:119:A:N3	55:2:120:A:H1'	2.00	0.76
42:Q:79:ILE:HD12	42:Q:96:THR:HG22	1.68	0.75
54:1:1697:G:H3'	54:1:1698:A:H5''	1.66	0.75
54:1:1779:U:H5	54:1:1784:A:N7	1.84	0.75
3:d:31:VAL:HG21	3:d:104:ALA:HB2	1.69	0.75
53:3:57:G:H2'	53:3:58:C:C6	2.21	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:i:8:VAL:HB	8:i:10:LEU:HG	1.67	0.75
20:u:10:VAL:HG12	20:u:71:ILE:HA	1.67	0.75
2:c:35:THR:HG22	2:c:73:VAL:HG21	1.66	0.75
20:u:25:LYS:HB2	20:u:36:GLU:OE2	1.87	0.75
53:3:57:G:H2'	53:3:58:C:H6	1.51	0.75
53:3:1323:G:H2'	53:3:1324:A:C8	2.22	0.75
54:1:1936:A:H2	54:1:1943:U:N3	1.84	0.75
56:6:69:C:H2'	56:6:70:G:H5''	1.67	0.75
2:c:123:LYS:HG2	2:c:165:MET:HE1	1.67	0.75
8:i:11:GLN:HB3	8:i:55:PRO:HA	1.68	0.75
15:p:3:ILE:H	15:p:3:ILE:HD12	1.51	0.75
47:V:24:ILE:HG23	47:V:41:THR:HB	1.69	0.75
54:1:528:A:N1	54:1:2042:A:H2'	2.02	0.74
56:6:34:C:H6	57:4:13:A:H62	1.35	0.74
4:e:115:GLY:HA3	4:e:177:ARG:HB2	1.69	0.74
29:D:12:ARG:HE	29:D:44:VAL:HG21	1.52	0.74
35:J:15:ILE:HD11	35:J:37:VAL:HG23	1.69	0.74
51:Z:41:THR:HG23	51:Z:44:ARG:NH2	2.03	0.74
9:j:17:VAL:HG23	9:j:137:PRO:HB2	1.69	0.74
16:q:23:TYR:HB2	16:q:28:SER:HB3	1.68	0.74
44:S:12:ARG:HD2	44:S:58:ARG:HB3	1.69	0.74
49:X:28:LYS:HD2	49:X:29:PRO:HD2	1.69	0.74
10:k:92:GLU:CD	10:k:92:GLU:H	1.96	0.74
38:M:28:SER:HB2	38:M:58:LEU:HB2	1.66	0.74
39:N:115:VAL:HG21	40:O:62:ARG:HB2	1.68	0.74
54:1:2118:U:H5	54:1:2149:U:H1'	1.52	0.74
1:b:257:ARG:NH1	1:b:266:ILE:HD12	2.02	0.74
21:v:21:ARG:HA	21:v:25:LYS:O	1.87	0.74
10:k:40:LYS:NZ	10:k:57:VAL:HG12	2.03	0.74
13:n:14:SER:HA	13:n:17:ARG:NH2	2.03	0.74
33:H:12:GLY:HA3	44:S:96:LYS:NZ	2.03	0.74
56:6:71:C:H2'	56:6:72:A:C8	2.22	0.74
58:7:2:G:H1'	58:7:3:G:OP1	1.87	0.74
36:K:6:ILE:HD12	36:K:62:MET:HG2	1.70	0.74
53:3:946:A:H2'	53:3:947:G:H8	1.53	0.73
6:g:97:ARG:NH2	54:1:2220:U:H4'	2.02	0.73
33:H:133:MET:CE	33:H:167:TYR:HB2	2.18	0.73
53:3:1342:C:H2'	53:3:1343:G:C8	2.23	0.73
54:1:2241:A:H2'	54:1:2242:G:C8	2.22	0.73
53:3:1342:C:H2'	53:3:1343:G:H8	1.52	0.73
54:1:2126:A:H2'	54:1:2162:G:N2	2.03	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:I:110:ARG:NH1	34:I:110:ARG:HB2	2.03	0.73
20:u:39:ASN:HB3	20:u:62:ALA:HB3	1.69	0.73
36:K:90:MET:HG3	36:K:91:ARG:H	1.52	0.73
12:m:50:ARG:HA	12:m:53:MET:HE3	1.70	0.73
30:E:32:LEU:HA	30:E:35:LYS:HD2	1.69	0.73
32:G:46:VAL:HA	32:G:49:PHE:CZ	2.23	0.73
41:P:85:VAL:HG21	51:Z:16:ARG:HH12	1.52	0.73
42:Q:36:VAL:CG2	42:Q:75:GLU:H	2.01	0.73
51:Z:39:LYS:HA	51:Z:39:LYS:HE2	1.70	0.73
11:l:9:ALA:HB3	11:l:12:SER:HB2	1.71	0.73
23:x:2:ARG:HH12	54:1:1364:G:H5''	1.54	0.73
53:3:501:C:H2'	53:3:502:A:C8	2.23	0.73
54:1:593:U:H2'	54:1:594:U:C6	2.24	0.73
46:U:26:ASN:HD22	46:U:31:ARG:HB3	1.53	0.73
53:3:35:G:H2'	53:3:36:C:C6	2.24	0.73
53:3:1005:A:H2'	53:3:1006:G:O4'	1.89	0.73
54:1:799:G:H5''	54:1:800:A:H2'	1.69	0.73
18:s:57:ASN:HB2	18:s:61:ASN:ND2	2.04	0.72
53:3:813:U:H2'	53:3:814:A:H5''	1.70	0.72
54:1:1965:C:H5''	54:1:1966:A:H2'	1.71	0.72
26:A:46:GLY:HA2	26:A:49:ARG:HH21	1.54	0.72
14:o:31:THR:HG22	14:o:33:ARG:H	1.53	0.72
32:G:18:GLN:O	32:G:19:THR:HB	1.88	0.72
15:p:38:ARG:HG2	15:p:39:LEU:H	1.52	0.72
38:M:73:SER:HB3	38:M:129:ALA:HB3	1.70	0.72
47:V:28:VAL:HG22	47:V:29:LYS:H	1.52	0.72
17:r:38:VAL:O	17:r:53:PHE:HA	1.89	0.72
36:K:48:ALA:HB1	48:W:68:PRO:HG3	1.72	0.72
37:L:26:VAL:HG12	37:L:42:VAL:HG21	1.71	0.72
53:3:501:C:H2'	53:3:502:A:H8	1.53	0.72
12:m:42:THR:HA	12:m:93:VAL:HG12	1.71	0.72
52:a:14:LYS:HD3	52:a:32:GLU:HB3	1.71	0.72
20:u:68:ASN:HD22	20:u:68:ASN:N	1.88	0.72
33:H:61:LYS:HG2	33:H:96:VAL:HG11	1.72	0.72
44:S:81:ILE:HG21	53:3:1202:U:C2	2.24	0.72
5:f:176:LYS:HE2	54:1:2660:A:N7	2.05	0.72
32:G:96:LEU:HD11	32:G:146:SER:HB2	1.72	0.72
54:1:112:U:H2'	54:1:113:U:H5'	1.72	0.72
54:1:548:G:H2'	54:1:549:G:C4'	2.18	0.72
54:1:849:A:H2'	54:1:850:U:C6	2.24	0.72
10:k:12:ASP:OD2	10:k:14:SER:HB3	1.90	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:2493:U:H3'	54:1:2494:G:H5''	1.72	0.72
37:L:110:ARG:HD3	37:L:122:GLU:OE2	1.90	0.71
40:O:41:PRO:HG2	53:3:1150:A:C2	2.25	0.71
41:P:28:ASN:HD21	41:P:30:ILE:HG12	1.55	0.71
45:T:88:ARG:HD3	45:T:88:ARG:N	2.02	0.71
48:W:40:PRO:HB3	53:3:720:C:H5''	1.71	0.71
54:1:1186:G:H2'	54:1:1187:G:O4'	1.90	0.71
37:L:56:SER:HB3	37:L:59:GLU:CG	2.20	0.71
54:1:140:C:H2'	54:1:141:G:H4'	1.71	0.71
53:3:1218:C:H2'	53:3:1219:A:C8	2.26	0.71
54:1:784:G:H5'	54:1:785:G:OP1	1.88	0.71
54:1:1827:U:H2'	54:1:1828:G:H5'	1.70	0.71
12:m:12:MET:HA	54:1:910:A:H62	1.55	0.71
14:o:28:VAL:HG23	14:o:106:LEU:HD13	1.73	0.71
50:Y:29:THR:HA	50:Y:32:LYS:HE2	1.71	0.71
56:6:16:C:O2'	56:6:17:C:H5'	1.90	0.71
2:c:13:ARG:NH1	15:p:55:HIS:HA	2.05	0.71
4:e:98:PHE:HB2	4:e:101:ARG:HH11	1.56	0.71
54:1:1912:A:H62	54:1:1917:U:H3	1.39	0.71
16:q:13:HIS:O	16:q:16:ILE:HG22	1.91	0.71
36:K:61:LEU:HD23	36:K:62:MET:N	2.05	0.71
54:1:828:U:H2'	54:1:829:A:C8	2.25	0.71
29:D:12:ARG:NH1	29:D:44:VAL:HG21	2.06	0.71
42:Q:113:ARG:NE	42:Q:120:ARG:HA	2.06	0.71
54:1:703:U:H2'	54:1:704:G:O4'	1.91	0.71
40:O:15:HIS:HB3	40:O:70:HIS:CE1	2.26	0.70
49:X:10:ILE:HD13	49:X:40:PHE:CE2	2.26	0.70
34:I:119:HIS:ND1	53:3:438:U:H4'	2.06	0.70
53:3:422:C:H4'	53:3:423:G:C2	2.26	0.70
54:1:548:G:H2'	54:1:549:G:H4'	1.72	0.70
54:1:2514:U:H2'	54:1:2515:C:C6	2.25	0.70
4:e:116:LEU:H	4:e:177:ARG:H	1.37	0.70
53:3:1306:A:H61	53:3:1331:G:H1'	1.57	0.70
54:1:2813:A:H2'	54:1:2814:A:H8	1.56	0.70
30:E:61:LEU:HD12	30:E:61:LEU:O	1.91	0.70
9:j:8:PRO:HB2	9:j:9:GLU:OE2	1.91	0.70
40:O:66:GLU:HB2	44:S:98:ALA:HB2	1.73	0.70
53:3:1090:U:H2'	53:3:1091:U:C6	2.27	0.70
53:3:1306:A:N6	53:3:1331:G:H1'	2.07	0.70
39:N:5:TYR:HB2	39:N:20:ILE:HG23	1.73	0.70
39:N:23:GLY:H	39:N:60:LEU:HA	1.56	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:672:C:O2'	54:1:673:C:H5'	1.92	0.70
29:D:1:MET:HE3	29:D:3:ARG:CD	2.20	0.70
35:J:107:GLY:H	35:J:110:MET:HE3	1.55	0.70
36:K:19:PRO:HA	36:K:22:ILE:HD12	1.74	0.70
54:1:1935:G:H1'	54:1:1964:G:N2	2.06	0.70
38:M:80:PRO:HA	38:M:83:ARG:NH1	2.07	0.70
53:3:252:U:O2	53:3:252:U:H2'	1.91	0.70
54:1:49:A:H5'	54:1:51:G:O4'	1.90	0.70
54:1:1528:A:H2'	54:1:1529:G:O4'	1.92	0.70
23:x:2:ARG:NH1	54:1:1364:G:H5''	2.07	0.70
51:Z:52:VAL:HG13	51:Z:53:LYS:HE3	1.74	0.70
53:3:946:A:H2'	53:3:947:G:C8	2.27	0.70
7:h:3:LEU:N	54:1:1043:C:H5'	2.06	0.69
29:D:34:ARG:HD3	54:1:467:G:OP2	1.91	0.69
37:L:70:PRO:HG3	37:L:98:LEU:HD23	1.74	0.69
10:k:15:GLY:O	10:k:47:ILE:HG22	1.92	0.69
12:m:72:PRO:HB2	12:m:89:VAL:HG12	1.74	0.69
54:1:947:A:H2'	54:1:948:C:C6	2.27	0.69
12:m:35:ALA:HA	12:m:128:THR:HG22	1.75	0.69
53:3:273:U:H2'	53:3:274:A:H5'	1.75	0.69
54:1:286:U:H2'	54:1:287:G:C8	2.27	0.69
55:2:65:U:H3'	55:2:108:A:N6	2.07	0.69
1:b:70:LYS:HD2	1:b:73:ILE:HD12	1.71	0.69
37:L:58:LEU:HD12	37:L:59:GLU:N	2.07	0.69
9:j:135:GLN:NE2	54:1:7:G:H1'	2.08	0.69
32:G:15:PHE:HA	32:G:42:LEU:HD23	1.75	0.69
44:S:18:LYS:O	44:S:22:LYS:HE2	1.93	0.69
54:1:2142:A:H2'	54:1:2143:C:H5'	1.73	0.69
54:1:2834:G:H2'	54:1:2879:A:N6	2.08	0.69
4:e:97:GLU:OE1	26:A:25:ARG:HB3	1.92	0.69
8:i:12:VAL:HG21	8:i:19:PRO:HG3	1.72	0.69
13:n:38:LEU:HD21	13:n:42:LYS:HE2	1.73	0.69
13:n:63:ARG:NH2	54:1:1454:C:H5'	2.07	0.69
18:s:110:ARG:NH2	18:s:110:ARG:HB2	2.07	0.69
19:t:69:ARG:HB3	19:t:69:ARG:NH1	2.07	0.69
47:V:69:THR:HG23	47:V:70:LYS:HG3	1.74	0.69
53:3:411:A:H1'	53:3:413:G:H1'	1.74	0.69
54:1:1807:G:H2'	54:1:1808:A:H5'	1.75	0.69
54:1:2469:A:H2'	54:1:2470:G:O4'	1.92	0.69
6:g:27:ARG:HH12	23:x:55:MET:HG2	1.56	0.69
34:I:100:VAL:HG21	34:I:136:VAL:HG21	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1259:C:H2'	53:3:1260:G:H5''	1.73	0.69
54:1:2130:U:H2'	54:1:2131:U:H5''	1.75	0.69
9:j:24:THR:HB	9:j:27:ARG:HB2	1.75	0.69
2:c:18:ASP:OD2	2:c:20:VAL:HG23	1.93	0.68
7:h:2:ALA:HB3	7:h:6:GLN:HG3	1.74	0.68
43:R:28:ARG:NH2	43:R:62:PHE:HB2	2.08	0.68
49:X:49:ALA:HB1	49:X:56:HIS:HB3	1.75	0.68
51:Z:36:PHE:C	51:Z:38:GLU:H	2.00	0.68
8:i:55:PRO:HG2	8:i:71:LYS:HB2	1.75	0.68
9:j:31:GLU:HG3	9:j:142:ILE:CG1	2.21	0.68
36:K:9:MET:HB2	36:K:58:HIS:O	1.93	0.68
36:K:38:ARG:HD3	36:K:97:THR:HA	1.75	0.68
3:d:188:MET:HE1	3:d:196:VAL:HG21	1.75	0.68
7:h:4:ASN:HA	7:h:7:ASP:HB2	1.75	0.68
52:a:41:SER:HA	52:a:177:LYS:HA	1.74	0.68
53:3:502:A:H2'	53:3:503:C:C6	2.28	0.68
54:1:1077:A:H2'	54:1:1078:U:H5'	1.75	0.68
54:1:1503:A:C2'	54:1:1504:A:H5''	2.23	0.68
54:1:1872:A:H2'	54:1:1873:G:O4'	1.94	0.68
4:e:16:MET:HE2	4:e:27:VAL:HB	1.76	0.68
52:a:177:LYS:HB2	52:a:179:ASP:OD1	1.93	0.68
53:3:212:G:H2'	53:3:213:G:C8	2.28	0.68
54:1:2024:G:H2'	54:1:2025:C:C6	2.27	0.68
25:z:40:THR:HG22	25:z:43:ILE:HG12	1.75	0.68
46:U:28:ARG:HE	46:U:29:ASN:ND2	1.91	0.68
47:V:13:SER:HB2	47:V:21:VAL:HB	1.76	0.68
52:a:30:LEU:HB2	52:a:216:THR:HG23	1.75	0.68
53:3:32:A:H2'	53:3:33:A:C8	2.29	0.68
54:1:1028:A:H2'	54:1:1029:A:C8	2.28	0.68
1:b:87:SER:HB2	1:b:199:HIS:CD2	2.29	0.68
1:b:104:LEU:HD23	1:b:104:LEU:N	2.07	0.68
5:f:1:SER:HB3	5:f:5:LYS:NZ	2.09	0.68
12:m:69:PRO:HA	12:m:94:ALA:HB2	1.74	0.68
37:L:125:ASP:O	37:L:129:ASN:HA	1.93	0.68
53:3:1237:C:H4'	53:3:1334:G:N2	2.09	0.68
2:c:207:VAL:HG13	2:c:208:LYS:H	1.59	0.68
3:d:61:ARG:NH2	3:d:63:LYS:O	2.27	0.68
54:1:121:G:H4'	54:1:149:A:H5'	1.73	0.68
1:b:244:VAL:HG12	1:b:250:GLN:HA	1.74	0.68
32:G:160:LEU:HB3	32:G:182:VAL:HG12	1.75	0.68
54:1:2126:A:H2'	54:1:2162:G:H21	1.56	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:i:27:LEU:HD21	8:i:34:ILE:HD11	1.74	0.68
31:F:1:MET:HE2	31:F:36:ARG:HG2	1.73	0.68
33:H:153:SER:HB3	33:H:164:THR:HG23	1.76	0.68
39:N:112:ARG:HE	44:S:100:TRP:NE1	1.92	0.68
52:a:163:TYR:HB2	52:a:171:ILE:HD11	1.76	0.68
54:1:1536:C:H4'	54:1:1537:G:C2	2.29	0.68
54:1:2281:A:O2'	54:1:2282:G:H5'	1.94	0.68
25:z:5:LYS:HB2	25:z:57:GLU:HB2	1.75	0.67
32:G:93:HIS:CD2	32:G:145:ASN:HB2	2.29	0.67
38:M:77:VAL:HG21	38:M:127:TYR:HE2	1.56	0.67
52:a:212:VAL:HB	52:a:224:VAL:HG22	1.76	0.67
54:1:687:C:H6	54:1:687:C:H5'	1.58	0.67
54:1:1842:G:H2'	54:1:1843:C:H6	1.59	0.67
2:c:124:ARG:HA	2:c:165:MET:HE2	1.76	0.67
12:m:6:ARG:HA	12:m:6:ARG:HH11	1.58	0.67
36:K:47:LEU:HD21	36:K:57:ALA:HB3	1.75	0.67
52:a:54:LYS:HB2	52:a:57:GLN:HE21	1.58	0.67
40:O:71:LEU:HD23	40:O:72:ARG:N	2.10	0.67
53:3:1369:C:H2'	53:3:1370:G:C8	2.27	0.67
53:3:1378:C:H3'	53:3:1379:G:C5'	2.21	0.67
36:K:75:GLU:HA	36:K:78:PHE:HD2	1.59	0.67
40:O:37:ARG:HA	40:O:37:ARG:HE	1.60	0.67
54:1:2156:G:H2'	54:1:2157:G:H5'	1.77	0.67
9:j:13:ARG:HD3	9:j:121:LYS:NZ	2.09	0.67
37:L:75:LYS:HE3	37:L:88:VAL:HG11	1.77	0.67
44:S:5:MET:HG2	44:S:62:ARG:HH22	1.58	0.67
51:Z:66:ARG:HA	51:Z:66:ARG:HE	1.60	0.67
54:1:2241:A:H2'	54:1:2242:G:H8	1.59	0.67
58:7:3:G:H4'	58:7:4:C:OP1	1.94	0.67
18:s:20:VAL:HG11	18:s:44:ALA:HA	1.75	0.67
37:L:55:LYS:HG3	37:L:56:SER:H	1.60	0.67
43:R:3:ILE:HG21	43:R:21:ILE:HD11	1.76	0.67
53:3:1259:C:C3'	53:3:1260:G:H5''	2.25	0.67
54:1:1105:U:H2'	54:1:1106:G:H5''	1.77	0.67
54:1:2243:U:H2'	54:1:2244:U:C6	2.28	0.67
20:u:81:ARG:HH22	54:1:300:A:H8	1.41	0.67
32:G:20:ARG:NH1	32:G:21:TYR:HB3	2.09	0.67
33:H:133:MET:HE3	33:H:150:VAL:HG23	1.76	0.67
42:Q:68:GLY:HA3	42:Q:98:ARG:NH1	2.10	0.67
54:1:118:A:OP2	54:1:119:A:H5''	1.95	0.67
54:1:2297:A:N1	54:1:2321:U:C5	2.61	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:m:63:ILE:HG12	12:m:105:MET:SD	2.35	0.67
52:a:19:LYS:HG2	52:a:20:GLN:H	1.60	0.67
54:1:704:G:H2'	54:1:726:G:H22	1.60	0.67
19:t:32:LEU:HD12	19:t:32:LEU:O	1.95	0.67
32:G:62:ARG:NH1	32:G:62:ARG:HB3	2.10	0.67
36:K:21:MET:HB3	36:K:25:TYR:CE2	2.29	0.67
37:L:108:ARG:HA	37:L:115:MET:HE1	1.75	0.67
46:U:19:VAL:HG13	46:U:36:VAL:O	1.94	0.67
47:V:16:MET:HB3	47:V:19:SER:HB2	1.76	0.67
53:3:1201:A:H1'	53:3:1202:U:OP2	1.93	0.67
5:f:3:VAL:CG2	54:1:2751:G:H4'	2.24	0.67
17:r:31:GLU:HG3	17:r:32:THR:H	1.59	0.67
26:A:46:GLY:HA2	26:A:49:ARG:NH2	2.10	0.67
34:I:145:ARG:NH1	34:I:147:LYS:HB2	2.10	0.67
37:L:111:GLY:HA2	37:L:118:ARG:CZ	2.26	0.67
38:M:26:MET:HE2	38:M:32:LYS:NZ	2.09	0.67
49:X:5:LYS:HZ2	49:X:6:LYS:CG	2.08	0.67
54:1:704:G:H1'	54:1:727:A:H61	1.59	0.67
41:P:49:SER:HA	41:P:68:ARG:NH1	2.10	0.66
46:U:28:ARG:NE	46:U:29:ASN:HD21	1.93	0.66
53:3:1356:G:H2'	53:3:1357:A:C8	2.30	0.66
54:1:445:C:C2'	54:1:446:G:H5'	2.25	0.66
11:l:81:ASP:OD2	11:l:100:ILE:HD11	1.94	0.66
15:p:74:GLN:HB2	15:p:77:SER:HB2	1.78	0.66
40:O:8:ILE:HB	40:O:74:VAL:HB	1.76	0.66
43:R:12:LYS:HB2	43:R:17:ALA:HB2	1.77	0.66
54:1:1063:G:N2	54:1:1075:C:N4	2.38	0.66
1:b:206:LYS:HE2	54:1:729:G:C8	2.30	0.66
9:j:104:ALA:O	9:j:108:MET:HE3	1.94	0.66
25:z:56:VAL:HG22	25:z:58:GLU:HB2	1.77	0.66
39:N:83:THR:HG22	39:N:97:LEU:HD21	1.77	0.66
54:1:2493:U:C3'	54:1:2494:G:H5''	2.26	0.66
18:s:25:ARG:HE	18:s:74:ILE:HG23	1.61	0.66
36:K:1:MET:SD	36:K:65:GLU:HG2	2.35	0.66
40:O:44:THR:HG21	40:O:68:ARG:HG3	1.75	0.66
49:X:38:THR:HA	49:X:69:LYS:HA	1.77	0.66
54:1:644:A:H61	54:1:2349:G:H21	1.44	0.66
56:6:35:A:N6	57:4:14:A:H62	1.87	0.66
13:n:12:ARG:NH2	13:n:20:MET:HE1	2.10	0.66
34:I:84:ASN:HB3	34:I:87:GLU:HG2	1.76	0.66
36:K:90:MET:HE1	48:W:60:ARG:HD2	1.78	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:2:60:C:H2'	55:2:61:G:H8	1.59	0.66
2:c:129:THR:HG22	2:c:130:GLN:O	1.96	0.66
53:3:225:C:H2'	53:3:226:G:H5''	1.78	0.66
54:1:1802:A:H2'	54:1:1803:A:C8	2.31	0.66
5:f:90:GLY:HA3	5:f:93:TYR:HD2	1.60	0.66
54:1:310:A:C2'	54:1:311:A:H5''	2.24	0.66
54:1:1367:A:H2'	54:1:1368:G:H5'	1.78	0.66
54:1:1597:A:H5''	54:1:1598:A:H5'	1.76	0.66
23:x:16:ASN:ND2	23:x:26:ARG:HB3	2.10	0.66
53:3:575:G:O2'	53:3:821:G:H5'	1.95	0.66
54:1:200:U:H2'	54:1:201:C:H5'	1.77	0.66
52:a:11:ILE:HG23	52:a:33:LEU:HD22	1.78	0.66
54:1:1659:G:C2'	54:1:1660:G:H5''	2.25	0.66
1:b:237:ARG:HG3	1:b:237:ARG:HH11	1.61	0.66
4:e:82:TYR:CD1	4:e:83:PRO:HD2	2.31	0.66
32:G:35:ASN:O	32:G:36:LYS:HB2	1.95	0.66
37:L:43:TYR:HD1	37:L:46:LEU:HD12	1.59	0.66
52:a:9:ARG:HA	52:a:12:ARG:HD3	1.77	0.66
53:3:1477:U:H2'	53:3:1478:U:C6	2.30	0.66
56:6:13:C:C2'	56:6:14:A:H5''	2.24	0.66
39:N:44:ARG:O	39:N:47:VAL:HG22	1.95	0.65
52:a:6:LYS:C	52:a:8:MET:H	2.02	0.65
53:3:181:A:H62	53:3:194:C:H2'	1.61	0.65
4:e:53:ALA:HB1	4:e:64:PRO:HG3	1.78	0.65
8:i:61:TYR:HB2	8:i:65:SER:O	1.95	0.65
42:Q:51:VAL:HG22	42:Q:52:CYS:H	1.61	0.65
42:Q:81:ILE:HD11	42:Q:94:TYR:CB	2.26	0.65
54:1:1059:G:H3'	54:1:1060:U:H2'	1.77	0.65
5:f:85:LYS:HG2	5:f:131:VAL:HG22	1.78	0.65
8:i:21:PRO:HB2	8:i:22:PRO:HD3	1.78	0.65
22:w:51:ARG:HH11	22:w:51:ARG:HG3	1.61	0.65
52:a:8:MET:SD	54:1:2174:C:H4'	2.36	0.65
4:e:37:MET:HG3	4:e:56:LEU:HD12	1.79	0.65
5:f:148:ARG:HA	5:f:161:VAL:HB	1.79	0.65
20:u:60:LYS:HG2	20:u:61:GLU:H	1.60	0.65
53:3:1088:G:H21	53:3:1167:A:H61	1.44	0.65
54:1:2121:G:H2'	54:1:2122:U:H5'	1.78	0.65
2:c:24:VAL:HG12	2:c:178:VAL:HG21	1.79	0.65
51:Z:13:VAL:HG23	51:Z:13:VAL:O	1.96	0.65
54:1:1179:G:H2'	54:1:1180:U:H4'	1.77	0.65
56:5:21:A:N6	56:5:46:G:H2'	2.10	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:184:GLU:HG3	1:b:186:ASP:H	1.61	0.65
2:c:116:LYS:HD3	13:n:1:MET:HE1	1.79	0.65
53:3:1236:A:H2'	53:3:1237:C:C6	2.32	0.65
54:1:445:C:O2'	54:1:446:G:H5'	1.97	0.65
54:1:1710:G:H2'	54:1:1711:A:H8	1.62	0.65
55:2:2:G:O6	55:2:119:A:N6	2.30	0.65
56:6:35:A:H62	57:4:14:A:N6	1.87	0.65
58:7:46:G:H2'	58:7:47:U:H4'	1.77	0.65
40:O:15:HIS:O	40:O:18:ILE:HG22	1.96	0.65
53:3:604:G:H2'	53:3:605:U:O4'	1.97	0.65
53:3:908:A:H2'	53:3:909:A:C8	2.31	0.65
54:1:1827:U:C2'	54:1:1828:G:H5'	2.26	0.65
54:1:2813:A:H2'	54:1:2814:A:C8	2.32	0.65
3:d:44:ARG:HG3	3:d:44:ARG:HH21	1.62	0.65
4:e:9:ASP:HB3	4:e:10:GLU:OE2	1.96	0.65
51:Z:38:GLU:O	51:Z:41:THR:N	2.28	0.65
1:b:140:VAL:HG12	1:b:191:LEU:HD23	1.76	0.65
13:n:55:ALA:HA	13:n:80:PHE:CE1	2.32	0.65
39:N:89:TYR:HB3	39:N:93:LEU:HD12	1.78	0.65
42:Q:68:GLY:HA3	42:Q:98:ARG:HH12	1.60	0.65
53:3:960:U:H4'	53:3:961:U:O5'	1.97	0.65
54:1:354:A:H2'	54:1:355:U:O4'	1.97	0.65
11:l:95:LEU:O	11:l:100:ILE:HG22	1.97	0.64
16:q:60:TRP:O	16:q:64:ILE:HG13	1.97	0.64
27:B:27:LEU:HD21	27:B:36:LYS:HB3	1.77	0.64
32:G:119:GLN:HA	32:G:123:GLY:HA3	1.79	0.64
34:I:110:ARG:HB2	34:I:110:ARG:HH11	1.60	0.64
37:L:15:PRO:HG2	37:L:43:TYR:OH	1.96	0.64
42:Q:23:LEU:HD22	42:Q:58:ASN:ND2	2.12	0.64
54:1:106:C:H2'	54:1:107:G:H8	1.62	0.64
54:1:1063:G:H1	54:1:1075:C:H42	1.43	0.64
56:6:69:C:C3'	56:6:70:G:H5''	2.27	0.64
33:H:139:ASN:HA	33:H:142:ARG:HG2	1.78	0.64
38:M:48:PHE:HB3	38:M:60:LEU:HD13	1.78	0.64
41:P:19:VAL:HG11	41:P:84:MET:HE3	1.78	0.64
48:W:31:TYR:HB3	48:W:54:LEU:HD21	1.78	0.64
50:Y:66:ILE:HG23	50:Y:70:LYS:HB3	1.77	0.64
54:1:1019:U:H3	54:1:1142:A:H62	1.45	0.64
4:e:138:PRO:HB3	26:A:32:LEU:HD21	1.79	0.64
37:L:14:ASP:HB3	37:L:17:PHE:O	1.97	0.64
53:3:211:G:H2'	53:3:212:G:H5'	1.78	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:h:59:LEU:HD23	7:h:60:LEU:N	2.12	0.64
35:J:92:ARG:O	35:J:93:VAL:O	2.16	0.64
53:3:715:A:H2'	53:3:716:A:C8	2.32	0.64
53:3:1001:C:H2'	53:3:1002:G:C8	2.32	0.64
54:1:473:G:O2'	54:1:474:G:H5'	1.98	0.64
54:1:1373:A:H2'	54:1:1374:G:O4'	1.97	0.64
23:x:42:GLU:HG2	23:x:44:ARG:HE	1.62	0.64
24:y:17:GLU:HB3	24:y:53:VAL:HG11	1.80	0.64
51:Z:19:LYS:HB3	51:Z:24:LYS:HB2	1.79	0.64
54:1:1484:U:H2'	54:1:1485:U:C6	2.33	0.64
54:1:1801:A:H5''	54:1:2203:U:H2'	1.78	0.64
10:k:40:LYS:HZ2	10:k:57:VAL:HG12	1.63	0.64
29:D:12:ARG:NE	29:D:44:VAL:HG21	2.13	0.64
56:6:69:C:C2'	56:6:70:G:H5''	2.27	0.64
12:m:2:LEU:N	12:m:2:LEU:HD23	2.13	0.64
39:N:82:ILE:O	39:N:86:LEU:HD13	1.98	0.64
56:5:47:U:H3'	56:5:48:C:H5'	1.79	0.64
35:J:133:ILE:H	35:J:133:ILE:HD12	1.62	0.64
4:e:114:ARG:HG3	4:e:177:ARG:HD3	1.80	0.64
6:g:16:GLY:HA2	6:g:47:PHE:HZ	1.63	0.64
13:n:44:LEU:HD23	13:n:113:ILE:HD13	1.78	0.64
15:p:20:ARG:HD3	15:p:112:ARG:HH12	1.63	0.64
21:v:6:ALA:HB1	21:v:40:ILE:HG23	1.79	0.64
35:J:110:MET:HA	35:J:113:VAL:HG12	1.80	0.64
44:S:26:LEU:HA	44:S:30:ILE:HD12	1.79	0.64
52:a:165:ASN:OD1	52:a:171:ILE:HB	1.98	0.64
26:A:42:PRO:HA	26:A:44:PHE:CE1	2.33	0.63
27:B:46:GLY:HA3	27:B:54:ILE:HG21	1.80	0.63
37:L:111:GLY:HA2	37:L:118:ARG:NE	2.13	0.63
54:1:2398:U:H2'	54:1:2399:G:H8	1.62	0.63
8:i:4:VAL:HG11	54:1:1099:G:OP1	1.98	0.63
9:j:17:VAL:CG2	9:j:137:PRO:HB2	2.29	0.63
42:Q:29:LYS:O	42:Q:81:ILE:HG22	1.98	0.63
53:3:1251:A:H2'	53:3:1252:A:C8	2.33	0.63
56:5:47:U:H3'	56:5:48:C:C5'	2.28	0.63
7:h:74:ASP:O	7:h:77:VAL:HG23	1.99	0.63
16:q:55:GLN:O	16:q:58:GLN:HG3	1.99	0.63
33:H:113:LYS:HB2	33:H:184:ASN:ND2	2.14	0.63
43:R:15:VAL:O	43:R:19:THR:HG23	1.98	0.63
53:3:1280:A:O2'	53:3:1281:C:H5'	1.98	0.63
54:1:100:U:H4'	54:1:101:A:O4'	1.99	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:O:41:PRO:HB3	53:3:1151:A:O4'	1.99	0.63
8:i:29:GLN:HB3	8:i:30:GLN:NE2	2.13	0.63
39:N:12:LYS:HD2	53:3:1347:G:N7	2.14	0.63
43:R:28:ARG:HH21	43:R:62:PHE:HB2	1.61	0.63
54:1:2074:U:H2'	54:1:2075:U:C6	2.33	0.63
9:j:1:MET:HG3	9:j:2:LYS:N	2.13	0.63
49:X:5:LYS:HB3	53:3:1313:U:OP2	1.97	0.63
54:1:2731:G:H2'	54:1:2732:G:C8	2.33	0.63
54:1:2808:G:H5'	54:1:2809:A:OP1	1.99	0.63
42:Q:81:ILE:HG13	42:Q:82:ARG:N	2.13	0.63
56:5:15:G:H2'	56:5:16:C:H5'	1.79	0.63
4:e:90:LEU:HD12	4:e:90:LEU:O	1.98	0.63
7:h:2:ALA:HB3	7:h:6:GLN:CG	2.29	0.63
15:p:28:LYS:HE3	15:p:39:LEU:HG	1.78	0.63
26:A:16:CYS:HB3	26:A:34:LEU:HB2	1.80	0.63
40:O:42:LEU:HG	40:O:71:LEU:HD22	1.81	0.63
42:Q:51:VAL:HG22	42:Q:52:CYS:N	2.13	0.63
50:Y:66:ILE:CG2	50:Y:70:LYS:HB3	2.28	0.63
54:1:813:U:H2'	54:1:814:C:C6	2.33	0.63
54:1:2557:G:H2'	54:1:2558:C:C6	2.33	0.63
16:q:20:ALA:HA	16:q:23:TYR:CE2	2.34	0.63
34:I:187:ARG:HH12	34:I:192:ALA:HA	1.63	0.63
39:N:87:MET:HG3	39:N:88:GLU:H	1.64	0.63
46:U:43:ALA:HA	46:U:46:LYS:NZ	2.14	0.63
54:1:2849:U:H4'	54:1:2868:A:C2	2.33	0.63
32:G:212:TYR:O	32:G:216:VAL:HG23	1.98	0.62
35:J:93:VAL:CG1	35:J:138:ALA:HB1	2.28	0.62
39:N:33:SER:OG	39:N:36:GLN:HG2	1.99	0.62
46:U:20:VAL:HG23	46:U:34:GLU:O	1.98	0.62
47:V:15:LYS:HG3	53:3:275:G:H5'	1.80	0.62
50:Y:34:VAL:O	50:Y:38:ILE:HG13	1.98	0.62
55:2:66:A:H61	55:2:107:G:H2'	1.64	0.62
58:7:29:U:H2'	58:7:30:G:H8	1.64	0.62
17:r:4:VAL:HG21	17:r:40:MET:HE2	1.81	0.62
39:N:57:VAL:HG23	39:N:58:GLU:H	1.64	0.62
50:Y:67:HIS:O	50:Y:69:ASN:ND2	2.27	0.62
54:1:134:G:C3'	54:1:135:U:H5''	2.28	0.62
54:1:2243:U:H2'	54:1:2244:U:H6	1.64	0.62
55:2:60:C:H2'	55:2:61:G:C8	2.34	0.62
24:y:9:LYS:HZ2	24:y:11:VAL:HG23	1.64	0.62
32:G:33:ALA:HB2	32:G:39:ILE:CG1	2.25	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:M:8:ASP:O	38:M:12:ARG:HG3	1.99	0.62
53:3:1259:C:H3'	53:3:1260:G:H5''	1.82	0.62
54:1:1821:A:H2'	54:1:1822:C:H6	1.59	0.62
54:1:2537:U:H2'	54:1:2538:C:C6	2.35	0.62
55:2:3:C:C2'	55:2:4:C:H5''	2.28	0.62
55:2:37:C:H42	55:2:49:C:H1'	1.64	0.62
10:k:105:ARG:HD3	10:k:108:ARG:HH12	1.64	0.62
20:u:5:ARG:HG2	20:u:8:ASP:OD2	1.99	0.62
53:3:371:A:H2'	53:3:372:C:O4'	1.99	0.62
54:1:1104:C:H2'	54:1:1105:U:C6	2.34	0.62
6:g:47:PHE:HA	6:g:51:ARG:HB2	1.82	0.62
7:h:81:LEU:HD22	54:1:1106:G:H21	1.64	0.62
10:k:105:ARG:CD	10:k:108:ARG:HH12	2.12	0.62
14:o:106:LEU:C	14:o:106:LEU:HD23	2.24	0.62
17:r:68:ARG:HH11	17:r:90:ARG:HD3	1.65	0.62
28:C:45:HIS:ND1	54:1:2372:U:H4'	2.15	0.62
53:3:1259:C:C2'	53:3:1260:G:H5''	2.30	0.62
54:1:528:A:C2	54:1:2042:A:H2'	2.35	0.62
54:1:554:U:H2'	54:1:555:G:O4'	1.99	0.62
54:1:813:U:H2'	54:1:814:C:H6	1.64	0.62
5:f:44:HIS:CG	5:f:45:ALA:H	2.18	0.62
5:f:116:LEU:HD12	5:f:120:ILE:HG21	1.79	0.62
19:t:39:THR:HG23	19:t:42:GLU:H	1.63	0.62
20:u:85:ARG:HG3	20:u:92:VAL:HG23	1.82	0.62
40:O:11:LYS:HE2	40:O:71:LEU:HG	1.80	0.62
52:a:213:SER:HA	52:a:223:ALA:HA	1.82	0.62
53:3:1540:U:O4	57:4:5:A:C2	2.49	0.62
1:b:167:ASP:HB3	1:b:170:TYR:HB2	1.81	0.62
7:h:54:VAL:O	54:1:1084:A:H5''	1.99	0.62
10:k:43:ILE:HD12	10:k:56:ASP:HB2	1.82	0.62
15:p:20:ARG:HD3	15:p:112:ARG:NH1	2.15	0.62
35:J:37:VAL:HG12	35:J:116:VAL:HG21	1.82	0.62
38:M:95:MET:HE2	38:M:129:ALA:HB1	1.79	0.62
39:N:69:GLY:N	53:3:1250:A:H4'	2.15	0.62
9:j:13:ARG:HD3	9:j:121:LYS:HZ1	1.64	0.62
42:Q:113:ARG:HE	42:Q:120:ARG:HA	1.63	0.62
47:V:20:ILE:CG2	47:V:45:VAL:HB	2.30	0.62
49:X:14:LEU:O	49:X:18:VAL:HG23	1.99	0.62
54:1:1066:U:H2'	54:1:1068:G:OP2	2.00	0.62
54:1:1434:A:H2'	54:1:1435:G:C8	2.34	0.62
54:1:2439:A:H4'	54:1:2440:C:H5'	1.80	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:f:86:LEU:HB2	5:f:130:ILE:HB	1.82	0.62
10:k:105:ARG:HD2	10:k:108:ARG:HH22	1.65	0.62
16:q:86:SER:O	17:r:52:PRO:HD3	2.00	0.62
34:I:122:ILE:HD12	34:I:143:SER:O	2.00	0.62
36:K:26:THR:HA	36:K:29:ILE:HD12	1.81	0.62
53:3:1418:A:H3'	53:3:1419:G:H5''	1.80	0.62
54:1:1353:A:H2'	54:1:1354:A:C8	2.35	0.62
3:d:147:LEU:HB2	3:d:183:PHE:CD2	2.35	0.62
9:j:30:THR:HG21	54:1:1005:C:O2'	2.00	0.62
9:j:78:THR:O	9:j:80:HIS:N	2.32	0.62
30:E:31:ILE:CD1	30:E:34:LYS:HE3	2.28	0.62
33:H:32:LEU:HD11	44:S:92:ILE:HG13	1.82	0.62
40:O:26:VAL:HG22	40:O:30:LYS:HE3	1.82	0.62
44:S:18:LYS:HE3	44:S:19:TYR:CZ	2.35	0.62
54:1:192:C:H2'	54:1:193:U:H5'	1.82	0.62
10:k:19:VAL:HB	10:k:41:ILE:HD12	1.81	0.61
33:H:28:PHE:O	33:H:32:LEU:HD23	1.99	0.61
47:V:11:VAL:HB	47:V:56:ASP:OD1	2.00	0.61
53:3:813:U:C2'	53:3:814:A:H5''	2.29	0.61
54:1:2457:U:H3	54:1:2494:G:H1	1.48	0.61
20:u:34:ILE:N	20:u:34:ILE:HD12	2.15	0.61
20:u:67:SER:C	20:u:68:ASN:HD22	2.07	0.61
30:E:30:HIS:ND1	30:E:31:ILE:HG22	2.15	0.61
52:a:213:SER:OG	54:1:2177:C:H5'	2.00	0.61
53:3:31:G:N2	53:3:47:C:H5''	2.15	0.61
53:3:922:G:H2'	53:3:923:A:C8	2.35	0.61
58:7:49:G:H1	58:7:65:U:H3	1.48	0.61
20:u:35:VAL:HG23	20:u:38:ILE:HG13	1.83	0.61
53:3:389:A:H3'	53:3:390:U:H6	1.65	0.61
53:3:994:A:C8	53:3:1216:A:H4'	2.35	0.61
55:2:48:U:H2'	55:2:49:C:C6	2.34	0.61
17:r:37:GLU:O	17:r:39:LEU:HD12	2.00	0.61
37:L:2:ARG:HB3	53:3:933:G:OP2	2.00	0.61
38:M:95:MET:O	38:M:98:LEU:HG	2.01	0.61
40:O:7:ARG:HA	40:O:75:ASP:HA	1.82	0.61
47:V:69:THR:HG22	53:3:254:G:OP1	1.99	0.61
51:Z:5:VAL:HG22	51:Z:7:GLU:H	1.65	0.61
53:3:1001:C:H2'	53:3:1002:G:H8	1.64	0.61
54:1:1078:U:H4'	54:1:1088:A:C2	2.36	0.61
1:b:145:MET:HE3	1:b:152:GLN:OE1	2.00	0.61
12:m:6:ARG:HA	12:m:6:ARG:NH1	2.15	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:n:37:THR:CG2	13:n:103:ARG:HH21	2.14	0.61
19:t:1:MET:HG3	19:t:3:ARG:H	1.65	0.61
29:D:12:ARG:HE	29:D:44:VAL:CG2	2.13	0.61
38:M:27:PRO:O	38:M:32:LYS:NZ	2.34	0.61
40:O:41:PRO:HG2	53:3:1150:A:N3	2.16	0.61
42:Q:33:CYS:HB2	42:Q:79:ILE:HG12	1.83	0.61
53:3:715:A:H2'	53:3:716:A:H8	1.63	0.61
53:3:831:A:H2'	53:3:832:G:H5''	1.82	0.61
54:1:1152:C:H2'	54:1:1153:C:H6	1.65	0.61
54:1:2682:A:H61	54:1:2728:U:H1'	1.66	0.61
56:6:31:G:H2'	56:6:32:C:H5'	1.81	0.61
5:f:1:SER:HB3	5:f:5:LYS:HZ3	1.66	0.61
5:f:85:LYS:NZ	5:f:87:GLN:HB2	2.15	0.61
34:I:151:GLN:CG	53:3:437:U:H5''	2.31	0.61
37:L:80:GLY:HA3	57:4:11:U:H4'	1.80	0.61
54:1:1097:U:H2'	54:1:1098:A:H5'	1.83	0.61
54:1:1716:U:H2'	54:1:1717:A:H8	1.65	0.61
54:1:2262:U:H2'	54:1:2263:C:H6	1.65	0.61
1:b:174:ARG:HD3	1:b:180:MET:HE1	1.81	0.61
2:c:47:ALA:HA	2:c:84:LEU:HG	1.82	0.61
4:e:7:TYR:O	4:e:12:VAL:HG23	2.01	0.61
52:a:44:VAL:HA	52:a:214:ILE:HG22	1.81	0.61
53:3:29:U:O2'	53:3:30:U:H5'	2.00	0.61
54:1:467:G:O2'	54:1:468:G:H5'	2.00	0.61
56:6:3:C:C2'	56:6:4:G:H5''	2.30	0.61
58:7:2:G:O2'	58:7:3:G:H2'	2.01	0.61
1:b:89:ASN:ND2	1:b:196:ASN:HB2	2.16	0.61
32:G:8:MET:HE3	32:G:10:LYS:HE2	1.83	0.61
32:G:99:MET:HA	32:G:106:VAL:HG21	1.81	0.61
33:H:3:LYS:HD2	33:H:3:LYS:N	2.16	0.61
33:H:179:ALA:HB1	33:H:202:PHE:HE1	1.66	0.61
34:I:145:ARG:HH11	34:I:147:LYS:HB2	1.65	0.61
39:N:51:LEU:HB3	39:N:56:MET:HG2	1.83	0.61
41:P:30:ILE:HG23	41:P:45:THR:HG22	1.83	0.61
53:3:1103:C:H2'	53:3:1104:G:H5''	1.82	0.61
54:1:2246:G:H2'	54:1:2247:A:C8	2.36	0.61
58:7:29:U:H2'	58:7:30:G:C8	2.35	0.61
5:f:90:GLY:HA3	5:f:93:TYR:CD2	2.36	0.61
5:f:93:TYR:C	5:f:94:ARG:HD3	2.25	0.61
19:t:69:ARG:HB3	19:t:69:ARG:HH11	1.64	0.61
36:K:67:PRO:HG2	36:K:70:VAL:HG23	1.81	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:N:29:ILE:HD13	39:N:38:PHE:HE1	1.66	0.61
40:O:5:ARG:N	40:O:77:VAL:O	2.32	0.61
53:3:1536:C:H2'	53:3:1537:U:C6	2.36	0.61
1:b:132:ARG:HA	1:b:166:ARG:HH12	1.65	0.60
24:y:21:LEU:HA	24:y:25:GLN:HB3	1.83	0.60
1:b:32:LEU:C	1:b:33:LEU:HD12	2.26	0.60
2:c:184:ARG:HG3	2:c:186:LEU:HG	1.83	0.60
8:i:24:GLY:O	8:i:27:LEU:HG	2.01	0.60
13:n:86:ARG:HH21	13:n:117:ASP:HB2	1.66	0.60
30:E:14:LYS:HE2	30:E:14:LYS:HA	1.83	0.60
30:E:14:LYS:HB2	30:E:22:LYS:HG2	1.84	0.60
35:J:156:ARG:HD2	35:J:157:GLY:N	2.15	0.60
54:1:1300:G:H4'	54:1:1301:A:C5'	2.31	0.60
54:1:1440:U:H2'	54:1:1441:G:C8	2.36	0.60
56:6:34:C:H6	57:4:13:A:N6	1.98	0.60
2:c:56:LYS:NZ	54:1:2830:C:H5''	2.15	0.60
5:f:23:ILE:HD11	5:f:36:LEU:HD11	1.83	0.60
9:j:3:THR:HG22	54:1:995:C:N3	2.16	0.60
13:n:49:GLU:HB3	13:n:50:PRO:HD3	1.84	0.60
28:C:32:LYS:HE3	28:C:50:GLU:HG3	1.82	0.60
37:L:12:LEU:HD23	37:L:12:LEU:H	1.65	0.60
38:M:78:SER:HB2	38:M:84:ILE:HG22	1.84	0.60
53:3:1019:A:H2'	53:3:1020:G:O4'	2.02	0.60
54:1:274:C:H2'	54:1:275:C:H5'	1.81	0.60
18:s:29:VAL:HG11	18:s:55:ILE:HG21	1.83	0.60
30:E:13:PHE:O	30:E:14:LYS:HE2	2.01	0.60
34:I:149:LYS:HG2	34:I:150:LYS:HG3	1.82	0.60
50:Y:40:ALA:HB3	50:Y:42:ASP:OD1	2.02	0.60
52:a:51:ASP:HB3	52:a:53:ARG:HD3	1.82	0.60
53:3:279:A:H4'	53:3:281:G:C8	2.37	0.60
53:3:908:A:H2'	53:3:909:A:H8	1.66	0.60
54:1:720:U:H2'	54:1:721:A:C8	2.36	0.60
54:1:1268:A:H2'	54:1:1269:A:O4'	2.00	0.60
54:1:2134:A:H62	54:1:2157:G:H4'	1.66	0.60
7:h:37:LYS:HG3	7:h:41:LEU:HD12	1.83	0.60
10:k:70:ARG:HG2	10:k:76:VAL:HG12	1.82	0.60
25:z:30:ARG:HB3	25:z:30:ARG:NH1	2.15	0.60
33:H:156:LEU:HD12	33:H:156:LEU:O	2.01	0.60
34:I:1:ALA:N	53:3:405:U:O4	2.33	0.60
35:J:159:SER:HB3	35:J:162:GLU:OE1	2.02	0.60
52:a:6:LYS:C	52:a:8:MET:N	2.59	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:2073:C:O2'	54:1:2074:U:H5'	2.01	0.60
7:h:59:LEU:HB3	7:h:62:ARG:HG3	1.82	0.60
45:T:55:LEU:O	45:T:58:MET:HG2	2.01	0.60
46:U:14:ARG:HD2	46:U:42:ILE:HD12	1.84	0.60
53:3:114:U:H2'	53:3:115:G:C8	2.36	0.60
54:1:2191:A:H2'	54:1:2192:U:H5''	1.83	0.60
54:1:2277:G:H2'	54:1:2278:A:H5''	1.83	0.60
54:1:2637:U:H2'	54:1:2638:G:O4'	2.02	0.60
2:c:13:ARG:HD2	2:c:21:SER:OG	2.01	0.60
13:n:12:ARG:CZ	13:n:20:MET:HE1	2.32	0.60
18:s:6:LYS:HB3	18:s:104:THR:HG23	1.83	0.60
4:e:16:MET:SD	4:e:21:TYR:HB2	2.42	0.60
12:m:135:VAL:O	12:m:136:MET:HG2	2.02	0.60
33:H:130:ARG:O	33:H:134:LYS:HG2	2.01	0.60
46:U:4:ILE:HD13	46:U:57:ILE:HG23	1.84	0.60
53:3:1295:U:H2'	53:3:1296:C:C6	2.37	0.60
54:1:2398:U:H2'	54:1:2399:G:C8	2.36	0.60
4:e:133:GLU:HG2	4:e:135:ILE:HG12	1.84	0.60
37:L:4:ARG:HD2	37:L:4:ARG:N	2.16	0.60
42:Q:71:HIS:HB2	42:Q:73:LEU:HD13	1.84	0.60
44:S:20:PHE:CE2	44:S:55:SER:HA	2.35	0.60
47:V:45:VAL:HG13	47:V:72:TRP:O	2.02	0.60
51:Z:5:VAL:HG22	51:Z:6:ARG:H	1.66	0.60
53:3:437:U:O2'	53:3:438:U:H5'	2.00	0.60
54:1:690:G:H2'	54:1:691:C:H6	1.65	0.60
54:1:1794:A:H2'	54:1:1795:C:C6	2.37	0.60
54:1:2671:G:H2'	54:1:2672:U:C6	2.37	0.60
8:i:61:TYR:CD1	8:i:66:PHE:HA	2.36	0.60
11:l:69:ARG:HB3	11:l:69:ARG:NH1	2.17	0.60
12:m:4:PRO:HG2	12:m:70:ASP:HA	1.84	0.60
12:m:41:LEU:HA	12:m:45:GLN:NE2	2.16	0.60
21:v:76:ASP:HB3	21:v:90:ASP:OD2	2.01	0.60
33:H:76:ILE:HA	33:H:83:VAL:HG23	1.83	0.60
39:N:69:GLY:H	53:3:1250:A:H4'	1.67	0.60
39:N:83:THR:HG21	39:N:102:PHE:HB3	1.83	0.60
53:3:410:G:H2'	53:3:429:U:C4	2.37	0.60
53:3:1435:G:H2'	53:3:1436:U:C6	2.36	0.60
54:1:1857:G:H1'	54:1:1885:A:N6	2.16	0.60
54:1:2345:G:N3	54:1:2381:A:H2'	2.17	0.60
1:b:42:ARG:NH1	1:b:48:ILE:HB	2.16	0.59
5:f:94:ARG:H	5:f:105:SER:HB2	1.66	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:h:27:VAL:HB	7:h:83:ALA:HB3	1.83	0.59
17:r:65:ALA:HB3	17:r:95:ASP:HB2	1.82	0.59
36:K:49:TYR:CE1	48:W:65:SER:HA	2.37	0.59
50:Y:82:ILE:O	50:Y:86:ALA:N	2.35	0.59
52:a:210:LYS:CG	52:a:211:LYS:H	2.15	0.59
53:3:1237:C:C4'	53:3:1334:G:H21	2.15	0.59
54:1:575:A:O2'	54:1:576:U:H5'	2.01	0.59
56:5:6:G:H2'	56:5:7:G:C8	2.37	0.59
3:d:102:ARG:HD2	54:1:617:G:OP1	2.02	0.59
21:v:75:GLN:HB2	21:v:92:VAL:CG2	2.28	0.59
33:H:6:PRO:HB3	33:H:10:ARG:HH22	1.65	0.59
33:H:156:LEU:HD11	33:H:163:ARG:HE	1.65	0.59
37:L:75:LYS:HZ3	37:L:77:ARG:HH11	1.50	0.59
54:1:1053:C:C3'	54:1:1054:A:H5''	2.32	0.59
22:w:33:ILE:HG22	22:w:34:VAL:HG23	1.85	0.59
46:U:74:LEU:O	46:U:78:VAL:HG23	2.02	0.59
53:3:1144:G:H21	53:3:1146:A:H62	1.48	0.59
54:1:230:G:O2'	54:1:231:A:H5'	2.02	0.59
54:1:1524:G:H2'	54:1:1525:A:H8	1.68	0.59
4:e:133:GLU:CG	4:e:135:ILE:HG12	2.32	0.59
34:I:8:LEU:CD1	34:I:21:LYS:HD3	2.33	0.59
38:M:66:GLN:C	38:M:68:LYS:H	2.10	0.59
49:X:13:HIS:HA	49:X:16:LYS:HD3	1.85	0.59
52:a:15:VAL:CG2	52:a:220:ALA:HB3	2.31	0.59
53:3:1349:A:H2'	53:3:1350:A:O4'	2.03	0.59
54:1:357:C:H2'	54:1:358:U:C6	2.37	0.59
54:1:690:G:H2'	54:1:691:C:C6	2.37	0.59
55:2:65:U:H2'	55:2:66:A:H5'	1.84	0.59
7:h:81:LEU:O	7:h:82:ILE:HD13	2.03	0.59
32:G:13:VAL:HG22	32:G:15:PHE:HE1	1.67	0.59
37:L:97:ALA:HA	37:L:100:MET:HE2	1.85	0.59
43:R:7:ASN:HD21	43:R:21:ILE:HA	1.68	0.59
53:3:1171:A:H2'	53:3:1172:C:H6	1.68	0.59
53:3:1233:G:H2'	53:3:1234:C:C6	2.36	0.59
54:1:2078:C:H2'	54:1:2079:U:C6	2.37	0.59
4:e:107:VAL:HB	4:e:108:PRO:HD3	1.84	0.59
11:l:23:ILE:HD12	11:l:23:ILE:N	2.16	0.59
15:p:47:ILE:HG22	15:p:99:LEU:HD12	1.84	0.59
25:z:15:ARG:HG3	25:z:53:MET:HE1	1.84	0.59
25:z:40:THR:OG1	25:z:41:PRO:HD2	2.03	0.59
36:K:2:ARG:HD2	36:K:92:THR:HG21	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:673:A:H2'	53:3:674:G:C8	2.38	0.59
53:3:830:G:H2'	53:3:831:A:C8	2.38	0.59
54:1:974:G:H1'	54:1:975:A:C8	2.37	0.59
54:1:1710:G:H2'	54:1:1711:A:C8	2.37	0.59
9:j:93:ILE:HD13	9:j:100:VAL:HG21	1.83	0.59
14:o:2:ASP:HB3	14:o:5:SER:OG	2.02	0.59
25:z:8:GLN:NE2	25:z:23:LEU:HD13	2.18	0.59
40:O:59:LYS:HD3	40:O:62:ARG:NH1	2.18	0.59
52:a:10:VAL:HA	52:a:13:GLU:HB2	1.85	0.59
54:1:613:A:H2'	54:1:613:A:N3	2.17	0.59
54:1:1487:U:H2'	54:1:1488:C:H6	1.67	0.59
4:e:56:LEU:O	4:e:56:LEU:HD23	2.03	0.59
9:j:119:PHE:C	9:j:121:LYS:H	2.11	0.59
33:H:68:HIS:HA	33:H:103:ALA:HB3	1.85	0.59
35:J:68:ARG:HH11	35:J:68:ARG:HG3	1.68	0.59
53:3:32:A:H2'	53:3:33:A:H8	1.67	0.59
54:1:1679:A:H2'	54:1:1680:U:C6	2.38	0.59
5:f:174:LYS:HE2	54:1:2530:A:H5'	1.84	0.59
37:L:41:ILE:HD11	53:3:1240:U:O4'	2.02	0.59
40:O:78:GLU:HG3	40:O:80:THR:HG23	1.84	0.59
2:c:1:MET:SD	2:c:205:PRO:HG2	2.43	0.59
10:k:7:MET:HB3	10:k:18:ARG:NH2	2.18	0.59
34:I:151:GLN:HG3	53:3:437:U:OP1	2.03	0.59
37:L:75:LYS:NZ	37:L:77:ARG:HD3	2.17	0.59
45:T:88:ARG:HH22	54:1:714:U:H5''	1.66	0.59
53:3:1370:G:O2'	53:3:1371:G:H5'	2.02	0.59
54:1:2834:G:O2'	54:1:2835:A:H5'	2.02	0.59
3:d:105:LEU:O	3:d:109:LEU:HD13	2.02	0.58
8:i:61:TYR:HB2	8:i:65:SER:C	2.28	0.58
11:l:111:ILE:N	11:l:111:ILE:HD12	2.18	0.58
17:r:49:ILE:HB	17:r:51:VAL:O	2.02	0.58
17:r:76:LYS:HE3	17:r:85:LYS:HD2	1.85	0.58
41:P:82:GLU:HG3	41:P:107:THR:HB	1.84	0.58
51:Z:33:ARG:NH1	51:Z:33:ARG:HB2	2.18	0.58
52:a:59:VAL:HB	52:a:165:ASN:ND2	2.15	0.58
53:3:67:C:H2'	53:3:68:G:C8	2.38	0.58
54:1:519:U:H2'	54:1:520:G:H8	1.67	0.58
54:1:2807:U:H3	54:1:2891:U:H3	1.50	0.58
2:c:25:THR:HG21	2:c:193:VAL:HG22	1.84	0.58
5:f:14:VAL:HG13	5:f:27:GLY:HA2	1.84	0.58
7:h:54:VAL:O	7:h:54:VAL:HG13	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:k:104:THR:CG2	10:k:106:GLU:H	2.04	0.58
33:H:9:ILE:HG23	33:H:10:ARG:HD3	1.83	0.58
42:Q:42:LYS:HG3	42:Q:44:PRO:HD2	1.86	0.58
42:Q:55:ARG:HA	42:Q:60:PHE:O	2.03	0.58
44:S:41:TRP:O	44:S:44:VAL:HG22	2.03	0.58
54:1:1716:U:H2'	54:1:1717:A:C8	2.38	0.58
54:1:2123:G:N2	54:1:2176:A:H61	2.01	0.58
54:1:2277:G:C3'	54:1:2278:A:H5''	2.34	0.58
9:j:120:ARG:HD2	54:1:2780:G:OP2	2.02	0.58
12:m:18:ARG:HG2	55:2:90:C:H5'	1.83	0.58
32:G:138:ARG:NH2	53:3:1097:C:H5''	2.17	0.58
47:V:28:VAL:HG22	47:V:29:LYS:N	2.19	0.58
53:3:830:G:H2'	53:3:831:A:H8	1.68	0.58
54:1:639:U:H2'	54:1:640:C:C6	2.38	0.58
54:1:1394:U:H4'	54:1:1603:A:H4'	1.86	0.58
54:1:1659:G:C3'	54:1:1660:G:H5''	2.33	0.58
54:1:2156:G:C2'	54:1:2157:G:H5'	2.32	0.58
54:1:2508:G:H1	54:1:2580:U:H3	1.50	0.58
4:e:137:PHE:HB2	4:e:140:ILE:HD13	1.85	0.58
25:z:15:ARG:HE	25:z:52:PHE:HE2	1.50	0.58
54:1:1637:A:H5'	54:1:1760:C:O2'	2.04	0.58
3:d:189:THR:O	3:d:193:VAL:HG23	2.04	0.58
16:q:23:TYR:CD1	54:1:533:G:H5'	2.38	0.58
30:E:24:LYS:HD3	30:E:46:LYS:HE3	1.85	0.58
32:G:90:PHE:CE1	32:G:149:GLY:HA3	2.39	0.58
39:N:18:VAL:HG13	39:N:64:ILE:HG12	1.86	0.58
50:Y:2:ASN:ND2	50:Y:3:ILE:H	2.01	0.58
53:3:868:C:H2'	53:3:869:G:O4'	2.03	0.58
53:3:1251:A:H2'	53:3:1252:A:H8	1.69	0.58
54:1:995:C:H6	54:1:995:C:H5'	1.69	0.58
54:1:2114:A:H61	54:1:2117:A:H62	1.50	0.58
54:1:2224:G:H4'	54:1:2226:C:C2	2.39	0.58
22:w:17:LEU:HD21	22:w:37:ARG:NH2	2.18	0.58
35:J:82:HIS:HD2	38:M:98:LEU:HD21	1.69	0.58
36:K:74:LEU:HG	36:K:78:PHE:CE2	2.39	0.58
38:M:77:VAL:HG21	38:M:127:TYR:CE2	2.38	0.58
53:3:256:U:H2'	53:3:257:G:C8	2.39	0.58
2:c:181:ASP:HB3	2:c:186:LEU:HB2	1.85	0.58
6:g:27:ARG:HH22	23:x:55:MET:HG3	1.67	0.58
33:H:6:PRO:HB3	33:H:10:ARG:NH2	2.19	0.58
33:H:42:LEU:HD12	33:H:54:ILE:HD12	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:M:42:GLU:HG2	38:M:100:ILE:HG21	1.85	0.58
41:P:28:ASN:ND2	41:P:30:ILE:CG1	2.67	0.58
51:Z:5:VAL:HG22	51:Z:6:ARG:N	2.19	0.58
52:a:30:LEU:HA	52:a:33:LEU:HG	1.85	0.58
53:3:1502:A:H8	53:3:1505:G:N2	1.97	0.58
54:1:419:U:H2'	54:1:420:C:C6	2.39	0.58
54:1:594:U:H2'	54:1:595:C:C6	2.38	0.58
55:2:3:C:C3'	55:2:4:C:H5''	2.34	0.58
1:b:259:ASN:O	1:b:260:LYS:HB2	2.03	0.58
3:d:177:PRO:O	3:d:181:ILE:HG13	2.03	0.58
12:m:4:PRO:HG3	12:m:68:PHE:HE2	1.68	0.58
19:t:56:GLU:HG2	19:t:88:LYS:HG2	1.84	0.58
52:a:47:ASN:HB3	52:a:210:LYS:HB3	1.86	0.58
52:a:66:PRO:HB2	52:a:188:ASN:HA	1.85	0.58
52:a:66:PRO:HG2	52:a:191:ALA:HB3	1.86	0.58
53:3:352:C:H4'	53:3:354:G:OP1	2.03	0.58
53:3:455:G:H2'	53:3:456:A:H8	1.69	0.58
53:3:1354:U:H2'	53:3:1355:G:H8	1.69	0.58
54:1:1434:A:H2'	54:1:1435:G:H8	1.68	0.58
5:f:85:LYS:HZ3	5:f:87:GLN:HB2	1.67	0.58
6:g:8:LYS:O	6:g:13:GLY:O	2.22	0.58
11:l:122:VAL:O	11:l:143:GLU:HG2	2.03	0.58
12:m:2:LEU:HD23	12:m:2:LEU:H	1.68	0.58
14:o:56:LYS:HD3	14:o:56:LYS:H	1.69	0.58
33:H:131:ARG:O	33:H:135:ARG:HG3	2.03	0.58
36:K:72:ASP:O	36:K:75:GLU:HG3	2.03	0.58
38:M:58:LEU:HG	38:M:60:LEU:HD21	1.84	0.58
40:O:43:PRO:HD3	53:3:1150:A:O2'	2.04	0.58
54:1:570:G:H2'	54:1:2030:A:N7	2.19	0.58
54:1:864:G:O2'	54:1:865:C:H5'	2.03	0.58
53:3:56:U:H2'	53:3:57:G:H8	1.68	0.58
54:1:310:A:O2'	54:1:311:A:H5''	2.04	0.58
54:1:1842:G:H2'	54:1:1843:C:C6	2.39	0.58
54:1:2228:G:H2'	54:1:2229:U:C6	2.39	0.58
55:2:2:G:H2'	55:2:3:C:C6	2.38	0.58
3:d:163:ASN:OD1	54:1:323:C:H5''	2.03	0.57
5:f:1:SER:HA	5:f:4:ALA:HB3	1.86	0.57
6:g:112:LYS:HA	6:g:115:VAL:CG2	2.34	0.57
13:n:72:ASP:O	13:n:76:VAL:HG23	2.03	0.57
34:I:2:ARG:HB2	34:I:2:ARG:HH11	1.69	0.57
53:3:1502:A:C8	53:3:1505:G:N2	2.65	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:7:70:C:H2'	58:7:71:C:C6	2.39	0.57
16:q:29:ARG:HD2	27:B:9:ARG:NH1	2.19	0.57
39:N:112:ARG:HD2	44:S:100:TRP:OXT	2.04	0.57
42:Q:81:ILE:HD12	42:Q:95:HIS:O	2.04	0.57
50:Y:56:ILE:HA	50:Y:59:ARG:NH1	2.16	0.57
52:a:180:PHE:HB3	52:a:184:LYS:HB3	1.85	0.57
53:3:1360:A:H2'	53:3:1361:G:O4'	2.04	0.57
54:1:1152:C:H2'	54:1:1153:C:C6	2.39	0.57
54:1:1697:G:C3'	54:1:1698:A:H5''	2.35	0.57
58:7:70:C:H2'	58:7:71:C:H6	1.68	0.57
19:t:54:GLU:HB3	19:t:88:LYS:HD3	1.85	0.57
26:A:1:MET:HE2	55:2:43:C:H5''	1.84	0.57
45:T:61:GLN:O	45:T:65:LEU:HD13	2.04	0.57
45:T:88:ARG:H	45:T:88:ARG:CD	1.94	0.57
46:U:51:ARG:C	46:U:52:LEU:HD12	2.29	0.57
51:Z:65:ARG:O	51:Z:65:ARG:HG2	2.03	0.57
53:3:128:G:O2'	53:3:129:A:H5'	2.04	0.57
54:1:655:A:H4'	54:1:656:G:H5'	1.86	0.57
54:1:948:C:H2'	54:1:949:G:H8	1.69	0.57
54:1:1105:U:C2'	54:1:1106:G:H5''	2.34	0.57
54:1:1746:A:H2'	54:1:1747:U:C6	2.38	0.57
54:1:2066:C:O2'	54:1:2067:G:H5'	2.04	0.57
54:1:2625:G:H2'	54:1:2626:C:C6	2.40	0.57
4:e:44:ALA:HA	4:e:46:LYS:NZ	2.19	0.57
4:e:114:ARG:NH1	43:R:70:ARG:HD2	2.20	0.57
32:G:14:HIS:CE1	32:G:42:LEU:HD22	2.39	0.57
39:N:7:GLY:HA3	39:N:85:ALA:N	2.19	0.57
54:1:493:G:O2'	54:1:494:G:H5'	2.05	0.57
54:1:2514:U:H2'	54:1:2515:C:H6	1.64	0.57
58:7:27:A:H2'	58:7:28:C:C6	2.40	0.57
6:g:111:ALA:HB3	6:g:114:GLU:OE1	2.04	0.57
33:H:83:VAL:HB	33:H:84:GLU:OE1	2.04	0.57
51:Z:67:THR:OXT	53:3:1167:A:C8	2.57	0.57
53:3:1033:G:H2'	53:3:1034:G:C4'	2.35	0.57
54:1:1091:G:H2'	54:1:1092:C:H6	1.69	0.57
54:1:1682:G:H2'	54:1:1683:U:C6	2.39	0.57
6:g:23:ALA:O	6:g:27:ARG:HG2	2.05	0.57
6:g:95:GLY:H	6:g:98:ASP:HB3	1.70	0.57
14:o:30:ARG:HG2	14:o:30:ARG:HH11	1.68	0.57
31:F:25:VAL:HB	31:F:35:GLN:HB2	1.86	0.57
32:G:35:ASN:HB3	32:G:37:VAL:HG12	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:I:34:GLU:HB3	34:I:35:GLN:HE21	1.67	0.57
35:J:107:GLY:HA2	53:3:8:A:H1'	1.87	0.57
39:N:91:GLU:HA	39:N:94:ARG:HB2	1.86	0.57
46:U:8:ARG:CZ	46:U:15:PRO:HB3	2.34	0.57
52:a:10:VAL:O	52:a:14:LYS:HG3	2.04	0.57
53:3:314:C:O2'	53:3:315:A:H5'	2.04	0.57
54:1:191:A:H2'	54:1:192:C:C6	2.40	0.57
54:1:579:G:H2'	54:1:580:U:C6	2.40	0.57
54:1:1468:U:H2'	54:1:1522:A:H61	1.70	0.57
2:c:18:ASP:CG	2:c:20:VAL:HG23	2.29	0.57
4:e:109:ARG:HD3	4:e:136:ILE:O	2.04	0.57
6:g:103:VAL:HG13	6:g:108:VAL:O	2.04	0.57
13:n:9:GLN:HA	13:n:17:ARG:HH11	1.69	0.57
18:s:7:HIS:HB3	18:s:103:ILE:CG2	2.35	0.57
20:u:58:VAL:HG12	20:u:59:GLU:N	2.20	0.57
38:M:10:LEU:CD2	38:M:74:ILE:HD11	2.34	0.57
44:S:58:ARG:HH21	53:3:980:C:H4'	1.68	0.57
54:1:1053:C:H3'	54:1:1054:A:H5''	1.85	0.57
54:1:2257:U:O2'	54:1:2258:C:H5'	2.05	0.57
54:1:2557:G:H2'	54:1:2558:C:H6	1.69	0.57
4:e:72:SER:OG	4:e:79:ARG:HA	2.05	0.57
15:p:51:ASN:O	54:1:2845:U:H5''	2.04	0.57
32:G:72:LYS:C	32:G:74:ALA:H	2.12	0.57
38:M:52:GLY:HA3	38:M:56:PRO:HA	1.85	0.57
40:O:18:ILE:O	40:O:22:THR:HG23	2.05	0.57
43:R:75:SER:O	43:R:78:ARG:HB3	2.04	0.57
51:Z:58:LYS:O	51:Z:61:ARG:HD2	2.05	0.57
53:3:222:C:H2'	53:3:223:A:H8	1.68	0.57
53:3:580:C:H2'	53:3:581:G:O4'	2.05	0.57
53:3:1030:U:H3'	53:3:1031:C:H5'	1.87	0.57
54:1:2196:C:O2'	54:1:2197:U:H5'	2.04	0.57
54:1:2543:G:H2'	54:1:2544:G:C8	2.40	0.57
55:2:28:C:H2'	55:2:29:A:C8	2.40	0.57
1:b:144:GLU:HA	1:b:151:GLY:HA2	1.87	0.57
17:r:13:ARG:HD2	17:r:13:ARG:C	2.30	0.57
26:A:2:LYS:O	26:A:5:ILE:HG12	2.04	0.57
35:J:108:GLY:H	53:3:9:G:H4'	1.69	0.57
46:U:70:ARG:NE	53:3:452:A:H1'	2.19	0.57
53:3:112:G:N2	53:3:354:G:H5'	2.17	0.57
54:1:593:U:H2'	54:1:594:U:H6	1.67	0.57
1:b:144:GLU:HB2	1:b:187:CYS:HB3	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:d:45:ALA:HB3	54:1:37:C:O2'	2.05	0.57
6:g:4:ILE:HG13	6:g:39:ALA:HB2	1.86	0.57
10:k:121:GLU:HG3	10:k:122:VAL:HG23	1.87	0.57
13:n:59:SER:O	13:n:63:ARG:HG2	2.05	0.57
15:p:90:ALA:HB2	15:p:112:ARG:HA	1.85	0.57
19:t:4:GLU:O	19:t:8:LEU:HG	2.04	0.57
33:h:168:ARG:NH2	53:3:1106:G:H4'	2.20	0.57
52:a:20:GLN:HG3	52:a:223:ALA:HB3	1.86	0.57
52:a:68:GLY:HA2	52:a:159:GLY:HA2	1.86	0.57
54:1:145:C:H2'	54:1:146:A:C8	2.40	0.57
54:1:1060:U:H5''	54:1:1061:U:H3'	1.87	0.57
54:1:1173:U:H1'	54:1:1177:G:N2	2.17	0.57
54:1:2193:G:H2'	54:1:2194:U:C6	2.39	0.57
56:6:9:G:H3'	56:6:10:G:C8	2.40	0.57
52:a:10:VAL:O	52:a:14:LYS:N	2.38	0.56
52:a:215:SER:HB2	52:a:219:GLY:HA3	1.87	0.56
54:1:259:G:O2'	54:1:260:G:H5'	2.05	0.56
54:1:760:G:H2'	54:1:761:A:O4'	2.05	0.56
10:k:6:THR:HG23	54:1:1666:G:H4'	1.86	0.56
10:k:108:ARG:HG3	10:k:113:MET:CE	2.31	0.56
39:N:79:ARG:HD2	39:N:102:PHE:CD1	2.41	0.56
50:Y:27:MET:HE1	50:Y:66:ILE:HD11	1.87	0.56
51:Z:34:ARG:HD3	51:Z:36:PHE:CZ	2.39	0.56
54:1:1579:A:H2'	54:1:1580:A:C8	2.40	0.56
54:1:2443:C:O2'	54:1:2444:G:H5'	2.05	0.56
54:1:2788:C:H2'	54:1:2789:C:C6	2.40	0.56
5:f:175:LYS:HD2	5:f:176:LYS:N	2.20	0.56
9:j:1:MET:CG	9:j:2:LYS:H	2.13	0.56
17:r:2:TYR:HE2	17:r:40:MET:HE3	1.69	0.56
18:s:98:LYS:HD3	54:1:2012:G:OP1	2.05	0.56
21:v:2:PHE:HB3	21:v:61:LEU:HD13	1.86	0.56
34:I:36:ALA:N	34:I:37:PRO:HD3	2.19	0.56
34:I:97:LEU:O	34:I:101:VAL:HG23	2.05	0.56
34:I:158:LEU:HD12	34:I:159:GLU:N	2.19	0.56
36:K:19:PRO:HA	36:K:22:ILE:CD1	2.35	0.56
36:K:49:TYR:HE1	48:W:65:SER:HA	1.71	0.56
41:P:91:GLY:O	41:P:93:GLU:N	2.39	0.56
52:a:37:LYS:HB2	54:1:2127:G:H5'	1.87	0.56
53:3:82:G:H2'	53:3:83:C:H5'	1.86	0.56
53:3:1435:G:H2'	53:3:1436:U:H6	1.70	0.56
54:1:549:G:H2'	54:1:550:C:H6	1.69	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:1197:G:H2'	54:1:1198:U:H6	1.69	0.56
54:1:1771:C:H2'	54:1:1772:A:C8	2.39	0.56
54:1:2386:A:H2'	54:1:2387:U:C6	2.40	0.56
54:1:2393:U:O2'	54:1:2394:C:H5'	2.04	0.56
11:l:93:ASN:O	11:l:94:THR:HB	2.04	0.56
13:n:10:LEU:O	13:n:12:ARG:HG3	2.05	0.56
35:J:104:ILE:HG22	35:J:122:VAL:HG12	1.88	0.56
37:L:77:ARG:HG3	37:L:78:ARG:H	1.69	0.56
41:P:28:ASN:ND2	41:P:30:ILE:HG12	2.21	0.56
43:R:84:CYS:SG	43:R:86:ARG:HG3	2.46	0.56
54:1:75:G:H2'	54:1:75:G:N3	2.21	0.56
54:1:310:A:H2'	54:1:311:A:H5''	1.87	0.56
54:1:1728:C:H2'	54:1:1729:U:H5''	1.88	0.56
54:1:2104:C:H2'	54:1:2105:U:C6	2.41	0.56
54:1:2366:A:H2'	54:1:2367:G:O4'	2.04	0.56
55:2:118:C:H2'	55:2:119:A:H8	1.69	0.56
2:c:3:GLY:C	2:c:4:LEU:HD12	2.30	0.56
6:g:83:LYS:HA	6:g:149:GLU:HB2	1.87	0.56
28:C:32:LYS:HB2	28:C:50:GLU:HG2	1.88	0.56
32:G:216:VAL:O	32:G:220:VAL:HG12	2.05	0.56
35:J:133:ILE:HD12	35:J:133:ILE:N	2.20	0.56
37:L:68:VAL:HG13	37:L:99:ALA:HB1	1.87	0.56
39:N:54:VAL:HG12	39:N:96:GLU:OE2	2.06	0.56
52:a:14:LYS:HD2	52:a:33:LEU:HD23	1.88	0.56
52:a:51:ASP:HB3	52:a:53:ARG:CD	2.35	0.56
53:3:545:C:O2'	53:3:546:A:H5'	2.06	0.56
53:3:1354:U:H2'	53:3:1355:G:C8	2.40	0.56
54:1:414:C:H2'	54:1:415:A:C8	2.40	0.56
54:1:623:C:H2'	54:1:624:C:C6	2.40	0.56
54:1:1161:C:H2'	54:1:1162:G:H8	1.70	0.56
54:1:2318:G:H2'	54:1:2319:G:O4'	2.05	0.56
54:1:2512:C:H2'	54:1:2513:A:O4'	2.05	0.56
4:e:68:LYS:NZ	55:2:41:G:H22	2.03	0.56
6:g:40:THR:HB	6:g:43:ASN:HB2	1.88	0.56
9:j:89:PHE:O	9:j:93:ILE:HG12	2.05	0.56
23:x:68:ALA:HA	23:x:71:ARG:HD3	1.87	0.56
32:G:53:LEU:HD13	32:G:219:THR:HG21	1.88	0.56
32:G:67:LEU:HD21	32:G:91:VAL:HG23	1.88	0.56
36:K:18:VAL:HG12	36:K:19:PRO:HD3	1.87	0.56
38:M:12:ARG:HH12	38:M:27:PRO:HD3	1.69	0.56
41:P:124:LYS:HD2	41:P:124:LYS:C	2.30	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:R:94:LEU:HD23	43:R:95:PRO:N	2.20	0.56
45:T:68:TYR:O	45:T:71:ARG:HG3	2.06	0.56
46:U:29:ASN:HD22	46:U:29:ASN:N	2.03	0.56
53:3:483:C:H2'	53:3:484:G:C8	2.41	0.56
54:1:1316:U:H2'	54:1:1317:G:H8	1.69	0.56
54:1:1487:U:H2'	54:1:1488:C:C6	2.40	0.56
54:1:1702:G:C3'	54:1:1703:G:H5''	2.36	0.56
2:c:102:ALA:HA	2:c:180:VAL:HG21	1.86	0.56
11:l:80:SER:HB3	11:l:114:GLY:HA3	1.88	0.56
31:F:33:HIS:O	31:F:35:GLN:HG3	2.05	0.56
33:H:21:TRP:HB3	33:H:58:ARG:H	1.70	0.56
34:I:86:GLY:O	34:I:90:LEU:HG	2.06	0.56
34:I:110:ARG:HH11	34:I:110:ARG:CB	2.19	0.56
44:S:84:ARG:HH11	44:S:84:ARG:HG3	1.71	0.56
52:a:53:ARG:H	52:a:53:ARG:HD2	1.71	0.56
52:a:210:LYS:HG2	52:a:211:LYS:N	2.19	0.56
54:1:720:U:H2'	54:1:721:A:H8	1.71	0.56
54:1:2662:A:H2'	54:1:2663:G:O4'	2.05	0.56
10:k:25:LEU:HD21	10:k:40:LYS:HB2	1.87	0.56
12:m:50:ARG:HD3	12:m:65:ILE:HD11	1.87	0.56
14:o:8:ILE:HD12	14:o:8:ILE:N	2.21	0.56
32:G:173:LYS:HD3	32:G:173:LYS:C	2.30	0.56
32:G:224:ARG:HD3	32:G:224:ARG:H	1.70	0.56
34:I:151:GLN:HG3	53:3:437:U:H5''	1.88	0.56
35:J:44:ARG:HH21	35:J:70:MET:HG2	1.71	0.56
42:Q:43:LYS:HD3	42:Q:43:LYS:C	2.31	0.56
51:Z:39:LYS:HE2	51:Z:39:LYS:CA	2.34	0.56
53:3:321:A:H2'	53:3:322:C:C6	2.40	0.56
54:1:161:A:H3'	54:1:162:U:H5''	1.88	0.56
54:1:1431:A:O2'	54:1:1432:G:H5'	2.05	0.56
54:1:1725:U:H2'	54:1:1726:C:C6	2.40	0.56
54:1:2246:G:H2'	54:1:2247:A:H8	1.69	0.56
11:l:20:GLY:HA2	11:l:28:GLY:HA2	1.88	0.56
12:m:39:GLY:HA3	12:m:126:ILE:HD11	1.88	0.56
16:q:35:PHE:O	16:q:39:ILE:HG12	2.05	0.56
32:G:13:VAL:HG13	32:G:15:PHE:CE1	2.41	0.56
49:X:9:PHE:CD2	53:3:1318:A:H4'	2.41	0.56
49:X:10:ILE:HD12	49:X:15:LEU:HD21	1.88	0.56
53:3:497:G:H2'	53:3:498:A:C8	2.41	0.56
53:3:991:U:C4	53:3:1212:U:H4'	2.41	0.56
53:3:1144:G:N2	53:3:1146:A:H62	2.03	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:1383:A:H2	54:1:1406:U:H1'	1.70	0.56
1:b:44:ASN:ND2	54:1:1812:U:H1'	2.21	0.56
2:c:3:GLY:HA3	2:c:203:VAL:O	2.05	0.56
13:n:29:VAL:HG13	13:n:83:LEU:HD21	1.87	0.56
13:n:33:ILE:HG13	13:n:114:GLU:HB3	1.87	0.56
25:z:56:VAL:CG2	25:z:58:GLU:HB2	2.36	0.56
33:H:96:VAL:HB	33:H:97:PRO:HD2	1.88	0.56
38:M:28:SER:HB2	38:M:58:LEU:CB	2.36	0.56
40:O:15:HIS:HB3	40:O:70:HIS:ND1	2.21	0.56
40:O:76:ILE:H	40:O:76:ILE:HD12	1.71	0.56
53:3:97:G:H2'	53:3:98:A:O4'	2.06	0.56
53:3:520:A:H3'	53:3:521:G:H5''	1.87	0.56
54:1:545:U:C2	54:1:546:U:H1'	2.41	0.56
54:1:1656:C:H2'	54:1:1657:U:H6	1.71	0.56
54:1:1679:A:H2'	54:1:1680:U:H6	1.71	0.56
54:1:1934:C:O2'	54:1:1935:G:H5'	2.06	0.56
54:1:2024:G:OP2	54:1:2034:U:H4'	2.06	0.56
54:1:2543:G:H2'	54:1:2544:G:H8	1.70	0.56
54:1:2646:C:H2'	54:1:2647:U:O4'	2.06	0.56
55:2:104:A:H2'	55:2:105:G:O4'	2.06	0.56
56:5:9:G:N3	56:5:45:G:H2'	2.21	0.56
56:5:62:C:H2'	56:5:63:G:C8	2.41	0.56
5:f:139:VAL:O	5:f:143:VAL:HG23	2.06	0.55
6:g:80:ILE:O	6:g:147:VAL:HG23	2.05	0.55
8:i:20:SER:HB3	8:i:21:PRO:HD3	1.87	0.55
18:s:23:LEU:HD21	27:B:21:LEU:O	2.06	0.55
38:M:26:MET:HE2	38:M:32:LYS:HZ2	1.70	0.55
53:3:102:G:H2'	53:3:103:U:H6	1.70	0.55
53:3:1062:U:H2'	53:3:1063:C:C6	2.41	0.55
53:3:1369:C:H2'	53:3:1370:G:H8	1.71	0.55
54:1:1316:U:H2'	54:1:1317:G:C8	2.41	0.55
54:1:1475:G:O2'	54:1:1476:U:H6	1.89	0.55
54:1:1956:U:H2'	54:1:1957:C:H5'	1.88	0.55
55:2:29:A:H2'	55:2:30:C:H6	1.71	0.55
1:b:77:VAL:HG21	1:b:109:LEU:HD11	1.88	0.55
18:s:7:HIS:HB2	18:s:50:VAL:HG22	1.87	0.55
25:z:5:LYS:CB	25:z:57:GLU:HB2	2.36	0.55
34:I:7:LYS:H	34:I:7:LYS:HD2	1.71	0.55
43:R:24:VAL:HG23	43:R:28:ARG:HB3	1.87	0.55
47:V:20:ILE:HG22	47:V:45:VAL:HB	1.89	0.55
51:Z:41:THR:HG23	51:Z:44:ARG:HH22	1.70	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1355:G:H2'	53:3:1356:G:C8	2.40	0.55
47:V:45:VAL:HG12	47:V:46:HIS:O	2.05	0.55
53:3:265:G:N2	53:3:267:C:H5'	2.21	0.55
53:3:1202:U:H2'	53:3:1203:C:H5'	1.88	0.55
54:1:533:G:H2'	54:1:534:U:C6	2.42	0.55
54:1:971:G:H2'	54:1:972:A:O4'	2.05	0.55
58:7:16:C:O2'	58:7:17:U:H5'	2.06	0.55
1:b:131:MET:HE1	1:b:183:VAL:HG21	1.88	0.55
16:q:105:PHE:O	16:q:109:VAL:HG23	2.06	0.55
20:u:95:PHE:O	20:u:99:SER:HA	2.07	0.55
33:H:106:ARG:HB3	33:H:107:LYS:NZ	2.20	0.55
35:J:107:GLY:CA	53:3:9:G:H5'	2.36	0.55
37:L:14:ASP:OD1	37:L:15:PRO:HD2	2.07	0.55
46:U:43:ALA:HA	46:U:46:LYS:HZ2	1.70	0.55
46:U:79:ASN:O	46:U:82:ALA:N	2.25	0.55
50:Y:2:ASN:CG	50:Y:3:ILE:H	2.13	0.55
53:3:1412:C:H2'	53:3:1413:A:C8	2.40	0.55
54:1:74:A:H4'	54:1:75:G:O5'	2.07	0.55
54:1:301:G:H1'	54:1:302:C:C6	2.42	0.55
54:1:441:U:O2'	54:1:442:G:H5'	2.06	0.55
54:1:1503:A:C3'	54:1:1504:A:H5''	2.37	0.55
54:1:2229:U:H2'	54:1:2230:G:H8	1.71	0.55
55:2:49:C:H2'	55:2:50:A:H8	1.71	0.55
2:c:24:VAL:CG1	2:c:178:VAL:HG21	2.37	0.55
2:c:40:LEU:H	2:c:40:LEU:HD12	1.72	0.55
10:k:41:ILE:HD11	10:k:86:LEU:HD21	1.88	0.55
37:L:78:ARG:HD3	37:L:83:THR:HG22	1.88	0.55
43:R:85:TYR:HA	43:R:88:LEU:HD12	1.88	0.55
53:3:493:A:H2'	53:3:494:G:C8	2.42	0.55
53:3:708:C:H2'	53:3:709:U:C6	2.42	0.55
54:1:1585:C:H2'	54:1:1586:A:H5'	1.89	0.55
54:1:1684:G:H2'	54:1:1685:C:C6	2.41	0.55
54:1:2233:U:H2'	54:1:2234:G:H8	1.70	0.55
2:c:179:ARG:HD2	2:c:180:VAL:N	2.22	0.55
3:d:181:ILE:HG22	11:l:2:ARG:HB3	1.88	0.55
4:e:32:LYS:HD3	4:e:91:ARG:HH11	1.70	0.55
14:o:24:THR:HG23	14:o:40:ILE:O	2.07	0.55
15:p:52:ARG:NH2	54:1:2720:U:H5''	2.20	0.55
23:x:32:LEU:O	23:x:33:HIS:ND1	2.39	0.55
36:K:72:ASP:O	36:K:76:THR:HG23	2.07	0.55
38:M:76:ARG:HH12	38:M:125:ILE:HG23	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:R:5:GLY:C	43:R:6:ILE:HD12	2.32	0.55
53:3:448:A:H2'	53:3:449:G:O4'	2.06	0.55
54:1:75:G:H22	54:1:111:A:H2	1.53	0.55
54:1:2743:U:H2'	54:1:2744:G:H5''	1.88	0.55
1:b:42:ARG:HH12	1:b:48:ILE:HB	1.72	0.55
1:b:62:ARG:HG3	1:b:62:ARG:HH11	1.71	0.55
6:g:42:LYS:HG3	6:g:43:ASN:N	2.22	0.55
7:h:79:PRO:HA	54:1:1108:U:OP1	2.06	0.55
14:o:111:ARG:HG2	14:o:111:ARG:HH21	1.70	0.55
19:t:3:ARG:O	19:t:7:LEU:HD13	2.07	0.55
21:v:42:LEU:HD11	21:v:91:PHE:HE2	1.72	0.55
22:w:17:LEU:HD21	22:w:37:ARG:HH21	1.71	0.55
32:G:75:ALA:HB1	32:G:209:VAL:HG21	1.89	0.55
32:G:162:VAL:HG23	32:G:168:GLU:OE1	2.07	0.55
34:I:27:ILE:HG13	34:I:28:ASP:H	1.72	0.55
52:a:11:ILE:HD13	52:a:218:MET:HB2	1.88	0.55
52:a:66:PRO:CG	52:a:191:ALA:HB3	2.36	0.55
52:a:162:ARG:HB2	52:a:162:ARG:NH2	2.22	0.55
53:3:824:G:H2'	53:3:825:A:H8	1.71	0.55
53:3:1033:G:H2'	53:3:1034:G:H4'	1.87	0.55
53:3:1462:C:H2'	53:3:1463:U:C6	2.42	0.55
53:3:1517:G:C2'	53:3:1518:A:H5'	2.37	0.55
54:1:745:G:C2'	54:1:746:U:H5'	2.37	0.55
54:1:782:A:H5'	54:1:783:A:C2	2.42	0.55
54:1:2461:A:H2'	54:1:2462:C:C6	2.41	0.55
54:1:2590:A:O2'	54:1:2591:C:H5'	2.06	0.55
3:d:131:THR:HG22	3:d:160:ALA:O	2.06	0.55
4:e:104:THR:HA	26:A:38:SER:HB3	1.89	0.55
6:g:7:ASP:CG	6:g:8:LYS:H	2.15	0.55
12:m:50:ARG:HA	12:m:53:MET:CE	2.35	0.55
33:H:137:VAL:HG12	33:H:169:GLU:OE1	2.07	0.55
33:H:174:LEU:HD23	33:H:181:ILE:HD13	1.89	0.55
34:I:27:ILE:HG13	34:I:28:ASP:N	2.22	0.55
37:L:71:THR:O	37:L:90:VAL:HG12	2.07	0.55
42:Q:65:TYR:HB2	42:Q:92:VAL:HG11	1.88	0.55
52:a:22:ASP:O	52:a:26:ALA:N	2.40	0.55
54:1:1990:C:H2'	54:1:1991:U:C6	2.41	0.55
54:1:2273:A:H2'	54:1:2274:A:H8	1.70	0.55
8:i:20:SER:HA	8:i:24:GLY:HA3	1.89	0.55
20:u:31:GLY:O	20:u:66:VAL:HG23	2.06	0.55
20:u:32:LYS:HD2	20:u:63:ALA:O	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:G:94:ARG:HD3	53:3:1100:C:OP2	2.06	0.55
32:G:110:ILE:HG12	32:G:147:LEU:HD13	1.88	0.55
33:H:1:GLY:HA2	53:3:1060:U:C5	2.42	0.55
39:N:70:GLY:HA3	53:3:1371:G:O3'	2.07	0.55
49:X:13:HIS:NE2	53:3:1014:A:H4'	2.21	0.55
51:Z:7:GLU:HB2	51:Z:11:PHE:CE1	2.42	0.55
51:Z:66:ARG:HA	51:Z:66:ARG:NE	2.20	0.55
53:3:477:C:H2'	53:3:478:A:C8	2.42	0.55
53:3:1148:U:H2'	53:3:1149:C:O4'	2.07	0.55
54:1:106:C:H2'	54:1:107:G:C8	2.40	0.55
54:1:444:C:O2'	54:1:445:C:H5'	2.07	0.55
54:1:2626:C:H2'	54:1:2627:G:H8	1.72	0.55
58:7:27:A:H2'	58:7:28:C:H6	1.71	0.55
1:b:93:VAL:HG12	1:b:94:LEU:N	2.22	0.55
7:h:11:ILE:O	7:h:15:VAL:HG23	2.06	0.55
7:h:62:ARG:HG2	7:h:62:ARG:HH11	1.72	0.55
10:k:16:ALA:HA	10:k:46:ALA:HA	1.88	0.55
13:n:38:LEU:HB3	13:n:39:PRO:HD3	1.89	0.55
24:y:9:LYS:NZ	24:y:11:VAL:HG23	2.22	0.55
35:J:111:ARG:HH11	35:J:111:ARG:HG3	1.72	0.55
39:N:83:THR:CG2	39:N:97:LEU:HD21	2.37	0.55
40:O:52:LEU:HD21	40:O:59:LYS:HA	1.89	0.55
40:O:76:ILE:HD12	40:O:76:ILE:N	2.21	0.55
45:T:68:TYR:HB2	53:3:754:C:H4'	1.88	0.55
53:3:1355:G:H2'	53:3:1356:G:H8	1.70	0.55
54:1:2246:G:H1'	54:1:2426:A:C2	2.42	0.55
54:1:2489:U:O2'	54:1:2490:G:H5'	2.07	0.55
54:1:2590:A:H61	54:1:2604:U:H3	1.54	0.55
5:f:125:PRO:HG3	5:f:131:VAL:HG23	1.89	0.54
8:i:72:THR:HB	8:i:73:PRO:HD2	1.89	0.54
42:Q:2:THR:O	42:Q:5:GLN:N	2.40	0.54
42:Q:66:ILE:HD12	42:Q:66:ILE:N	2.22	0.54
43:R:69:ARG:HG2	43:R:69:ARG:HH11	1.72	0.54
44:S:55:SER:OG	44:S:58:ARG:HG3	2.05	0.54
46:U:8:ARG:NE	46:U:15:PRO:HB3	2.21	0.54
50:Y:34:VAL:HG22	50:Y:49:ALA:HB1	1.89	0.54
53:3:211:G:C2'	53:3:212:G:H5'	2.38	0.54
54:1:1441:G:H2'	54:1:1442:U:C6	2.42	0.54
54:1:1656:C:H2'	54:1:1657:U:C6	2.42	0.54
5:f:71:LEU:O	5:f:75:VAL:HG23	2.08	0.54
11:l:29:LYS:O	11:l:30:THR:HG23	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:q:40:LYS:HE3	54:1:563:A:H4'	1.90	0.54
19:t:11:LEU:O	19:t:12:ARG:HD2	2.07	0.54
25:z:15:ARG:HG2	25:z:15:ARG:HH11	1.71	0.54
35:J:89:THR:HG21	53:3:1078:U:C2	2.42	0.54
39:N:70:GLY:H	53:3:1371:G:H5''	1.72	0.54
42:Q:14:LYS:HZ3	53:3:562:U:H5	1.54	0.54
43:R:2:ARG:HA	43:R:7:ASN:O	2.06	0.54
47:V:68:LYS:HD2	53:3:253:A:OP1	2.07	0.54
53:3:1171:A:H2'	53:3:1172:C:C6	2.42	0.54
54:1:549:G:H2'	54:1:550:C:C6	2.42	0.54
54:1:727:A:O2'	54:1:728:G:H5'	2.07	0.54
54:1:842:U:O2'	54:1:843:G:H5'	2.07	0.54
54:1:1468:U:H2'	54:1:1522:A:N6	2.23	0.54
54:1:1922:G:H2'	54:1:1923:U:C6	2.42	0.54
55:2:106:G:H2'	55:2:107:G:O4'	2.07	0.54
15:p:26:GLU:HB3	15:p:84:SER:OG	2.07	0.54
28:C:34:GLU:HA	28:C:48:TYR:O	2.08	0.54
53:3:769:G:H4'	53:3:1513:A:H4'	1.90	0.54
54:1:818:G:O2'	54:1:819:A:H5''	2.08	0.54
54:1:1083:U:O2'	54:1:1084:A:H5'	2.07	0.54
54:1:1139:G:O2'	54:1:1140:C:H5'	2.06	0.54
54:1:1874:C:H2'	54:1:1875:G:O4'	2.07	0.54
54:1:2078:C:H2'	54:1:2079:U:H6	1.72	0.54
4:e:41:GLU:HB3	4:e:45:ASP:OD2	2.07	0.54
4:e:111:ARG:HG2	4:e:112:ASP:OD2	2.06	0.54
13:n:38:LEU:HD23	13:n:38:LEU:C	2.32	0.54
14:o:94:ARG:HD3	54:1:2376:A:N6	2.22	0.54
27:B:2:VAL:HG11	54:1:2016:U:H1'	1.88	0.54
41:P:19:VAL:CG1	41:P:84:MET:HE3	2.36	0.54
50:Y:36:ALA:HA	50:Y:39:GLU:HG2	1.87	0.54
53:3:225:C:C3'	53:3:226:G:H5''	2.36	0.54
54:1:145:C:H2'	54:1:146:A:H8	1.72	0.54
54:1:1796:U:H2'	54:1:1797:G:H8	1.72	0.54
54:1:1930:G:H2'	54:1:1968:G:N1	2.22	0.54
4:e:111:ARG:HG3	43:R:6:ILE:HG12	1.88	0.54
5:f:100:ASN:O	5:f:116:LEU:HD23	2.07	0.54
9:j:31:GLU:CG	9:j:142:ILE:HG12	2.29	0.54
11:l:57:LEU:HA	11:l:60:ARG:NH2	2.22	0.54
11:l:58:TYR:O	30:E:12:ARG:HD2	2.08	0.54
14:o:31:THR:HG23	14:o:32:PRO:HD2	1.89	0.54
30:E:18:LYS:HB3	54:1:651:G:OP1	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:E:31:ILE:HD11	30:E:34:LYS:HG2	1.88	0.54
44:S:12:ARG:NH1	44:S:12:ARG:HB2	2.23	0.54
53:3:224:U:H2'	53:3:225:C:C6	2.43	0.54
53:3:272:C:H2'	53:3:273:U:C6	2.42	0.54
53:3:459:A:H2'	53:3:460:A:H8	1.71	0.54
53:3:459:A:H2'	53:3:460:A:C8	2.43	0.54
53:3:1411:C:H2'	53:3:1412:C:C6	2.43	0.54
54:1:1199:U:H2'	54:1:1200:C:C6	2.43	0.54
54:1:2233:U:H2'	54:1:2234:G:C8	2.43	0.54
9:j:52:ASP:N	9:j:121:LYS:HE3	2.23	0.54
32:G:150:ILE:N	32:G:150:ILE:HD12	2.23	0.54
39:N:54:VAL:HG23	39:N:55:ASP:N	2.18	0.54
41:P:110:THR:HA	51:Z:3:ILE:O	2.07	0.54
41:P:122:PRO:HB2	51:Z:33:ARG:HA	1.88	0.54
54:1:547:A:H4'	54:1:548:G:N7	2.22	0.54
54:1:582:A:H2'	54:1:583:G:C8	2.42	0.54
54:1:1179:G:C2'	54:1:1180:U:H4'	2.38	0.54
54:1:2352:A:H2'	54:1:2353:G:H5'	1.89	0.54
2:c:179:ARG:O	2:c:188:LEU:HB2	2.08	0.54
23:x:7:THR:OG1	23:x:9:LYS:HG3	2.07	0.54
35:J:40:ASP:OD1	35:J:44:ARG:HB2	2.07	0.54
45:T:38:LEU:HD22	45:T:55:LEU:HD13	1.89	0.54
53:3:502:A:H2'	53:3:503:C:H6	1.71	0.54
53:3:516:U:H3	53:3:533:A:H62	1.54	0.54
53:3:651:C:H2'	53:3:652:U:C6	2.43	0.54
54:1:742:A:H2'	54:1:743:A:C8	2.43	0.54
54:1:2331:G:H2'	54:1:2332:C:C6	2.43	0.54
54:1:2348:U:O2'	54:1:2349:G:H5'	2.07	0.54
5:f:132:LEU:C	5:f:133:LYS:HD3	2.33	0.54
31:F:7:VAL:HB	31:F:25:VAL:CG2	2.37	0.54
32:G:20:ARG:HD2	32:G:20:ARG:C	2.33	0.54
36:K:38:ARG:HD3	36:K:97:THR:CA	2.36	0.54
40:O:43:PRO:HD3	53:3:1150:A:HO2'	1.71	0.54
40:O:81:GLU:O	40:O:84:VAL:HG12	2.07	0.54
47:V:61:ARG:HG3	47:V:73:THR:HB	1.90	0.54
48:W:14:ALA:HB2	48:W:47:ARG:HG3	1.88	0.54
54:1:1138:G:H2'	54:1:1139:G:O4'	2.08	0.54
8:i:41:PHE:O	8:i:45:THR:N	2.41	0.54
11:l:77:ILE:HD12	11:l:77:ILE:N	2.23	0.54
13:n:11:ASN:C	13:n:12:ARG:HG3	2.32	0.54
51:Z:38:GLU:HB2	53:3:1526:G:OP2	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1288:A:O2'	53:3:1353:G:H5'	2.08	0.54
54:1:64:A:H2'	54:1:65:U:C6	2.43	0.54
54:1:1794:A:H2'	54:1:1795:C:H6	1.72	0.54
58:7:3:G:H1'	58:7:4:C:C6	2.42	0.54
2:c:91:THR:HG23	2:c:94:GLN:HG3	1.90	0.54
7:h:26:VAL:HB	7:h:82:ILE:HD12	1.90	0.54
15:p:96:LEU:HD22	15:p:98:TYR:HE1	1.73	0.54
35:J:149:PRO:HA	35:J:152:VAL:HG12	1.90	0.54
42:Q:110:LYS:NZ	42:Q:121:PRO:HB3	2.23	0.54
53:3:77:A:H2'	53:3:78:A:H8	1.73	0.54
53:3:265:G:H2'	53:3:267:C:H5	1.73	0.54
53:3:272:C:H2'	53:3:273:U:H6	1.71	0.54
53:3:689:C:H2'	53:3:690:G:O4'	2.09	0.54
54:1:783:A:H2'	54:1:784:G:H4'	1.90	0.54
54:1:1077:A:C2'	54:1:1078:U:H5'	2.36	0.54
54:1:1486:U:H2'	54:1:1487:U:C6	2.43	0.54
54:1:2071:A:H2'	54:1:2072:C:C6	2.43	0.54
56:6:42:G:H2'	56:6:43:A:O4'	2.08	0.54
1:b:48:ILE:HG22	54:1:779:U:OP1	2.08	0.53
2:c:4:LEU:HD11	2:c:100:LEU:HD22	1.90	0.53
5:f:66:THR:O	5:f:70:LEU:HD23	2.08	0.53
32:G:221:ARG:O	32:G:224:ARG:HD2	2.07	0.53
42:Q:98:ARG:HB2	42:Q:116:TYR:HA	1.89	0.53
46:U:61:VAL:HG22	46:U:67:ILE:HD11	1.90	0.53
48:W:56:ARG:HB3	48:W:60:ARG:NH1	2.15	0.53
49:X:18:VAL:O	49:X:22:VAL:HG23	2.08	0.53
52:a:54:LYS:HB2	52:a:57:GLN:NE2	2.23	0.53
53:3:947:G:H2'	53:3:948:C:C6	2.43	0.53
53:3:1305:G:H1'	53:3:1332:A:N6	2.22	0.53
54:1:289:G:H2'	54:1:290:U:C6	2.43	0.53
54:1:1175:A:H3'	54:1:1176:U:C5'	2.38	0.53
54:1:1758:U:C5	54:1:2696:U:H5'	2.43	0.53
54:1:2277:G:H3'	54:1:2278:A:H5''	1.90	0.53
3:d:122:GLU:HG3	3:d:123:LYS:N	2.22	0.53
5:f:25:ILE:HD12	5:f:74:MET:HB3	1.90	0.53
11:l:93:ASN:O	11:l:94:THR:CB	2.57	0.53
32:G:46:VAL:HB	32:G:47:PRO:HD3	1.90	0.53
32:G:124:THR:HG22	32:G:127:LYS:HE2	1.91	0.53
35:J:14:LEU:HA	35:J:36:THR:HA	1.91	0.53
43:R:84:CYS:SG	43:R:85:TYR:N	2.82	0.53
47:V:64:ARG:HD2	53:3:264:C:H4'	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:262:A:H2'	54:1:263:G:O4'	2.08	0.53
54:1:948:C:H2'	54:1:949:G:C8	2.43	0.53
3:d:149:ILE:HD11	3:d:172:ALA:CA	2.35	0.53
4:e:111:ARG:CG	43:R:6:ILE:HG12	2.37	0.53
5:f:23:ILE:HG21	5:f:71:LEU:HD11	1.89	0.53
8:i:56:VAL:HG13	8:i:58:ILE:HG12	1.89	0.53
8:i:56:VAL:HG23	8:i:69:VAL:C	2.34	0.53
16:q:57:ARG:O	16:q:61:ILE:HG12	2.08	0.53
27:B:46:GLY:HA3	27:B:54:ILE:CG2	2.38	0.53
34:I:40:HIS:HD2	34:I:43:ARG:NH2	2.06	0.53
38:M:48:PHE:HB2	38:M:58:LEU:HD11	1.88	0.53
38:M:88:LYS:C	38:M:88:LYS:HD3	2.34	0.53
43:R:65:GLU:OE2	43:R:69:ARG:NE	2.39	0.53
54:1:786:C:O2'	54:1:787:C:H5'	2.08	0.53
54:1:1045:C:H5'	54:1:1046:A:H5''	1.90	0.53
54:1:1808:A:H3'	54:1:1809:A:C8	2.42	0.53
54:1:1930:G:H2'	54:1:1968:G:H1	1.73	0.53
54:1:2328:A:H2'	54:1:2329:U:H6	1.71	0.53
55:2:49:C:H2'	55:2:50:A:C8	2.43	0.53
2:c:105:LYS:O	2:c:177:VAL:HG12	2.08	0.53
14:o:33:ARG:O	14:o:33:ARG:HG2	2.08	0.53
15:p:77:SER:O	15:p:80:VAL:HG22	2.08	0.53
19:t:2:ILE:HD11	54:1:144:A:H4'	1.89	0.53
21:v:32:GLY:HA3	21:v:93:ARG:HB3	1.90	0.53
22:w:48:GLY:HA2	22:w:58:LYS:HE3	1.91	0.53
35:J:87:VAL:HA	35:J:91:SER:O	2.09	0.53
37:L:23:ALA:O	37:L:26:VAL:HG22	2.08	0.53
42:Q:75:GLU:O	42:Q:76:HIS:ND1	2.42	0.53
43:R:22:TYR:CE2	43:R:68:LEU:HD23	2.44	0.53
43:R:24:VAL:HA	53:3:1329:A:H5''	1.91	0.53
52:a:43:ASP:OD2	54:1:2176:A:H1'	2.08	0.53
53:3:291:U:O2'	53:3:292:G:H5'	2.09	0.53
54:1:717:C:C2'	54:1:718:A:H5'	2.37	0.53
54:1:871:U:H2'	54:1:872:U:C6	2.43	0.53
54:1:2552:U:H2'	54:1:2554:U:OP2	2.09	0.53
4:e:116:LEU:CD1	4:e:175:PRO:HD2	2.37	0.53
9:j:3:THR:HG21	16:q:56:PHE:CE1	2.44	0.53
11:l:64:PHE:HZ	30:E:14:LYS:HG2	1.74	0.53
27:B:12:ARG:HH11	27:B:12:ARG:HG3	1.74	0.53
29:D:31:LEU:HB3	29:D:35:ARG:HH12	1.73	0.53
33:H:171:ARG:HG3	53:3:1107:C:P	2.48	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:J:92:ARG:O	35:J:93:VAL:C	2.45	0.53
53:3:139:A:H2'	53:3:140:U:C6	2.44	0.53
53:3:1170:A:H2'	53:3:1171:A:O4'	2.08	0.53
54:1:176:A:O2'	54:1:177:G:H5'	2.08	0.53
55:2:119:A:N3	55:2:120:A:C1'	2.69	0.53
2:c:202:ILE:HD12	2:c:202:ILE:N	2.24	0.53
32:G:33:ALA:HB3	32:G:37:VAL:O	2.09	0.53
35:J:93:VAL:HG12	35:J:138:ALA:HB1	1.89	0.53
47:V:60:ILE:HG22	47:V:61:ARG:H	1.73	0.53
51:Z:36:PHE:C	51:Z:38:GLU:N	2.67	0.53
53:3:279:A:H4'	53:3:281:G:N7	2.24	0.53
53:3:1118:U:H2'	53:3:1119:C:C6	2.44	0.53
53:3:1432:G:H1'	53:3:1468:A:N6	2.23	0.53
54:1:582:A:H2'	54:1:583:G:H8	1.73	0.53
54:1:704:G:H2'	54:1:726:G:N2	2.22	0.53
54:1:2861:U:H2'	54:1:2862:G:H8	1.74	0.53
1:b:48:ILE:HD11	1:b:51:ARG:HA	1.90	0.53
2:c:35:THR:HG22	2:c:73:VAL:CG2	2.38	0.53
4:e:49:LEU:HD21	4:e:83:PRO:HB2	1.89	0.53
6:g:5:LEU:HD11	6:g:19:VAL:CG2	2.38	0.53
8:i:34:ILE:O	8:i:38:CYS:N	2.41	0.53
10:k:7:MET:HE3	10:k:18:ARG:NE	2.23	0.53
10:k:103:VAL:HG23	10:k:104:THR:N	2.14	0.53
12:m:45:GLN:NE2	12:m:125:PRO:HG3	2.24	0.53
37:L:55:LYS:HB2	37:L:59:GLU:OE2	2.08	0.53
39:N:105:ARG:O	39:N:105:ARG:HD3	2.08	0.53
53:3:273:U:C2'	53:3:274:A:H5'	2.38	0.53
53:3:381:C:H2'	53:3:382:A:O4'	2.09	0.53
53:3:1235:U:C3'	53:3:1236:A:H5''	2.38	0.53
53:3:1521:C:H2'	53:3:1522:U:C6	2.44	0.53
54:1:2393:U:H2'	54:1:2394:C:C6	2.43	0.53
54:1:2626:C:H2'	54:1:2627:G:C8	2.44	0.53
1:b:257:ARG:HD3	54:1:1799:G:OP1	2.09	0.53
3:d:146:VAL:HG22	3:d:147:LEU:N	2.24	0.53
13:n:12:ARG:HG2	13:n:12:ARG:HH21	1.74	0.53
17:r:14:VAL:HG21	17:r:98:ILE:HG13	1.90	0.53
18:s:82:MET:HB3	18:s:84:ARG:HH22	1.73	0.53
19:t:7:LEU:HD23	19:t:46:ALA:HA	1.91	0.53
29:D:41:ARG:NH2	29:D:41:ARG:HB3	2.23	0.53
35:J:12:GLU:OE2	35:J:63:MET:HE3	2.08	0.53
41:P:12:ARG:HD3	41:P:12:ARG:N	2.24	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:Q:62:VAL:HG11	42:Q:94:TYR:CE2	2.44	0.53
44:S:5:MET:HE1	53:3:982:U:H5''	1.90	0.53
51:Z:16:ARG:HG2	51:Z:19:LYS:HZ2	1.74	0.53
53:3:1060:U:O2'	53:3:1061:G:H5'	2.09	0.53
54:1:146:A:H2'	54:1:147:C:C6	2.43	0.53
54:1:236:C:H2'	54:1:237:C:H6	1.74	0.53
54:1:1810:A:H2'	54:1:1811:G:H5'	1.91	0.53
58:7:59:A:O2'	58:7:60:U:H5'	2.08	0.53
9:j:99:ARG:O	9:j:103:ILE:HG13	2.09	0.53
13:n:86:ARG:HH21	13:n:117:ASP:CB	2.21	0.53
14:o:7:ARG:O	14:o:10:ARG:HB3	2.09	0.53
41:P:30:ILE:HG12	41:P:45:THR:HG22	1.89	0.53
42:Q:94:TYR:O	42:Q:95:HIS:ND1	2.41	0.53
44:S:25:GLU:HG3	44:S:26:LEU:HD12	1.91	0.53
53:3:225:C:C2'	53:3:226:G:H5''	2.38	0.53
53:3:243:A:H4'	53:3:244:U:H3'	1.89	0.53
54:1:191:A:H2'	54:1:192:C:H6	1.73	0.53
54:1:522:A:H2'	54:1:523:C:C6	2.43	0.53
54:1:2134:A:C2	54:1:2159:G:H4'	2.44	0.53
56:6:46:G:H2'	56:6:47:U:H5'	1.91	0.53
1:b:48:ILE:HG22	54:1:779:U:P	2.48	0.53
1:b:145:MET:HE1	54:1:1800:C:C2'	2.36	0.53
5:f:7:PRO:HB2	5:f:48:THR:HG21	1.91	0.53
10:k:15:GLY:C	10:k:47:ILE:HG22	2.34	0.53
13:n:103:ARG:NE	13:n:110:MET:HE2	2.24	0.53
17:r:68:ARG:NH1	17:r:90:ARG:HB2	2.24	0.53
18:s:18:ARG:NH1	54:1:518:G:H4'	2.24	0.53
19:t:50:LEU:HD23	24:y:26:PHE:CE1	2.44	0.53
39:N:23:GLY:N	39:N:60:LEU:HA	2.24	0.53
45:T:24:THR:HG22	45:T:69:LEU:HD22	1.90	0.53
53:3:533:A:O2'	53:3:534:U:H5''	2.09	0.53
53:3:1070:U:H2'	53:3:1071:C:C6	2.43	0.53
53:3:1517:G:H2'	53:3:1518:A:H5'	1.90	0.53
54:1:2277:G:C2'	54:1:2278:A:H5''	2.40	0.53
54:1:2282:G:H4'	54:1:2389:G:O2'	2.08	0.53
3:d:85:PHE:CE2	54:1:587:C:H5'	2.44	0.52
10:k:71:ARG:HB3	10:k:72:PRO:HD2	1.91	0.52
11:l:95:LEU:HD11	11:l:125:LEU:HD21	1.91	0.52
12:m:24:THR:O	12:m:101:VAL:HG23	2.09	0.52
20:u:24:VAL:HG22	20:u:35:VAL:HG12	1.91	0.52
22:w:33:ILE:HD12	22:w:33:ILE:N	2.24	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:D:12:ARG:CZ	29:D:44:VAL:HG21	2.39	0.52
39:N:112:ARG:HE	44:S:100:TRP:CD1	2.26	0.52
50:Y:2:ASN:N	53:3:332:G:OP2	2.42	0.52
54:1:929:U:H2'	54:1:930:G:C8	2.44	0.52
56:6:69:C:H3'	56:6:70:G:H5''	1.90	0.52
2:c:151:THR:HB	2:c:152:PRO:HD3	1.91	0.52
4:e:111:ARG:HD3	43:R:6:ILE:HG12	1.90	0.52
15:p:83:ILE:HD12	15:p:83:ILE:N	2.25	0.52
16:q:74:SER:OG	16:q:77:LYS:HE2	2.10	0.52
33:H:79:LYS:HD2	33:H:79:LYS:N	2.24	0.52
47:V:44:HIS:CD2	47:V:69:THR:HG21	2.43	0.52
53:3:335:C:H2'	53:3:336:A:H8	1.73	0.52
53:3:524:G:H2'	53:3:525:C:C6	2.44	0.52
53:3:981:U:H2'	53:3:982:U:C5	2.44	0.52
54:1:17:G:H2'	54:1:18:U:C6	2.44	0.52
54:1:579:G:H2'	54:1:580:U:H6	1.75	0.52
54:1:1297:C:OP1	54:1:2710:C:H4'	2.08	0.52
54:1:2376:A:H2'	54:1:2377:A:O4'	2.09	0.52
54:1:2836:U:H2'	54:1:2837:A:C8	2.44	0.52
58:7:43:U:H2'	58:7:44:G:C8	2.45	0.52
1:b:250:GLN:NE2	1:b:251:THR:O	2.35	0.52
6:g:116:ARG:HB2	6:g:131:SER:O	2.09	0.52
22:w:42:HIS:HB3	22:w:75:PHE:CE1	2.44	0.52
31:F:3:VAL:HG21	54:1:2539:C:H5'	1.90	0.52
38:M:46:GLU:O	38:M:61:THR:HB	2.09	0.52
52:a:27:ILE:HD12	52:a:185:LEU:HB2	1.90	0.52
53:3:1522:U:H2'	53:3:1523:G:H8	1.73	0.52
54:1:210:C:H2'	54:1:211:C:C6	2.45	0.52
1:b:245:THR:HB	1:b:246:PRO:HD2	1.92	0.52
4:e:43:ILE:HG13	4:e:44:ALA:N	2.25	0.52
11:l:22:GLY:O	11:l:28:GLY:HA3	2.10	0.52
33:H:168:ARG:C	33:H:168:ARG:HD3	2.34	0.52
34:I:90:LEU:HD13	34:I:190:LEU:HD11	1.91	0.52
39:N:22:PRO:HA	39:N:60:LEU:HB3	1.92	0.52
43:R:90:HIS:HA	43:R:108:ARG:HH21	1.75	0.52
44:S:5:MET:CG	44:S:62:ARG:HH22	2.19	0.52
45:T:45:HIS:O	45:T:47:LYS:N	2.42	0.52
47:V:25:GLU:HA	47:V:40:THR:HA	1.90	0.52
49:X:28:LYS:HD2	49:X:29:PRO:CD	2.39	0.52
52:a:40:GLU:HB2	52:a:217:THR:OG1	2.10	0.52
52:a:57:GLN:HG2	52:a:203:GLN:O	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:785:G:O2'	53:3:786:G:H5'	2.08	0.52
53:3:831:A:C3'	53:3:832:G:H5''	2.40	0.52
53:3:1090:U:H2'	53:3:1091:U:H6	1.72	0.52
54:1:1179:G:C3'	54:1:1180:U:H4'	2.40	0.52
54:1:1728:C:C2'	54:1:1729:U:H5''	2.40	0.52
56:5:62:C:H2'	56:5:63:G:H8	1.73	0.52
3:d:104:ALA:O	3:d:108:ILE:HG13	2.10	0.52
13:n:79:LEU:C	13:n:81:ASN:H	2.18	0.52
21:v:64:VAL:HG22	21:v:69:GLU:HG2	1.91	0.52
33:H:5:HIS:CB	44:S:88:MET:HE3	2.39	0.52
34:I:23:GLY:HA3	53:3:409:U:OP1	2.10	0.52
34:I:57:LYS:HD3	34:I:202:LEU:HD13	1.90	0.52
50:Y:8:LYS:HA	50:Y:11:ILE:HG12	1.92	0.52
53:3:235:C:H2'	53:3:236:A:C8	2.45	0.52
53:3:455:G:H2'	53:3:456:A:C8	2.44	0.52
53:3:865:A:H2'	53:3:866:C:C6	2.45	0.52
54:1:506:G:H4'	54:1:509:C:O2	2.10	0.52
54:1:741:U:H2'	54:1:742:A:C8	2.45	0.52
54:1:1080:A:H2'	54:1:1081:U:O4'	2.09	0.52
54:1:1549:A:H2'	54:1:1550:C:C6	2.45	0.52
56:6:46:G:C2'	56:6:47:U:H5'	2.40	0.52
1:b:259:ASN:C	1:b:261:ARG:H	2.16	0.52
4:e:25:MET:HG2	4:e:29:ARG:HH21	1.74	0.52
32:G:9:LEU:HD23	32:G:9:LEU:O	2.09	0.52
37:L:21:LEU:HD22	37:L:61:PHE:HE2	1.75	0.52
37:L:142:ARG:CB	37:L:142:ARG:HH11	2.22	0.52
53:3:1404:C:H2'	53:3:1405:G:C8	2.45	0.52
54:1:1073:A:H2'	54:1:1074:G:H8	1.74	0.52
54:1:1300:G:H4'	54:1:1301:A:H5'	1.91	0.52
55:2:3:C:H3'	55:2:4:C:H5''	1.92	0.52
1:b:81:GLU:HB2	1:b:90:ILE:HG13	1.91	0.52
12:m:42:THR:OG1	12:m:45:GLN:HG2	2.10	0.52
12:m:78:LEU:HD23	12:m:79:ALA:N	2.25	0.52
15:p:38:ARG:HG2	15:p:39:LEU:N	2.22	0.52
35:J:79:THR:OG1	35:J:80:LEU:N	2.43	0.52
35:J:107:GLY:N	35:J:110:MET:HE3	2.23	0.52
52:a:44:VAL:O	52:a:172:HIS:HA	2.09	0.52
54:1:2121:G:C2'	54:1:2122:U:H5'	2.37	0.52
54:1:2139:U:H2'	54:1:2140:G:C8	2.45	0.52
54:1:2451:A:H1'	56:5:76:A:H2'	1.92	0.52
54:1:2834:G:H2'	54:1:2879:A:H61	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:86:ARG:HG3	1:b:86:ARG:HH11	1.75	0.52
2:c:62:LYS:HB2	2:c:63:PRO:HD3	1.92	0.52
4:e:71:LYS:HA	4:e:80:GLN:NE2	2.25	0.52
11:l:110:VAL:C	11:l:111:ILE:HD12	2.34	0.52
21:v:16:ALA:HA	21:v:19:ARG:NH1	2.25	0.52
34:I:1:ALA:O	34:I:67:LEU:HD11	2.10	0.52
37:L:92:PRO:HA	37:L:95:ARG:HB3	1.91	0.52
38:M:48:PHE:HB3	38:M:60:LEU:CD1	2.40	0.52
54:1:322:A:H5'	54:1:340:A:H1'	1.92	0.52
54:1:519:U:H2'	54:1:520:G:C8	2.45	0.52
54:1:758:C:O2	54:1:758:C:H2'	2.10	0.52
54:1:1417:C:H4'	54:1:1587:G:H21	1.75	0.52
54:1:1420:A:H5'	54:1:1421:G:OP2	2.09	0.52
54:1:2221:G:O2'	54:1:2222:C:H5'	2.10	0.52
20:u:85:ARG:HG3	20:u:92:VAL:CG2	2.40	0.52
21:v:53:LYS:N	21:v:53:LYS:HD2	2.24	0.52
31:F:2:LYS:HB2	31:F:35:GLN:HG2	1.91	0.52
38:M:78:SER:OG	38:M:83:ARG:HA	2.10	0.52
39:N:80:HIS:O	39:N:84:ARG:HG2	2.10	0.52
40:O:50:THR:HG23	40:O:64:GLN:HG2	1.92	0.52
43:R:22:TYR:HD2	43:R:65:GLU:HA	1.75	0.52
51:Z:19:LYS:HD2	51:Z:19:LYS:N	2.25	0.52
53:3:231:U:H2'	53:3:232:G:H8	1.74	0.52
3:d:57:LYS:HD2	3:d:58:LYS:O	2.10	0.52
4:e:36:ASN:O	4:e:151:LEU:HB2	2.10	0.52
4:e:125:GLY:HA3	4:e:159:ALA:HB3	1.92	0.52
11:l:55:MET:HE3	11:l:59:ARG:HB3	1.92	0.52
12:m:69:PRO:O	12:m:70:ASP:OD1	2.28	0.52
23:x:42:GLU:HG2	23:x:44:ARG:NE	2.25	0.52
37:L:4:ARG:HB3	37:L:6:ILE:HG23	1.91	0.52
43:R:8:ILE:HD12	43:R:8:ILE:N	2.25	0.52
44:S:27:LYS:HA	44:S:31:SER:OG	2.09	0.52
44:S:86:ALA:HB1	44:S:91:GLU:HB2	1.91	0.52
53:3:529:G:H4'	53:3:533:A:N3	2.25	0.52
53:3:869:G:H4'	53:3:872:A:C8	2.45	0.52
53:3:1241:G:H2'	53:3:1242:G:H8	1.74	0.52
54:1:368:A:H2'	54:1:369:U:O4'	2.09	0.52
54:1:1548:A:H2'	54:1:1549:A:C8	2.44	0.52
54:1:2027:G:O2'	54:1:2028:U:H5'	2.10	0.52
54:1:2070:A:H2'	54:1:2071:A:C8	2.45	0.52
23:x:62:GLY:O	23:x:66:VAL:HG23	2.09	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:y:8:GLU:HB3	24:y:12:GLU:HB3	1.91	0.51
28:C:37:LYS:HB2	28:C:48:TYR:CD2	2.45	0.51
34:I:120:LYS:HB3	34:I:128:VAL:CG2	2.40	0.51
37:L:22:LEU:O	37:L:22:LEU:HD23	2.10	0.51
53:3:997:U:H2'	53:3:998:C:C6	2.45	0.51
53:3:1314:C:H2'	53:3:1315:U:C6	2.45	0.51
54:1:173:A:H2'	54:1:174:U:C6	2.44	0.51
54:1:1181:U:H2'	54:1:1182:G:C8	2.46	0.51
54:1:2423:U:O2'	54:1:2425:A:H2'	2.10	0.51
12:m:17:ASN:O	12:m:17:ASN:ND2	2.33	0.51
12:m:53:MET:HE1	12:m:103:TYR:CG	2.45	0.51
20:u:49:PRO:HA	20:u:53:GLN:HB3	1.92	0.51
34:I:155:LYS:O	34:I:158:LEU:HG	2.10	0.51
34:I:194:ILE:HG13	34:I:194:ILE:O	2.09	0.51
35:J:59:ILE:O	35:J:63:MET:HG2	2.10	0.51
35:J:111:ARG:HD3	53:3:8:A:C2	2.45	0.51
37:L:110:ARG:HD3	37:L:122:GLU:CD	2.35	0.51
42:Q:33:CYS:HA	42:Q:54:VAL:HG12	1.92	0.51
53:3:135:C:H2'	53:3:136:C:H5'	1.91	0.51
53:3:541:G:H2'	53:3:542:G:O4'	2.10	0.51
53:3:917:G:H2'	53:3:918:A:C8	2.45	0.51
54:1:511:U:H2'	54:1:512:G:H5'	1.92	0.51
54:1:1181:U:H2'	54:1:1182:G:H8	1.74	0.51
54:1:1361:G:H2'	54:1:1362:C:C6	2.46	0.51
5:f:132:LEU:HD12	5:f:132:LEU:O	2.09	0.51
15:p:82:SER:C	15:p:83:ILE:HD12	2.35	0.51
32:G:129:THR:HG22	32:G:131:LYS:H	1.74	0.51
33:H:63:ILE:HG22	33:H:96:VAL:HG23	1.91	0.51
35:J:96:GLN:HB3	35:J:123:LEU:HG	1.93	0.51
47:V:20:ILE:N	47:V:45:VAL:O	2.43	0.51
49:X:16:LYS:O	49:X:20:LYS:HG2	2.09	0.51
51:Z:6:ARG:C	51:Z:8:ASN:H	2.18	0.51
51:Z:6:ARG:HG3	51:Z:8:ASN:H	1.75	0.51
53:3:784:A:H2'	53:3:785:G:C8	2.46	0.51
53:3:1462:C:H2'	53:3:1463:U:H6	1.75	0.51
54:1:1073:A:H2'	54:1:1074:G:C8	2.45	0.51
54:1:1771:C:H2'	54:1:1772:A:H8	1.75	0.51
54:1:2537:U:H2'	54:1:2538:C:H6	1.75	0.51
54:1:2798:U:H4'	54:1:2799:A:C4	2.45	0.51
56:5:1:C:H2'	56:5:2:G:H8	1.75	0.51
2:c:4:LEU:HD13	2:c:101:PHE:CE2	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:d:29:HIS:O	3:d:32:VAL:HG22	2.11	0.51
5:f:14:VAL:O	5:f:16:VAL:HG23	2.10	0.51
22:w:16:ARG:HE	54:1:2271:G:C5'	2.24	0.51
32:G:69:VAL:HB	32:G:168:GLU:OE2	2.11	0.51
43:R:87:GLY:O	43:R:91:ARG:N	2.40	0.51
44:S:40:ARG:O	44:S:44:VAL:HG13	2.10	0.51
49:X:12:LEU:HD23	49:X:12:LEU:C	2.35	0.51
52:a:46:VAL:O	52:a:170:ILE:HA	2.10	0.51
53:3:1040:U:H2'	53:3:1041:G:C8	2.45	0.51
53:3:1198:G:H5'	53:3:1198:G:H8	1.74	0.51
54:1:750:A:H2'	54:1:751:A:H5''	1.93	0.51
54:1:1300:G:H4'	54:1:1301:A:H5''	1.92	0.51
55:2:22:U:H2'	55:2:23:G:C8	2.45	0.51
57:4:14:A:H2'	57:4:15:A:H5'	1.91	0.51
2:c:124:ARG:CA	2:c:165:MET:HE2	2.40	0.51
12:m:78:LEU:HD23	12:m:79:ALA:HB2	1.92	0.51
17:r:16:GLU:HA	17:r:98:ILE:HG22	1.93	0.51
38:M:108:GLY:HA2	53:3:642:A:H1'	1.93	0.51
44:S:5:MET:HG2	44:S:62:ARG:NH2	2.24	0.51
46:U:67:ILE:HD12	46:U:67:ILE:N	2.17	0.51
52:a:193:LEU:O	52:a:197:LYS:N	2.39	0.51
54:1:814:C:O2'	54:1:815:C:H5'	2.11	0.51
54:1:1083:U:H2'	54:1:1085:A:OP2	2.11	0.51
1:b:144:GLU:OE2	1:b:188:ARG:HB2	2.10	0.51
2:c:129:THR:HB	54:1:1997:C:OP2	2.11	0.51
3:d:45:ALA:HB2	54:1:38:A:H4'	1.91	0.51
7:h:34:THR:CG2	54:1:1056:G:H5'	2.40	0.51
8:i:11:GLN:HB2	8:i:56:VAL:H	1.76	0.51
37:L:142:ARG:HB2	37:L:142:ARG:NH1	2.25	0.51
47:V:12:VAL:HG13	47:V:13:SER:N	2.25	0.51
54:1:226:A:H2'	54:1:227:A:O4'	2.10	0.51
54:1:415:A:H2'	54:1:416:U:C6	2.46	0.51
54:1:622:G:H2'	54:1:623:C:H6	1.76	0.51
54:1:974:G:N3	54:1:974:G:H2'	2.26	0.51
54:1:2019:A:H2	54:1:2035:G:H22	1.58	0.51
54:1:2317:A:H2'	54:1:2318:G:O4'	2.10	0.51
1:b:199:HIS:HD1	1:b:199:HIS:C	2.19	0.51
24:y:18:LEU:C	24:y:18:LEU:HD23	2.36	0.51
25:z:4:ILE:HG22	25:z:37:ARG:O	2.11	0.51
32:G:206:ILE:O	32:G:209:VAL:HG22	2.11	0.51
34:I:190:LEU:H	34:I:190:LEU:CD2	2.21	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:K:36:ILE:HD11	36:K:38:ARG:O	2.10	0.51
38:M:124:ILE:HD12	38:M:124:ILE:N	2.26	0.51
44:S:92:ILE:N	44:S:92:ILE:HD12	2.25	0.51
49:X:27:LYS:HG2	49:X:28:LYS:N	2.22	0.51
50:Y:16:ALA:HB3	53:3:323:U:H4'	1.92	0.51
51:Z:44:ARG:HH11	51:Z:44:ARG:HG3	1.75	0.51
53:3:411:A:H1'	53:3:413:G:C1'	2.40	0.51
53:3:458:U:H2'	53:3:459:A:C8	2.45	0.51
54:1:741:U:H2'	54:1:742:A:H8	1.75	0.51
54:1:947:A:H2'	54:1:948:C:H6	1.73	0.51
54:1:1857:G:H1'	54:1:1885:A:H62	1.75	0.51
54:1:2077:A:H5'	54:1:2077:A:H8	1.75	0.51
54:1:2118:U:C5	54:1:2149:U:H1'	2.40	0.51
9:j:80:HIS:CD2	54:1:2642:G:H5''	2.45	0.51
15:p:88:ARG:HH22	15:p:114:ASN:N	2.08	0.51
16:q:73:ILE:HD11	16:q:78:PHE:HA	1.93	0.51
19:t:73:ARG:HH11	54:1:456:C:H2'	1.76	0.51
20:u:42:LYS:CE	54:1:499:U:H5''	2.41	0.51
23:x:55:MET:HE1	54:1:2091:C:H5''	1.93	0.51
37:L:28:ILE:O	37:L:28:ILE:HG23	2.11	0.51
44:S:2:LYS:O	44:S:5:MET:N	2.42	0.51
44:S:27:LYS:O	44:S:31:SER:HB2	2.11	0.51
53:3:555:U:H2'	53:3:556:C:C6	2.45	0.51
53:3:1296:C:H4'	53:3:1302:C:N4	2.25	0.51
54:1:2836:U:H2'	54:1:2837:A:H8	1.75	0.51
1:b:7:PRO:HB3	1:b:13:ARG:HD3	1.92	0.51
1:b:129:LEU:N	1:b:129:LEU:HD23	2.26	0.51
1:b:156:SER:HB2	54:1:1818:U:H5'	1.91	0.51
6:g:90:LEU:HD21	6:g:93:SER:HA	1.93	0.51
11:l:131:ALA:O	11:l:135:ILE:HG13	2.10	0.51
12:m:46:ILE:HD11	12:m:67:VAL:HG23	1.93	0.51
13:n:78:LYS:O	13:n:83:LEU:HD13	2.10	0.51
20:u:45:GLN:O	54:1:483:A:H4'	2.11	0.51
22:w:78:ILE:HG22	22:w:79:GLU:N	2.26	0.51
28:C:10:LEU:HB3	28:C:48:TYR:HB3	1.91	0.51
32:G:169:HIS:HA	32:G:172:ILE:HD12	1.93	0.51
42:Q:26:CYS:SG	42:Q:29:LYS:HD3	2.51	0.51
42:Q:62:VAL:HG11	42:Q:94:TYR:CD2	2.46	0.51
43:R:80:MET:HE2	43:R:80:MET:HA	1.92	0.51
53:3:613:C:H2'	53:3:614:C:C6	2.46	0.51
53:3:784:A:H2'	53:3:785:G:H8	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:980:C:H2'	53:3:981:U:H5'	1.93	0.51
54:1:460:A:H2'	54:1:461:C:O4'	2.11	0.51
54:1:1171:G:H2'	54:1:1172:C:C4'	2.34	0.51
54:1:1439:A:H2'	54:1:1440:U:H5'	1.93	0.51
54:1:1948:G:O2'	54:1:1949:G:H5'	2.11	0.51
54:1:2228:G:H2'	54:1:2229:U:H6	1.76	0.51
54:1:2360:G:H2'	54:1:2361:G:H5'	1.92	0.51
54:1:2803:G:H2'	54:1:2804:U:C6	2.46	0.51
16:q:87:VAL:HG13	17:r:49:ILE:HD11	1.92	0.51
32:G:49:PHE:O	32:G:53:LEU:HG	2.12	0.51
42:Q:81:ILE:HG13	42:Q:82:ARG:H	1.76	0.51
44:S:13:VAL:HG12	44:S:17:ASP:OD2	2.12	0.51
44:S:20:PHE:C	44:S:22:LYS:H	2.19	0.51
47:V:44:HIS:HB3	47:V:70:LYS:HG2	1.93	0.51
49:X:9:PHE:O	49:X:38:THR:HG22	2.11	0.51
49:X:31:ARG:HD3	49:X:33:TRP:CH2	2.46	0.51
53:3:123:U:OP1	53:3:312:C:H5'	2.10	0.51
53:3:513:C:H2'	53:3:514:C:C6	2.45	0.51
53:3:955:U:H3	53:3:1225:A:H61	1.58	0.51
54:1:214:G:H2'	54:1:215:G:C8	2.46	0.51
54:1:772:C:O2'	54:1:773:U:H5'	2.11	0.51
54:1:1169:A:H2'	54:1:1170:C:O4'	2.11	0.51
54:1:2070:A:H2'	54:1:2071:A:O4'	2.11	0.51
56:6:51:C:H2'	56:6:52:G:C8	2.46	0.51
56:6:73:A:H2'	56:6:73:A:N3	2.25	0.51
3:d:68:ALA:C	3:d:69:ARG:HG2	2.36	0.50
4:e:107:VAL:HG11	4:e:175:PRO:HG2	1.93	0.50
4:e:114:ARG:HH11	43:R:70:ARG:HD2	1.76	0.50
5:f:85:LYS:HD2	5:f:86:LEU:N	2.26	0.50
8:i:23:VAL:HG12	8:i:26:ALA:HB3	1.93	0.50
21:v:72:VAL:HG21	21:v:91:PHE:HB3	1.92	0.50
38:M:4:ASP:OD2	38:M:6:ILE:HB	2.12	0.50
49:X:43:MET:HA	49:X:46:LEU:HD12	1.93	0.50
53:3:25:C:H2'	53:3:26:A:H8	1.75	0.50
53:3:553:A:H2'	53:3:554:A:C8	2.46	0.50
53:3:990:C:H2'	53:3:991:U:O4'	2.11	0.50
53:3:1162:C:H2'	53:3:1163:A:C8	2.46	0.50
53:3:1521:C:H2'	53:3:1522:U:H6	1.76	0.50
54:1:52:A:H2'	54:1:53:A:C8	2.46	0.50
54:1:278:A:C2	54:1:362:A:H1'	2.46	0.50
54:1:1507:C:H2'	54:1:1508:A:C4'	2.41	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:2262:U:H2'	54:1:2263:C:C6	2.46	0.50
54:1:2291:U:H2'	54:1:2292:U:C6	2.46	0.50
1:b:110:LYS:N	1:b:113:ASP:OD2	2.43	0.50
1:b:200:MET:HG3	54:1:1820:U:C2	2.47	0.50
4:e:88:VAL:HG12	4:e:90:LEU:H	1.77	0.50
4:e:159:ALA:C	4:e:160:LYS:HD3	2.36	0.50
5:f:67:ALA:O	5:f:71:LEU:HD23	2.10	0.50
5:f:126:THR:HG22	5:f:128:THR:H	1.76	0.50
19:t:69:ARG:HH11	19:t:69:ARG:CB	2.24	0.50
26:A:15:SER:O	26:A:33:ASN:HA	2.10	0.50
36:K:38:ARG:HD3	36:K:97:THR:C	2.36	0.50
53:3:236:A:H2'	53:3:237:G:C8	2.45	0.50
53:3:695:A:H2'	53:3:696:A:C8	2.46	0.50
53:3:1379:G:O2'	53:3:1380:U:H5'	2.10	0.50
54:1:558:U:H2'	54:1:559:G:H8	1.76	0.50
54:1:679:C:H2'	54:1:680:C:C6	2.46	0.50
54:1:1174:U:H4'	54:1:1176:U:C2	2.45	0.50
54:1:1635:A:H2'	54:1:1636:U:O4'	2.11	0.50
54:1:2314:A:H2'	54:1:2315:G:C8	2.47	0.50
55:2:59:A:H2'	55:2:60:C:C6	2.46	0.50
2:c:207:VAL:HG13	2:c:208:LYS:N	2.23	0.50
5:f:14:VAL:HG13	5:f:27:GLY:CA	2.41	0.50
5:f:162:ARG:NH2	5:f:168:VAL:HG21	2.27	0.50
23:x:39:VAL:HG12	23:x:42:GLU:H	1.76	0.50
30:E:25:HIS:HB3	30:E:43:LEU:HD22	1.93	0.50
31:F:4:ARG:HH21	31:F:35:GLN:NE2	2.10	0.50
35:J:23:THR:HA	35:J:28:ARG:HA	1.94	0.50
35:J:113:VAL:HG21	35:J:139:THR:OG1	2.11	0.50
37:L:121:ASN:O	37:L:124:SER:HB2	2.12	0.50
39:N:27:ILE:N	39:N:27:ILE:HD12	2.26	0.50
41:P:81:LEU:N	41:P:81:LEU:HD23	2.27	0.50
43:R:18:LEU:CD1	43:R:33:LEU:HD11	2.38	0.50
44:S:2:LYS:HA	53:3:1048:G:OP1	2.12	0.50
54:1:201:C:O2'	54:1:202:U:H5'	2.10	0.50
54:1:1278:C:H2'	54:1:1279:G:H8	1.74	0.50
54:1:1690:A:H2'	54:1:1691:C:O4'	2.12	0.50
54:1:2055:C:H5'	54:1:2056:G:O5'	2.11	0.50
54:1:2898:U:H2'	54:1:2899:A:C8	2.47	0.50
55:2:108:A:H5'	55:2:109:A:O5'	2.11	0.50
4:e:72:SER:OG	56:5:56:C:H1'	2.11	0.50
5:f:26:LYS:HA	5:f:31:GLU:HA	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:n:46:ARG:HG2	13:n:46:ARG:O	2.11	0.50
21:v:2:PHE:CE2	21:v:55:GLU:HB2	2.46	0.50
24:y:40:SER:O	24:y:43:LEU:N	2.44	0.50
26:A:59:ARG:CD	26:A:62:LYS:HD3	2.41	0.50
31:F:4:ARG:HB2	54:1:2466:C:OP1	2.11	0.50
32:G:129:THR:HB	32:G:132:GLU:OE1	2.12	0.50
36:K:37:HIS:ND1	36:K:95:ALA:HB1	2.26	0.50
40:O:40:ILE:O	40:O:42:LEU:HD23	2.11	0.50
47:V:8:GLN:NE2	47:V:9:GLY:H	2.09	0.50
49:X:10:ILE:HD12	49:X:15:LEU:HD11	1.93	0.50
49:X:48:ILE:HG13	49:X:59:VAL:HG23	1.94	0.50
50:Y:42:ASP:OD2	50:Y:45:ALA:HB3	2.11	0.50
53:3:114:U:O2'	53:3:115:G:H5'	2.10	0.50
53:3:879:C:H2'	53:3:880:C:H6	1.76	0.50
54:1:833:A:H2'	54:1:834:G:H8	1.76	0.50
54:1:1070:A:H2'	54:1:1097:U:OP1	2.11	0.50
54:1:2162:G:H5'	54:1:2162:G:H8	1.77	0.50
54:1:2475:C:H2'	54:1:2476:A:H5'	1.93	0.50
55:2:28:C:H2'	55:2:29:A:H8	1.75	0.50
55:2:48:U:H2'	55:2:49:C:H6	1.74	0.50
1:b:62:ARG:HG3	1:b:62:ARG:NH1	2.26	0.50
4:e:68:LYS:HZ3	55:2:41:G:H22	1.60	0.50
5:f:54:ARG:HB2	5:f:57:TYR:CD2	2.47	0.50
6:g:27:ARG:NH2	23:x:37:PHE:HE1	2.09	0.50
10:k:76:VAL:H	15:p:72:VAL:HG22	1.75	0.50
38:M:58:LEU:HG	38:M:60:LEU:CD2	2.42	0.50
46:U:5:ARG:HH12	46:U:28:ARG:HA	1.77	0.50
53:3:662:U:H2'	53:3:663:A:C8	2.46	0.50
53:3:1436:U:H2'	53:3:1437:A:C8	2.47	0.50
54:1:215:G:H4'	54:1:216:A:H4'	1.93	0.50
54:1:1826:G:H2'	54:1:1827:U:C6	2.46	0.50
54:1:1856:U:H2'	54:1:1857:G:O4'	2.10	0.50
54:1:2853:C:H2'	54:1:2854:G:C8	2.46	0.50
58:7:70:C:H2'	58:7:71:C:O4'	2.10	0.50
12:m:26:VAL:HG13	12:m:104:GLU:OE1	2.12	0.50
12:m:55:ARG:HB3	12:m:55:ARG:HH21	1.77	0.50
15:p:23:ASP:O	15:p:25:VAL:HG23	2.12	0.50
15:p:110:LYS:HG3	15:p:111:GLU:H	1.76	0.50
39:N:45:MET:O	39:N:49:GLN:N	2.45	0.50
39:N:112:ARG:HH11	39:N:112:ARG:HG3	1.76	0.50
46:U:21:VAL:HG12	46:U:34:GLU:O	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:V:8:GLN:NE2	47:V:9:GLY:O	2.45	0.50
53:3:708:C:H2'	53:3:709:U:H6	1.76	0.50
53:3:1017:U:H2'	53:3:1018:G:C8	2.46	0.50
53:3:1225:A:H5'	53:3:1226:C:OP2	2.12	0.50
54:1:362:A:H3'	54:1:363:G:H8	1.75	0.50
54:1:1409:U:H2'	54:1:1410:G:C8	2.46	0.50
54:1:1432:G:H2'	54:1:1433:A:C8	2.47	0.50
54:1:2049:G:O2'	54:1:2050:C:H5'	2.12	0.50
54:1:2298:A:H2'	54:1:2299:U:O4'	2.12	0.50
4:e:25:MET:HE2	55:2:57:A:N1	2.27	0.50
5:f:176:LYS:HE2	54:1:2660:A:C5	2.47	0.50
10:k:76:VAL:HG22	15:p:72:VAL:HG22	1.93	0.50
17:r:74:ILE:HD13	54:1:992:C:H4'	1.93	0.50
20:u:36:GLU:O	20:u:38:ILE:HG12	2.11	0.50
21:v:51:GLN:HG2	21:v:86:LEU:HD11	1.93	0.50
28:C:4:ILE:HD12	28:C:4:ILE:N	2.21	0.50
33:H:72:PRO:HD3	33:H:104:GLU:HG2	1.94	0.50
34:I:176:LYS:C	34:I:177:MET:HG2	2.36	0.50
35:J:156:ARG:HD3	38:M:42:GLU:HG3	1.93	0.50
37:L:117:LEU:C	37:L:117:LEU:HD23	2.36	0.50
38:M:31:LEU:HD23	38:M:31:LEU:O	2.11	0.50
41:P:88:PRO:HG2	41:P:89:GLY:H	1.77	0.50
44:S:20:PHE:O	44:S:21:ALA:HB3	2.11	0.50
47:V:74:LEU:HD12	47:V:75:VAL:N	2.27	0.50
53:3:479:U:H2'	53:3:480:U:H5''	1.94	0.50
53:3:1352:C:H2'	53:3:1353:G:C8	2.47	0.50
54:1:45:G:H5''	54:1:46:G:C5'	2.17	0.50
54:1:669:G:H2'	54:1:669:G:N3	2.27	0.50
54:1:2502:G:H5'	54:1:2503:A:H5''	1.94	0.50
54:1:2579:C:O2'	54:1:2580:U:H5'	2.11	0.50
54:1:2682:A:O2'	54:1:2683:C:H5'	2.11	0.50
6:g:8:LYS:HE3	6:g:137:GLU:HG2	1.93	0.50
7:h:3:LEU:HD12	7:h:4:ASN:H	1.76	0.50
12:m:55:ARG:HB3	12:m:55:ARG:NH2	2.27	0.50
14:o:26:LEU:O	14:o:93:ASP:HB3	2.11	0.50
24:y:9:LYS:HD3	24:y:10:SER:H	1.74	0.50
25:z:23:LEU:HD22	25:z:28:LEU:HD12	1.94	0.50
37:L:46:LEU:O	37:L:50:ALA:N	2.39	0.50
46:U:47:GLU:CD	46:U:47:GLU:H	2.19	0.50
47:V:46:HIS:ND1	47:V:66:LEU:HD11	2.27	0.50
49:X:19:GLU:HA	49:X:22:VAL:HG23	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:831:A:C2'	53:3:832:G:H5''	2.42	0.50
54:1:414:C:H2'	54:1:415:A:H8	1.75	0.50
54:1:1747:U:H2'	54:1:1748:C:C6	2.47	0.50
54:1:2853:C:H2'	54:1:2854:G:H8	1.77	0.50
1:b:209:ALA:O	1:b:213:ARG:HG2	2.12	0.50
2:c:179:ARG:HH11	2:c:179:ARG:HG3	1.77	0.50
5:f:71:LEU:HA	5:f:74:MET:HB2	1.94	0.50
11:l:125:LEU:H	11:l:125:LEU:HD12	1.77	0.50
12:m:7:THR:HG22	12:m:8:LYS:H	1.77	0.50
26:A:59:ARG:HH11	26:A:59:ARG:HG3	1.76	0.50
32:G:69:VAL:O	32:G:163:ILE:HG12	2.12	0.50
33:H:12:GLY:HA3	44:S:96:LYS:HZ1	1.74	0.50
35:J:10:LEU:HD12	35:J:10:LEU:N	2.27	0.50
35:J:40:ASP:CG	35:J:44:ARG:HB2	2.37	0.50
36:K:38:ARG:O	36:K:62:MET:O	2.30	0.50
41:P:24:ALA:HB1	41:P:89:GLY:HA3	1.94	0.50
41:P:51:PHE:O	41:P:56:LYS:HB2	2.11	0.50
45:T:44:GLU:O	45:T:45:HIS:HB2	2.11	0.50
45:T:47:LYS:O	45:T:49:HIS:N	2.45	0.50
53:3:834:U:H2'	53:3:835:U:C6	2.47	0.50
54:1:745:G:O2'	54:1:748:G:H1'	2.11	0.50
54:1:1179:G:N7	54:1:1180:U:H1'	2.27	0.50
54:1:1186:G:H2'	54:1:1187:G:H8	1.77	0.50
54:1:2404:U:H2'	54:1:2405:G:O4'	2.12	0.50
54:1:2439:A:H4'	54:1:2440:C:C5'	2.42	0.50
55:2:2:G:H2'	55:2:3:C:H6	1.75	0.50
2:c:149:ASN:O	2:c:152:PRO:HD2	2.11	0.49
5:f:44:HIS:O	5:f:45:ALA:HB3	2.12	0.49
11:l:19:LEU:HB2	54:1:587:C:O2'	2.12	0.49
12:m:101:VAL:HG11	12:m:104:GLU:OE2	2.11	0.49
33:H:125:ARG:HG3	33:H:127:VAL:HG23	1.93	0.49
35:J:22:LYS:HB3	35:J:29:ILE:CG2	2.42	0.49
35:J:73:VAL:HG11	35:J:143:LEU:HD12	1.94	0.49
35:J:149:PRO:HG2	35:J:150:GLU:OE2	2.12	0.49
38:M:79:ARG:HB2	38:M:80:PRO:HD2	1.93	0.49
40:O:53:ILE:HD11	44:S:84:ARG:CZ	2.42	0.49
40:O:53:ILE:HG13	44:S:84:ARG:HD2	1.94	0.49
43:R:52:ILE:HG22	43:R:56:ARG:NH1	2.27	0.49
44:S:41:TRP:HZ2	49:X:10:ILE:HD11	1.77	0.49
46:U:74:LEU:O	46:U:78:VAL:N	2.45	0.49
52:a:40:GLU:HG3	52:a:178:VAL:CG1	2.42	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:a:193:LEU:O	52:a:197:LYS:HG3	2.11	0.49
53:3:206:C:H2'	53:3:207:C:H5'	1.94	0.49
53:3:1118:U:H2'	53:3:1119:C:H6	1.76	0.49
53:3:1177:G:H2'	53:3:1178:G:O4'	2.12	0.49
53:3:1452:C:H5''	53:3:1453:G:C2	2.47	0.49
53:3:1487:G:O2'	53:3:1488:G:H5'	2.12	0.49
54:1:146:A:H2'	54:1:147:C:H6	1.77	0.49
54:1:150:U:H2'	54:1:151:C:C6	2.47	0.49
54:1:859:G:H1'	54:1:860:U:H5	1.77	0.49
54:1:1542:U:H2'	54:1:1543:G:C8	2.47	0.49
54:1:1570:A:H2'	54:1:1571:A:C8	2.47	0.49
54:1:2044:C:O2'	54:1:2045:C:H5'	2.12	0.49
54:1:2818:U:H2'	54:1:2819:G:C8	2.47	0.49
56:5:66:C:H2'	56:5:67:C:C6	2.47	0.49
56:6:26:G:H2'	56:6:26:G:N3	2.27	0.49
4:e:133:GLU:HG3	4:e:135:ILE:H	1.77	0.49
6:g:25:TYR:CZ	6:g:30:LEU:HD21	2.47	0.49
19:t:44:LYS:O	19:t:48:GLN:HG2	2.11	0.49
33:H:6:PRO:HD2	33:H:183:TYR:CD2	2.47	0.49
33:H:58:ARG:NH1	33:H:58:ARG:HB2	2.27	0.49
34:I:8:LEU:HD13	34:I:21:LYS:HD3	1.94	0.49
35:J:139:THR:O	35:J:143:LEU:HD23	2.12	0.49
36:K:2:ARG:HG3	36:K:68:GLN:HG2	1.94	0.49
41:P:92:ARG:NH2	51:Z:16:ARG:HH21	2.09	0.49
42:Q:30:ARG:HD3	42:Q:101:LEU:CD2	2.42	0.49
53:3:79:G:O2'	53:3:80:A:H5'	2.12	0.49
53:3:961:U:O2'	53:3:984:C:H5'	2.11	0.49
54:1:200:U:C2'	54:1:201:C:H5'	2.42	0.49
54:1:828:U:H4'	54:1:831:G:N1	2.27	0.49
54:1:858:G:H5'	54:1:859:G:OP2	2.12	0.49
54:1:1450:G:H21	54:1:1452:G:H1	1.58	0.49
54:1:1536:C:H4'	54:1:1537:G:N1	2.27	0.49
54:1:1796:U:H2'	54:1:1797:G:C8	2.47	0.49
54:1:2105:U:H2'	54:1:2106:U:O4'	2.11	0.49
54:1:2549:G:O2'	54:1:2550:G:H5'	2.12	0.49
55:2:29:A:H2'	55:2:30:C:C6	2.46	0.49
56:6:3:C:H2'	56:6:4:G:C5'	2.38	0.49
57:4:5:A:N3	57:4:5:A:H2'	2.27	0.49
10:k:87:LEU:HD13	10:k:92:GLU:HB3	1.93	0.49
11:l:29:LYS:HD3	11:l:30:THR:HG23	1.94	0.49
11:l:93:ASN:HA	11:l:96:LYS:HG2	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:y:21:LEU:HA	24:y:25:GLN:CB	2.41	0.49
25:z:11:SER:HB3	54:1:989:G:OP2	2.13	0.49
33:H:112:ALA:HB3	33:H:184:ASN:HB2	1.94	0.49
38:M:105:THR:OG1	38:M:110:MET:HE3	2.12	0.49
40:O:21:ALA:O	40:O:24:GLU:HG3	2.12	0.49
43:R:85:TYR:O	43:R:89:ARG:HG2	2.13	0.49
47:V:7:LEU:HD12	47:V:72:TRP:CH2	2.47	0.49
53:3:82:G:C2'	53:3:83:C:H5'	2.42	0.49
54:1:942:G:H2'	54:1:943:A:O4'	2.12	0.49
3:d:44:ARG:HD3	54:1:444:C:H4'	1.94	0.49
5:f:68:ARG:HD3	5:f:68:ARG:C	2.37	0.49
5:f:102:ILE:HD12	5:f:116:LEU:HD21	1.95	0.49
7:h:62:ARG:HG2	7:h:62:ARG:NH1	2.27	0.49
11:l:19:LEU:HD13	54:1:587:C:O2'	2.13	0.49
24:y:2:LYS:HG3	24:y:3:ALA:N	2.27	0.49
28:C:7:LYS:HE3	54:1:2420:C:O3'	2.12	0.49
35:J:148:SER:H	35:J:151:MET:HE3	1.77	0.49
42:Q:30:ARG:HB3	53:3:363:A:OP2	2.12	0.49
42:Q:41:PRO:HG3	42:Q:49:ARG:HG2	1.93	0.49
42:Q:69:GLU:H	42:Q:106:VAL:HG11	1.77	0.49
45:T:88:ARG:N	45:T:88:ARG:CD	2.71	0.49
51:Z:6:ARG:O	51:Z:7:GLU:HB2	2.13	0.49
53:3:346:G:H2'	53:3:347:G:H5'	1.94	0.49
53:3:807:A:H2'	53:3:808:C:C6	2.48	0.49
54:1:134:G:H2'	54:1:135:U:C5'	2.32	0.49
54:1:841:G:H2'	54:1:842:U:C6	2.47	0.49
54:1:1866:A:H2'	54:1:1867:G:O4'	2.13	0.49
54:1:2343:U:O2'	54:1:2344:U:H5'	2.12	0.49
54:1:2572:A:OP1	54:1:2574:G:H4'	2.11	0.49
56:5:17:C:H3'	56:5:17(A):U:C6	2.47	0.49
4:e:126:ASN:OD1	4:e:156:THR:HA	2.12	0.49
6:g:46:PHE:O	6:g:51:ARG:HD3	2.12	0.49
9:j:53:TYR:CD1	9:j:121:LYS:HG3	2.47	0.49
17:r:49:ILE:HG22	17:r:54:VAL:HA	1.94	0.49
18:s:16:LYS:O	18:s:19:LEU:HB2	2.12	0.49
22:w:25:GLU:HG3	54:1:923:G:H4'	1.93	0.49
44:S:53:ASP:HA	44:S:58:ARG:HD3	1.94	0.49
44:S:84:ARG:O	44:S:88:MET:HG2	2.13	0.49
52:a:182:ALA:O	52:a:186:LYS:HB2	2.12	0.49
53:3:416:G:H2'	53:3:417:G:H8	1.78	0.49
53:3:825:A:H2'	53:3:826:C:C6	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1507:A:H2'	53:3:1508:A:C8	2.47	0.49
53:3:1511:G:H2'	53:3:1512:U:O4'	2.12	0.49
54:1:677:A:C2	54:1:678:C:C6	3.00	0.49
54:1:1170:C:H2'	54:1:1171:G:C8	2.48	0.49
54:1:1216:G:O2'	54:1:1217:U:H5'	2.12	0.49
55:2:12:C:O2'	55:2:13:G:H5'	2.13	0.49
56:6:3:C:C3'	56:6:4:G:H5''	2.42	0.49
31:F:10:LEU:HD22	31:F:33:HIS:CE1	2.48	0.49
32:G:206:ILE:HG23	32:G:207:ARG:N	2.28	0.49
39:N:30:ASN:O	39:N:31:GLN:HB2	2.13	0.49
52:a:46:VAL:HB	52:a:171:ILE:HG22	1.94	0.49
53:3:458:U:H2'	53:3:459:A:H8	1.78	0.49
53:3:529:G:H4'	53:3:533:A:C2	2.47	0.49
53:3:594:U:O2'	53:3:595:A:H5'	2.11	0.49
53:3:1326:U:H2'	53:3:1327:C:H6	1.77	0.49
54:1:107:G:H2'	54:1:108:G:H8	1.77	0.49
54:1:155:A:H2'	54:1:156:A:H8	1.76	0.49
54:1:1327:A:H2'	54:1:1328:A:H5'	1.95	0.49
54:1:1785:A:H2'	54:1:1787:A:N7	2.28	0.49
54:1:1971:U:H5'	54:1:1972:G:H5''	1.93	0.49
54:1:2123:G:H21	54:1:2176:A:H61	1.60	0.49
2:c:20:VAL:HA	10:k:72:PRO:O	2.13	0.49
4:e:98:PHE:CB	4:e:101:ARG:HH11	2.23	0.49
6:g:78:VAL:HG11	6:g:102:ALA:HB1	1.94	0.49
6:g:133:GLN:HG2	6:g:139:PHE:CD1	2.46	0.49
12:m:22:GLN:O	12:m:22:GLN:NE2	2.43	0.49
18:s:95:ARG:HD2	18:s:95:ARG:O	2.13	0.49
27:B:4:GLN:O	54:1:2017:U:H4'	2.12	0.49
28:C:4:ILE:H	28:C:4:ILE:CD1	2.19	0.49
31:F:11:CYS:SG	31:F:14:CYS:N	2.85	0.49
35:J:93:VAL:HG11	35:J:138:ALA:HB1	1.95	0.49
38:M:14:ARG:HD2	53:3:875:U:O2'	2.11	0.49
40:O:28:THR:O	40:O:28:THR:HG22	2.13	0.49
43:R:15:VAL:CG1	43:R:33:LEU:HD22	2.40	0.49
51:Z:33:ARG:CB	51:Z:33:ARG:HH11	2.26	0.49
53:3:1190:G:H1'	53:3:1191:A:OP2	2.12	0.49
54:1:1186:G:H2'	54:1:1187:G:C8	2.48	0.49
54:1:1956:U:C2'	54:1:1957:C:H5'	2.43	0.49
7:h:6:GLN:OE1	7:h:6:GLN:HA	2.12	0.49
8:i:58:ILE:HD13	8:i:68:PHE:HA	1.95	0.49
20:u:48:VAL:O	20:u:53:GLN:HB3	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:D:26:ASN:CG	54:1:682:G:H5'	2.37	0.49
32:G:113:LEU:HD23	32:G:113:LEU:C	2.37	0.49
33:H:53:ARG:CG	33:H:68:HIS:HB2	2.43	0.49
37:L:68:VAL:HG22	37:L:102:TRP:HE3	1.77	0.49
38:M:48:PHE:CB	38:M:60:LEU:HD13	2.42	0.49
43:R:111:PRO:HD2	43:R:113:LYS:NZ	2.28	0.49
47:V:60:ILE:HG22	47:V:61:ARG:N	2.27	0.49
51:Z:38:GLU:C	51:Z:40:PRO:HD2	2.37	0.49
53:3:882:C:O2'	53:3:883:C:H5'	2.13	0.49
54:1:575:A:H2'	54:1:576:U:H6	1.77	0.49
54:1:1219:U:O2'	54:1:1220:G:H5'	2.12	0.49
54:1:1475:G:HO2'	54:1:1476:U:H6	1.57	0.49
54:1:2461:A:H2'	54:1:2462:C:H6	1.78	0.49
54:1:2686:G:H2'	54:1:2687:U:C6	2.48	0.49
2:c:29:VAL:O	2:c:185:ASN:HB3	2.13	0.49
4:e:140:ILE:N	4:e:140:ILE:HD12	2.28	0.49
5:f:97:VAL:HG23	5:f:124:CYS:HB2	1.95	0.49
8:i:10:LEU:O	8:i:11:GLN:HB2	2.10	0.49
11:l:127:VAL:HG12	11:l:128:THR:O	2.13	0.49
14:o:15:ARG:HH21	14:o:95:SER:HA	1.77	0.49
33:H:139:ASN:O	33:H:142:ARG:HG2	2.13	0.49
35:J:108:GLY:O	35:J:109:ALA:HB3	2.12	0.49
37:L:75:LYS:NZ	37:L:77:ARG:HH11	2.10	0.49
42:Q:48:LEU:HB3	53:3:520:A:P	2.52	0.49
50:Y:29:THR:HG22	50:Y:32:LYS:HE2	1.94	0.49
52:a:4:LEU:HD12	52:a:12:ARG:NH2	2.27	0.49
53:3:26:A:H61	53:3:558:G:H1'	1.77	0.49
53:3:235:C:H2'	53:3:236:A:H8	1.77	0.49
53:3:616:G:O2'	53:3:617:G:H5'	2.13	0.49
54:1:161:A:C5	54:1:162:U:H5	2.31	0.49
54:1:293:U:H2'	54:1:294:A:H5''	1.95	0.49
54:1:1111:A:O2'	54:1:1112:G:H4'	2.12	0.49
54:1:1545:A:H2'	54:1:1546:G:O4'	2.12	0.49
54:1:2162:G:O2'	54:1:2163:A:H5'	2.12	0.49
54:1:2475:C:C2'	54:1:2476:A:H5'	2.43	0.49
54:1:2636:C:H2'	54:1:2637:U:C6	2.47	0.49
2:c:18:ASP:OD1	2:c:20:VAL:HG23	2.12	0.49
2:c:148:GLN:CD	2:c:148:GLN:N	2.71	0.49
5:f:44:HIS:CD2	5:f:45:ALA:H	2.31	0.49
5:f:162:ARG:CZ	5:f:168:VAL:HG21	2.43	0.49
6:g:3:VAL:HA	6:g:38:PRO:HA	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:g:112:LYS:HA	6:g:115:VAL:HG23	1.95	0.49
11:l:76:GLU:C	11:l:77:ILE:HD12	2.37	0.49
18:s:4:ILE:HG13	18:s:106:VAL:HG22	1.93	0.49
23:x:35:HIS:ND1	23:x:36:ARG:N	2.61	0.49
32:G:168:GLU:O	32:G:172:ILE:HG13	2.13	0.49
34:l:2:ARG:HH11	34:l:2:ARG:CB	2.25	0.49
38:M:34:ALA:HB1	38:M:109:VAL:HG21	1.95	0.49
38:M:88:LYS:HD3	38:M:89:ASP:N	2.28	0.49
38:M:113:ARG:HA	38:M:116:ARG:HH11	1.78	0.49
44:S:9:GLU:OE2	44:S:60:ARG:HB3	2.11	0.49
53:3:644:U:O2'	53:3:645:G:H5'	2.13	0.49
53:3:1144:G:O2'	53:3:1145:A:H5'	2.13	0.49
54:1:522:A:H2'	54:1:523:C:H6	1.78	0.49
54:1:1336:A:H2'	54:1:1337:G:H8	1.78	0.49
54:1:1798:U:C4	54:1:1819:A:C2	3.00	0.49
54:1:2024:G:H2'	54:1:2025:C:H6	1.74	0.49
4:e:108:PRO:HG2	26:A:38:SER:HA	1.94	0.48
10:k:87:LEU:HD23	10:k:94:PRO:HA	1.94	0.48
19:t:2:ILE:HD11	54:1:144:A:C4'	2.43	0.48
19:t:30:ILE:CG2	19:t:85:VAL:HB	2.42	0.48
23:x:2:ARG:O	23:x:11:PRO:HD3	2.13	0.48
25:z:29:ARG:NH1	54:1:930:G:H5''	2.28	0.48
25:z:31:ILE:HG13	25:z:31:ILE:O	2.13	0.48
32:G:213:LEU:O	32:G:217:ALA:N	2.42	0.48
33:H:19:SER:HB3	33:H:21:TRP:HE1	1.77	0.48
37:L:109:LYS:O	37:L:110:ARG:HG2	2.13	0.48
42:Q:94:TYR:C	42:Q:95:HIS:HD1	2.21	0.48
44:S:64:ARG:HG3	44:S:77:GLY:O	2.13	0.48
48:W:40:PRO:HG2	48:W:43:ILE:HG12	1.95	0.48
52:a:3:LYS:HD3	54:1:2107:G:OP1	2.13	0.48
53:3:1408:A:H2'	53:3:1409:C:C6	2.48	0.48
53:3:1511:G:O2'	53:3:1512:U:H5'	2.13	0.48
54:1:45:G:C5'	54:1:46:G:H5'	2.18	0.48
54:1:103:A:H2'	54:1:104:A:O4'	2.13	0.48
54:1:1442:U:H2'	54:1:1443:U:C6	2.48	0.48
54:1:1516:G:O2'	54:1:1517:G:H5'	2.13	0.48
54:1:1594:U:H2'	54:1:1595:C:C6	2.47	0.48
54:1:1702:G:H2'	54:1:1703:G:C5'	2.29	0.48
56:6:31:G:H2'	56:6:32:C:C5'	2.42	0.48
56:6:34:C:H5'	56:6:34:C:O2	2.13	0.48
3:d:48:THR:HG23	3:d:51:GLU:OE1	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:f:159:LYS:NZ	54:1:2658:C:H5'	2.28	0.48
6:g:40:THR:O	6:g:44:ILE:HG13	2.13	0.48
6:g:90:LEU:CD2	6:g:93:SER:HA	2.43	0.48
7:h:3:LEU:HG	7:h:4:ASN:N	2.27	0.48
31:F:3:VAL:HG23	31:F:3:VAL:O	2.12	0.48
32:G:224:ARG:HG2	32:G:224:ARG:HH21	1.78	0.48
37:L:16:LYS:HB3	37:L:17:PHE:CD1	2.48	0.48
41:P:90:PRO:HG2	41:P:91:GLY:H	1.78	0.48
42:Q:29:LYS:HB2	42:Q:81:ILE:CG2	2.42	0.48
43:R:58:GLU:HA	43:R:61:LYS:HZ3	1.78	0.48
53:3:147:G:H2'	53:3:148:G:C8	2.48	0.48
53:3:372:C:N4	53:3:387:U:H2'	2.27	0.48
53:3:665:A:H1'	53:3:733:G:O4'	2.13	0.48
53:3:1253:G:H2'	53:3:1254:A:H8	1.78	0.48
54:1:493:G:HO2'	54:1:494:G:H5'	1.77	0.48
54:1:621:A:H2'	54:1:622:G:H5'	1.94	0.48
54:1:1308:A:H2'	54:1:1309:G:H5'	1.95	0.48
54:1:2121:G:H2'	54:1:2122:U:C5'	2.43	0.48
54:1:2493:U:H2'	54:1:2494:G:H5''	1.95	0.48
5:f:159:LYS:HZ1	54:1:2658:C:C5'	2.26	0.48
19:t:73:ARG:N	19:t:73:ARG:HD2	2.27	0.48
34:I:104:MET:SD	34:I:170:LEU:HD22	2.53	0.48
35:J:28:ARG:NH1	53:3:15:G:H4'	2.29	0.48
35:J:68:ARG:HG3	35:J:68:ARG:NH1	2.27	0.48
40:O:37:ARG:HA	40:O:37:ARG:NE	2.26	0.48
40:O:68:ARG:HG2	40:O:70:HIS:NE2	2.28	0.48
42:Q:51:VAL:HG23	42:Q:64:SER:O	2.13	0.48
42:Q:53:ARG:HA	42:Q:63:THR:HA	1.94	0.48
42:Q:109:ARG:HG3	42:Q:109:ARG:HH11	1.77	0.48
44:S:81:ILE:HG21	53:3:1202:U:N3	2.27	0.48
54:1:279:A:H2'	54:1:280:U:O4'	2.12	0.48
54:1:581:C:H2'	54:1:582:A:C8	2.48	0.48
54:1:1028:A:H2'	54:1:1029:A:H8	1.75	0.48
54:1:1103:A:H3'	54:1:1104:C:C6	2.48	0.48
55:2:35:C:O2'	55:2:36:C:H5'	2.13	0.48
10:k:97:THR:O	10:k:118:LEU:HD13	2.14	0.48
12:m:50:ARG:O	12:m:53:MET:HG2	2.13	0.48
13:n:29:VAL:HB	13:n:75:ILE:HD12	1.95	0.48
13:n:94:TYR:C	13:n:116:VAL:HG23	2.38	0.48
18:s:14:ALA:O	18:s:18:ARG:HG3	2.13	0.48
26:A:59:ARG:HD3	26:A:62:LYS:HD3	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:G:70:GLY:HA3	32:G:79:VAL:HG21	1.95	0.48
34:I:151:GLN:HG2	53:3:437:U:H5''	1.93	0.48
37:L:3:ARG:HB3	37:L:4:ARG:NH1	2.28	0.48
38:M:113:ARG:HA	38:M:116:ARG:NH1	2.28	0.48
39:N:24:ASN:O	39:N:61:ASP:HB3	2.13	0.48
41:P:92:ARG:HH22	51:Z:16:ARG:HH21	1.60	0.48
44:S:19:TYR:O	44:S:22:LYS:HG3	2.13	0.48
45:T:28:VAL:HG11	45:T:66:LEU:HD21	1.96	0.48
49:X:76:THR:HG21	53:3:1221:G:H4'	1.94	0.48
54:1:756:A:H2'	54:1:757:G:O4'	2.14	0.48
54:1:818:G:C2'	54:1:819:A:H5''	2.43	0.48
54:1:1791:A:N6	54:1:1828:G:H1'	2.27	0.48
5:f:97:VAL:CG2	5:f:124:CYS:HB2	2.44	0.48
6:g:111:ALA:O	6:g:115:VAL:HG23	2.14	0.48
9:j:40:HIS:CE1	9:j:41:LYS:HG3	2.49	0.48
14:o:9:ARG:HH22	54:1:2295:C:P	2.37	0.48
14:o:58:ILE:O	14:o:62:LEU:HD23	2.12	0.48
21:v:46:LYS:O	21:v:50:MET:HG2	2.14	0.48
30:E:31:ILE:HG23	30:E:31:ILE:O	2.14	0.48
33:H:84:GLU:OE1	33:H:84:GLU:N	2.47	0.48
34:I:2:ARG:CB	34:I:2:ARG:NH1	2.76	0.48
34:I:144:ILE:N	34:I:144:ILE:HD12	2.29	0.48
35:J:160:VAL:O	35:J:163:ILE:HG12	2.13	0.48
36:K:90:MET:CG	36:K:91:ARG:H	2.23	0.48
41:P:44:ALA:CB	41:P:69:CYS:HB2	2.41	0.48
45:T:81:ILE:HG13	45:T:82:GLU:N	2.27	0.48
48:W:59:LYS:HD3	53:3:734:G:O2'	2.13	0.48
49:X:76:THR:CG2	53:3:1221:G:H4'	2.44	0.48
52:a:21:TYR:HB3	52:a:26:ALA:HA	1.95	0.48
53:3:426:U:H2'	53:3:427:U:C6	2.47	0.48
53:3:591:U:H2'	53:3:592:G:H8	1.77	0.48
53:3:591:U:H2'	53:3:592:G:C8	2.47	0.48
53:3:1086:U:H3	53:3:1099:G:H22	1.61	0.48
54:1:745:G:O2'	54:1:746:U:H5'	2.13	0.48
54:1:2462:C:H1'	54:1:2491:U:O4	2.14	0.48
54:1:2793:C:H2'	54:1:2794:C:C6	2.49	0.48
2:c:124:ARG:NH1	2:c:163:GLY:HA3	2.28	0.48
5:f:156:TYR:CE1	5:f:171:LYS:HG3	2.49	0.48
7:h:77:VAL:O	7:h:77:VAL:HG12	2.14	0.48
12:m:18:ARG:HH21	12:m:18:ARG:HB2	1.79	0.48
15:p:32:VAL:HG22	15:p:37:LYS:HG3	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:s:87:PRO:O	18:s:88:ARG:HD2	2.13	0.48
27:B:2:VAL:HG22	54:1:2015:A:C2	2.48	0.48
32:G:22:TRP:CD1	32:G:22:TRP:H	2.31	0.48
32:G:124:THR:O	32:G:136:ARG:NH2	2.47	0.48
33:H:39:ARG:NH1	33:H:54:ILE:HG13	2.28	0.48
34:I:9:LYS:HG3	34:I:12:ARG:HH21	1.78	0.48
38:M:53:ASP:OD2	38:M:54:THR:HG22	2.14	0.48
39:N:49:GLN:N	39:N:50:PRO:HD2	2.29	0.48
41:P:91:GLY:C	41:P:93:GLU:H	2.22	0.48
43:R:58:GLU:HA	43:R:61:LYS:NZ	2.29	0.48
53:3:79:G:C2'	53:3:80:A:H5'	2.43	0.48
53:3:119:A:H4'	53:3:120:A:C8	2.48	0.48
53:3:308:C:O2'	53:3:309:A:H5'	2.13	0.48
53:3:620:C:H2'	53:3:621:A:O4'	2.13	0.48
53:3:1128:C:O2'	53:3:1129:C:H5'	2.13	0.48
54:1:671:C:O2'	54:1:672:C:H5'	2.13	0.48
54:1:687:C:H5'	54:1:687:C:C6	2.44	0.48
54:1:1405:U:H2'	54:1:1406:U:C6	2.48	0.48
54:1:1627:G:O2'	54:1:1628:G:H5'	2.12	0.48
54:1:2850:A:H2'	54:1:2851:A:O4'	2.14	0.48
56:5:59:A:C2'	56:5:60:U:H5'	2.44	0.48
56:6:68:C:O2'	56:6:69:C:H5'	2.14	0.48
4:e:44:ALA:HA	4:e:46:LYS:HZ3	1.77	0.48
7:h:25:ALA:O	7:h:84:TYR:HA	2.12	0.48
7:h:61:ARG:HA	7:h:65:GLU:HB2	1.95	0.48
11:l:21:ARG:HH21	11:l:21:ARG:HG2	1.79	0.48
13:n:14:SER:HA	13:n:17:ARG:HH21	1.78	0.48
14:o:28:VAL:CG2	14:o:106:LEU:HD13	2.43	0.48
17:r:22:LEU:HD12	17:r:22:LEU:N	2.28	0.48
25:z:7:THR:HB	25:z:55:LYS:HB3	1.96	0.48
30:E:44:ARG:N	30:E:45:PRO:HD2	2.29	0.48
34:I:89:LEU:HD21	34:I:199:ILE:HG21	1.96	0.48
35:J:29:ILE:HD11	35:J:53:ARG:NH1	2.28	0.48
38:M:10:LEU:HD12	38:M:76:ARG:HB2	1.95	0.48
40:O:53:ILE:HG23	53:3:1060:U:H4'	1.96	0.48
41:P:124:LYS:O	51:Z:34:ARG:CZ	2.61	0.48
42:Q:30:ARG:HG3	42:Q:78:VAL:HG22	1.94	0.48
44:S:38:GLU:O	44:S:42:ASN:N	2.46	0.48
46:U:67:ILE:H	46:U:67:ILE:CD1	2.13	0.48
51:Z:23:GLU:HG2	51:Z:24:LYS:N	2.22	0.48
52:a:162:ARG:CB	52:a:162:ARG:HH21	2.26	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:741:G:H2'	53:3:742:G:O4'	2.14	0.48
53:3:1333:A:H2'	53:3:1334:G:O4'	2.14	0.48
53:3:1392:G:H2'	53:3:1393:U:C6	2.49	0.48
54:1:1300:G:C4'	54:1:1301:A:H5''	2.44	0.48
2:c:1:MET:HG3	2:c:205:PRO:HG2	1.96	0.48
8:i:13:ALA:HB3	8:i:16:MET:HE3	1.96	0.48
10:k:58:LEU:N	10:k:58:LEU:HD23	2.29	0.48
32:G:160:LEU:HD22	32:G:175:ALA:HB2	1.96	0.48
33:H:56:ILE:HG23	33:H:63:ILE:HD11	1.94	0.48
34:I:169:TRP:HZ3	34:I:189:ASP:HB3	1.79	0.48
36:K:3:HIS:O	36:K:92:THR:HG22	2.14	0.48
38:M:10:LEU:CD1	38:M:76:ARG:HB2	2.43	0.48
38:M:54:THR:C	38:M:56:PRO:HD3	2.38	0.48
50:Y:66:ILE:HG22	50:Y:67:HIS:N	2.28	0.48
53:3:166:U:H2'	53:3:167:A:C8	2.48	0.48
53:3:335:C:H2'	53:3:336:A:C8	2.49	0.48
53:3:363:A:H2'	53:3:364:A:O4'	2.14	0.48
53:3:476:U:H2'	53:3:477:C:C6	2.48	0.48
53:3:485:U:H5'	53:3:486:U:OP2	2.13	0.48
54:1:181:A:H2'	54:1:182:A:C8	2.49	0.48
54:1:1744:A:H3'	54:1:1745:A:H8	1.78	0.48
54:1:1754:A:C2	54:1:2717:C:H5'	2.49	0.48
54:1:2671:G:H2'	54:1:2672:U:H6	1.78	0.48
3:d:122:GLU:CG	3:d:123:LYS:H	2.21	0.48
4:e:9:ASP:O	4:e:13:LYS:HD3	2.14	0.48
4:e:151:LEU:C	4:e:151:LEU:HD12	2.39	0.48
13:n:60:VAL:HG13	54:1:1454:C:O2'	2.13	0.48
17:r:22:LEU:O	17:r:94:THR:N	2.42	0.48
27:B:3:GLN:HA	54:1:2615:U:C2	2.49	0.48
29:D:27:GLY:HA2	29:D:30:VAL:HG23	1.95	0.48
32:G:153:MET:HE1	32:G:155:GLY:C	2.39	0.48
35:J:82:HIS:HB2	35:J:83:PRO:HD2	1.94	0.48
37:L:1:PRO:HB2	53:3:1379:G:N7	2.29	0.48
37:L:127:ALA:HB3	37:L:128:GLU:OE1	2.13	0.48
38:M:9:MET:HE1	38:M:35:ILE:HB	1.96	0.48
39:N:32:ARG:HB3	39:N:36:GLN:HG3	1.95	0.48
47:V:44:HIS:HB2	47:V:70:LYS:H	1.79	0.48
49:X:12:LEU:CD2	49:X:16:LYS:HD2	2.44	0.48
52:a:40:GLU:HG3	52:a:178:VAL:HG11	1.95	0.48
52:a:65:LEU:HB2	52:a:159:GLY:HA2	1.95	0.48
53:3:180:U:H2'	53:3:181:A:O4'	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:553:A:H2'	53:3:554:A:H8	1.78	0.48
54:1:257:C:H2'	54:1:258:G:O4'	2.14	0.48
54:1:282:A:H2'	54:1:283:G:C8	2.48	0.48
54:1:1199:U:H2'	54:1:1200:C:H6	1.78	0.48
54:1:1524:G:H2'	54:1:1525:A:C8	2.48	0.48
54:1:1560:G:H2'	54:1:1560:G:N3	2.28	0.48
54:1:2272:U:H5''	54:1:2273:A:OP1	2.14	0.48
54:1:2389:G:H5''	54:1:2390:U:O4'	2.13	0.48
56:6:31:G:C2'	56:6:32:C:H5'	2.43	0.48
1:b:62:ARG:HH22	54:1:1568:G:P	2.37	0.48
11:l:77:ILE:HD13	11:l:108:ALA:HB1	1.94	0.48
22:w:35:ARG:HA	22:w:54:THR:HG23	1.94	0.48
23:x:16:ASN:HD21	23:x:26:ARG:HB3	1.79	0.48
24:y:41:HIS:CD2	54:1:96:C:H4'	2.49	0.48
32:G:20:ARG:CZ	32:G:21:TYR:HB3	2.44	0.48
32:G:33:ALA:HB3	32:G:37:VAL:HG13	1.96	0.48
33:H:179:ALA:HB1	33:H:202:PHE:CE1	2.47	0.48
37:L:107:ALA:O	37:L:118:ARG:HG2	2.14	0.48
40:O:10:LEU:HD12	40:O:10:LEU:O	2.14	0.48
40:O:59:LYS:HD3	40:O:59:LYS:O	2.13	0.48
42:Q:98:ARG:HH11	42:Q:98:ARG:HG3	1.79	0.48
44:S:30:ILE:HG21	44:S:43:ALA:HB2	1.96	0.48
51:Z:25:ALA:O	51:Z:29:ALA:N	2.47	0.48
51:Z:39:LYS:N	51:Z:40:PRO:CD	2.77	0.48
53:3:271:C:H2'	53:3:272:C:H6	1.79	0.48
53:3:346:G:C2'	53:3:347:G:H5'	2.43	0.48
53:3:721:G:H4'	53:3:722:G:O4'	2.13	0.48
53:3:883:C:O2'	53:3:884:U:H5'	2.14	0.48
53:3:1260:G:H4'	53:3:1284:C:H5'	1.96	0.48
53:3:1516:G:H2'	53:3:1518:A:OP2	2.14	0.48
54:1:171:U:H2'	54:1:172:A:C8	2.49	0.48
54:1:306:U:H2'	54:1:307:G:O4'	2.14	0.48
54:1:1062:G:OP1	54:1:1070:A:H5''	2.14	0.48
54:1:2180:U:O2'	54:1:2181:U:H5'	2.13	0.48
54:1:2818:U:H2'	54:1:2819:G:H8	1.79	0.48
1:b:152:GLN:HB3	54:1:1818:U:C4	2.48	0.47
1:b:204:LEU:N	1:b:204:LEU:HD22	2.29	0.47
2:c:109:VAL:HG23	2:c:175:LEU:HD12	1.96	0.47
3:d:77:ILE:HG13	3:d:78:TRP:HD1	1.78	0.47
15:p:38:ARG:CG	15:p:39:LEU:H	2.24	0.47
19:t:77:ARG:HA	54:1:64:A:OP1	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:A:66:ILE:HG23	26:A:66:ILE:O	2.14	0.47
32:G:41:ASN:OD1	32:G:43:GLU:HB2	2.14	0.47
35:J:84:VAL:HG22	35:J:85:LYS:N	2.29	0.47
36:K:29:ILE:HG21	36:K:64:VAL:CG2	2.44	0.47
39:N:6:TYR:HD1	39:N:18:VAL:O	1.97	0.47
41:P:71:ASP:HA	41:P:74:LYS:NZ	2.28	0.47
42:Q:82:ARG:O	42:Q:95:HIS:N	2.47	0.47
43:R:94:LEU:HD23	43:R:95:PRO:CD	2.44	0.47
51:Z:36:PHE:O	51:Z:38:GLU:N	2.47	0.47
51:Z:65:ARG:HG2	51:Z:65:ARG:HH11	1.79	0.47
53:3:390:U:H2'	53:3:391:G:C8	2.49	0.47
53:3:1066:C:O2'	53:3:1067:A:H5'	2.14	0.47
53:3:1353:G:O2'	53:3:1354:U:H5'	2.14	0.47
54:1:278:A:N1	54:1:362:A:H1'	2.28	0.47
54:1:310:A:H1'	54:1:330:A:C2	2.49	0.47
54:1:628:G:O2'	54:1:629:G:H5'	2.14	0.47
54:1:1063:G:H22	54:1:1075:C:H42	1.52	0.47
54:1:1659:G:H2'	54:1:1660:G:C5'	2.39	0.47
54:1:1990:C:H2'	54:1:1991:U:O4'	2.14	0.47
54:1:2303:G:O2'	54:1:2304:G:H5'	2.13	0.47
54:1:2679:A:O2'	54:1:2680:U:H5'	2.14	0.47
55:2:14:U:O2	55:2:107:G:H4'	2.14	0.47
4:e:25:MET:HE2	55:2:57:A:C6	2.49	0.47
12:m:108:VAL:HG23	12:m:113:ALA:HB2	1.96	0.47
15:p:1:SER:O	15:p:5:LYS:HG2	2.14	0.47
21:v:48:MET:O	21:v:51:GLN:HG3	2.13	0.47
27:B:51:ARG:HH21	27:B:51:ARG:HG3	1.78	0.47
33:H:69:THR:O	33:H:105:VAL:N	2.47	0.47
33:H:107:LYS:HB2	33:H:110:LEU:HD12	1.96	0.47
34:I:87:GLU:OE2	34:I:187:ARG:HB2	2.14	0.47
36:K:51:ILE:CG2	36:K:85:ILE:HD11	2.44	0.47
38:M:60:LEU:HD22	38:M:60:LEU:N	2.29	0.47
39:N:5:TYR:HB2	39:N:20:ILE:CG2	2.41	0.47
42:Q:110:LYS:HZ2	42:Q:121:PRO:HB3	1.78	0.47
44:S:30:ILE:HG22	44:S:30:ILE:O	2.14	0.47
46:U:53:ASP:O	46:U:57:ILE:HG13	2.14	0.47
47:V:48:GLU:HB3	47:V:51:GLU:OE2	2.15	0.47
53:3:701:U:C5'	53:3:703:G:H1'	2.44	0.47
53:3:788:U:H2'	53:3:789:U:O4'	2.14	0.47
53:3:1065:U:C5	53:3:1190:G:C5	3.01	0.47
53:3:1070:U:H2'	53:3:1071:C:H6	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:239:C:H2'	54:1:240:C:O4'	2.15	0.47
54:1:2193:G:H2'	54:1:2194:U:H6	1.78	0.47
54:1:2423:U:H1'	54:1:2425:A:C5	2.49	0.47
55:2:1:U:O4	55:2:119:A:N1	2.47	0.47
1:b:226:PRO:HD3	1:b:233:GLY:HA2	1.96	0.47
3:d:61:ARG:CB	3:d:61:ARG:HH21	2.27	0.47
4:e:43:ILE:HG13	4:e:44:ALA:H	1.80	0.47
14:o:103:VAL:HG23	14:o:104:GLN:N	2.29	0.47
28:C:28:THR:O	28:C:30:PRO:HD3	2.14	0.47
33:H:111:ASP:O	33:H:115:VAL:HG23	2.15	0.47
34:I:27:ILE:C	34:I:29:THR:H	2.22	0.47
35:J:135:VAL:O	35:J:138:ALA:HB3	2.14	0.47
41:P:35:ASP:CG	41:P:37:GLN:H	2.22	0.47
43:R:69:ARG:HG2	43:R:69:ARG:NH1	2.29	0.47
49:X:10:ILE:HG21	49:X:40:PHE:CE2	2.49	0.47
53:3:56:U:H2'	53:3:57:G:C8	2.49	0.47
53:3:175:C:H2'	53:3:176:C:H6	1.79	0.47
54:1:112:U:C2'	54:1:113:U:H5'	2.41	0.47
54:1:194:G:H2'	54:1:195:A:O4'	2.14	0.47
54:1:1147:A:H2'	54:1:1148:U:C6	2.50	0.47
54:1:1447:C:H2'	54:1:1448:G:C8	2.49	0.47
54:1:1535:A:H3'	54:1:1536:C:H5'	1.96	0.47
56:5:24:U:H2'	56:5:25:C:H6	1.79	0.47
3:d:44:ARG:HG3	3:d:44:ARG:NH2	2.27	0.47
9:j:119:PHE:C	9:j:121:LYS:N	2.72	0.47
15:p:92:ARG:HD3	54:1:1753:G:H5''	1.96	0.47
17:r:51:VAL:O	17:r:52:PRO:C	2.56	0.47
18:s:16:LYS:HA	18:s:19:LEU:HD13	1.97	0.47
21:v:41:GLU:O	21:v:42:LEU:HD23	2.14	0.47
31:F:7:VAL:HB	31:F:25:VAL:HG23	1.97	0.47
32:G:113:LEU:HD12	32:G:143:LEU:HB3	1.96	0.47
33:H:2:GLN:HB2	33:H:3:LYS:HD2	1.96	0.47
37:L:43:TYR:O	37:L:46:LEU:HB2	2.14	0.47
37:L:102:TRP:CH2	37:L:140:VAL:HG21	2.49	0.47
39:N:98:ARG:HH22	53:3:1179:A:H5''	1.79	0.47
47:V:13:SER:CB	47:V:21:VAL:HB	2.44	0.47
51:Z:23:GLU:C	51:Z:25:ALA:H	2.22	0.47
51:Z:34:ARG:HG2	51:Z:34:ARG:NH1	2.29	0.47
53:3:513:C:H2'	53:3:514:C:H6	1.79	0.47
53:3:926:G:H22	57:4:15:A:H3'	1.79	0.47
53:3:1082:A:O2'	53:3:1083:U:H5'	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1202:U:C2'	53:3:1203:C:H5'	2.44	0.47
54:1:704:G:H1'	54:1:727:A:N6	2.27	0.47
54:1:1506:U:H2'	54:1:1507:C:C6	2.49	0.47
1:b:176:ARG:HG2	54:1:1820:U:OP1	2.14	0.47
8:i:56:VAL:HG23	8:i:70:THR:HA	1.95	0.47
12:m:36:VAL:HG13	21:v:82:TYR:CD2	2.50	0.47
16:q:63:ARG:HH11	16:q:63:ARG:HG3	1.78	0.47
32:G:16:GLY:C	32:G:17:HIS:ND1	2.73	0.47
32:G:31:PHE:N	32:G:39:ILE:O	2.47	0.47
32:G:195:VAL:HG12	32:G:196:ASP:N	2.29	0.47
36:K:38:ARG:CD	36:K:97:THR:HA	2.44	0.47
37:L:14:ASP:CG	37:L:15:PRO:HD2	2.39	0.47
38:M:9:MET:O	38:M:13:ILE:HG13	2.14	0.47
38:M:21:LYS:O	38:M:62:LEU:HD12	2.14	0.47
46:U:21:VAL:HG13	46:U:21:VAL:O	2.14	0.47
51:Z:67:THR:C	53:3:1167:A:N7	2.72	0.47
53:3:59:A:H5''	53:3:387:U:H5''	1.97	0.47
53:3:893:C:H2'	53:3:894:G:C8	2.50	0.47
53:3:1193:G:O2'	53:3:1194:U:H5'	2.13	0.47
54:1:894:U:O2'	54:1:895:U:H5'	2.13	0.47
54:1:1103:A:H5''	54:1:1104:C:C5	2.50	0.47
54:1:1810:A:C2'	54:1:1811:G:H5'	2.44	0.47
54:1:1878:G:H2'	54:1:1879:C:O4'	2.15	0.47
54:1:2000:C:O2'	54:1:2001:C:H5'	2.14	0.47
54:1:2065:C:H2'	54:1:2066:C:H6	1.79	0.47
54:1:2088:A:H2'	54:1:2089:C:C6	2.49	0.47
58:7:67:U:O2'	58:7:68:C:H5'	2.14	0.47
1:b:237:ARG:HG3	1:b:237:ARG:NH1	2.28	0.47
5:f:117:PRO:HG2	5:f:120:ILE:HG13	1.96	0.47
5:f:123:GLU:N	5:f:131:VAL:O	2.43	0.47
6:g:5:LEU:N	6:g:5:LEU:CD1	2.77	0.47
8:i:10:LEU:CD1	8:i:27:LEU:HB3	2.44	0.47
10:k:7:MET:HB3	10:k:18:ARG:CZ	2.44	0.47
12:m:22:GLN:O	12:m:24:THR:N	2.47	0.47
16:q:2:ARG:HG2	54:1:445:C:O3'	2.14	0.47
22:w:39:THR:H	54:1:2331:G:H4'	1.80	0.47
33:H:155:ARG:HB2	33:H:192:TYR:HB3	1.97	0.47
44:S:18:LYS:HE3	44:S:19:TYR:CE2	2.50	0.47
45:T:87:ARG:NE	45:T:87:ARG:HA	2.29	0.47
52:a:6:LYS:O	52:a:7:ARG:C	2.51	0.47
53:3:422:C:H4'	53:3:423:G:N3	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1103:C:C3'	53:3:1104:G:H5''	2.44	0.47
53:3:1162:C:H2'	53:3:1163:A:H8	1.79	0.47
54:1:1101:U:H2'	54:1:1102:C:H6	1.79	0.47
54:1:1173:U:C2'	54:1:1174:U:H5'	2.45	0.47
1:b:199:HIS:C	1:b:199:HIS:ND1	2.72	0.47
1:b:206:LYS:HG3	1:b:209:ALA:H	1.80	0.47
2:c:2:ILE:HD13	2:c:48:ILE:CD1	2.41	0.47
2:c:4:LEU:HD21	2:c:98:VAL:HA	1.96	0.47
2:c:151:THR:HB	2:c:152:PRO:CD	2.45	0.47
7:h:61:ARG:HB3	54:1:1046:A:O3'	2.14	0.47
8:i:56:VAL:HG23	8:i:70:THR:N	2.30	0.47
9:j:27:ARG:HH22	54:1:1142:A:H4'	1.79	0.47
9:j:129:GLU:CD	9:j:129:GLU:H	2.23	0.47
10:k:40:LYS:HZ1	10:k:57:VAL:HG12	1.77	0.47
16:q:91:ARG:HD3	54:1:997:G:OP1	2.15	0.47
17:r:4:VAL:CG2	17:r:40:MET:HE2	2.45	0.47
21:v:80:HIS:ND1	21:v:81:PRO:HD2	2.30	0.47
22:w:51:ARG:HG3	22:w:51:ARG:NH1	2.28	0.47
24:y:24:GLU:HB3	24:y:28:LEU:HD12	1.96	0.47
31:F:23:ILE:HD13	54:1:1032:A:H1'	1.97	0.47
32:G:164:ASP:OD2	32:G:166:ASP:HB2	2.15	0.47
33:H:69:THR:N	33:H:103:ALA:O	2.43	0.47
35:J:105:ILE:HG13	35:J:123:LEU:HA	1.95	0.47
37:L:119:LEU:O	37:L:123:LEU:HD13	2.15	0.47
38:M:94:VAL:HG22	38:M:127:TYR:CD1	2.50	0.47
39:N:21:LYS:O	39:N:60:LEU:HB2	2.14	0.47
40:O:42:LEU:CG	40:O:71:LEU:HD22	2.45	0.47
41:P:63:GLN:O	41:P:66:ALA:HB3	2.14	0.47
42:Q:52:CYS:O	42:Q:64:SER:N	2.48	0.47
43:R:15:VAL:HG23	43:R:16:ILE:CD1	2.36	0.47
43:R:113:LYS:N	43:R:114:PRO:HD2	2.30	0.47
45:T:29:ALA:HA	45:T:84:LEU:HD21	1.97	0.47
47:V:16:MET:HE2	47:V:19:SER:HB3	1.95	0.47
51:Z:23:GLU:H	51:Z:23:GLU:CD	2.23	0.47
52:a:38:PHE:HB2	54:1:2126:A:O5'	2.15	0.47
53:3:396:C:H2'	53:3:397:A:H5''	1.96	0.47
54:1:39:G:H2'	54:1:40:U:C6	2.50	0.47
54:1:254:G:C2'	54:1:255:A:H5''	2.43	0.47
54:1:286:U:H2'	54:1:287:G:H8	1.73	0.47
54:1:372:G:H1'	54:1:373:U:H5	1.80	0.47
54:1:833:A:H2'	54:1:834:G:C8	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:838:C:O2'	54:1:839:U:H5'	2.15	0.47
54:1:1360:G:H2'	54:1:1361:G:H5'	1.97	0.47
54:1:2103:C:H2'	54:1:2104:C:C6	2.50	0.47
54:1:2106:U:H2'	54:1:2107:G:C8	2.50	0.47
54:1:2295:C:H2'	54:1:2296:U:C6	2.50	0.47
54:1:2457:U:O2'	54:1:2458:G:H5'	2.15	0.47
55:2:88:C:H5''	55:2:89:U:OP1	2.15	0.47
56:6:34:C:O2	56:6:34:C:O4'	2.33	0.47
56:6:38:A:H2'	56:6:39:C:H5'	1.97	0.47
2:c:152:PRO:O	2:c:154:LYS:HG2	2.14	0.47
4:e:165:GLY:O	4:e:168:LEU:HB3	2.14	0.47
13:n:26:GLY:O	13:n:30:ARG:N	2.41	0.47
20:u:8:ASP:CG	20:u:93:ARG:HH22	2.23	0.47
25:z:40:THR:HG23	25:z:43:ILE:H	1.80	0.47
33:H:12:GLY:HA3	44:S:96:LYS:HZ2	1.77	0.47
34:I:64:TYR:CE2	34:I:93:LEU:HD13	2.49	0.47
39:N:79:ARG:HD2	39:N:102:PHE:HD1	1.80	0.47
41:P:127:ARG:HB2	51:Z:34:ARG:HH22	1.80	0.47
42:Q:32:VAL:HG11	42:Q:55:ARG:HB2	1.97	0.47
43:R:94:LEU:HD23	43:R:95:PRO:HD2	1.96	0.47
44:S:84:ARG:HG3	44:S:84:ARG:NH1	2.30	0.47
45:T:24:THR:CG2	45:T:69:LEU:HD22	2.45	0.47
46:U:29:ASN:ND2	46:U:29:ASN:N	2.63	0.47
47:V:24:ILE:CG2	47:V:41:THR:HB	2.42	0.47
50:Y:10:ALA:O	50:Y:13:SER:N	2.48	0.47
50:Y:23:ARG:HH22	50:Y:63:LYS:HB3	1.80	0.47
53:3:77:A:H2'	53:3:78:A:C8	2.49	0.47
53:3:668:G:O2'	53:3:669:G:H5'	2.14	0.47
53:3:1496:C:H2'	53:3:1497:G:O4'	2.14	0.47
54:1:854:C:O2'	54:1:855:G:H5'	2.15	0.47
54:1:1097:U:C2'	54:1:1098:A:H5'	2.45	0.47
54:1:1292:G:O2'	54:1:1293:C:H5'	2.15	0.47
54:1:1367:A:C2'	54:1:1368:G:H5'	2.43	0.47
2:c:14:ILE:HA	15:p:11:GLN:HE22	1.80	0.47
3:d:106:LYS:CG	3:d:200:LEU:HD23	2.45	0.47
10:k:92:GLU:O	10:k:93:GLN:C	2.58	0.47
11:l:119:PRO:HB3	11:l:140:GLY:H	1.80	0.47
25:z:36:GLU:O	25:z:37:ARG:NH1	2.48	0.47
34:I:66:VAL:HG12	34:I:67:LEU:N	2.30	0.47
35:J:133:ILE:H	35:J:133:ILE:CD1	2.28	0.47
46:U:70:ARG:HE	53:3:452:A:H1'	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:756:C:H2'	53:3:757:U:O4'	2.15	0.47
54:1:1011:G:H1'	54:1:1013:C:O4'	2.13	0.47
54:1:1464:G:H2'	54:1:1465:G:H8	1.80	0.47
54:1:1684:G:H2'	54:1:1685:C:H6	1.80	0.47
54:1:1821:A:C6	54:1:1822:C:N4	2.83	0.47
54:1:2493:U:C2'	54:1:2494:G:H5''	2.44	0.47
54:1:2632:A:O2'	54:1:2633:G:H5'	2.15	0.47
55:2:54:G:O2'	55:2:55:U:H5'	2.15	0.47
56:6:61:C:H2'	56:6:62:C:C6	2.50	0.47
1:b:16:VAL:HB	1:b:203:VAL:HG22	1.97	0.47
5:f:108:PHE:CZ	5:f:151:ARG:HD3	2.50	0.47
10:k:14:SER:CB	10:k:86:LEU:HD12	2.44	0.47
11:l:79:LEU:HG	11:l:111:ILE:O	2.15	0.47
13:n:107:ASN:O	13:n:107:ASN:OD1	2.32	0.47
16:q:58:GLN:C	16:q:58:GLN:CD	2.83	0.47
32:G:129:THR:HB	32:G:132:GLU:CD	2.40	0.47
33:H:2:GLN:HB3	53:3:1190:G:O2'	2.15	0.47
36:K:24:ARG:HB2	36:K:24:ARG:HH11	1.80	0.47
43:R:82:LEU:HD13	49:X:64:GLU:HG3	1.97	0.47
44:S:12:ARG:HB2	44:S:12:ARG:HH11	1.77	0.47
52:a:4:LEU:HD12	52:a:12:ARG:HH21	1.78	0.47
53:3:442:G:H2'	53:3:443:C:C6	2.50	0.47
53:3:900:A:O2'	53:3:901:A:H5'	2.14	0.47
53:3:959:A:C2	53:3:1222:G:O4'	2.68	0.47
53:3:1219:A:H2'	53:3:1220:G:H8	1.80	0.47
53:3:1323:G:H2'	53:3:1324:A:H8	1.77	0.47
53:3:1500:A:H5''	53:3:1508:A:H5''	1.97	0.47
54:1:15:G:O2'	54:1:16:C:H5'	2.15	0.47
54:1:940:G:H2'	54:1:941:A:H5''	1.97	0.47
54:1:1060:U:C5'	54:1:1061:U:H3'	2.45	0.47
54:1:1671:U:H6	54:1:1671:U:O5'	1.97	0.47
54:1:2103:C:H2'	54:1:2104:C:H6	1.80	0.47
2:c:14:ILE:HD13	15:p:11:GLN:HE22	1.80	0.46
3:d:5:LEU:HD11	3:d:12:LEU:CD1	2.44	0.46
6:g:27:ARG:NH1	23:x:55:MET:HG2	2.28	0.46
14:o:56:LYS:HD3	14:o:56:LYS:N	2.30	0.46
24:y:14:LEU:HD23	24:y:14:LEU:C	2.40	0.46
25:z:30:ARG:HH11	25:z:30:ARG:CB	2.25	0.46
26:A:44:PHE:CD2	26:A:45:THR:HG23	2.50	0.46
32:G:182:VAL:HG22	32:G:196:ASP:OD2	2.14	0.46
32:G:205:ALA:HB3	32:G:208:ALA:HB2	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:H:179:ALA:CB	33:H:202:PHE:HE1	2.28	0.46
35:J:108:GLY:C	35:J:110:MET:H	2.23	0.46
37:L:2:ARG:NH2	53:3:933:G:O6	2.48	0.46
37:L:17:PHE:CD1	37:L:17:PHE:N	2.83	0.46
39:N:112:ARG:HA	53:3:1369:C:OP2	2.15	0.46
42:Q:51:VAL:CG2	42:Q:52:CYS:H	2.27	0.46
46:U:70:ARG:HD3	46:U:73:ALA:HB3	1.96	0.46
50:Y:54:GLN:N	50:Y:55:PRO:HD2	2.30	0.46
52:a:38:PHE:CE2	52:a:40:GLU:HB3	2.50	0.46
52:a:212:VAL:HB	52:a:224:VAL:CG2	2.43	0.46
53:3:82:G:H2'	53:3:83:C:C5'	2.45	0.46
53:3:131:A:H2'	53:3:132:C:C6	2.49	0.46
53:3:602:A:O2'	53:3:603:U:H5'	2.14	0.46
53:3:1326:U:H2'	53:3:1327:C:C6	2.50	0.46
54:1:955:U:H3	54:1:962:G:H1	1.61	0.46
54:1:1430:G:H2'	54:1:1431:A:C8	2.50	0.46
54:1:1507:C:H2'	54:1:1508:A:H4'	1.97	0.46
54:1:1917:U:O2'	54:1:1918:A:H5'	2.15	0.46
54:1:2619:C:O2'	54:1:2620:C:H5'	2.15	0.46
54:1:2757:A:H2'	54:1:2757:A:N3	2.30	0.46
54:1:2783:U:O2'	54:1:2784:U:H5'	2.15	0.46
1:b:30:ALA:HB3	1:b:31:PRO:HD3	1.97	0.46
2:c:2:ILE:O	2:c:2:ILE:HG13	2.14	0.46
9:j:78:THR:HG21	54:1:2641:G:OP1	2.16	0.46
10:k:14:SER:HB2	10:k:86:LEU:HD12	1.96	0.46
11:l:69:ARG:NH1	11:l:69:ARG:CB	2.78	0.46
12:m:33:LEU:HB2	12:m:117:PHE:CD1	2.50	0.46
17:r:79:ARG:NH2	54:1:572:A:OP2	2.48	0.46
18:s:29:VAL:HG11	18:s:55:ILE:CG2	2.45	0.46
18:s:46:LEU:O	18:s:50:VAL:HG23	2.15	0.46
20:u:35:VAL:CG2	20:u:38:ILE:HG13	2.43	0.46
38:M:11:THR:HG22	38:M:15:ASN:ND2	2.30	0.46
50:Y:53:MET:O	50:Y:57:VAL:HG23	2.14	0.46
51:Z:53:LYS:HE2	51:Z:53:LYS:CA	2.41	0.46
53:3:66:A:H5'	53:3:173:U:O4	2.14	0.46
53:3:1101:A:H4'	53:3:1102:A:O5'	2.15	0.46
53:3:1200:C:H5''	53:3:1201:A:H3'	1.96	0.46
54:1:699:A:H2'	54:1:700:G:O4'	2.16	0.46
54:1:1278:C:H2'	54:1:1279:G:C8	2.49	0.46
54:1:1387:A:H2'	54:1:1388:G:H8	1.80	0.46
54:1:1725:U:H2'	54:1:1726:C:H6	1.79	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:2352:A:C2'	54:1:2353:G:H5'	2.45	0.46
54:1:2638:G:H22	54:1:2775:G:H2'	1.81	0.46
54:1:2805:C:H2'	54:1:2806:C:C6	2.50	0.46
3:d:106:LYS:HG3	3:d:200:LEU:HD23	1.98	0.46
10:k:71:ARG:HB2	10:k:73:ASP:OD1	2.14	0.46
14:o:24:THR:N	14:o:42:PRO:HG3	2.30	0.46
37:L:125:ASP:HB3	37:L:131:GLY:HA3	1.97	0.46
44:S:13:VAL:HG22	44:S:59:GLN:OE1	2.15	0.46
46:U:28:ARG:NE	46:U:29:ASN:ND2	2.54	0.46
48:W:21:ASP:OD2	48:W:23:LYS:HB2	2.16	0.46
53:3:410:G:C6	53:3:429:U:H1'	2.51	0.46
53:3:621:A:H2'	53:3:622:A:C8	2.50	0.46
53:3:1206:G:C2	53:3:1207:G:H1'	2.50	0.46
54:1:297:G:H2'	54:1:298:G:O4'	2.16	0.46
54:1:742:A:H2'	54:1:743:A:H8	1.80	0.46
54:1:1558:C:O4'	54:1:1560:G:C8	2.68	0.46
54:1:1777:U:O2'	54:1:1778:U:H5'	2.15	0.46
54:1:2498:C:O2'	54:1:2499:C:H5'	2.15	0.46
1:b:36:ASN:HB2	1:b:61:TYR:HB2	1.96	0.46
4:e:39:VAL:HG13	4:e:40:GLY:N	2.30	0.46
5:f:60:GLY:O	5:f:64:ALA:N	2.43	0.46
8:i:55:PRO:HG2	8:i:71:LYS:CB	2.44	0.46
10:k:18:ARG:HH11	10:k:18:ARG:HG3	1.79	0.46
12:m:43:ALA:O	12:m:46:ILE:HG22	2.16	0.46
13:n:93:GLY:O	13:n:116:VAL:HG21	2.15	0.46
18:s:93:ALA:HB2	54:1:1614:A:N1	2.30	0.46
26:A:37:CYS:N	26:A:40:CYS:SG	2.87	0.46
34:I:122:ILE:HG13	34:I:123:MET:N	2.29	0.46
34:I:186:GLU:HG3	34:I:187:ARG:H	1.80	0.46
35:J:160:VAL:HG13	35:J:161:GLU:H	1.80	0.46
43:R:12:LYS:O	43:R:43:LYS:HA	2.15	0.46
43:R:16:ILE:HD12	43:R:16:ILE:N	2.30	0.46
44:S:33:VAL:O	44:S:33:VAL:HG23	2.16	0.46
52:a:16:ASP:HB3	52:a:21:TYR:HE1	1.80	0.46
53:3:423:G:H2'	53:3:424:G:H5'	1.97	0.46
53:3:1047:G:O2'	53:3:1048:G:H5'	2.15	0.46
54:1:171:U:H2'	54:1:172:A:H8	1.80	0.46
54:1:936:A:H2'	54:1:937:C:C6	2.51	0.46
54:1:1910:G:O2'	54:1:1911:U:H5'	2.16	0.46
56:6:17:C:H4'	56:6:61:C:OP1	2.15	0.46
58:7:2:G:C1'	58:7:3:G:OP1	2.58	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:q:16:ILE:HG21	16:q:31:TYR:CE1	2.50	0.46
16:q:16:ILE:HG21	16:q:31:TYR:HE1	1.80	0.46
17:r:31:GLU:HG3	17:r:32:THR:N	2.28	0.46
17:r:84:ARG:HH21	17:r:84:ARG:HB2	1.81	0.46
20:u:8:ASP:OD1	20:u:93:ARG:NH2	2.49	0.46
29:D:31:LEU:HB3	29:D:35:ARG:NH1	2.30	0.46
34:I:165:GLU:C	34:I:166:LYS:HD2	2.41	0.46
36:K:29:ILE:HG21	36:K:64:VAL:HG21	1.96	0.46
37:L:10:LYS:N	37:L:10:LYS:HD2	2.30	0.46
40:O:88:MET:O	40:O:89:ARG:HG2	2.15	0.46
43:R:99:GLN:OE1	43:R:99:GLN:N	2.48	0.46
46:U:26:ASN:ND2	46:U:31:ARG:HD3	2.30	0.46
53:3:1106:G:O2'	53:3:1107:C:H5'	2.14	0.46
53:3:1536:C:H2'	53:3:1537:U:H6	1.78	0.46
54:1:1061:U:H4'	54:1:1070:A:C4	2.50	0.46
54:1:1161:C:H2'	54:1:1162:G:C8	2.50	0.46
54:1:1486:U:H2'	54:1:1487:U:H6	1.80	0.46
54:1:1507:C:C2'	54:1:1508:A:H4'	2.45	0.46
54:1:1730:C:O2'	54:1:1731:G:C8	2.68	0.46
54:1:2191:A:C2'	54:1:2192:U:H5''	2.45	0.46
54:1:2296:U:H5''	54:1:2297:A:OP1	2.16	0.46
54:1:2861:U:H2'	54:1:2862:G:C8	2.51	0.46
57:4:17:U:O2'	57:4:18:G:H5'	2.15	0.46
9:j:92:MET:HA	9:j:92:MET:HE3	1.96	0.46
19:t:67:VAL:HG11	19:t:74:ILE:HD11	1.96	0.46
21:v:2:PHE:HB3	21:v:61:LEU:CD1	2.45	0.46
21:v:80:HIS:CG	21:v:83:LYS:HB2	2.51	0.46
23:x:53:LYS:C	23:x:53:LYS:HD3	2.40	0.46
24:y:49:ASP:O	24:y:53:VAL:HG23	2.15	0.46
34:I:69:ARG:HG2	34:I:69:ARG:HH11	1.81	0.46
35:J:12:GLU:CD	35:J:63:MET:HE3	2.41	0.46
38:M:50:VAL:HG22	38:M:50:VAL:O	2.16	0.46
42:Q:48:LEU:HD23	53:3:520:A:OP1	2.15	0.46
46:U:5:ARG:HD2	53:3:376:G:O3'	2.14	0.46
47:V:5:ARG:NH2	53:3:127:G:O2'	2.49	0.46
51:Z:6:ARG:HG3	51:Z:8:ASN:HA	1.97	0.46
52:a:34:ALA:HB2	52:a:40:GLU:OE2	2.15	0.46
52:a:45:ALA:O	52:a:212:VAL:HA	2.16	0.46
53:3:1411:C:H2'	53:3:1412:C:H6	1.80	0.46
54:1:337:C:H2'	54:1:338:G:O4'	2.16	0.46
54:1:1652:A:C2'	54:1:1653:G:H5'	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:2065:C:H1'	54:1:2449:U:H3	1.80	0.46
2:c:40:LEU:HD12	2:c:40:LEU:N	2.31	0.46
2:c:43:ASP:HB3	2:c:45:TYR:CE1	2.51	0.46
8:i:10:LEU:HD23	54:1:1070:A:N1	2.31	0.46
11:l:85:VAL:HG12	11:l:86:GLU:O	2.16	0.46
15:p:90:ALA:HB2	15:p:112:ARG:CA	2.46	0.46
16:q:63:ARG:HG3	16:q:63:ARG:NH1	2.31	0.46
17:r:27:ILE:HG21	17:r:63:VAL:HG21	1.98	0.46
22:w:52:ASP:O	22:w:53:HIS:HB2	2.16	0.46
23:x:71:ARG:HB2	23:x:71:ARG:HH11	1.80	0.46
31:F:11:CYS:HB3	31:F:33:HIS:ND1	2.30	0.46
32:G:27:LYS:N	32:G:28:PRO:CD	2.78	0.46
33:H:89:VAL:O	33:H:93:ILE:HG12	2.15	0.46
34:I:67:LEU:HB3	53:3:546:A:P	2.56	0.46
44:S:89:ARG:HG2	44:S:89:ARG:HH11	1.80	0.46
45:T:38:LEU:HD23	45:T:42:PHE:HE2	1.81	0.46
52:a:33:LEU:HD13	52:a:219:GLY:HA2	1.98	0.46
53:3:554:A:H2'	53:3:555:U:C6	2.51	0.46
53:3:739:C:H2'	53:3:740:U:O4'	2.16	0.46
53:3:1486:G:H2'	53:3:1487:G:O4'	2.16	0.46
54:1:174:U:H2'	54:1:175:G:H8	1.81	0.46
54:1:351:C:O2'	54:1:352:A:H5'	2.16	0.46
54:1:362:A:H3'	54:1:363:G:C8	2.51	0.46
54:1:1048:A:H2'	54:1:1049:C:H6	1.80	0.46
54:1:1308:A:C2'	54:1:1309:G:H5'	2.46	0.46
54:1:1921:G:O2'	54:1:1922:G:H5'	2.16	0.46
56:6:43:A:O2'	56:6:44:A:H5'	2.15	0.46
2:c:35:THR:HG23	2:c:51:THR:HG22	1.97	0.46
4:e:67:THR:N	4:e:85:GLY:O	2.49	0.46
4:e:131:VAL:HG22	4:e:132:ARG:N	2.31	0.46
7:h:61:ARG:HB3	54:1:1046:A:H4'	1.98	0.46
11:l:90:VAL:N	11:l:121:THR:O	2.49	0.46
13:n:47:VAL:C	13:n:50:PRO:HD2	2.41	0.46
18:s:11:ARG:HH21	18:s:98:LYS:HD3	1.81	0.46
34:I:116:LEU:HD12	34:I:153:ARG:HH21	1.81	0.46
37:L:55:LYS:HG3	37:L:56:SER:N	2.30	0.46
39:N:88:GLU:H	39:N:88:GLU:CD	2.23	0.46
41:P:28:ASN:ND2	41:P:30:ILE:HG13	2.30	0.46
51:Z:34:ARG:HG2	51:Z:34:ARG:HH11	1.79	0.46
53:3:123:U:H5''	53:3:311:C:O2'	2.16	0.46
53:3:779:C:H2'	53:3:780:A:O4'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:753:A:O2'	54:1:754:U:H5'	2.16	0.46
54:1:847:U:O2	54:1:847:U:H2'	2.14	0.46
54:1:1076:C:O2'	54:1:1077:A:H5'	2.16	0.46
54:1:1365:A:N3	54:1:1365:A:H2'	2.30	0.46
54:1:1853:A:H2'	54:1:1854:A:C8	2.51	0.46
54:1:2295:C:H2'	54:1:2296:U:H6	1.81	0.46
54:1:2313:C:H2'	54:1:2314:A:H8	1.81	0.46
54:1:2452:C:N4	54:1:2504:U:H3	2.07	0.46
54:1:2591:C:H2'	54:1:2592:G:C8	2.51	0.46
54:1:2805:C:H2'	54:1:2806:C:H6	1.81	0.46
3:d:61:ARG:NH2	3:d:61:ARG:HB2	2.31	0.46
5:f:34:ARG:HG2	5:f:34:ARG:HH11	1.81	0.46
6:g:5:LEU:HD11	6:g:19:VAL:HG21	1.98	0.46
7:h:51:TYR:HD1	7:h:51:TYR:H	1.64	0.46
7:h:53:ARG:HB3	54:1:1084:A:P	2.56	0.46
8:i:8:VAL:O	8:i:58:ILE:O	2.33	0.46
12:m:38:ARG:NH1	12:m:98:PRO:HD3	2.31	0.46
13:n:11:ASN:N	54:1:1653:G:O6	2.48	0.46
19:t:67:VAL:CG1	19:t:74:ILE:HD11	2.46	0.46
20:u:97:SER:O	20:u:98:ASN:CB	2.64	0.46
32:G:138:ARG:CZ	53:3:1097:C:H5''	2.46	0.46
32:G:206:ILE:HG23	32:G:207:ARG:H	1.81	0.46
33:H:122:GLN:O	33:H:125:ARG:HG2	2.15	0.46
35:J:44:ARG:NH2	35:J:70:MET:HG2	2.30	0.46
36:K:18:VAL:CG1	36:K:19:PRO:HD3	2.45	0.46
36:K:38:ARG:HH11	36:K:38:ARG:HG3	1.80	0.46
42:Q:27:PRO:HG3	53:3:33:A:H1'	1.98	0.46
43:R:29:SER:O	43:R:33:LEU:HD13	2.16	0.46
51:Z:48:LYS:HA	51:Z:51:ALA:HB3	1.98	0.46
53:3:171:A:H2'	53:3:172:A:C8	2.51	0.46
53:3:427:U:H2'	53:3:428:G:C8	2.51	0.46
53:3:852:G:H2'	53:3:853:C:C6	2.51	0.46
53:3:1103:C:C2'	53:3:1104:G:H5''	2.44	0.46
53:3:1219:A:H2'	53:3:1220:G:C8	2.51	0.46
53:3:1278:G:OP1	53:3:1279:G:H5'	2.16	0.46
54:1:6:A:H2'	54:1:7:G:C8	2.50	0.46
54:1:173:A:H2'	54:1:174:U:H6	1.81	0.46
54:1:691:C:H2'	54:1:692:C:C6	2.50	0.46
54:1:1344:U:H3'	54:1:1345:C:H5'	1.98	0.46
54:1:1789:A:H2'	54:1:1790:C:O4'	2.16	0.46
1:b:72:GLY:O	1:b:74:PRO:HD3	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:131:MET:CE	1:b:187:CYS:HB2	2.41	0.46
3:d:3:LEU:O	3:d:11:ALA:HA	2.16	0.46
3:d:134:LEU:HD21	3:d:161:ALA:HB2	1.98	0.46
28:C:10:LEU:O	28:C:19:PHE:HA	2.15	0.46
31:F:24:ARG:HA	31:F:36:ARG:HA	1.98	0.46
33:H:106:ARG:HB3	33:H:107:LYS:HZ3	1.81	0.46
35:J:138:ALA:O	35:J:141:ASP:HB3	2.16	0.46
35:J:164:LEU:C	35:J:164:LEU:HD12	2.41	0.46
39:N:85:ALA:O	39:N:88:GLU:OE2	2.33	0.46
40:O:52:LEU:HB2	44:S:80:ARG:HD2	1.97	0.46
44:S:58:ARG:NH2	53:3:980:C:H4'	2.30	0.46
53:3:252:U:O2	53:3:252:U:C2'	2.62	0.46
53:3:298:A:H2'	53:3:299:G:O4'	2.16	0.46
53:3:1006:G:H2'	53:3:1007:U:H6	1.81	0.46
54:1:794:A:H2'	54:1:795:C:C6	2.51	0.46
54:1:1287:A:O2'	54:1:1288:G:H5'	2.17	0.46
54:1:1548:A:H2'	54:1:1549:A:H8	1.80	0.46
54:1:1925:C:O2'	54:1:1926:U:H5'	2.15	0.46
54:1:2098:U:H2'	54:1:2099:U:O4'	2.16	0.46
54:1:2290:G:H2'	54:1:2291:U:C6	2.51	0.46
54:1:2443:C:H2'	54:1:2444:G:H8	1.81	0.46
54:1:2547:A:H2'	54:1:2548:U:C6	2.51	0.46
54:1:2859:G:H2'	54:1:2860:A:C8	2.51	0.46
56:5:5:G:O2'	56:5:6:G:H5'	2.16	0.46
3:d:149:ILE:HG23	3:d:188:MET:HA	1.98	0.45
5:f:51:PHE:CZ	5:f:68:ARG:HA	2.51	0.45
6:g:3:VAL:HG13	6:g:37:VAL:C	2.41	0.45
11:l:57:LEU:HA	11:l:60:ARG:HH22	1.80	0.45
14:o:30:ARG:HG2	14:o:30:ARG:NH1	2.30	0.45
15:p:105:LYS:O	15:p:108:ARG:NH2	2.50	0.45
18:s:97:LEU:HD12	18:s:97:LEU:N	2.31	0.45
23:x:63:ILE:O	23:x:67:LEU:HD23	2.16	0.45
33:H:5:HIS:HB2	44:S:88:MET:HE3	1.98	0.45
35:J:22:LYS:HB3	35:J:29:ILE:HG22	1.97	0.45
35:J:160:VAL:HG13	35:J:161:GLU:N	2.31	0.45
38:M:80:PRO:HA	38:M:83:ARG:CZ	2.46	0.45
47:V:60:ILE:CG2	47:V:72:TRP:HB3	2.46	0.45
47:V:61:ARG:HG3	47:V:61:ARG:HH11	1.82	0.45
48:W:12:PHE:C	48:W:14:ALA:H	2.25	0.45
49:X:39:ILE:HG23	49:X:43:MET:SD	2.55	0.45
53:3:117:G:N2	53:3:118:U:H1'	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:701:U:H4'	53:3:703:G:H1'	1.98	0.45
53:3:1041:G:O2'	53:3:1042:A:H5'	2.16	0.45
53:3:1238:A:H2	53:3:1241:G:N3	2.15	0.45
53:3:1486:G:H2'	53:3:1487:G:C8	2.51	0.45
54:1:174:U:H2'	54:1:175:G:C8	2.51	0.45
54:1:287:G:H2'	54:1:288:U:C6	2.50	0.45
54:1:1196:C:H2'	54:1:1197:G:C8	2.51	0.45
54:1:1413:A:H2'	54:1:1414:C:O4'	2.16	0.45
54:1:1535:A:H3'	54:1:1536:C:C5'	2.46	0.45
4:e:16:MET:CE	4:e:27:VAL:HB	2.43	0.45
5:f:22:VAL:HG22	5:f:35:THR:HG23	1.98	0.45
6:g:26:ALA:HA	6:g:30:LEU:HG	1.98	0.45
19:t:66:LYS:HD3	19:t:77:ARG:HH21	1.80	0.45
24:y:14:LEU:O	24:y:17:GLU:HG3	2.15	0.45
31:F:10:LEU:HD23	31:F:10:LEU:C	2.40	0.45
32:G:101:THR:HG22	32:G:174:GLU:CD	2.41	0.45
33:H:53:ARG:HG3	33:H:68:HIS:HB2	1.98	0.45
33:H:107:LYS:HG2	33:H:143:LEU:HD12	1.97	0.45
38:M:115:ALA:O	38:M:119:GLY:N	2.49	0.45
42:Q:36:VAL:HG21	42:Q:74:GLN:HA	1.98	0.45
42:Q:41:PRO:HG2	42:Q:47:ALA:HB3	1.98	0.45
43:R:70:ARG:O	43:R:74:MET:HG3	2.17	0.45
49:X:22:VAL:HB	49:X:23:GLU:OE2	2.17	0.45
49:X:51:HIS:HA	49:X:55:GLN:O	2.17	0.45
52:a:170:ILE:HD13	54:1:2177:C:H1'	1.97	0.45
52:a:210:LYS:CG	52:a:211:LYS:N	2.78	0.45
53:3:166:U:H2'	53:3:167:A:H8	1.80	0.45
53:3:517:G:H2'	53:3:531:U:C5	2.50	0.45
53:3:998:C:O2'	53:3:999:C:H5'	2.16	0.45
54:1:722:A:H2'	54:1:723:C:C6	2.51	0.45
54:1:2333:A:H5''	54:1:2334:U:OP1	2.16	0.45
54:1:2803:G:H2'	54:1:2804:U:H6	1.82	0.45
1:b:202:ARG:NH1	1:b:202:ARG:HB2	2.32	0.45
3:d:134:LEU:HD23	3:d:160:ALA:O	2.16	0.45
8:i:26:ALA:HB1	54:1:1097:U:C2	2.51	0.45
11:l:93:ASN:C	11:l:95:LEU:H	2.23	0.45
17:r:41:ILE:HD11	17:r:101:ILE:CG2	2.42	0.45
17:r:58:VAL:O	17:r:58:VAL:HG13	2.17	0.45
25:z:4:ILE:HG12	25:z:6:ILE:HD11	1.99	0.45
25:z:43:ILE:O	25:z:47:ILE:HG12	2.16	0.45
25:z:52:PHE:CD2	55:2:83:G:H4'	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:A:59:ARG:HA	26:A:62:LYS:HB2	1.97	0.45
32:G:86:CYS:SG	32:G:220:VAL:HG13	2.56	0.45
33:H:87:ARG:HD2	33:H:87:ARG:C	2.41	0.45
37:L:43:TYR:HD1	37:L:46:LEU:CD1	2.27	0.45
43:R:27:THR:HG21	53:3:1328:C:H5'	1.98	0.45
44:S:26:LEU:O	44:S:30:ILE:HB	2.16	0.45
45:T:50:HIS:ND1	53:3:667:G:H4'	2.31	0.45
45:T:63:ARG:HH11	45:T:63:ARG:HG2	1.81	0.45
46:U:79:ASN:O	46:U:81:ALA:N	2.49	0.45
47:V:10:ARG:O	47:V:23:ALA:N	2.42	0.45
50:Y:26:MET:HG3	50:Y:27:MET:N	2.32	0.45
53:3:25:C:H2'	53:3:26:A:C8	2.51	0.45
53:3:230:G:O2'	53:3:231:U:H5'	2.16	0.45
53:3:607:A:H2'	53:3:608:A:H8	1.80	0.45
53:3:775:G:H2'	53:3:776:G:O4'	2.16	0.45
54:1:417:C:H2'	54:1:418:C:C6	2.51	0.45
54:1:820:A:O2'	54:1:821:A:H5'	2.16	0.45
54:1:1021:A:H2'	54:1:1022:G:H4'	1.98	0.45
54:1:1557:C:H3'	54:1:1558:C:H2'	1.98	0.45
54:1:2074:U:H2'	54:1:2075:U:H6	1.78	0.45
54:1:2078:C:O2'	54:1:2079:U:H5'	2.15	0.45
1:b:66:PHE:HB3	1:b:150:GLY:O	2.17	0.45
1:b:175:LEU:HD13	54:1:1799:G:C5	2.51	0.45
1:b:245:THR:C	1:b:247:TRP:H	2.24	0.45
3:d:75:SER:OG	3:d:77:ILE:HG12	2.16	0.45
6:g:103:VAL:O	6:g:103:VAL:HG22	2.16	0.45
7:h:34:THR:O	7:h:37:LYS:HB3	2.17	0.45
8:i:4:VAL:HG13	8:i:7:TYR:HB2	1.99	0.45
12:m:78:LEU:HD23	12:m:79:ALA:CB	2.46	0.45
35:J:36:THR:HB	35:J:63:MET:SD	2.57	0.45
35:J:98:ALA:O	35:J:101:GLY:N	2.49	0.45
36:K:61:LEU:HD23	36:K:61:LEU:C	2.40	0.45
38:M:54:THR:HG23	38:M:55:LYS:HG3	1.96	0.45
39:N:129:ARG:HG2	39:N:129:ARG:HH11	1.82	0.45
41:P:98:ALA:O	41:P:102:ALA:N	2.47	0.45
50:Y:14:GLU:HA	50:Y:17:ARG:HG2	1.99	0.45
53:3:163:C:H2'	53:3:164:G:O4'	2.16	0.45
53:3:222:C:H2'	53:3:223:A:C8	2.48	0.45
53:3:287:U:O2'	53:3:288:A:H5'	2.16	0.45
53:3:517:G:H2'	53:3:531:U:H5	1.80	0.45
53:3:1210:C:C2'	53:3:1211:U:H5'	2.47	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:69:C:H4'	54:1:75:G:N7	2.32	0.45
54:1:69:C:H2'	54:1:70:G:H8	1.82	0.45
54:1:118:A:H2'	54:1:120:U:O4	2.16	0.45
54:1:161:A:N7	54:1:162:U:H5	2.14	0.45
54:1:445:C:H2'	54:1:446:G:H5'	1.95	0.45
54:1:839:U:H2'	54:1:840:C:C6	2.52	0.45
58:7:14:A:H2'	58:7:15:G:H5'	1.98	0.45
58:7:59:A:C2'	58:7:60:U:H5'	2.46	0.45
2:c:90:PHE:HD1	2:c:94:GLN:NE2	2.15	0.45
6:g:26:ALA:CB	6:g:30:LEU:HD12	2.47	0.45
7:h:59:LEU:HB2	54:1:1107:G:OP1	2.17	0.45
10:k:7:MET:HE3	10:k:18:ARG:HE	1.82	0.45
21:v:36:ALA:O	21:v:37:PRO:C	2.60	0.45
26:A:36:VAL:HB	26:A:41:HIS:HB2	1.98	0.45
26:A:57:VAL:HG21	49:X:63:ASP:OD1	2.17	0.45
33:H:54:ILE:HG22	33:H:67:ILE:HG23	1.99	0.45
36:K:44:ARG:HG2	36:K:58:HIS:ND1	2.31	0.45
38:M:6:ILE:HD11	38:M:31:LEU:HD13	1.99	0.45
38:M:25:THR:HA	38:M:59:GLU:HA	1.99	0.45
47:V:17:GLU:O	47:V:18:LYS:HB2	2.16	0.45
52:a:60:ARG:HH11	52:a:60:ARG:HG2	1.80	0.45
53:3:33:A:H2'	53:3:34:C:C6	2.51	0.45
53:3:202:G:H2'	53:3:203:G:O4'	2.17	0.45
53:3:297:G:H4'	53:3:557:G:H4'	1.99	0.45
53:3:1401:G:N1	53:3:1402:C:O2	2.50	0.45
54:1:685:A:C8	54:1:773:U:C4	3.05	0.45
54:1:940:G:C3'	54:1:941:A:H5''	2.46	0.45
54:1:1079:C:N4	54:1:1080:A:H62	2.14	0.45
54:1:2371:G:O2'	54:1:2372:U:H5'	2.16	0.45
54:1:2405:G:H2'	54:1:2411:A:N6	2.32	0.45
5:f:54:ARG:HH11	5:f:54:ARG:HG3	1.82	0.45
11:l:125:LEU:HD12	11:l:125:LEU:N	2.31	0.45
17:r:27:ILE:HG13	17:r:33:VAL:HG12	1.97	0.45
25:z:37:ARG:HH21	54:1:929:U:H4'	1.82	0.45
32:G:141:GLU:O	32:G:144:GLU:HB3	2.17	0.45
33:H:188:ALA:CB	33:H:195:ILE:HB	2.38	0.45
34:I:43:ARG:H	34:I:43:ARG:HD3	1.82	0.45
35:J:45:VAL:C	35:J:70:MET:HE3	2.42	0.45
36:K:3:HIS:HB2	36:K:92:THR:HA	1.98	0.45
36:K:6:ILE:HB	36:K:62:MET:HB3	1.98	0.45
37:L:12:LEU:H	37:L:12:LEU:CD2	2.30	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:R:85:TYR:CZ	43:R:89:ARG:HD3	2.52	0.45
52:a:3:LYS:HG3	54:1:2108:A:OP1	2.17	0.45
53:3:162:A:H2'	53:3:163:C:O4'	2.16	0.45
53:3:631:C:H5''	53:3:632:U:O4'	2.16	0.45
53:3:1229:A:H2'	53:3:1230:C:H6	1.82	0.45
53:3:1259:C:H2'	53:3:1260:G:C5'	2.43	0.45
54:1:114:U:O2	54:1:114:U:H2'	2.15	0.45
54:1:759:G:H2'	54:1:760:G:H8	1.81	0.45
54:1:1060:U:H5''	54:1:1061:U:H5'	1.97	0.45
54:1:1645:G:OP1	54:1:1646:C:H5'	2.16	0.45
56:6:66:C:H2'	56:6:67:C:O4'	2.15	0.45
1:b:52:HIS:CE1	1:b:218:THR:HG23	2.52	0.45
3:d:75:SER:OG	3:d:76:PRO:HD2	2.17	0.45
4:e:24:VAL:HG13	4:e:25:MET:N	2.31	0.45
4:e:45:ASP:CB	4:e:48:LEU:HB3	2.26	0.45
4:e:136:ILE:HG13	4:e:137:PHE:N	2.31	0.45
7:h:26:VAL:CG1	7:h:82:ILE:HD12	2.46	0.45
7:h:40:GLU:O	7:h:44:ALA:N	2.44	0.45
9:j:111:LYS:HD3	9:j:111:LYS:N	2.32	0.45
12:m:81:ARG:HG2	12:m:81:ARG:HH11	1.82	0.45
13:n:12:ARG:HB3	13:n:16:HIS:HD2	1.81	0.45
32:G:187:ASP:O	32:G:190:SER:N	2.48	0.45
32:G:224:ARG:HG2	32:G:224:ARG:NH2	2.32	0.45
34:I:43:ARG:HD3	34:I:43:ARG:N	2.32	0.45
34:I:201:GLU:OE2	35:J:104:ILE:HG13	2.16	0.45
36:K:18:VAL:N	36:K:19:PRO:CD	2.80	0.45
41:P:120:CYS:SG	53:3:677:U:H1'	2.56	0.45
42:Q:28:GLN:HB3	42:Q:80:LEU:HG	1.98	0.45
42:Q:74:GLN:O	42:Q:76:HIS:N	2.48	0.45
49:X:2:ARG:HG2	49:X:2:ARG:HH11	1.80	0.45
49:X:15:LEU:O	49:X:19:GLU:HG2	2.16	0.45
50:Y:30:PHE:O	50:Y:34:VAL:HG23	2.17	0.45
53:3:175:C:H2'	53:3:176:C:C6	2.52	0.45
53:3:469:C:H2'	53:3:470:C:O4'	2.16	0.45
53:3:560:A:H5'	53:3:566:G:N2	2.32	0.45
53:3:742:G:O2'	53:3:743:A:H5'	2.16	0.45
53:3:1273:C:H2'	53:3:1274:A:O4'	2.16	0.45
53:3:1509:C:O2'	53:3:1510:C:H5'	2.16	0.45
54:1:155:A:H2'	54:1:156:A:C8	2.51	0.45
54:1:192:C:C2'	54:1:193:U:H5'	2.47	0.45
54:1:497:A:H2'	54:1:498:G:O4'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:506:G:H4'	54:1:509:C:H1'	1.98	0.45
54:1:645:C:H2'	54:1:647:G:N7	2.32	0.45
54:1:819:A:O2'	54:1:820:A:H5'	2.16	0.45
54:1:2698:U:H2'	54:1:2699:C:C6	2.52	0.45
10:k:103:VAL:CG2	10:k:104:THR:H	2.16	0.45
11:l:29:LYS:O	11:l:30:THR:OG1	2.35	0.45
11:l:109:LYS:HE2	54:1:636:G:N7	2.31	0.45
19:t:45:ALA:O	19:t:49:LYS:HD3	2.17	0.45
20:u:73:ASN:HB2	20:u:80:ASP:OD2	2.16	0.45
20:u:93:ARG:HE	20:u:102:ILE:CD1	2.29	0.45
30:E:63:TYR:CE2	54:1:242:G:H5''	2.52	0.45
33:H:61:LYS:CG	33:H:96:VAL:HG11	2.44	0.45
40:O:22:THR:O	40:O:26:VAL:HG12	2.16	0.45
43:R:47:LEU:HD23	43:R:48:SER:O	2.17	0.45
49:X:9:PHE:CE2	53:3:1318:A:H4'	2.51	0.45
49:X:10:ILE:HG21	49:X:40:PHE:HE2	1.82	0.45
52:a:53:ARG:HD2	52:a:53:ARG:N	2.31	0.45
52:a:215:SER:HB3	52:a:220:ALA:O	2.16	0.45
53:3:155:A:H2'	53:3:156:C:C6	2.52	0.45
54:1:1056:G:H8	54:1:1056:G:O5'	2.00	0.45
54:1:1173:U:H2'	54:1:1174:U:O4'	2.17	0.45
54:1:1822:C:O2'	54:1:1823:G:H5'	2.16	0.45
54:1:2898:U:H2'	54:1:2899:A:H8	1.82	0.45
1:b:20:ASN:OD1	1:b:22:GLU:HB2	2.16	0.45
1:b:167:ASP:O	1:b:169:ALA:N	2.49	0.45
4:e:14:LYS:O	4:e:18:GLU:HG2	2.16	0.45
6:g:95:GLY:H	6:g:98:ASP:CB	2.30	0.45
10:k:109:SER:O	10:k:110:GLU:HB3	2.17	0.45
11:l:69:ARG:CB	11:l:69:ARG:HH11	2.29	0.45
15:p:20:ARG:HB3	15:p:21:PRO:HD2	1.98	0.45
24:y:26:PHE:HD1	24:y:29:ARG:NH1	2.15	0.45
34:I:14:GLU:OE2	34:I:62:ARG:NH1	2.49	0.45
36:K:81:ASN:OD1	36:K:83:ALA:HB3	2.17	0.45
48:W:13:THR:O	48:W:13:THR:OG1	2.34	0.45
52:a:5:THR:O	52:a:6:LYS:C	2.60	0.45
53:3:457:G:O2'	53:3:458:U:H5'	2.17	0.45
53:3:663:A:H5'	53:3:836:G:OP1	2.17	0.45
53:3:1237:C:H4'	53:3:1334:G:H21	1.74	0.45
53:3:1383:C:H5''	56:6:35:A:H2	1.82	0.45
54:1:141:G:H3'	54:1:142:A:O4'	2.17	0.45
54:1:968:C:O2'	54:1:969:G:H5'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:1180:U:H5'	54:1:1181:U:OP2	2.17	0.45
54:1:1438:U:O2'	54:1:1439:A:H5'	2.16	0.45
54:1:1564:C:O2'	54:1:1565:C:H5'	2.17	0.45
54:1:1625:C:H2'	54:1:1626:A:O4'	2.17	0.45
54:1:1979:U:O2'	54:1:1980:G:H5'	2.17	0.45
54:1:2070:A:H2'	54:1:2071:A:H8	1.81	0.45
54:1:2266:A:H4'	54:1:2267:A:N3	2.32	0.45
54:1:2795:C:H2'	54:1:2796:U:C6	2.51	0.45
3:d:40:ARG:HG2	54:1:443:A:N7	2.31	0.45
4:e:7:TYR:HA	4:e:11:VAL:HB	1.99	0.45
5:f:106:LEU:HD12	5:f:112:VAL:HG21	1.99	0.45
15:p:4:ILE:O	15:p:8:GLU:N	2.50	0.45
15:p:21:PRO:HD3	15:p:49:ILE:HD12	1.97	0.45
17:r:74:ILE:N	17:r:87:GLN:O	2.47	0.45
22:w:67:VAL:HG23	22:w:67:VAL:O	2.17	0.45
32:G:62:ARG:HB3	32:G:62:ARG:HH11	1.81	0.45
38:M:66:GLN:C	38:M:68:LYS:N	2.75	0.45
41:P:20:ALA:HB2	41:P:81:LEU:HD12	1.99	0.45
48:W:54:LEU:O	48:W:58:ILE:HG12	2.17	0.45
53:3:437:U:C2'	53:3:438:U:H5'	2.47	0.45
53:3:515:G:H2'	53:3:516:U:C6	2.51	0.45
53:3:852:G:H2'	53:3:853:C:H6	1.82	0.45
53:3:1175:G:O2'	53:3:1176:A:H5'	2.17	0.45
53:3:1405:G:O2'	53:3:1406:U:H5'	2.17	0.45
54:1:1370:C:H2'	54:1:1371:G:O4'	2.17	0.45
54:1:1409:U:H2'	54:1:1410:G:H8	1.80	0.45
54:1:2080:A:H2'	54:1:2081:U:C6	2.52	0.45
54:1:2760:C:O2'	54:1:2761:A:H5'	2.17	0.45
55:2:69:G:H2'	55:2:70:C:H5'	1.98	0.45
1:b:224:MET:SD	1:b:229:HIS:HB2	2.57	0.44
2:c:25:THR:HG21	2:c:193:VAL:CG2	2.46	0.44
4:e:24:VAL:HG12	55:2:55:U:H4'	1.99	0.44
5:f:15:ASP:O	5:f:25:ILE:HA	2.17	0.44
7:h:26:VAL:CB	7:h:82:ILE:HD12	2.47	0.44
7:h:26:VAL:HG12	7:h:82:ILE:HD12	1.99	0.44
7:h:53:ARG:HB3	54:1:1084:A:OP1	2.17	0.44
7:h:55:VAL:HG23	7:h:84:TYR:HD2	1.81	0.44
12:m:123:LYS:HE2	54:1:2467:C:O2	2.17	0.44
19:t:24:MET:O	19:t:24:MET:HE3	2.17	0.44
20:u:58:VAL:HG12	20:u:59:GLU:H	1.81	0.44
26:A:44:PHE:H	26:A:44:PHE:HD1	1.63	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:B:27:LEU:HD23	27:B:36:LYS:HD2	1.99	0.44
28:C:32:LYS:CB	28:C:50:GLU:HG2	2.45	0.44
32:G:224:ARG:HD3	32:G:224:ARG:N	2.31	0.44
33:H:180:ASP:HB3	33:H:204:GLY:HA3	1.99	0.44
37:L:100:MET:O	37:L:104:VAL:HG22	2.18	0.44
39:N:113:LYS:HG2	53:3:1368:A:OP2	2.17	0.44
40:O:102:LEU:N	40:O:102:LEU:HD12	2.32	0.44
42:Q:52:CYS:SG	42:Q:64:SER:HB3	2.57	0.44
43:R:22:TYR:OH	43:R:72:ILE:HD12	2.17	0.44
46:U:34:GLU:OE2	46:U:35:ARG:O	2.35	0.44
46:U:60:TRP:HB3	46:U:65:ALA:HB2	2.00	0.44
52:a:163:TYR:HB2	52:a:171:ILE:CD1	2.43	0.44
53:3:607:A:H2'	53:3:608:A:C8	2.51	0.44
54:1:256:A:O2'	54:1:257:C:H5'	2.17	0.44
54:1:622:G:H2'	54:1:623:C:C6	2.52	0.44
54:1:644:A:H61	54:1:2349:G:N2	2.12	0.44
54:1:1149:G:H2'	54:1:1150:C:C6	2.52	0.44
54:1:1259:G:O2'	54:1:1260:A:H5'	2.17	0.44
54:1:1387:A:H2'	54:1:1388:G:C8	2.51	0.44
54:1:2082:A:H2'	54:1:2083:G:O4'	2.17	0.44
54:1:2149:U:H2'	54:1:2150:C:O4'	2.18	0.44
54:1:2569:G:O2'	54:1:2570:G:H5'	2.17	0.44
54:1:2720:U:O2'	54:1:2721:A:H5'	2.16	0.44
2:c:150:GLN:NE2	54:1:2032:G:C4	2.86	0.44
6:g:94:ILE:HD11	6:g:122:LEU:HD12	1.98	0.44
11:l:89:VAL:HA	11:l:121:THR:HB	1.99	0.44
13:n:21:PHE:O	13:n:25:ALA:N	2.50	0.44
15:p:52:ARG:HB3	15:p:55:HIS:HB2	2.00	0.44
18:s:11:ARG:HG3	18:s:11:ARG:NH1	2.31	0.44
20:u:64:ILE:HG12	20:u:65:GLN:N	2.32	0.44
21:v:30:ILE:CD1	21:v:40:ILE:HG13	2.47	0.44
23:x:17:ARG:HH12	54:1:201:C:P	2.40	0.44
33:H:120:THR:HG23	33:H:188:ALA:HA	1.98	0.44
44:S:62:ARG:HD3	44:S:67:GLY:O	2.18	0.44
45:T:24:THR:O	45:T:28:VAL:HG23	2.18	0.44
45:T:46:LYS:O	45:T:46:LYS:HG2	2.17	0.44
50:Y:31:ILE:HD12	50:Y:31:ILE:H	1.82	0.44
53:3:102:G:H2'	53:3:103:U:C6	2.52	0.44
53:3:478:A:H2'	53:3:479:U:O4'	2.17	0.44
53:3:803:G:H2'	53:3:804:U:C6	2.52	0.44
53:3:1009:U:H2'	53:3:1010:U:H6	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:215:G:C4'	54:1:216:A:H4'	2.48	0.44
54:1:1645:G:H5''	54:1:1646:C:H5'	1.99	0.44
54:1:1741:C:H2'	54:1:1742:U:C6	2.52	0.44
54:1:2028:U:H2'	54:1:2029:G:C8	2.52	0.44
54:1:2106:U:H2'	54:1:2107:G:H8	1.82	0.44
54:1:2191:A:C3'	54:1:2192:U:H5''	2.47	0.44
1:b:179:GLU:HB2	1:b:268:ARG:O	2.17	0.44
3:d:59:PRO:HD2	3:d:70:SER:OG	2.17	0.44
5:f:41:GLU:N	5:f:52:GLY:O	2.43	0.44
6:g:101:ASP:HA	6:g:104:THR:HB	1.99	0.44
8:i:8:VAL:HB	8:i:10:LEU:CG	2.41	0.44
10:k:62:VAL:HA	10:k:84:CYS:HA	2.00	0.44
25:z:4:ILE:O	25:z:36:GLU:HA	2.17	0.44
33:H:188:ALA:N	33:H:195:ILE:O	2.51	0.44
34:I:59:LYS:O	34:I:63:ILE:HG13	2.18	0.44
34:I:63:ILE:O	34:I:110:ARG:HD2	2.18	0.44
36:K:46:GLN:HA	36:K:56:LYS:HA	1.99	0.44
38:M:33:VAL:HG13	38:M:48:PHE:HE2	1.83	0.44
41:P:34:THR:HG22	41:P:40:ALA:CA	2.43	0.44
47:V:15:LYS:HE2	53:3:275:G:H5'	1.99	0.44
49:X:13:HIS:HA	49:X:16:LYS:CD	2.46	0.44
52:a:7:ARG:O	52:a:11:ILE:HG13	2.16	0.44
53:3:33:A:H2'	53:3:34:C:H6	1.82	0.44
53:3:206:C:C2'	53:3:207:C:H5'	2.47	0.44
53:3:956:U:O2'	53:3:957:U:H5'	2.16	0.44
53:3:986:U:H2'	53:3:987:G:C8	2.52	0.44
54:1:523:C:O2'	54:1:524:G:H5'	2.18	0.44
54:1:541:A:H2'	54:1:542:C:O4'	2.17	0.44
54:1:804:A:H2'	54:1:806:C:N4	2.32	0.44
54:1:1092:C:H2'	54:1:1093:G:O4'	2.17	0.44
54:1:1197:G:O2'	54:1:1198:U:H5'	2.17	0.44
54:1:1355:G:O2'	54:1:1356:G:H5'	2.17	0.44
54:1:1463:C:H2'	54:1:1464:G:C8	2.51	0.44
54:1:1501:G:O2'	54:1:1502:A:H5'	2.17	0.44
54:1:1538:G:H2'	54:1:1539:U:C6	2.52	0.44
54:1:2313:C:H2'	54:1:2314:A:C8	2.52	0.44
54:1:2714:G:O2'	54:1:2715:C:H5'	2.17	0.44
58:7:16:C:O2	58:7:60:U:H4'	2.17	0.44
1:b:4:LYS:HD2	1:b:16:VAL:HG22	2.00	0.44
2:c:54:ALA:HA	2:c:75:ALA:O	2.18	0.44
4:e:56:LEU:HD23	4:e:56:LEU:C	2.42	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:g:25:TYR:CE2	6:g:30:LEU:HD21	2.52	0.44
6:g:128:HIS:HB2	6:g:144:VAL:HB	1.99	0.44
10:k:41:ILE:HD11	10:k:86:LEU:CD2	2.47	0.44
11:l:29:LYS:C	11:l:30:THR:HG23	2.43	0.44
13:n:102:PHE:HE1	13:n:109:PRO:HG3	1.82	0.44
24:y:41:HIS:CG	54:1:96:C:H4'	2.52	0.44
29:D:16:HIS:ND1	29:D:16:HIS:N	2.65	0.44
33:H:140:ALA:HB2	33:H:148:ILE:HD12	2.00	0.44
34:I:138:PRO:HA	34:I:181:PHE:CD2	2.52	0.44
34:I:142:VAL:O	34:I:179:GLY:N	2.50	0.44
34:I:173:ASP:HB2	34:I:178:GLU:HG3	1.99	0.44
36:K:75:GLU:O	36:K:78:PHE:HB2	2.17	0.44
37:L:129:ASN:O	37:L:130:LYS:HG3	2.17	0.44
41:P:105:ARG:HG2	41:P:105:ARG:HH11	1.82	0.44
42:Q:51:VAL:CG2	42:Q:52:CYS:N	2.80	0.44
43:R:18:LEU:HD21	43:R:55:LEU:HD21	1.99	0.44
43:R:52:ILE:O	43:R:55:LEU:HB3	2.18	0.44
50:Y:13:SER:O	50:Y:17:ARG:HG2	2.17	0.44
51:Z:33:ARG:NH1	51:Z:33:ARG:CB	2.81	0.44
52:a:181:ASP:N	52:a:184:LYS:HB2	2.33	0.44
53:3:82:G:H2'	53:3:83:C:C4'	2.47	0.44
53:3:236:A:H2'	53:3:237:G:H8	1.81	0.44
53:3:428:G:H8	53:3:428:G:OP1	2.01	0.44
53:3:1456:A:H2'	53:3:1457:G:O4'	2.16	0.44
54:1:413:C:H2'	54:1:414:C:C6	2.53	0.44
54:1:475:C:N3	54:1:479:A:N7	2.66	0.44
54:1:577:G:H2'	54:1:578:G:C8	2.53	0.44
54:1:1183:U:H2'	54:1:1184:U:C6	2.52	0.44
54:1:2220:U:H2'	54:1:2221:G:H8	1.82	0.44
54:1:2789:C:H2'	54:1:2790:U:H5'	2.00	0.44
55:2:114:C:O2'	55:2:115:A:H5'	2.17	0.44
58:7:4:C:C2	58:7:5:G:N7	2.86	0.44
4:e:122:ASP:OD2	4:e:124:ARG:HB3	2.17	0.44
5:f:98:LYS:O	5:f:100:ASN:N	2.51	0.44
6:g:26:ALA:HA	6:g:30:LEU:CG	2.48	0.44
32:G:45:THR:HG23	32:G:200:PRO:HD2	2.00	0.44
33:H:10:ARG:NH2	33:H:181:ILE:HB	2.33	0.44
34:I:7:LYS:HD2	34:I:7:LYS:N	2.31	0.44
34:I:96:ARG:HH12	34:I:133:SER:HB3	1.82	0.44
36:K:5:GLU:HB2	36:K:90:MET:HB3	1.99	0.44
43:R:3:ILE:CG2	43:R:21:ILE:HD11	2.46	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:X:52:ASN:O	49:X:76:THR:HG22	2.18	0.44
53:3:389:A:H3'	53:3:390:U:C6	2.48	0.44
53:3:1127:G:H5'	53:3:1280:A:O2'	2.17	0.44
54:1:139:U:H2'	54:1:140:C:H5	1.83	0.44
54:1:492:A:H2'	54:1:493:G:O4'	2.18	0.44
54:1:499:U:H2'	54:1:500:G:O4'	2.17	0.44
54:1:656:G:H2'	54:1:657:U:C6	2.52	0.44
54:1:776:G:H1	54:1:2072:C:H5'	1.82	0.44
54:1:1179:G:H3'	54:1:1180:U:H4'	1.98	0.44
54:1:1182:G:H2'	54:1:1183:U:O4'	2.17	0.44
54:1:1720:U:H2'	54:1:1721:G:O4'	2.18	0.44
54:1:1771:C:N4	54:1:1772:A:N6	2.65	0.44
54:1:1917:U:C2'	54:1:1918:A:H5'	2.48	0.44
2:c:1:MET:CG	2:c:205:PRO:HG2	2.47	0.44
2:c:68:PHE:O	2:c:72:GLY:N	2.51	0.44
3:d:31:VAL:HG21	3:d:104:ALA:CB	2.45	0.44
11:l:57:LEU:CD1	11:l:60:ARG:HH22	2.30	0.44
14:o:26:LEU:HD23	14:o:92:PHE:CD1	2.53	0.44
16:q:87:VAL:HG13	17:r:49:ILE:CD1	2.48	0.44
17:r:27:ILE:HG13	17:r:33:VAL:CG1	2.48	0.44
17:r:33:VAL:HG22	17:r:61:ALA:HB3	2.00	0.44
18:s:3:THR:HG23	18:s:57:ASN:OD1	2.18	0.44
19:t:7:LEU:CD2	19:t:46:ALA:HA	2.48	0.44
22:w:11:ASP:CG	22:w:12:SER:N	2.75	0.44
33:H:139:ASN:HA	33:H:142:ARG:CG	2.47	0.44
43:R:101:THR:HG22	53:3:1226:C:H2'	2.00	0.44
45:T:14:PHE:HE1	45:T:83:ARG:HD3	1.83	0.44
45:T:55:LEU:HD21	54:1:715:A:C2	2.53	0.44
48:W:11:ARG:HD2	53:3:845:A:H1'	1.99	0.44
53:3:555:U:H2'	53:3:556:C:H6	1.81	0.44
53:3:1009:U:H2'	53:3:1010:U:C6	2.52	0.44
53:3:1202:U:H2'	53:3:1203:C:C5'	2.47	0.44
53:3:1268:G:H2'	53:3:1269:A:C8	2.53	0.44
54:1:545:U:H2'	54:1:546:U:O4'	2.17	0.44
54:1:581:C:H2'	54:1:582:A:H8	1.83	0.44
54:1:662:G:O2'	54:1:663:G:H5'	2.18	0.44
54:1:1112:G:O2'	54:1:1113:U:H5'	2.17	0.44
54:1:1298:C:H2'	54:1:1299:G:O4'	2.17	0.44
54:1:1530:G:H2'	54:1:1531:C:O4'	2.18	0.44
54:1:2047:C:O2'	54:1:2048:G:H5'	2.18	0.44
54:1:2151:U:H2'	54:1:2152:G:H8	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:2205:A:H2'	54:1:2206:C:C6	2.52	0.44
54:1:2350:C:H2'	54:1:2351:G:O4'	2.17	0.44
54:1:2370:G:H2'	54:1:2371:G:C8	2.53	0.44
2:c:59:ARG:O	2:c:59:ARG:HG3	2.18	0.44
3:d:47:LYS:HD2	3:d:51:GLU:HB3	2.00	0.44
12:m:23:GLY:HA2	54:1:907:G:OP1	2.18	0.44
18:s:87:PRO:HB3	54:1:1614:A:N6	2.33	0.44
31:F:37:GLN:HG3	31:F:37:GLN:O	2.17	0.44
32:G:47:PRO:O	32:G:51:GLU:HG3	2.17	0.44
35:J:98:ALA:HB3	35:J:122:VAL:HA	1.99	0.44
35:J:130:THR:HG23	35:J:130:THR:O	2.17	0.44
37:L:20:GLU:O	37:L:23:ALA:HB3	2.18	0.44
40:O:9:ARG:O	40:O:9:ARG:HG3	2.17	0.44
40:O:10:LEU:HD12	40:O:10:LEU:C	2.43	0.44
49:X:10:ILE:HG23	49:X:38:THR:HG22	2.00	0.44
53:3:418:C:H2'	53:3:419:C:C6	2.53	0.44
53:3:1253:G:H2'	53:3:1254:A:C8	2.52	0.44
54:1:25:U:H2'	54:1:26:G:O4'	2.18	0.44
54:1:437:U:H2'	54:1:438:G:H8	1.82	0.44
54:1:1526:C:H2'	54:1:1527:G:O4'	2.17	0.44
54:1:1713:A:C6	54:1:1716:U:H1'	2.52	0.44
1:b:19:VAL:HG12	1:b:20:ASN:N	2.33	0.44
2:c:116:LYS:HA	13:n:1:MET:HE1	2.00	0.44
10:k:58:LEU:HD23	10:k:58:LEU:H	1.83	0.44
13:n:12:ARG:NH2	13:n:12:ARG:HG2	2.31	0.44
13:n:12:ARG:HB3	13:n:16:HIS:CD2	2.52	0.44
13:n:49:GLU:OE1	54:1:2839:G:H4'	2.18	0.44
22:w:55:LEU:HD12	22:w:76:ILE:HD12	2.00	0.44
29:D:27:GLY:O	29:D:30:VAL:N	2.50	0.44
32:G:116:LEU:HA	32:G:119:GLN:HB2	2.00	0.44
33:H:122:GLN:HA	33:H:125:ARG:HG2	2.00	0.44
35:J:29:ILE:CG1	35:J:53:ARG:HH12	2.31	0.44
36:K:6:ILE:HB	36:K:62:MET:CB	2.47	0.44
40:O:57:VAL:HG23	40:O:57:VAL:O	2.17	0.44
43:R:63:VAL:HG13	43:R:67:ASP:HB2	2.00	0.44
46:U:13:LYS:O	46:U:14:ARG:HD3	2.18	0.44
50:Y:67:HIS:C	50:Y:69:ASN:H	2.25	0.44
52:a:214:ILE:N	52:a:222:VAL:O	2.44	0.44
53:3:225:C:H3'	53:3:226:G:H5''	1.99	0.44
53:3:694:A:H2'	53:3:695:A:O4'	2.18	0.44
53:3:879:C:H2'	53:3:880:C:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:945:G:H2'	53:3:945:G:N3	2.33	0.44
54:1:164:C:H2'	54:1:165:A:O4'	2.18	0.44
54:1:1105:U:H2'	54:1:1106:G:C5'	2.47	0.44
54:1:2065:C:H2'	54:1:2066:C:C6	2.53	0.44
54:1:2437:G:H2'	54:1:2438:U:C6	2.53	0.44
2:c:144:GLY:O	2:c:145:SER:C	2.60	0.44
4:e:9:ASP:HB3	4:e:10:GLU:CD	2.42	0.44
4:e:166:ARG:O	4:e:170:ALA:N	2.42	0.44
5:f:174:LYS:HG2	54:1:2529:G:H4'	1.99	0.44
9:j:135:GLN:NE2	54:1:7:G:C1'	2.80	0.44
11:l:51:GLU:HB2	54:1:833:A:H1'	2.00	0.44
13:n:83:LEU:HD12	13:n:83:LEU:N	2.32	0.44
15:p:46:VAL:HA	15:p:60:VAL:HG12	2.00	0.44
15:p:92:ARG:HD2	54:1:1753:G:OP1	2.18	0.44
20:u:17:ASP:O	20:u:19:GLY:N	2.51	0.44
34:I:74:TYR:O	34:I:78:ALA:N	2.39	0.44
36:K:45:ARG:HB3	36:K:59:TYR:CD1	2.53	0.44
38:M:94:VAL:HG21	38:M:100:ILE:C	2.43	0.44
42:Q:43:LYS:HD3	42:Q:44:PRO:CA	2.48	0.44
53:3:21:G:H2'	53:3:22:G:C8	2.53	0.44
53:3:1137:C:H5'	53:3:1138:G:H5'	2.00	0.44
53:3:1186:G:O2'	53:3:1187:G:H5'	2.17	0.44
54:1:69:C:H2'	54:1:70:G:C8	2.53	0.44
54:1:331:C:O2'	54:1:332:A:H5'	2.18	0.44
54:1:708:G:H2'	54:1:709:U:C6	2.53	0.44
54:1:1675:C:H2'	54:1:1676:A:O4'	2.18	0.44
54:1:2297:A:N6	54:1:2319:G:O2'	2.51	0.44
1:b:91:ALA:O	1:b:93:VAL:HG23	2.18	0.43
2:c:1:MET:HE1	2:c:100:LEU:HD23	1.99	0.43
3:d:35:TYR:HA	54:1:615:U:O2	2.18	0.43
4:e:39:VAL:HG12	4:e:84:ILE:O	2.18	0.43
4:e:92:GLY:O	4:e:95:MET:HB3	2.18	0.43
5:f:116:LEU:HD12	5:f:120:ILE:CG2	2.46	0.43
12:m:62:LYS:HD2	12:m:64:TRP:CZ2	2.52	0.43
12:m:92:TRP:N	12:m:92:TRP:CD1	2.85	0.43
16:q:34:ALA:O	16:q:38:VAL:HG23	2.18	0.43
21:v:44:HIS:NE2	21:v:85:LYS:HB2	2.32	0.43
21:v:61:LEU:O	21:v:71:LYS:HA	2.18	0.43
25:z:45:GLY:HA3	54:1:852:U:H5'	2.00	0.43
30:E:23:HIS:ND1	30:E:23:HIS:C	2.76	0.43
32:G:163:ILE:O	32:G:185:ILE:HB	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:H:55:VAL:N	33:H:66:THR:O	2.45	0.43
34:I:59:LYS:HE3	34:I:194:ILE:HG22	2.00	0.43
35:J:15:ILE:HD12	35:J:15:ILE:N	2.33	0.43
36:K:90:MET:HE3	48:W:22:TYR:CE1	2.53	0.43
39:N:40:ARG:HH22	53:3:1292:G:H5''	1.83	0.43
49:X:52:ASN:HB3	49:X:74:ALA:HB1	2.00	0.43
53:3:390:U:H2'	53:3:391:G:H8	1.82	0.43
53:3:1033:G:C2'	53:3:1034:G:H4'	2.48	0.43
53:3:1096:C:H2'	53:3:1097:C:C6	2.53	0.43
53:3:1218:C:H2'	53:3:1219:A:H8	1.80	0.43
53:3:1235:U:H2'	53:3:1236:A:C5'	2.33	0.43
54:1:4:U:O2'	54:1:5:A:H5'	2.16	0.43
54:1:1038:G:H2'	54:1:1039:A:C8	2.53	0.43
54:1:2804:U:H2'	54:1:2805:C:C6	2.53	0.43
54:1:2819:G:H2'	54:1:2821:A:N7	2.32	0.43
1:b:134:ILE:O	1:b:166:ARG:NH2	2.51	0.43
5:f:59:ASP:O	5:f:63:GLN:N	2.37	0.43
5:f:104:LEU:HB2	5:f:112:VAL:HB	1.99	0.43
10:k:64:ARG:HD2	10:k:79:PHE:CD1	2.52	0.43
14:o:26:LEU:HD12	14:o:38:GLN:O	2.17	0.43
18:s:7:HIS:HB2	18:s:50:VAL:CG2	2.48	0.43
19:t:29:THR:HG23	19:t:85:VAL:O	2.17	0.43
21:v:37:PRO:HG2	55:2:73:A:H2	1.83	0.43
25:z:6:ILE:HG21	25:z:26:LEU:HD13	1.99	0.43
36:K:15:SER:O	36:K:18:VAL:HG12	2.18	0.43
37:L:55:LYS:CG	37:L:56:SER:H	2.29	0.43
43:R:48:SER:O	43:R:52:ILE:HG13	2.17	0.43
52:a:162:ARG:HB2	52:a:162:ARG:HH21	1.81	0.43
53:3:114:U:H2'	53:3:115:G:H8	1.79	0.43
53:3:218:U:H2'	53:3:219:U:C6	2.53	0.43
53:3:324:G:N1	53:3:327:A:OP2	2.49	0.43
53:3:437:U:H2'	53:3:438:U:O4'	2.18	0.43
53:3:763:G:H2'	53:3:764:C:H6	1.83	0.43
53:3:993:G:H2'	53:3:995:C:H41	1.83	0.43
53:3:1305:G:H1'	53:3:1332:A:H62	1.84	0.43
54:1:437:U:H2'	54:1:438:G:C8	2.53	0.43
54:1:622:G:O2'	54:1:623:C:H5'	2.18	0.43
54:1:780:G:H2'	54:1:782:A:N7	2.34	0.43
54:1:1053:C:H2'	54:1:1054:A:H5''	2.00	0.43
54:1:1087:G:H5''	54:1:1088:A:OP2	2.18	0.43
54:1:2240:U:O2'	54:1:2241:A:H5'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:2469:A:H8	54:1:2469:A:H5'	1.83	0.43
55:2:12:C:O2	55:2:12:C:O4'	2.36	0.43
3:d:117:ARG:HB3	3:d:184:ASP:O	2.19	0.43
3:d:131:THR:HG22	3:d:160:ALA:C	2.44	0.43
5:f:136:ASP:OD2	5:f:138:GLN:HB3	2.17	0.43
6:g:8:LYS:O	6:g:8:LYS:HG2	2.17	0.43
6:g:104:THR:HG23	6:g:109:GLU:HG2	2.00	0.43
7:h:3:LEU:CG	7:h:4:ASN:N	2.81	0.43
8:i:12:VAL:HG23	8:i:13:ALA:N	2.25	0.43
12:m:39:GLY:HA3	12:m:126:ILE:CD1	2.48	0.43
17:r:11:GLN:N	17:r:11:GLN:OE1	2.51	0.43
18:s:95:ARG:HD2	18:s:97:LEU:HD11	1.99	0.43
24:y:5:GLU:HA	24:y:8:GLU:OE1	2.18	0.43
25:z:15:ARG:HG2	25:z:15:ARG:NH1	2.33	0.43
33:H:147:GLY:HA2	33:H:170:GLY:HA3	1.99	0.43
34:I:183:ARG:HG2	34:I:183:ARG:HH11	1.82	0.43
37:L:3:ARG:HH11	37:L:3:ARG:HG3	1.84	0.43
37:L:37:THR:O	37:L:41:ILE:HG13	2.17	0.43
42:Q:6:LEU:HD22	42:Q:11:ARG:HD3	2.00	0.43
42:Q:81:ILE:CD1	42:Q:94:TYR:HB3	2.39	0.43
46:U:4:ILE:HG22	46:U:71:VAL:HG11	1.99	0.43
46:U:51:ARG:HG2	46:U:51:ARG:HH11	1.84	0.43
49:X:30:LEU:HD12	49:X:48:ILE:HG22	2.00	0.43
51:Z:16:ARG:HG2	51:Z:19:LYS:NZ	2.34	0.43
53:3:78:A:H2'	53:3:79:G:C8	2.52	0.43
53:3:737:C:O2'	53:3:738:C:H5'	2.18	0.43
53:3:842:U:H6	53:3:842:U:O5'	2.01	0.43
53:3:860:A:H2'	53:3:861:G:O4'	2.18	0.43
53:3:1017:U:H2'	53:3:1018:G:H8	1.84	0.43
53:3:1167:A:HO2'	53:3:1168:U:H5	1.65	0.43
54:1:540:C:O2'	54:1:541:A:H5'	2.19	0.43
54:1:675:A:H2	54:1:2443:C:O2	2.02	0.43
54:1:804:A:H2'	54:1:806:C:C4	2.52	0.43
54:1:1313:U:H5'	54:1:1314:C:OP2	2.18	0.43
54:1:2230:G:H2'	54:1:2231:U:C6	2.53	0.43
54:1:2243:U:C2	54:1:2244:U:C5	3.05	0.43
1:b:60:ALA:O	1:b:62:ARG:NH1	2.51	0.43
2:c:32:ASN:O	2:c:96:ILE:N	2.51	0.43
5:f:106:LEU:HB3	5:f:151:ARG:HG3	2.01	0.43
6:g:87:GLU:HG3	36:K:17:GLN:OE1	2.17	0.43
9:j:135:GLN:HE22	54:1:7:G:H1'	1.81	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:n:75:ILE:O	13:n:79:LEU:N	2.48	0.43
13:n:79:LEU:HD23	13:n:83:LEU:HD22	2.01	0.43
16:q:23:TYR:HD1	54:1:533:G:H5'	1.83	0.43
17:r:24:LYS:HA	17:r:94:THR:OG1	2.18	0.43
19:t:11:LEU:N	19:t:11:LEU:HD12	2.34	0.43
24:y:2:LYS:HD2	54:1:102:U:O2	2.18	0.43
26:A:2:LYS:HB2	26:A:5:ILE:CD1	2.49	0.43
34:I:113:ALA:O	34:I:117:VAL:HG23	2.19	0.43
34:I:202:LEU:O	34:I:202:LEU:HD23	2.18	0.43
35:J:101:GLY:N	35:J:121:ASN:HB3	2.33	0.43
36:K:10:VAL:HG12	36:K:11:HIS:N	2.33	0.43
36:K:51:ILE:C	36:K:53:LYS:H	2.26	0.43
37:L:42:VAL:O	37:L:46:LEU:HG	2.18	0.43
42:Q:109:ARG:HB3	42:Q:118:VAL:HG21	2.00	0.43
43:R:72:ILE:O	43:R:76:ILE:HG13	2.19	0.43
47:V:29:LYS:HD3	47:V:36:PHE:CZ	2.54	0.43
53:3:271:C:H2'	53:3:272:C:C6	2.53	0.43
53:3:677:U:H2'	53:3:678:U:H6	1.82	0.43
53:3:1097:C:H2'	53:3:1098:C:C6	2.53	0.43
53:3:1246:A:O2'	53:3:1247:U:H5'	2.18	0.43
53:3:1370:G:C2	53:3:1371:G:C8	3.06	0.43
54:1:6:A:H2'	54:1:7:G:H8	1.84	0.43
54:1:255:A:H2'	54:1:256:A:O4'	2.18	0.43
54:1:1091:G:H2'	54:1:1092:C:C6	2.49	0.43
54:1:1361:G:H2'	54:1:1362:C:H6	1.81	0.43
54:1:1889:A:H2'	54:1:1890:A:C8	2.53	0.43
54:1:1999:C:H2'	54:1:2000:C:H6	1.84	0.43
56:6:69:C:H2'	56:6:70:G:C5'	2.43	0.43
1:b:153:LEU:HD23	54:1:1799:G:N2	2.33	0.43
10:k:18:ARG:HG3	10:k:18:ARG:NH1	2.34	0.43
11:l:69:ARG:NH2	54:1:2406:A:C2	2.87	0.43
17:r:34:GLU:HB3	17:r:58:VAL:HG23	2.01	0.43
18:s:110:ARG:HB2	18:s:110:ARG:CZ	2.48	0.43
19:t:74:ILE:O	19:t:74:ILE:HG13	2.18	0.43
22:w:19:VAL:HG12	22:w:20:LYS:N	2.32	0.43
29:D:41:ARG:CB	29:D:41:ARG:HH21	2.32	0.43
29:D:42:LEU:HG	29:D:43:THR:HG23	1.99	0.43
32:G:20:ARG:NH1	53:3:830:G:O2'	2.51	0.43
32:G:66:ILE:O	32:G:88:GLN:HB3	2.18	0.43
32:G:149:GLY:C	32:G:150:ILE:HD12	2.43	0.43
34:I:2:ARG:NH1	34:I:2:ARG:HB3	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:I:12:ARG:CZ	34:I:36:ALA:O	2.66	0.43
35:J:37:VAL:CG1	35:J:116:VAL:HG21	2.48	0.43
35:J:75:LEU:HD23	35:J:75:LEU:H	1.83	0.43
35:J:91:SER:HB3	35:J:138:ALA:HB2	1.99	0.43
39:N:77:ALA:O	39:N:81:GLY:N	2.46	0.43
40:O:8:ILE:HD13	40:O:100:ILE:HG22	2.01	0.43
41:P:51:PHE:CE2	41:P:64:VAL:HG11	2.53	0.43
43:R:53:ASP:O	43:R:56:ARG:HB2	2.19	0.43
46:U:20:VAL:HG23	46:U:35:ARG:HA	2.01	0.43
50:Y:44:ALA:O	50:Y:48:LYS:N	2.43	0.43
52:a:170:ILE:HG21	54:1:2177:C:H1'	2.01	0.43
53:3:663:A:H2'	53:3:664:G:C8	2.53	0.43
53:3:745:G:OP1	53:3:852:G:H5'	2.17	0.43
54:1:251:A:H2'	54:1:252:G:O4'	2.19	0.43
54:1:941:A:H2'	54:1:942:G:O4'	2.19	0.43
54:1:979:A:H2'	54:1:982:C:H42	1.83	0.43
54:1:1606:C:H4'	54:1:1608:A:C2	2.54	0.43
54:1:1623:G:O2'	54:1:1624:U:H5'	2.19	0.43
54:1:1857:G:O2'	54:1:1885:A:N6	2.52	0.43
54:1:2151:U:H2'	54:1:2152:G:C8	2.54	0.43
54:1:2850:A:C2	54:1:2869:G:H4'	2.53	0.43
1:b:242:HIS:O	1:b:244:VAL:HG13	2.18	0.43
2:c:60:VAL:HG13	2:c:60:VAL:O	2.18	0.43
2:c:155:VAL:O	54:1:2619:C:H5'	2.18	0.43
4:e:37:MET:HG2	4:e:151:LEU:HB3	1.99	0.43
5:f:106:LEU:HD13	5:f:151:ARG:HG3	2.01	0.43
8:i:52:LEU:O	8:i:54:ILE:HG13	2.18	0.43
10:k:103:VAL:O	10:k:104:THR:OG1	2.28	0.43
20:u:17:ASP:OD1	20:u:20:LYS:HD2	2.18	0.43
20:u:81:ARG:NH2	54:1:300:A:C8	2.85	0.43
21:v:77:VAL:O	21:v:77:VAL:HG13	2.18	0.43
32:G:72:LYS:O	32:G:73:ARG:HB3	2.17	0.43
35:J:59:ILE:HG13	35:J:60:GLN:N	2.32	0.43
39:N:26:LYS:HG3	39:N:26:LYS:O	2.18	0.43
40:O:53:ILE:HD11	44:S:84:ARG:NH2	2.33	0.43
41:P:12:ARG:C	41:P:14:GLN:H	2.26	0.43
41:P:88:PRO:O	41:P:92:ARG:HD2	2.19	0.43
44:S:72:PHE:CZ	44:S:77:GLY:HA2	2.53	0.43
46:U:46:LYS:HE2	46:U:48:GLU:O	2.19	0.43
49:X:76:THR:HG21	53:3:1221:G:O3'	2.18	0.43
53:3:94:G:H4'	53:3:95:C:OP1	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:254:G:O2'	53:3:255:G:H5'	2.18	0.43
53:3:490:C:H2'	53:3:491:G:H8	1.82	0.43
53:3:626:G:H2'	53:3:627:G:C8	2.54	0.43
53:3:701:U:C4'	53:3:703:G:H1'	2.48	0.43
53:3:979:C:H2'	53:3:980:C:H5'	2.01	0.43
53:3:1073:U:H2'	53:3:1074:G:O4'	2.18	0.43
53:3:1221:G:O2'	53:3:1222:G:H5'	2.18	0.43
53:3:1366:C:O2'	53:3:1367:C:H5'	2.18	0.43
53:3:1413:A:H2	53:3:1487:G:H22	1.67	0.43
54:1:610:C:H2'	54:1:611:C:C6	2.53	0.43
54:1:870:U:O2'	54:1:871:U:H5'	2.19	0.43
54:1:1104:C:H2'	54:1:1105:U:H6	1.82	0.43
54:1:1672:A:C2	54:1:2582:G:H5'	2.53	0.43
54:1:2131:U:O5'	54:1:2133:G:H4'	2.19	0.43
54:1:2180:U:H2'	54:1:2181:U:O4'	2.19	0.43
1:b:70:LYS:CD	1:b:73:ILE:HD12	2.44	0.43
1:b:86:ARG:NH2	54:1:1817:G:OP1	2.52	0.43
8:i:11:GLN:OE1	8:i:56:VAL:HB	2.18	0.43
10:k:11:ALA:O	10:k:99:ILE:HG23	2.18	0.43
10:k:19:VAL:CB	10:k:41:ILE:HD12	2.46	0.43
19:t:43:ILE:O	19:t:47:VAL:HG23	2.19	0.43
20:u:42:LYS:HE2	54:1:499:U:H5''	2.01	0.43
20:u:66:VAL:C	20:u:68:ASN:H	2.27	0.43
21:v:44:HIS:HE2	21:v:85:LYS:HB2	1.84	0.43
24:y:48:ARG:HG3	24:y:48:ARG:HH11	1.83	0.43
32:G:66:ILE:HB	32:G:88:GLN:HG3	2.00	0.43
32:G:131:LYS:O	32:G:134:LEU:HB3	2.19	0.43
32:G:153:MET:HE1	32:G:155:GLY:O	2.19	0.43
34:I:120:LYS:HB3	34:I:128:VAL:HG21	1.98	0.43
37:L:9:ARG:NH2	53:3:1376:U:O4	2.50	0.43
38:M:76:ARG:NH2	38:M:78:SER:O	2.52	0.43
40:O:68:ARG:HG2	40:O:70:HIS:HE2	1.83	0.43
48:W:12:PHE:O	48:W:14:ALA:N	2.52	0.43
49:X:62:THR:H	49:X:65:MET:CG	2.31	0.43
51:Z:6:ARG:HG2	51:Z:6:ARG:HH11	1.84	0.43
52:a:214:ILE:O	52:a:222:VAL:HB	2.19	0.43
53:3:915:A:H2'	53:3:916:U:H5'	2.01	0.43
53:3:1230:C:H5'	56:5:30:G:H5''	2.00	0.43
54:1:633:A:H2'	54:1:634:C:O4'	2.19	0.43
54:1:973:A:O4'	54:1:1188:U:C6	2.71	0.43
54:1:2584:U:H2'	54:1:2585:U:H2'	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:2810:A:H2'	54:1:2811:G:O4'	2.18	0.43
2:c:108:ASP:CG	2:c:206:ALA:HA	2.41	0.43
4:e:65:LEU:HD22	55:2:42:C:C5	2.54	0.43
5:f:84:LYS:HB2	5:f:132:LEU:HD11	2.01	0.43
6:g:9:VAL:HB	6:g:13:GLY:HA3	2.01	0.43
10:k:88:ASN:HB2	10:k:91:SER:O	2.19	0.43
16:q:80:ASN:OD1	54:1:1151:A:H4'	2.19	0.43
18:s:87:PRO:HB3	54:1:1614:A:C6	2.53	0.43
22:w:43:ALA:HB1	22:w:47:VAL:O	2.18	0.43
24:y:52:ARG:NH2	24:y:52:ARG:HB2	2.34	0.43
30:E:15:LYS:HD2	30:E:64:ALA:OXT	2.19	0.43
33:H:155:ARG:O	33:H:156:LEU:C	2.62	0.43
36:K:22:ILE:O	36:K:26:THR:HG23	2.17	0.43
42:Q:34:THR:HA	42:Q:75:GLU:HA	2.01	0.43
42:Q:54:VAL:HG11	42:Q:79:ILE:HD11	2.00	0.43
46:U:5:ARG:HB2	53:3:376:G:H5''	2.01	0.43
49:X:9:PHE:CG	53:3:1318:A:H4'	2.54	0.43
51:Z:38:GLU:OE2	51:Z:41:THR:HB	2.18	0.43
52:a:11:ILE:HG21	52:a:218:MET:O	2.19	0.43
52:a:69:THR:HG22	52:a:174:THR:O	2.18	0.43
53:3:323:U:H2'	53:3:324:G:O4'	2.19	0.43
53:3:545:C:H2'	53:3:546:A:O4'	2.18	0.43
53:3:580:C:H2'	53:3:581:G:C8	2.54	0.43
53:3:693:G:H21	56:6:38:A:H1'	1.84	0.43
53:3:861:G:O2'	53:3:862:C:H5'	2.18	0.43
53:3:1201:A:H4'	53:3:1203:C:OP2	2.18	0.43
54:1:236:C:H2'	54:1:237:C:C6	2.52	0.43
54:1:853:C:O2'	54:1:854:C:H5'	2.19	0.43
54:1:983:A:C6	54:1:984:A:C2	3.06	0.43
54:1:1023:U:O2'	54:1:1122:G:H5'	2.18	0.43
54:1:1127:A:H2'	54:1:2518:A:H2	1.83	0.43
54:1:1570:A:C6	54:1:1571:A:C6	3.07	0.43
54:1:1656:C:C2	54:1:1657:U:C5	3.06	0.43
54:1:2185:U:H2'	54:1:2186:G:C8	2.53	0.43
55:2:30:C:H2'	55:2:31:C:H5'	2.01	0.43
2:c:90:PHE:CD1	2:c:94:GLN:NE2	2.87	0.43
3:d:131:THR:HG23	54:1:321:U:H5''	2.01	0.43
19:t:61:LEU:N	19:t:61:LEU:HD23	2.34	0.43
29:D:18:PHE:CZ	29:D:22:MET:HE2	2.54	0.43
33:H:64:ARG:HH11	33:H:64:ARG:HG3	1.83	0.43
34:I:54:LEU:HA	34:I:202:LEU:HD11	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:K:38:ARG:CG	36:K:97:THR:HA	2.49	0.43
36:K:67:PRO:HD2	36:K:70:VAL:HG21	2.00	0.43
42:Q:38:THR:HG22	42:Q:50:LYS:HA	2.00	0.43
53:3:360:G:O2'	53:3:361:G:H5'	2.19	0.43
53:3:767:A:H2'	53:3:768:A:O4'	2.19	0.43
54:1:1443:U:H2'	54:1:1444:G:C8	2.53	0.43
54:1:1661:G:O2'	54:1:1662:U:H5'	2.19	0.43
54:1:1859:U:H2'	54:1:1860:G:C8	2.54	0.43
54:1:2229:U:H2'	54:1:2230:G:C8	2.51	0.43
54:1:2451:A:N3	59:5:101:FME:HCN	2.34	0.43
54:1:2648:G:H2'	54:1:2649:C:O4'	2.18	0.43
56:6:14:A:H2'	56:6:15:G:O4'	2.18	0.43
1:b:9:SER:HB2	1:b:10:PRO:HD2	2.00	0.43
1:b:43:ASN:O	1:b:46:GLY:N	2.49	0.43
6:g:83:LYS:O	6:g:90:LEU:HD12	2.19	0.43
12:m:4:PRO:CG	12:m:70:ASP:HA	2.49	0.43
13:n:103:ARG:HG3	13:n:110:MET:HE2	2.01	0.43
14:o:25:ARG:NE	14:o:40:ILE:HD11	2.34	0.43
18:s:77:ASP:O	18:s:102:HIS:N	2.45	0.43
24:y:6:LEU:HA	24:y:56:LEU:HD21	2.01	0.43
26:A:56:ARG:O	26:A:60:PHE:N	2.52	0.43
35:J:42:ASN:O	35:J:44:ARG:N	2.49	0.43
35:J:81:GLN:NE2	35:J:149:PRO:HD2	2.34	0.43
40:O:81:GLU:OE1	40:O:84:VAL:HG11	2.18	0.43
43:R:6:ILE:CD1	43:R:65:GLU:HG2	2.49	0.43
44:S:60:ARG:HA	44:S:60:ARG:HD2	1.87	0.43
53:3:112:G:H22	53:3:315:A:H2	1.67	0.43
53:3:193:C:H2'	53:3:194:C:C6	2.53	0.43
53:3:313:A:H2'	53:3:314:C:C6	2.53	0.43
53:3:974:A:H5'	53:3:976:G:OP1	2.19	0.43
54:1:154:U:H2'	54:1:155:A:C8	2.54	0.43
54:1:435:C:H2'	54:1:436:C:H5'	2.00	0.43
54:1:743:A:O2'	54:1:744:U:H5'	2.19	0.43
54:1:807:U:H2'	54:1:808:G:H8	1.84	0.43
54:1:1401:G:H2'	54:1:1402:U:O4'	2.18	0.43
54:1:1463:C:H2'	54:1:1464:G:H8	1.84	0.43
54:1:1659:G:H3'	54:1:1660:G:H5''	2.01	0.43
54:1:2124:G:H2'	54:1:2125:G:O4'	2.19	0.43
54:1:2691:C:H2'	54:1:2692:G:H8	1.83	0.43
56:5:22:G:H2'	56:5:23:C:C6	2.54	0.43
1:b:104:LEU:CD2	1:b:104:LEU:N	2.68	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:e:55:ASP:O	4:e:59:ILE:HG13	2.18	0.42
7:h:38:MET:O	7:h:42:ARG:HG3	2.19	0.42
12:m:12:MET:SD	12:m:72:PRO:HD2	2.59	0.42
13:n:4:ARG:HD2	54:1:2874:C:OP1	2.19	0.42
13:n:46:ARG:HH12	54:1:2838:G:H5'	1.84	0.42
18:s:75:PHE:CE2	18:s:104:THR:HB	2.54	0.42
19:t:48:GLN:OE1	19:t:53:VAL:O	2.36	0.42
34:I:104:MET:HE1	34:I:180:THR:H	1.84	0.42
34:I:122:ILE:HD12	34:I:143:SER:C	2.44	0.42
35:J:75:LEU:HD12	35:J:119:VAL:HG12	2.01	0.42
41:P:67:GLU:O	41:P:70:ALA:N	2.51	0.42
42:Q:23:LEU:HD22	42:Q:58:ASN:HD22	1.84	0.42
42:Q:69:GLU:HG2	53:3:521:G:H4'	2.00	0.42
51:Z:64:ALA:C	51:Z:66:ARG:H	2.27	0.42
53:3:205:A:H2'	53:3:206:C:O4'	2.19	0.42
53:3:479:U:H2'	53:3:480:U:C5'	2.48	0.42
53:3:768:A:H4'	53:3:1523:G:N2	2.34	0.42
53:3:1332:A:H2'	53:3:1333:A:H8	1.84	0.42
54:1:799:G:C6	54:1:800:A:C6	3.07	0.42
54:1:910:A:H2'	54:1:911:A:C8	2.53	0.42
54:1:1746:A:H2'	54:1:1747:U:H6	1.82	0.42
54:1:2086:U:H2'	54:1:2087:G:C8	2.54	0.42
54:1:2811:G:O2'	54:1:2812:G:H5'	2.19	0.42
1:b:131:MET:HE1	1:b:183:VAL:CG2	2.48	0.42
1:b:259:ASN:C	1:b:261:ARG:N	2.77	0.42
2:c:101:PHE:C	2:c:103:ASP:H	2.26	0.42
4:e:135:ILE:HG22	4:e:140:ILE:HG21	2.00	0.42
8:i:55:PRO:HG2	8:i:71:LYS:HE3	2.01	0.42
12:m:45:GLN:HE22	12:m:125:PRO:HG3	1.81	0.42
29:D:1:MET:HE3	29:D:3:ARG:HH21	1.84	0.42
35:J:76:ASN:HB2	35:J:81:GLN:OE1	2.19	0.42
35:J:86:GLY:HA3	35:J:93:VAL:HG13	2.01	0.42
38:M:17:GLN:OE1	38:M:62:LEU:HD13	2.18	0.42
38:M:122:GLY:O	38:M:124:ILE:HD12	2.19	0.42
39:N:6:TYR:HE1	39:N:17:ARG:HA	1.84	0.42
39:N:43:ALA:HA	39:N:45:MET:SD	2.58	0.42
45:T:74:VAL:O	45:T:78:THR:HG23	2.18	0.42
45:T:86:LEU:O	45:T:87:ARG:HB3	2.18	0.42
48:W:13:THR:HG23	48:W:50:TYR:CD1	2.54	0.42
49:X:63:ASP:O	49:X:66:VAL:HG23	2.18	0.42
53:3:556:C:O2'	53:3:557:G:H5'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:747:A:H2'	53:3:748:G:O4'	2.19	0.42
53:3:961:U:H1'	53:3:983:A:C2	2.54	0.42
54:1:52:A:C5	54:1:118:A:C2	3.07	0.42
54:1:170:U:O2'	54:1:171:U:H5'	2.19	0.42
54:1:301:G:C6	54:1:317:G:C6	3.07	0.42
54:1:471:A:H2'	54:1:472:A:O4'	2.19	0.42
54:1:845:A:N3	54:1:845:A:H3'	2.34	0.42
54:1:1260:A:O2'	54:1:1261:C:H5'	2.19	0.42
54:1:1430:G:H2'	54:1:1431:A:H8	1.84	0.42
54:1:1775:U:H2'	54:1:1776:G:H5'	2.01	0.42
54:1:1779:U:C5	54:1:1784:A:N7	2.75	0.42
54:1:2018:G:O2'	54:1:2019:A:H5'	2.19	0.42
54:1:2040:G:O2'	54:1:2041:U:H5'	2.18	0.42
54:1:2555:U:H2'	54:1:2556:C:H5'	2.00	0.42
54:1:2672:U:C2'	54:1:2673:G:H5'	2.40	0.42
54:1:2875:C:H2'	54:1:2876:G:H8	1.84	0.42
1:b:123:ILE:HG23	1:b:191:LEU:HD13	2.02	0.42
1:b:227:VAL:HG11	54:1:784:G:C2	2.53	0.42
3:d:136:GLN:OE1	3:d:139:LYS:HD3	2.19	0.42
6:g:29:PHE:HB2	54:1:2198:A:C4	2.54	0.42
6:g:95:GLY:O	6:g:99:ILE:HG13	2.19	0.42
10:k:7:MET:SD	10:k:19:VAL:O	2.77	0.42
12:m:33:LEU:HB2	12:m:117:PHE:CE1	2.55	0.42
19:t:57:VAL:H	19:t:86:THR:HG1	1.68	0.42
20:u:12:VAL:HB	20:u:17:ASP:O	2.18	0.42
32:G:67:LEU:HD23	32:G:67:LEU:C	2.43	0.42
32:G:81:ASP:O	32:G:85:SER:HB3	2.19	0.42
32:G:209:VAL:O	32:G:213:LEU:HD23	2.19	0.42
38:M:76:ARG:HG3	38:M:76:ARG:HH11	1.84	0.42
41:P:90:PRO:HG2	41:P:91:GLY:N	2.34	0.42
43:R:7:ASN:ND2	43:R:21:ILE:HA	2.33	0.42
43:R:94:LEU:O	43:R:95:PRO:C	2.61	0.42
46:U:70:ARG:O	46:U:74:LEU:HG	2.19	0.42
48:W:11:ARG:HB3	53:3:845:A:O2'	2.19	0.42
49:X:62:THR:HG22	49:X:63:ASP:H	1.84	0.42
52:a:3:LYS:HG2	52:a:4:LEU:HG	2.00	0.42
53:3:92:U:H2'	53:3:93:U:H5'	2.01	0.42
53:3:144:G:H2'	53:3:145:G:O4'	2.19	0.42
53:3:782:A:H2'	53:3:783:C:H5'	2.00	0.42
53:3:1436:U:H2'	53:3:1437:A:H8	1.82	0.42
53:3:1441:A:H62	53:3:1461:G:N2	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:143:C:H2'	54:1:144:A:C8	2.53	0.42
54:1:370:G:H2'	54:1:423:A:N7	2.34	0.42
54:1:644:A:H2'	54:1:645:C:O4'	2.19	0.42
54:1:723:C:H2'	54:1:724:U:O4'	2.20	0.42
54:1:740:C:O2'	54:1:741:U:H5'	2.19	0.42
54:1:856:G:H2'	54:1:857:G:C8	2.55	0.42
54:1:1336:A:H2'	54:1:1337:G:C8	2.54	0.42
54:1:2520:C:C6	54:1:2567:G:H1'	2.55	0.42
2:c:32:ASN:O	2:c:96:ILE:HG22	2.20	0.42
7:h:37:LYS:HD2	54:1:1082:U:O2	2.20	0.42
7:h:58:THR:HG22	7:h:84:TYR:OH	2.19	0.42
8:i:27:LEU:CD2	8:i:34:ILE:HD11	2.46	0.42
16:q:97:ILE:CD1	17:r:40:MET:HE1	2.48	0.42
18:s:58:ALA:O	18:s:62:ASP:HB2	2.19	0.42
18:s:110:ARG:HB2	18:s:110:ARG:HH21	1.83	0.42
22:w:70:PRO:HD3	55:2:12:C:N4	2.34	0.42
24:y:23:ARG:HG2	24:y:23:ARG:HH11	1.84	0.42
33:H:59:PRO:HG2	33:H:62:SER:OG	2.20	0.42
33:H:198:LYS:HE3	53:3:1058:G:OP1	2.19	0.42
35:J:13:LYS:HE3	35:J:115:GLU:OE2	2.19	0.42
37:L:21:LEU:C	37:L:21:LEU:HD23	2.44	0.42
37:L:48:THR:OG1	37:L:120:ALA:HB2	2.20	0.42
39:N:29:ILE:CD1	39:N:38:PHE:HE1	2.32	0.42
40:O:9:ARG:NH2	53:3:1279:G:H5''	2.35	0.42
49:X:62:THR:H	49:X:65:MET:HG3	1.85	0.42
50:Y:82:ILE:HA	50:Y:85:LEU:HB3	2.01	0.42
53:3:110:C:H2'	53:3:111:G:O4'	2.19	0.42
53:3:399:G:H2'	53:3:400:C:C6	2.54	0.42
53:3:1091:U:O2	53:3:1093:A:C8	2.72	0.42
53:3:1238:A:H2'	53:3:1238:A:N3	2.35	0.42
53:3:1446:A:O2'	53:3:1447:A:H5'	2.19	0.42
53:3:1448:C:H2'	53:3:1449:C:H6	1.85	0.42
54:1:226:A:H2'	54:1:227:A:C8	2.54	0.42
54:1:775:G:C6	54:1:794:A:C8	3.07	0.42
54:1:1857:G:N2	54:1:1884:G:H2'	2.35	0.42
54:1:1878:G:O2'	54:1:1879:C:H5'	2.20	0.42
54:1:1989:G:H2'	54:1:1990:C:O4'	2.19	0.42
54:1:2163:A:H2'	54:1:2164:C:H5'	2.00	0.42
54:1:2616:C:O2'	54:1:2617:U:H5'	2.19	0.42
54:1:2642:G:O2'	54:1:2643:G:H5'	2.19	0.42
54:1:2709:G:H2'	54:1:2710:C:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:49:THR:OG1	54:1:1805:A:H1'	2.19	0.42
1:b:175:LEU:HD13	54:1:1799:G:C4	2.55	0.42
1:b:206:LYS:HE2	54:1:729:G:N7	2.35	0.42
3:d:24:ASN:HB3	3:d:27:LEU:HB3	2.02	0.42
5:f:82:PHE:HB3	5:f:140:ILE:CD1	2.49	0.42
7:h:61:ARG:HG2	7:h:61:ARG:HH11	1.85	0.42
14:o:75:GLY:HA3	14:o:109:ALA:HB3	2.02	0.42
15:p:98:TYR:HA	15:p:101:GLU:OE2	2.19	0.42
20:u:5:ARG:N	20:u:8:ASP:OD2	2.42	0.42
22:w:60:ASP:O	22:w:80:ALA:HA	2.20	0.42
33:H:5:HIS:HB3	44:S:88:MET:HE3	2.02	0.42
33:H:20:THR:O	33:H:57:GLU:HA	2.19	0.42
34:I:6:PRO:HB3	53:3:430:A:H4'	2.01	0.42
37:L:75:LYS:CE	37:L:88:VAL:HG11	2.47	0.42
42:Q:111:GLN:HB3	53:3:538:G:OP2	2.19	0.42
43:R:16:ILE:HG12	53:3:1302:C:C5	2.55	0.42
43:R:105:ALA:HA	53:3:948:C:OP1	2.18	0.42
45:T:25:GLU:H	45:T:25:GLU:CD	2.28	0.42
45:T:66:LEU:O	45:T:70:LYS:N	2.48	0.42
47:V:61:ARG:HD2	47:V:75:VAL:HG22	2.01	0.42
52:a:69:THR:C	52:a:176:GLY:HA2	2.44	0.42
53:3:1187:G:O2'	53:3:1188:A:H5'	2.19	0.42
53:3:1468:A:O2'	53:3:1469:C:H5'	2.19	0.42
54:1:193:U:H4'	54:1:803:U:H5'	2.01	0.42
54:1:341:C:H2'	54:1:342:A:H8	1.84	0.42
54:1:513:A:O2'	54:1:514:A:H5'	2.19	0.42
54:1:745:G:H2'	54:1:746:U:H5'	2.01	0.42
54:1:1598:A:H2'	54:1:1598:A:N3	2.34	0.42
54:1:2248:C:C2'	54:1:2249:U:H5'	2.50	0.42
2:c:142:VAL:HB	2:c:143:PRO:HD2	2.02	0.42
3:d:109:LEU:O	3:d:113:VAL:HG23	2.20	0.42
4:e:40:GLY:O	4:e:43:ILE:HG23	2.19	0.42
4:e:48:LEU:O	4:e:52:ALA:N	2.48	0.42
5:f:1:SER:O	5:f:5:LYS:N	2.39	0.42
7:h:34:THR:HG23	54:1:1056:G:H5'	2.00	0.42
16:q:38:VAL:O	16:q:41:ALA:HB3	2.19	0.42
19:t:1:MET:C	19:t:3:ARG:N	2.76	0.42
34:I:1:ALA:N	53:3:405:U:C4	2.88	0.42
34:I:12:ARG:HG2	34:I:33:ILE:HD12	2.01	0.42
51:Z:30:GLU:C	51:Z:32:ARG:H	2.25	0.42
53:3:183:C:H5'	53:3:184:G:OP2	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1027:C:H2'	53:3:1028:C:OP1	2.19	0.42
53:3:1097:C:H2'	53:3:1098:C:H6	1.83	0.42
53:3:1142:G:H2'	53:3:1143:G:O4'	2.18	0.42
53:3:1305:G:H22	53:3:1331:G:H2'	1.85	0.42
53:3:1402:C:H2'	53:3:1403:C:O4'	2.18	0.42
53:3:1517:G:H2'	53:3:1518:A:C5'	2.49	0.42
54:1:1176:U:H2'	54:1:1177:G:C4	2.55	0.42
54:1:1319:C:O2'	54:1:1320:C:H5'	2.19	0.42
54:1:1369:G:O2'	54:1:1370:C:H5'	2.20	0.42
54:1:1739:A:H2'	54:1:1740:G:O4'	2.19	0.42
54:1:1821:A:C4	54:1:1822:C:C5	3.08	0.42
54:1:2545:G:O2'	54:1:2546:U:H5'	2.18	0.42
54:1:2691:C:H2'	54:1:2692:G:C8	2.54	0.42
54:1:2743:U:H2'	54:1:2744:G:C5'	2.48	0.42
55:2:92:C:H2'	55:2:93:C:H6	1.84	0.42
1:b:68:ARG:HH22	1:b:115:ILE:HD12	1.85	0.42
1:b:260:LYS:HB3	54:1:2227:A:H5''	2.02	0.42
3:d:34:ALA:HA	3:d:94:GLN:OE1	2.19	0.42
3:d:88:ARG:HA	3:d:88:ARG:CZ	2.49	0.42
3:d:188:MET:HE1	3:d:196:VAL:CG2	2.48	0.42
4:e:39:VAL:O	4:e:41:GLU:N	2.45	0.42
4:e:69:ALA:N	4:e:82:TYR:O	2.49	0.42
5:f:8:VAL:H	5:f:48:THR:HB	1.85	0.42
5:f:86:LEU:N	5:f:86:LEU:HD22	2.34	0.42
9:j:78:THR:HG21	54:1:2641:G:H5''	2.00	0.42
10:k:58:LEU:HA	10:k:89:ASN:HB3	2.01	0.42
12:m:31:PHE:O	12:m:104:GLU:HA	2.20	0.42
13:n:47:VAL:O	13:n:50:PRO:HD2	2.20	0.42
24:y:18:LEU:HD23	24:y:18:LEU:O	2.19	0.42
33:H:33:ASP:HB2	44:S:64:ARG:HD3	2.01	0.42
34:I:10:LEU:O	34:I:14:GLU:HG2	2.19	0.42
35:J:159:SER:HB2	35:J:162:GLU:HB2	2.01	0.42
37:L:63:VAL:O	37:L:67:ASN:OD1	2.37	0.42
37:L:78:ARG:HH21	56:6:34:C:C5'	2.33	0.42
37:L:142:ARG:CB	37:L:142:ARG:NH1	2.81	0.42
43:R:16:ILE:HD12	43:R:16:ILE:H	1.84	0.42
45:T:11:VAL:HG23	45:T:12:SER:N	2.35	0.42
47:V:21:VAL:HA	47:V:43:LEU:O	2.19	0.42
49:X:77:ARG:HD2	53:3:1225:A:H1'	2.01	0.42
52:a:4:LEU:HB3	52:a:5:THR:H	1.74	0.42
53:3:156:C:H2'	53:3:157:U:O4'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:265:G:H2'	53:3:267:C:C5	2.53	0.42
53:3:692:U:H2'	53:3:694:A:OP2	2.20	0.42
53:3:1243:C:H2'	53:3:1244:G:H8	1.84	0.42
53:3:1527:U:H2'	53:3:1528:U:C6	2.55	0.42
54:1:494:G:O2'	54:1:495:G:H5'	2.19	0.42
54:1:619:G:H3'	54:1:620:G:H21	1.84	0.42
54:1:809:G:O2'	54:1:810:U:H5'	2.19	0.42
54:1:851:C:H2'	54:1:852:U:C6	2.55	0.42
54:1:2280:G:O2'	54:1:2281:A:H5'	2.19	0.42
54:1:2420:C:O2'	54:1:2421:G:H5'	2.20	0.42
54:1:2533:U:H2'	54:1:2534:A:O4'	2.20	0.42
2:c:46:ARG:HG3	2:c:84:LEU:HB2	2.02	0.42
4:e:160:LYS:HD3	4:e:160:LYS:N	2.35	0.42
6:g:79:THR:HG23	6:g:145:ASN:OD1	2.20	0.42
27:B:10:SER:O	27:B:14:MET:HG3	2.20	0.42
33:H:19:SER:O	44:S:93:PRO:HG3	2.18	0.42
33:H:86:LEU:O	33:H:90:VAL:HG23	2.20	0.42
36:K:32:ALA:O	36:K:33:GLU:HB2	2.20	0.42
37:L:61:PHE:O	37:L:65:LEU:N	2.53	0.42
39:N:45:MET:SD	39:N:45:MET:N	2.92	0.42
42:Q:11:ARG:NH2	53:3:563:A:C2	2.88	0.42
42:Q:69:GLU:OE2	53:3:521:G:H4'	2.20	0.42
44:S:39:ASP:HA	44:S:42:ASN:HB2	2.01	0.42
45:T:28:VAL:HG13	45:T:62:ARG:HG3	2.02	0.42
45:T:86:LEU:C	45:T:86:LEU:HD12	2.45	0.42
49:X:10:ILE:HD13	49:X:40:PHE:HE2	1.80	0.42
49:X:28:LYS:O	49:X:29:PRO:C	2.61	0.42
53:3:181:A:H2'	53:3:182:A:C8	2.54	0.42
53:3:687:A:N3	53:3:688:G:H1'	2.35	0.42
53:3:831:A:H3'	53:3:832:G:H5''	2.02	0.42
53:3:865:A:H2'	53:3:866:C:H6	1.85	0.42
53:3:945:G:C2	53:3:946:A:C8	3.07	0.42
53:3:1294:G:H2'	53:3:1295:U:O4'	2.19	0.42
54:1:16:C:O2'	54:1:17:G:H5'	2.20	0.42
54:1:945:A:C5	54:1:2448:A:C2	3.07	0.42
54:1:1036:G:C6	54:1:1120:G:C6	3.08	0.42
54:1:1160:G:H2'	54:1:1161:C:C6	2.54	0.42
54:1:1259:G:H2'	54:1:1260:A:H8	1.84	0.42
54:1:1447:C:H2'	54:1:1448:G:H8	1.84	0.42
54:1:2700:A:H2'	54:1:2701:U:H6	1.85	0.42
54:1:2741:A:H2'	54:1:2742:G:O4'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:5:CYS:SG	1:b:12:ARG:NH2	2.93	0.42
1:b:252:LYS:NZ	54:1:1795:C:H1'	2.35	0.42
4:e:125:GLY:HA2	4:e:162:ASP:HA	2.01	0.42
5:f:155:PRO:O	5:f:170:THR:HA	2.20	0.42
7:h:3:LEU:CD1	7:h:4:ASN:H	2.32	0.42
8:i:32:VAL:CG2	8:i:60:VAL:HG22	2.50	0.42
24:y:2:LYS:HG3	24:y:3:ALA:H	1.84	0.42
32:G:35:ASN:O	32:G:36:LYS:CB	2.66	0.42
32:G:59:ILE:O	32:G:62:ARG:HB2	2.19	0.42
33:H:65:VAL:HG21	33:H:90:VAL:HG11	2.02	0.42
35:J:92:ARG:CB	35:J:127:TYR:HB2	2.49	0.42
36:K:14:GLN:HG2	36:K:83:ALA:CB	2.50	0.42
37:L:58:LEU:HD12	37:L:58:LEU:C	2.44	0.42
38:M:98:LEU:HD12	38:M:98:LEU:C	2.44	0.42
38:M:120:LEU:N	38:M:120:LEU:HD23	2.34	0.42
40:O:58:ASN:O	40:O:61:ALA:N	2.33	0.42
42:Q:52:CYS:SG	42:Q:66:ILE:HD11	2.59	0.42
42:Q:120:ARG:HG3	42:Q:120:ARG:HH11	1.85	0.42
44:S:32:ASP:CG	44:S:33:VAL:N	2.78	0.42
45:T:27:GLN:O	45:T:31:LEU:HG	2.19	0.42
52:a:27:ILE:HA	52:a:30:LEU:HG	2.02	0.42
52:a:189:LEU:HD21	52:a:224:VAL:CG1	2.50	0.42
53:3:149:A:H2'	53:3:150:U:C6	2.55	0.42
53:3:1138:G:H3'	53:3:1138:G:N3	2.35	0.42
53:3:1173:U:H2'	53:3:1174:G:H8	1.84	0.42
53:3:1420:U:O2'	53:3:1421:G:H5'	2.20	0.42
54:1:52:A:H2'	54:1:53:A:H8	1.84	0.42
54:1:375:G:O2'	54:1:376:G:H5'	2.20	0.42
54:1:466:A:H2'	54:1:467:G:H5'	2.01	0.42
54:1:2544:G:O2'	54:1:2545:G:H5'	2.20	0.42
55:2:118:C:C4	55:2:119:A:N7	2.88	0.42
56:6:10:G:H2'	56:6:11:A:C8	2.55	0.42
56:6:62:C:H2'	56:6:63:G:O4'	2.20	0.42
58:7:18:G:O2'	58:7:57:G:N2	2.53	0.42
1:b:14:HIS:O	1:b:16:VAL:HG23	2.20	0.42
1:b:24:HIS:HB3	1:b:81:GLU:OE2	2.20	0.42
2:c:9:VAL:CG2	2:c:28:GLU:H	2.32	0.42
2:c:61:THR:OG1	2:c:64:GLU:HG3	2.20	0.42
2:c:83:ARG:HG3	2:c:83:ARG:HH21	1.84	0.42
7:h:60:LEU:O	7:h:64:VAL:HB	2.19	0.42
14:o:32:PRO:HD2	55:2:29:A:OP2	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:o:111:ARG:HG2	14:o:111:ARG:NH2	2.35	0.42
32:G:17:HIS:O	32:G:18:GLN:HB2	2.19	0.42
34:I:12:ARG:NH1	34:I:36:ALA:O	2.53	0.42
36:K:68:GLN:O	36:K:71:ILE:HG22	2.20	0.42
37:L:13:PRO:HA	37:L:20:GLU:HG2	2.02	0.42
38:M:49:LYS:O	38:M:58:LEU:HD12	2.20	0.42
40:O:24:GLU:OE1	40:O:92:LEU:HD12	2.19	0.42
45:T:31:LEU:O	45:T:35:ILE:HG13	2.19	0.42
47:V:30:HIS:HB3	47:V:35:LYS:H	1.85	0.42
49:X:79:TYR:CE1	49:X:80:ARG:HG3	2.55	0.42
53:3:701:U:H5''	53:3:703:G:H1'	2.02	0.42
53:3:1165:U:H2'	53:3:1166:G:O4'	2.20	0.42
53:3:1299:A:H1'	53:3:1301:U:H1'	2.02	0.42
54:1:395:U:H2'	54:1:396:G:C8	2.55	0.42
54:1:737:C:O2'	54:1:738:G:H5'	2.19	0.42
54:1:1308:A:H2'	54:1:1309:G:C5'	2.50	0.42
54:1:1797:G:C6	54:1:1823:G:C6	3.08	0.42
54:1:1859:U:H2'	54:1:1860:G:H8	1.85	0.42
54:1:2139:U:H2'	54:1:2140:G:H8	1.83	0.42
54:1:2636:C:H2'	54:1:2637:U:H6	1.85	0.42
55:2:23:G:H2'	55:2:24:G:C8	2.55	0.42
55:2:75:G:H2'	55:2:76:G:C8	2.54	0.42
4:e:128:SER:HA	4:e:154:THR:HA	2.02	0.41
4:e:130:GLY:HA3	54:1:2305:U:H5''	2.02	0.41
8:i:18:ASN:HB2	8:i:34:ILE:HG21	2.02	0.41
14:o:28:VAL:O	14:o:29:HIS:C	2.62	0.41
25:z:5:LYS:O	25:z:6:ILE:HD13	2.20	0.41
26:A:14:ALA:HB1	26:A:34:LEU:HD23	2.01	0.41
32:G:8:MET:CE	32:G:10:LYS:HE2	2.50	0.41
33:H:1:GLY:N	53:3:1060:U:OP2	2.53	0.41
33:H:38:VAL:HG23	33:H:39:ARG:N	2.35	0.41
35:J:90:GLY:O	35:J:129:SER:HB3	2.20	0.41
36:K:75:GLU:HA	36:K:78:PHE:CD2	2.46	0.41
39:N:20:ILE:HD11	39:N:60:LEU:CD2	2.42	0.41
40:O:62:ARG:HH11	40:O:62:ARG:HG3	1.85	0.41
45:T:6:ALA:O	45:T:10:ILE:HG13	2.19	0.41
46:U:57:ILE:O	46:U:61:VAL:HG23	2.20	0.41
46:U:73:ALA:HB1	46:U:77:GLU:OE2	2.20	0.41
50:Y:31:ILE:HD12	50:Y:31:ILE:N	2.35	0.41
51:Z:23:GLU:HB2	51:Z:27:VAL:HG22	2.01	0.41
51:Z:65:ARG:HD2	53:3:1088:G:H5'	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:26:A:N6	53:3:558:G:H1'	2.35	0.41
53:3:156:C:O2'	53:3:157:U:H5'	2.20	0.41
53:3:971:G:H1'	53:3:1365:G:O2'	2.20	0.41
53:3:1028:C:H1'	53:3:1034:G:N1	2.35	0.41
53:3:1237:C:C4'	53:3:1334:G:N2	2.76	0.41
54:1:340:A:H2'	54:1:341:C:O4'	2.20	0.41
54:1:728:G:C4	54:1:730:A:C8	3.07	0.41
54:1:1328:A:H2'	54:1:1330:C:C4	2.55	0.41
55:2:69:G:C2'	55:2:70:C:H5'	2.50	0.41
55:2:119:A:H2'	55:2:120:A:O4'	2.20	0.41
56:6:4:G:C2	56:6:5:G:H1'	2.55	0.41
2:c:91:THR:HG22	2:c:94:GLN:OE1	2.19	0.41
2:c:98:VAL:HG22	2:c:98:VAL:O	2.20	0.41
3:d:187:VAL:O	3:d:187:VAL:HG23	2.19	0.41
4:e:105:ILE:HD12	4:e:138:PRO:HG2	2.02	0.41
4:e:145:VAL:O	4:e:145:VAL:HG23	2.20	0.41
5:f:159:LYS:HZ1	54:1:2658:C:H5'	1.83	0.41
9:j:58:ASN:C	9:j:60:ASP:H	2.27	0.41
11:l:61:LEU:HD12	30:E:13:PHE:CZ	2.55	0.41
13:n:14:SER:HA	13:n:17:ARG:HH22	1.81	0.41
26:A:18:CYS:SG	26:A:37:CYS:SG	3.17	0.41
32:G:115:ASP:O	32:G:119:GLN:HG2	2.20	0.41
33:H:156:LEU:CD1	33:H:163:ARG:HE	2.30	0.41
39:N:46:VAL:HA	39:N:49:GLN:HB2	2.03	0.41
46:U:10:GLY:HA2	53:3:624:C:H4'	2.02	0.41
46:U:26:ASN:HD22	46:U:31:ARG:CB	2.29	0.41
52:a:40:GLU:O	52:a:178:VAL:HG22	2.20	0.41
53:3:113:G:H1'	53:3:354:G:H5''	2.02	0.41
53:3:1119:C:H2'	53:3:1120:C:C6	2.54	0.41
54:1:873:C:H2'	54:1:874:G:H8	1.85	0.41
54:1:1384:A:H1'	54:1:1405:U:H1'	2.02	0.41
54:1:1685:C:O2'	54:1:1686:C:H5'	2.20	0.41
54:1:1773:A:H2'	54:1:1774:C:H5'	2.02	0.41
54:1:2415:G:H2'	54:1:2416:C:H6	1.85	0.41
54:1:2485:G:O2'	54:1:2486:C:H5'	2.20	0.41
1:b:18:VAL:HG23	1:b:202:ARG:HB2	2.03	0.41
1:b:129:LEU:N	1:b:129:LEU:CD2	2.84	0.41
1:b:257:ARG:HG2	1:b:257:ARG:HH11	1.85	0.41
2:c:118:PHE:O	54:1:1654:A:O2'	2.37	0.41
5:f:42:VAL:HA	5:f:51:PHE:HA	2.02	0.41
14:o:24:THR:OG1	14:o:42:PRO:HD3	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:o:89:ASP:HA	14:o:116:GLN:HB2	2.03	0.41
19:t:32:LEU:HD12	19:t:32:LEU:C	2.45	0.41
22:w:10:ARG:HH11	22:w:10:ARG:HG3	1.84	0.41
27:B:12:ARG:HG3	27:B:12:ARG:NH1	2.36	0.41
37:L:55:LYS:HD2	37:L:60:ALA:HA	2.01	0.41
39:N:24:ASN:OD1	39:N:25:GLY:N	2.53	0.41
40:O:26:VAL:HG13	40:O:27:GLU:N	2.35	0.41
44:S:47:LEU:HD12	44:S:50:LEU:HD12	2.02	0.41
47:V:48:GLU:OE2	47:V:48:GLU:HA	2.20	0.41
53:3:405:U:H3'	53:3:406:G:C5'	2.28	0.41
53:3:730:G:C5	53:3:731:G:H1'	2.55	0.41
53:3:760:G:H2'	53:3:761:G:H5'	2.03	0.41
54:1:691:C:H2'	54:1:692:C:H6	1.85	0.41
54:1:1443:U:H2'	54:1:1444:G:H8	1.85	0.41
54:1:2088:A:H2'	54:1:2089:C:H6	1.85	0.41
54:1:2443:C:H2'	54:1:2444:G:C8	2.56	0.41
56:6:67:C:O2	56:6:67:C:H2'	2.20	0.41
57:4:14:A:C2'	57:4:15:A:H5'	2.50	0.41
1:b:130:PRO:HA	1:b:187:CYS:O	2.20	0.41
4:e:84:ILE:HG21	54:1:2311:A:O2'	2.19	0.41
4:e:111:ARG:CD	43:R:6:ILE:HG12	2.50	0.41
5:f:93:TYR:CD1	5:f:106:LEU:HA	2.55	0.41
7:h:30:SER:O	7:h:31:ARG:HD3	2.20	0.41
11:l:70:LYS:HA	11:l:73:ILE:HG12	2.01	0.41
12:m:78:LEU:HD23	12:m:78:LEU:C	2.45	0.41
19:t:51:PHE:O	19:t:53:VAL:HG13	2.21	0.41
19:t:63:VAL:HG21	19:t:80:TRP:CZ2	2.56	0.41
21:v:12:GLN:HG3	55:2:75:G:OP1	2.21	0.41
22:w:20:LYS:N	22:w:33:ILE:O	2.49	0.41
29:D:41:ARG:NH2	29:D:41:ARG:CB	2.83	0.41
33:H:29:ALA:HB1	44:S:64:ARG:HH21	1.84	0.41
34:I:57:LYS:CD	34:I:202:LEU:HD13	2.51	0.41
35:J:19:ARG:HD3	35:J:30:PHE:HB3	2.03	0.41
36:K:47:LEU:HD21	36:K:57:ALA:CB	2.46	0.41
41:P:92:ARG:NH2	51:Z:16:ARG:NH2	2.68	0.41
42:Q:74:GLN:O	42:Q:74:GLN:HG3	2.20	0.41
43:R:6:ILE:HD12	43:R:6:ILE:N	2.36	0.41
43:R:104:ASN:O	43:R:105:ALA:HB3	2.20	0.41
49:X:4:LEU:CD2	49:X:9:PHE:HB2	2.50	0.41
50:Y:3:ILE:HG22	50:Y:3:ILE:O	2.20	0.41
53:3:490:C:H2'	53:3:491:G:C8	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1217:C:O2'	53:3:1218:C:H5'	2.21	0.41
53:3:1339:A:H2'	53:3:1340:A:H5'	2.03	0.41
53:3:1478:U:H2'	53:3:1479:C:C6	2.55	0.41
54:1:175:G:H2'	54:1:176:A:C8	2.55	0.41
54:1:210:C:H2'	54:1:211:C:H6	1.84	0.41
54:1:923:G:O2'	54:1:924:G:H5'	2.20	0.41
54:1:980:A:N6	54:1:981:A:N1	2.67	0.41
54:1:1788:C:H2'	54:1:1789:A:H8	1.85	0.41
54:1:1947:C:O2'	54:1:1948:G:H5'	2.20	0.41
54:1:2799:A:H2'	54:1:2800:A:H5'	2.02	0.41
54:1:2843:G:O2'	54:1:2844:G:H5'	2.20	0.41
57:4:9:G:H2'	57:4:10:G:C8	2.55	0.41
1:b:123:ILE:HG23	1:b:191:LEU:CD1	2.50	0.41
1:b:222:THR:HG23	54:1:1826:G:OP1	2.21	0.41
4:e:74:ALA:O	4:e:77:LYS:N	2.52	0.41
10:k:30:ARG:HD3	54:1:2674:G:H4'	2.01	0.41
11:l:125:LEU:H	11:l:125:LEU:CD1	2.34	0.41
14:o:39:VAL:HG12	14:o:48:LEU:HD12	2.02	0.41
15:p:88:ARG:H	15:p:88:ARG:HG2	1.68	0.41
19:t:3:ARG:HG3	19:t:7:LEU:HD13	2.02	0.41
19:t:42:GLU:O	19:t:43:ILE:C	2.63	0.41
22:w:51:ARG:C	22:w:53:HIS:H	2.29	0.41
24:y:1:MET:O	24:y:5:GLU:HG2	2.20	0.41
26:A:53:THR:HB	43:R:74:MET:HE3	2.02	0.41
33:H:149:LYS:HB3	33:H:200:TRP:HB2	2.02	0.41
38:M:7:ALA:HB2	38:M:76:ARG:HD3	2.01	0.41
39:N:56:MET:O	39:N:57:VAL:C	2.63	0.41
39:N:112:ARG:HH12	39:N:114:LYS:HA	1.85	0.41
42:Q:49:ARG:HG3	42:Q:49:ARG:HH11	1.86	0.41
44:S:46:LYS:C	44:S:48:GLN:H	2.29	0.41
47:V:62:GLU:OE2	47:V:63:CYS:O	2.39	0.41
48:W:13:THR:OG1	48:W:18:GLN:N	2.52	0.41
50:Y:77:ASN:O	50:Y:81:GLN:HG2	2.20	0.41
53:3:25:C:H5'	53:3:524:G:H1'	2.01	0.41
54:1:178:G:O2'	54:1:179:C:H5'	2.21	0.41
54:1:372:G:H1'	54:1:373:U:C5	2.55	0.41
54:1:547:A:H4'	54:1:548:G:C5	2.56	0.41
54:1:1440:U:H2'	54:1:1441:G:H8	1.82	0.41
54:1:1826:G:H2'	54:1:1827:U:H6	1.85	0.41
4:e:133:GLU:HG3	4:e:135:ILE:HG12	2.01	0.41
6:g:110:VAL:HG22	6:g:111:ALA:N	2.34	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:i:48:ILE:HG22	8:i:49:GLU:N	2.36	0.41
10:k:104:THR:CG2	10:k:105:ARG:N	2.84	0.41
12:m:134:THR:O	12:m:135:VAL:C	2.63	0.41
13:n:2:ARG:HA	13:n:5:LYS:CD	2.49	0.41
14:o:29:HIS:C	14:o:29:HIS:ND1	2.78	0.41
16:q:69:ARG:HH21	16:q:69:ARG:HG3	1.85	0.41
18:s:13:SER:O	18:s:17:VAL:HG23	2.21	0.41
18:s:95:ARG:HH21	18:s:95:ARG:HG3	1.86	0.41
23:x:54:GLY:O	23:x:58:ILE:HG13	2.21	0.41
33:H:54:ILE:HG13	33:H:54:ILE:O	2.21	0.41
33:H:67:ILE:O	33:H:103:ALA:N	2.52	0.41
35:J:92:ARG:HB2	35:J:127:TYR:O	2.21	0.41
38:M:95:MET:HG2	38:M:98:LEU:HD11	2.02	0.41
41:P:111:ASP:H	51:Z:3:ILE:HG23	1.84	0.41
42:Q:86:VAL:O	42:Q:87:LYS:HB3	2.20	0.41
53:3:304:U:O2'	53:3:305:G:H5'	2.20	0.41
53:3:405:U:C3'	53:3:406:G:H5'	2.28	0.41
53:3:407:U:H2'	53:3:408:A:H8	1.84	0.41
53:3:1190:G:C1'	53:3:1191:A:OP2	2.69	0.41
53:3:1382:C:H2'	53:3:1383:C:C6	2.55	0.41
54:1:402:A:H2'	54:1:403:U:O4'	2.20	0.41
54:1:1006:C:O2'	54:1:1007:C:H5'	2.21	0.41
54:1:1163:G:O2'	54:1:1164:C:H5'	2.21	0.41
54:1:1282:U:H2'	54:1:1283:G:O4'	2.20	0.41
54:1:1599:U:H2'	54:1:1600:C:H6	1.85	0.41
54:1:2128:G:H1'	54:1:2173:A:N3	2.36	0.41
54:1:2489:U:H2'	54:1:2490:G:O4'	2.21	0.41
1:b:95:TYR:HE2	1:b:101:ARG:HD2	1.86	0.41
4:e:33:ILE:HB	4:e:90:LEU:HD11	2.02	0.41
4:e:101:ARG:HG3	4:e:105:ILE:HD11	2.03	0.41
4:e:139:GLU:CD	4:e:139:GLU:H	2.28	0.41
5:f:17:LYS:HB3	5:f:24:THR:OG1	2.21	0.41
5:f:34:ARG:HG2	5:f:34:ARG:NH1	2.36	0.41
5:f:85:LYS:HE3	5:f:85:LYS:HB3	1.95	0.41
7:h:3:LEU:HA	54:1:1044:C:P	2.57	0.41
7:h:3:LEU:CG	7:h:4:ASN:H	2.34	0.41
14:o:59:ALA:HA	14:o:62:LEU:HB2	2.02	0.41
17:r:5:PHE:O	17:r:12:HIS:N	2.53	0.41
17:r:34:GLU:HB3	17:r:58:VAL:CG2	2.50	0.41
23:x:52:ALA:O	23:x:55:MET:HB3	2.20	0.41
27:B:49:ARG:HG2	54:1:2884:U:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:G:197:PHE:O	32:G:199:ILE:HD12	2.21	0.41
34:I:57:LYS:HA	34:I:199:ILE:CD1	2.50	0.41
36:K:90:MET:HG3	36:K:91:ARG:N	2.28	0.41
38:M:74:ILE:HG23	38:M:74:ILE:O	2.21	0.41
39:N:6:TYR:O	39:N:87:MET:HE3	2.20	0.41
40:O:44:THR:HG23	40:O:69:THR:O	2.20	0.41
41:P:30:ILE:HG12	41:P:45:THR:CG2	2.51	0.41
42:Q:106:VAL:HG23	42:Q:116:TYR:HB3	2.02	0.41
43:R:97:ARG:HH11	43:R:97:ARG:HG3	1.86	0.41
49:X:51:HIS:CE1	53:3:1220:G:H1'	2.56	0.41
50:Y:67:HIS:NE2	53:3:132:C:H5''	2.35	0.41
53:3:17:U:O2'	53:3:18:C:H5'	2.20	0.41
53:3:593:U:H2'	53:3:594:U:C6	2.56	0.41
53:3:829:G:C6	53:3:858:G:N2	2.89	0.41
53:3:903:G:H2'	53:3:904:U:C6	2.56	0.41
53:3:921:U:H2'	53:3:922:G:O4'	2.21	0.41
53:3:1010:U:H2'	53:3:1011:C:H6	1.85	0.41
53:3:1167:A:C2	53:3:1169:A:C4	3.09	0.41
53:3:1397:C:H5''	53:3:1398:A:O5'	2.21	0.41
54:1:201:C:C2'	54:1:202:U:H5'	2.51	0.41
54:1:511:U:C2'	54:1:512:G:H5'	2.50	0.41
54:1:566:U:O2'	54:1:567:U:H5'	2.21	0.41
54:1:873:C:H2'	54:1:874:G:C8	2.55	0.41
54:1:874:G:O2'	54:1:875:G:H5'	2.21	0.41
54:1:940:G:H3'	54:1:941:A:H5''	2.03	0.41
54:1:1014:A:H2'	54:1:1015:U:C6	2.56	0.41
54:1:1449:G:O2'	54:1:1450:G:H5'	2.21	0.41
54:1:2628:C:O2'	54:1:2781:A:H2'	2.20	0.41
1:b:131:MET:HA	1:b:134:ILE:CD1	2.50	0.41
7:h:37:LYS:CG	7:h:41:LEU:HD12	2.51	0.41
9:j:57:LEU:HD22	9:j:128:ASN:O	2.20	0.41
10:k:17:ARG:HH11	10:k:17:ARG:HG2	1.86	0.41
12:m:67:VAL:HG12	12:m:100:LYS:HE3	2.03	0.41
33:H:58:ARG:CB	33:H:58:ARG:HH11	2.34	0.41
36:K:92:THR:O	36:K:93:LYS:HB2	2.20	0.41
38:M:26:MET:HE3	38:M:26:MET:HB2	1.97	0.41
40:O:26:VAL:O	40:O:30:LYS:HG2	2.21	0.41
41:P:124:LYS:O	51:Z:34:ARG:NH1	2.54	0.41
42:Q:77:SER:HB2	42:Q:102:ASP:HB3	2.02	0.41
48:W:29:LYS:C	48:W:31:TYR:H	2.28	0.41
53:3:263:A:H2'	53:3:264:C:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:354:G:O2'	53:3:355:C:H5'	2.20	0.41
53:3:524:G:H2'	53:3:525:C:H6	1.86	0.41
53:3:839:C:H2'	53:3:840:C:C6	2.56	0.41
54:1:93:G:O2'	54:1:94:A:H5'	2.21	0.41
54:1:680:C:H2'	54:1:681:G:H8	1.86	0.41
54:1:825:A:H2'	54:1:826:U:C6	2.55	0.41
54:1:1505:A:O2'	54:1:1506:U:H5'	2.20	0.41
1:b:131:MET:HA	1:b:134:ILE:HD12	2.02	0.41
1:b:174:ARG:CD	1:b:180:MET:HE1	2.48	0.41
2:c:97:SER:HB3	2:c:99:GLU:HG2	2.03	0.41
2:c:109:VAL:HB	2:c:172:VAL:CG2	2.51	0.41
3:d:148:ILE:N	3:d:168:ASP:O	2.53	0.41
4:e:4:HIS:NE2	4:e:8:LYS:HE3	2.36	0.41
5:f:8:VAL:N	5:f:48:THR:HB	2.36	0.41
7:h:56:ARG:O	54:1:1106:G:H4'	2.21	0.41
9:j:47:HIS:CD2	54:1:536:G:H21	2.38	0.41
11:l:55:MET:HE3	11:l:59:ARG:HD3	2.03	0.41
11:l:123:ARG:HG3	11:l:143:GLU:HG3	2.03	0.41
12:m:18:ARG:NH2	12:m:18:ARG:CB	2.84	0.41
13:n:45:ARG:C	13:n:47:VAL:H	2.29	0.41
13:n:76:VAL:HG13	13:n:80:PHE:CE2	2.56	0.41
17:r:5:PHE:HA	17:r:39:LEU:HD13	2.02	0.41
18:s:7:HIS:HB3	18:s:103:ILE:HG22	2.03	0.41
18:s:49:LYS:O	18:s:52:GLU:HB2	2.20	0.41
19:t:51:PHE:O	19:t:52:GLU:HG2	2.20	0.41
20:u:6:ARG:N	54:1:85:G:OP1	2.53	0.41
20:u:51:LEU:N	20:u:51:LEU:HD12	2.36	0.41
22:w:42:HIS:NE2	22:w:73:ARG:HD3	2.36	0.41
22:w:65:PHE:HD1	22:w:76:ILE:HG12	1.85	0.41
25:z:41:PRO:O	25:z:45:GLY:N	2.50	0.41
30:E:1:PRO:HG2	54:1:591:U:O2	2.21	0.41
31:F:26:ILE:O	31:F:26:ILE:HG13	2.20	0.41
33:H:4:VAL:HG11	33:H:9:ILE:HD12	2.03	0.41
33:H:55:VAL:O	33:H:56:ILE:HD13	2.20	0.41
33:H:155:ARG:HH11	33:H:155:ARG:HG3	1.85	0.41
33:H:160:GLU:OE2	53:3:1055:A:H4'	2.21	0.41
34:I:9:LYS:HZ1	53:3:428:G:P	2.44	0.41
34:I:88:ASN:O	34:I:92:LEU:HD13	2.21	0.41
34:I:169:TRP:CZ3	34:I:189:ASP:HB3	2.55	0.41
34:I:173:ASP:O	34:I:174:ALA:HB3	2.21	0.41
38:M:1:SER:HA	53:3:824:G:H1'	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:M:80:PRO:HG2	53:3:878:A:C5'	2.51	0.41
40:O:8:ILE:CD1	40:O:100:ILE:HG22	2.50	0.41
40:O:66:GLU:OE2	40:O:67:ILE:C	2.64	0.41
41:P:38:GLY:O	41:P:39:ASN:C	2.63	0.41
42:Q:13:ARG:HD3	42:Q:14:LYS:H	1.85	0.41
43:R:95:PRO:HD3	43:R:108:ARG:HB3	2.03	0.41
44:S:41:TRP:O	44:S:45:LEU:HG	2.21	0.41
45:T:63:ARG:HG3	45:T:67:ASP:OD2	2.21	0.41
46:U:51:ARG:HG2	46:U:51:ARG:NH1	2.36	0.41
47:V:11:VAL:HG11	47:V:20:ILE:HD11	2.02	0.41
47:V:26:ARG:NH1	47:V:28:VAL:HB	2.36	0.41
48:W:16:GLY:O	48:W:18:GLN:HG2	2.20	0.41
52:a:7:ARG:O	52:a:11:ILE:N	2.47	0.41
52:a:21:TYR:CD2	52:a:222:VAL:HG13	2.55	0.41
52:a:175:ILE:HB	52:a:188:ASN:OD1	2.21	0.41
53:3:49:U:O4	53:3:365:U:H5	2.04	0.41
53:3:149:A:H2'	53:3:150:U:H6	1.86	0.41
53:3:245:U:O2'	53:3:246:A:H5'	2.20	0.41
53:3:320:A:H2'	53:3:321:A:C8	2.56	0.41
53:3:389:A:N3	53:3:389:A:H2'	2.36	0.41
53:3:423:G:C2'	53:3:424:G:H5'	2.51	0.41
53:3:592:G:O2'	53:3:593:U:H5'	2.21	0.41
53:3:844:G:H2'	53:3:844:G:N3	2.35	0.41
53:3:890:G:H2'	53:3:906:A:N6	2.36	0.41
53:3:1512:U:H2'	53:3:1513:A:C8	2.55	0.41
54:1:100:U:H5''	54:1:101:A:O5'	2.21	0.41
54:1:121:G:H2'	54:1:122:G:H8	1.86	0.41
54:1:279:A:C2'	54:1:280:U:H5'	2.51	0.41
54:1:402:A:C2'	54:1:403:U:H5'	2.51	0.41
54:1:562:U:H2'	54:1:572:A:O4'	2.19	0.41
54:1:575:A:H2'	54:1:576:U:C6	2.55	0.41
54:1:599:A:O2'	54:1:600:G:H5'	2.20	0.41
54:1:841:G:H2'	54:1:842:U:H6	1.85	0.41
54:1:1417:C:H2'	54:1:1418:G:O4'	2.21	0.41
54:1:1425:G:C6	54:1:1426:G:N1	2.88	0.41
54:1:1592:C:H2'	54:1:1593:A:H8	1.85	0.41
54:1:1889:A:H2'	54:1:1890:A:H8	1.85	0.41
54:1:2156:G:H2'	54:1:2157:G:C5'	2.49	0.41
54:1:2437:G:O2'	54:1:2438:U:H5'	2.20	0.41
54:1:2497:A:H8	54:1:2497:A:OP2	2.04	0.41
54:1:2544:G:H2'	54:1:2545:G:H8	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:2638:G:H1'	54:1:2778:A:H61	1.84	0.41
54:1:2801:G:OP2	54:1:2801:G:H8	2.04	0.41
56:5:22:G:H2'	56:5:23:C:H6	1.85	0.41
4:e:72:SER:HB2	4:e:80:GLN:H	1.86	0.41
4:e:72:SER:HB2	4:e:80:GLN:N	2.36	0.41
4:e:142:TYR:CD1	4:e:145:VAL:HG11	2.56	0.41
5:f:8:VAL:HB	5:f:49:LEU:HB2	2.02	0.41
6:g:5:LEU:HD11	6:g:19:VAL:HG22	2.03	0.41
7:h:64:VAL:O	7:h:68:PRO:HD3	2.21	0.41
8:i:14:ALA:HB1	8:i:45:THR:HG23	2.03	0.41
10:k:76:VAL:HG22	15:p:72:VAL:CG2	2.51	0.41
14:o:8:ILE:N	14:o:8:ILE:CD1	2.84	0.41
14:o:67:ASN:OD1	14:o:70:ALA:HB2	2.20	0.41
26:A:45:THR:O	26:A:48:GLN:HB3	2.21	0.41
34:I:32:LYS:HE2	53:3:413:G:C6	2.56	0.41
34:I:61:ARG:HG2	34:I:66:VAL:O	2.19	0.41
34:I:120:LYS:HG2	34:I:130:ASN:HB3	2.02	0.41
39:N:6:TYR:CE2	53:3:1147:C:H4'	2.55	0.41
39:N:95:SER:C	39:N:97:LEU:N	2.79	0.41
40:O:8:ILE:HG12	40:O:100:ILE:HG22	2.02	0.41
41:P:84:MET:HG2	41:P:110:THR:OG1	2.21	0.41
46:U:74:LEU:C	46:U:78:VAL:HG23	2.46	0.41
52:a:20:GLN:HB3	52:a:223:ALA:O	2.21	0.41
53:3:20:U:C2'	53:3:21:G:H5'	2.50	0.41
53:3:358:U:O2'	53:3:359:G:H5'	2.21	0.41
53:3:1010:U:H2'	53:3:1011:C:C6	2.56	0.41
53:3:1206:G:H2'	53:3:1207:G:O4'	2.20	0.41
53:3:1333:A:H3'	53:3:1334:G:H8	1.86	0.41
53:3:1472:U:H2'	53:3:1473:G:C8	2.55	0.41
54:1:251:A:O5'	54:1:251:A:H8	2.03	0.41
54:1:402:A:H2'	54:1:403:U:H5'	2.03	0.41
54:1:849:A:H2'	54:1:850:U:H6	1.79	0.41
54:1:1022:G:N2	54:1:1142:A:C2	2.89	0.41
54:1:1416:G:H2'	54:1:1417:C:H6	1.86	0.41
54:1:1924:C:H2'	54:1:1925:C:C6	2.55	0.41
54:1:1998:A:O2'	54:1:1999:C:H5'	2.21	0.41
1:b:204:LEU:N	1:b:204:LEU:CD2	2.84	0.40
2:c:101:PHE:C	2:c:103:ASP:N	2.79	0.40
2:c:169:ARG:O	54:1:2773:C:H5''	2.20	0.40
3:d:1:MET:HB2	3:d:14:VAL:HG23	2.02	0.40
3:d:12:LEU:N	3:d:12:LEU:HD12	2.37	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:e:3:LEU:O	4:e:6:TYR:HB3	2.21	0.40
9:j:78:THR:CG2	54:1:2641:G:H5''	2.51	0.40
9:j:109:LEU:O	9:j:111:LYS:HD3	2.21	0.40
10:k:113:MET:HA	10:k:113:MET:HE2	2.03	0.40
11:l:92:LEU:O	11:l:95:LEU:HB2	2.21	0.40
13:n:79:LEU:O	13:n:81:ASN:N	2.55	0.40
14:o:55:GLU:HG2	55:2:116:G:OP1	2.21	0.40
18:s:86:MET:HB2	18:s:96:ILE:HD13	2.03	0.40
19:t:1:MET:C	19:t:3:ARG:H	2.29	0.40
19:t:54:GLU:CB	19:t:88:LYS:HD3	2.50	0.40
21:v:30:ILE:HG23	21:v:72:VAL:HG11	2.03	0.40
26:A:37:CYS:HG	26:A:40:CYS:CB	2.33	0.40
31:F:4:ARG:O	31:F:37:GLN:HB3	2.21	0.40
34:I:190:LEU:HD23	34:I:190:LEU:N	2.25	0.40
38:M:23:ALA:HA	38:M:60:LEU:O	2.21	0.40
39:N:17:ARG:HD2	53:3:1147:C:O2'	2.21	0.40
53:3:827:U:H2'	53:3:870:U:O4	2.21	0.40
54:1:1060:U:H4'	54:1:1061:U:O5'	2.21	0.40
54:1:1071:G:H3'	54:1:1071:G:OP1	2.21	0.40
54:1:1130:U:O2'	54:1:1131:G:OP1	2.35	0.40
54:1:1410:G:O2'	54:1:1411:U:H5'	2.21	0.40
54:1:1657:U:H2'	54:1:1658:C:C6	2.55	0.40
54:1:1999:C:H2'	54:1:2000:C:C6	2.56	0.40
54:1:2447:G:C8	54:1:2501:C:C6	3.09	0.40
1:b:18:VAL:HB	1:b:202:ARG:NH2	2.35	0.40
3:d:32:VAL:HG23	3:d:33:VAL:N	2.36	0.40
8:i:3:LYS:HG3	8:i:4:VAL:N	2.36	0.40
9:j:52:ASP:O	9:j:54:ILE:HG13	2.21	0.40
9:j:98:GLU:O	9:j:102:GLU:HG3	2.22	0.40
10:k:7:MET:HE3	10:k:18:ARG:CD	2.51	0.40
11:l:79:LEU:HB2	11:l:114:GLY:O	2.21	0.40
13:n:4:ARG:NH2	54:1:2820:A:C2	2.89	0.40
23:x:2:ARG:HD2	54:1:1365:A:OP1	2.21	0.40
24:y:6:LEU:HD12	24:y:56:LEU:HD11	2.03	0.40
24:y:55:THR:O	24:y:59:GLU:HG3	2.22	0.40
31:F:32:LYS:HE3	54:1:2478:A:H5'	2.01	0.40
32:G:18:GLN:O	32:G:19:THR:CB	2.56	0.40
33:H:72:PRO:O	33:H:76:ILE:HG12	2.21	0.40
35:J:43:GLY:N	35:J:117:ALA:O	2.54	0.40
35:J:88:HIS:ND1	35:J:88:HIS:C	2.79	0.40
46:U:20:VAL:HG23	46:U:34:GLU:C	2.45	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:622:A:H2'	53:3:623:C:H5'	2.03	0.40
53:3:1220:G:O2'	53:3:1221:G:H5'	2.22	0.40
54:1:244:A:H2'	54:1:245:G:O4'	2.21	0.40
54:1:493:G:H2'	54:1:494:G:O4'	2.20	0.40
54:1:1053:C:C2'	54:1:1054:A:H5''	2.52	0.40
54:1:1060:U:H5'	54:1:1062:G:C5'	2.42	0.40
54:1:1061:U:H4'	54:1:1070:A:C1'	2.51	0.40
54:1:1301:A:N3	54:1:1301:A:H2'	2.35	0.40
54:1:1344:U:H4'	54:1:1384:A:C5	2.56	0.40
54:1:1387:A:H5'	54:1:1469:A:H1'	2.04	0.40
54:1:1772:A:H2'	54:1:1773:A:H4'	2.04	0.40
54:1:1778:U:C5	54:1:1784:A:C2	3.09	0.40
54:1:2071:A:C6	54:1:2072:C:N4	2.89	0.40
54:1:2155:U:H2'	54:1:2156:G:H5'	2.02	0.40
54:1:2455:G:H2'	54:1:2456:C:C6	2.56	0.40
54:1:2687:U:H2'	54:1:2688:G:O4'	2.21	0.40
56:5:74:C:O5'	56:5:74:C:H6	2.04	0.40
56:6:72:A:H3'	56:6:73:A:H5''	2.02	0.40
4:e:91:ARG:NH2	55:2:43:C:O2	2.54	0.40
5:f:1:SER:HB3	5:f:5:LYS:HZ1	1.82	0.40
13:n:72:ASP:OD1	13:n:74:GLU:HB3	2.21	0.40
13:n:79:LEU:C	13:n:81:ASN:N	2.79	0.40
18:s:18:ARG:HH12	54:1:518:G:H4'	1.86	0.40
18:s:110:ARG:HH21	18:s:110:ARG:CB	2.34	0.40
32:G:72:LYS:C	32:G:74:ALA:N	2.76	0.40
32:G:170:ILE:HG13	32:G:171:ALA:N	2.36	0.40
32:G:224:ARG:H	32:G:224:ARG:CD	2.33	0.40
34:I:96:ARG:O	34:I:100:VAL:HG23	2.21	0.40
39:N:112:ARG:NE	44:S:100:TRP:NE1	2.67	0.40
41:P:117:HIS:O	41:P:118:ASN:HB2	2.21	0.40
43:R:24:VAL:O	43:R:24:VAL:HG13	2.21	0.40
46:U:2:VAL:O	46:U:65:ALA:HA	2.21	0.40
47:V:46:HIS:HB3	47:V:70:LYS:HE2	2.03	0.40
53:3:226:G:O2'	53:3:227:G:H5'	2.21	0.40
53:3:442:G:H2'	53:3:443:C:H6	1.85	0.40
53:3:1039:G:H2'	53:3:1040:U:C6	2.56	0.40
53:3:1173:U:H2'	53:3:1174:G:C8	2.56	0.40
53:3:1527:U:O2'	53:3:1528:U:H5'	2.22	0.40
54:1:358:U:H2'	54:1:359:G:O4'	2.20	0.40
54:1:1000:A:H2'	54:1:1001:A:C8	2.56	0.40
54:1:1404:C:O2'	54:1:1405:U:H5'	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:1416:G:H2'	54:1:1417:C:C6	2.57	0.40
54:1:1539:U:H2'	54:1:1540:G:H8	1.86	0.40
54:1:1800:C:H42	54:1:1817:G:H22	1.70	0.40
54:1:2419:U:H2'	54:1:2420:C:C6	2.56	0.40
4:e:42:ALA:HB2	4:e:49:LEU:HD13	2.03	0.40
7:h:7:ASP:O	7:h:10:ALA:HB3	2.21	0.40
11:l:13:LYS:HE3	54:1:660:C:O2'	2.21	0.40
18:s:21:ALA:C	18:s:23:LEU:H	2.30	0.40
20:u:24:VAL:HG22	20:u:35:VAL:CG1	2.51	0.40
26:A:20:ASN:ND2	26:A:37:CYS:SG	2.80	0.40
32:G:23:ASN:OD1	32:G:25:LYS:HG2	2.22	0.40
33:H:156:LEU:HD11	33:H:163:ARG:CG	2.51	0.40
34:I:149:LYS:HG3	34:I:177:MET:SD	2.60	0.40
35:J:29:ILE:HG12	35:J:53:ARG:HH12	1.87	0.40
38:M:51:GLU:O	38:M:57:GLU:N	2.47	0.40
40:O:13:PHE:CE2	44:S:93:PRO:HB2	2.56	0.40
40:O:54:SER:OG	40:O:55:PRO:HD2	2.22	0.40
40:O:65:TYR:HB3	44:S:95:LEU:HD11	2.04	0.40
40:O:72:ARG:HG2	40:O:72:ARG:HH11	1.86	0.40
41:P:24:ALA:N	41:P:86:LYS:O	2.42	0.40
43:R:90:HIS:HA	43:R:108:ARG:NH2	2.36	0.40
44:S:37:ASP:C	44:S:39:ASP:H	2.30	0.40
48:W:33:THR:HG22	48:W:37:LYS:N	2.37	0.40
53:3:113:G:H2'	53:3:114:U:C6	2.56	0.40
53:3:487:A:H2'	53:3:488:C:H5'	2.03	0.40
53:3:601:G:H2'	53:3:602:A:H8	1.87	0.40
53:3:1006:G:H2'	53:3:1007:U:C6	2.57	0.40
53:3:1130:A:H61	53:3:1144:G:HI1'	1.86	0.40
53:3:1530:G:H2'	53:3:1531:A:C8	2.56	0.40
54:1:568:U:H2'	54:1:570:G:OP2	2.22	0.40
54:1:689:A:H2'	54:1:690:G:C8	2.56	0.40
54:1:1665:A:H2'	54:1:1666:G:O4'	2.21	0.40
54:1:1841:U:C2	54:1:1842:G:C8	3.10	0.40
54:1:2025:C:H2'	54:1:2026:U:C6	2.56	0.40
54:1:2603:G:O2'	54:1:2604:U:H5'	2.22	0.40
54:1:2773:C:H2'	54:1:2774:C:H6	1.86	0.40
2:c:97:SER:OG	2:c:98:VAL:N	2.54	0.40
5:f:44:HIS:O	5:f:45:ALA:CB	2.69	0.40
6:g:3:VAL:HG12	6:g:4:ILE:N	2.35	0.40
12:m:18:ARG:HH21	12:m:18:ARG:CB	2.35	0.40
12:m:71:LYS:CD	12:m:95:LEU:HD11	2.51	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:w:56:PHE:CZ	54:1:2365:G:H4'	2.56	0.40
33:H:139:ASN:HA	33:H:142:ARG:HD3	2.04	0.40
34:I:10:LEU:HD22	34:I:62:ARG:NE	2.37	0.40
35:J:114:LEU:O	35:J:119:VAL:HG22	2.22	0.40
36:K:6:ILE:H	36:K:6:ILE:HG13	1.67	0.40
37:L:11:ILE:HG13	37:L:12:LEU:O	2.22	0.40
46:U:20:VAL:CG2	46:U:32:PHE:HB2	2.52	0.40
53:3:407:U:H2'	53:3:408:A:C8	2.57	0.40
53:3:570:G:H1'	53:3:820:U:C4	2.56	0.40
53:3:1168:U:H5''	53:3:1169:A:OP2	2.21	0.40
53:3:1477:U:H2'	53:3:1478:U:H6	1.82	0.40
53:3:1514:G:H2'	53:3:1515:G:H8	1.86	0.40
54:1:38:A:H2'	54:1:39:G:O4'	2.21	0.40
54:1:65:U:H2'	54:1:66:C:H6	1.86	0.40
54:1:193:U:O2'	54:1:194:G:H5'	2.21	0.40
54:1:578:G:H21	54:1:1252:G:N2	2.20	0.40
54:1:609:A:H2'	54:1:610:C:O4'	2.21	0.40
54:1:712:G:H2'	54:1:713:G:H5'	2.03	0.40
54:1:967:U:H2'	54:1:968:C:C6	2.56	0.40
54:1:1103:A:N3	54:1:1103:A:H2'	2.37	0.40
54:1:1229:C:O2'	54:1:1230:A:H5'	2.22	0.40
54:1:2220:U:H2'	54:1:2221:G:C8	2.56	0.40
54:1:2329:U:H2'	54:1:2330:G:C8	2.56	0.40
54:1:2628:C:H3'	54:1:2629:U:H5'	2.04	0.40
54:1:2660:A:H2'	54:1:2661:G:O4'	2.21	0.40
54:1:2773:C:H2'	54:1:2774:C:C6	2.56	0.40
54:1:2834:G:H1'	54:1:2883:A:N6	2.37	0.40
55:2:30:C:H2'	55:2:31:C:O4'	2.21	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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	
1	b	269/271 (99%)	233 (87%)	32 (12%)	4 (2%)	8	37
2	c	207/209 (99%)	182 (88%)	24 (12%)	1 (0%)	24	59
3	d	199/201 (99%)	175 (88%)	23 (12%)	1 (0%)	24	59
4	e	175/177 (99%)	153 (87%)	22 (13%)	0	100	100
5	f	174/176 (99%)	156 (90%)	18 (10%)	0	100	100
6	g	121/149 (81%)	102 (84%)	17 (14%)	2 (2%)	7	35
7	h	82/131 (63%)	63 (77%)	18 (22%)	1 (1%)	10	42
8	i	72/141 (51%)	58 (81%)	12 (17%)	2 (3%)	4	25
9	j	140/142 (99%)	124 (89%)	15 (11%)	1 (1%)	18	52
10	k	120/122 (98%)	98 (82%)	20 (17%)	2 (2%)	7	35
11	l	141/143 (99%)	116 (82%)	21 (15%)	4 (3%)	4	25
12	m	134/136 (98%)	123 (92%)	9 (7%)	2 (2%)	8	37
13	n	118/120 (98%)	101 (86%)	15 (13%)	2 (2%)	7	35
14	o	114/116 (98%)	102 (90%)	12 (10%)	0	100	100
15	p	112/114 (98%)	95 (85%)	16 (14%)	1 (1%)	14	47
16	q	115/117 (98%)	111 (96%)	4 (4%)	0	100	100
17	r	101/103 (98%)	84 (83%)	16 (16%)	1 (1%)	12	45
18	s	108/110 (98%)	97 (90%)	11 (10%)	0	100	100
19	t	91/93 (98%)	80 (88%)	11 (12%)	0	100	100
20	u	100/102 (98%)	74 (74%)	23 (23%)	3 (3%)	3	23
21	v	92/94 (98%)	77 (84%)	14 (15%)	1 (1%)	11	43
22	w	73/75 (97%)	63 (86%)	10 (14%)	0	100	100
23	x	75/77 (97%)	68 (91%)	7 (9%)	0	100	100
24	y	61/63 (97%)	57 (93%)	4 (7%)	0	100	100
25	z	56/58 (97%)	53 (95%)	3 (5%)	0	100	100
26	A	64/66 (97%)	55 (86%)	8 (12%)	1 (2%)	7	36
27	B	54/56 (96%)	49 (91%)	5 (9%)	0	100	100
28	C	48/50 (96%)	44 (92%)	4 (8%)	0	100	100
29	D	44/46 (96%)	41 (93%)	3 (7%)	0	100	100
30	E	62/64 (97%)	53 (86%)	6 (10%)	3 (5%)	2	14
31	F	36/38 (95%)	30 (83%)	6 (17%)	0	100	100
32	G	216/225 (96%)	178 (82%)	36 (17%)	2 (1%)	14	47

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
33	H	204/206 (99%)	183 (90%)	21 (10%)	0	100	100
34	I	203/205 (99%)	170 (84%)	32 (16%)	1 (0%)	24	59
35	J	155/157 (99%)	128 (83%)	24 (16%)	3 (2%)	6	33
36	K	98/100 (98%)	78 (80%)	19 (19%)	1 (1%)	12	45
37	L	149/151 (99%)	127 (85%)	21 (14%)	1 (1%)	18	52
38	M	127/129 (98%)	111 (87%)	16 (13%)	0	100	100
39	N	125/127 (98%)	98 (78%)	24 (19%)	3 (2%)	4	28
40	O	96/98 (98%)	81 (84%)	13 (14%)	2 (2%)	5	31
41	P	114/116 (98%)	87 (76%)	24 (21%)	3 (3%)	4	26
42	Q	121/123 (98%)	90 (74%)	29 (24%)	2 (2%)	7	35
43	R	112/114 (98%)	90 (80%)	19 (17%)	3 (3%)	4	25
44	S	98/100 (98%)	76 (78%)	22 (22%)	0	100	100
45	T	86/88 (98%)	71 (83%)	14 (16%)	1 (1%)	10	42
46	U	80/82 (98%)	66 (82%)	13 (16%)	1 (1%)	9	40
47	V	78/80 (98%)	61 (78%)	16 (20%)	1 (1%)	9	40
48	W	63/65 (97%)	48 (76%)	13 (21%)	2 (3%)	3	21
49	X	77/79 (98%)	68 (88%)	9 (12%)	0	100	100
50	Y	83/85 (98%)	76 (92%)	7 (8%)	0	100	100
51	Z	63/65 (97%)	39 (62%)	20 (32%)	4 (6%)	1	8
52	a	130/223 (58%)	104 (80%)	21 (16%)	5 (4%)	2	18
All	All	5836/6178 (94%)	4947 (85%)	822 (14%)	67 (1%)	14	43

All (67) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	d	83	VAL
6	g	9	VAL
17	r	54	VAL
30	E	30	HIS
30	E	31	ILE
35	J	87	VAL
35	J	93	VAL
39	N	90	ASP
45	T	46	LYS
48	W	20	ILE

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Mol	Chain	Res	Type
52	a	6	LYS
52	a	7	ARG
1	b	232	GLY
6	g	10	ALA
11	l	140	GLY
13	n	2	ARG
13	n	71	ARG
20	u	18	LYS
41	P	92	ARG
42	Q	75	GLU
43	R	4	ALA
46	U	80	LYS
51	Z	12	ASP
51	Z	37	TYR
1	b	149	LYS
32	G	87	ASP
36	K	40	GLU
37	L	129	ASN
39	N	57	VAL
43	R	65	GLU
48	W	13	THR
51	Z	34	ARG
7	h	60	LEU
9	j	79	GLY
10	k	92	GLU
11	l	36	LYS
15	p	65	ASN
20	u	6	ARG
40	O	43	PRO
42	Q	3	VAL
51	Z	14	ALA
10	k	93	GLN
11	l	27	LEU
12	m	69	PRO
20	u	98	ASN
32	G	188	THR
39	N	91	GLU
40	O	59	LYS
41	P	89	GLY
52	a	55	SER
1	b	150	GLY
8	i	12	VAL

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Mol	Chain	Res	Type
11	l	30	THR
12	m	70	ASP
26	A	51	VAL
34	I	29	THR
47	V	50	ASN
2	c	153	GLY
35	J	43	GLY
8	i	24	GLY
30	E	62	PRO
41	P	90	PRO
1	b	31	PRO
21	v	37	PRO
43	R	6	ILE
52	a	219	GLY
52	a	221	GLY

5.3.2 Protein sidechains ⓘ

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	
1	b	216/216 (100%)	209 (97%)	7 (3%)	34	65
2	c	164/164 (100%)	163 (99%)	1 (1%)	78	84
3	d	165/165 (100%)	164 (99%)	1 (1%)	78	84
4	e	148/148 (100%)	147 (99%)	1 (1%)	76	83
5	f	137/137 (100%)	136 (99%)	1 (1%)	76	83
6	g	98/114 (86%)	97 (99%)	1 (1%)	68	80
7	h	66/100 (66%)	65 (98%)	1 (2%)	57	76
8	i	60/109 (55%)	58 (97%)	2 (3%)	33	65
9	j	116/116 (100%)	115 (99%)	1 (1%)	70	81
10	k	103/103 (100%)	100 (97%)	3 (3%)	37	67
11	l	102/102 (100%)	99 (97%)	3 (3%)	37	67
12	m	109/109 (100%)	105 (96%)	4 (4%)	30	63

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
13	n	100/100 (100%)	100 (100%)	0	100	100
14	o	86/86 (100%)	85 (99%)	1 (1%)	63	79
15	p	99/99 (100%)	99 (100%)	0	100	100
16	q	89/89 (100%)	87 (98%)	2 (2%)	45	71
17	r	84/84 (100%)	81 (96%)	3 (4%)	31	63
18	s	93/93 (100%)	93 (100%)	0	100	100
19	t	80/80 (100%)	80 (100%)	0	100	100
20	u	83/83 (100%)	78 (94%)	5 (6%)	17	50
21	v	78/78 (100%)	78 (100%)	0	100	100
22	w	57/57 (100%)	57 (100%)	0	100	100
23	x	67/67 (100%)	66 (98%)	1 (2%)	57	76
24	y	55/55 (100%)	54 (98%)	1 (2%)	51	74
25	z	48/48 (100%)	45 (94%)	3 (6%)	16	48
26	A	59/59 (100%)	59 (100%)	0	100	100
27	B	47/47 (100%)	47 (100%)	0	100	100
28	C	45/45 (100%)	45 (100%)	0	100	100
29	D	38/38 (100%)	37 (97%)	1 (3%)	40	69
30	E	51/51 (100%)	50 (98%)	1 (2%)	48	72
31	F	34/34 (100%)	33 (97%)	1 (3%)	37	67
32	G	180/186 (97%)	179 (99%)	1 (1%)	78	84
33	H	170/170 (100%)	167 (98%)	3 (2%)	51	74
34	I	172/172 (100%)	169 (98%)	3 (2%)	53	75
35	J	119/119 (100%)	118 (99%)	1 (1%)	73	82
36	K	87/87 (100%)	85 (98%)	2 (2%)	44	70
37	L	124/124 (100%)	122 (98%)	2 (2%)	55	75
38	M	104/104 (100%)	104 (100%)	0	100	100
39	N	105/105 (100%)	101 (96%)	4 (4%)	29	62
40	O	86/86 (100%)	85 (99%)	1 (1%)	63	79
41	P	89/89 (100%)	87 (98%)	2 (2%)	45	71
42	Q	103/103 (100%)	103 (100%)	0	100	100
43	R	92/92 (100%)	89 (97%)	3 (3%)	33	65

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
44	S	83/83 (100%)	83 (100%)	0	100	100
45	T	76/76 (100%)	74 (97%)	2 (3%)	40	69
46	U	65/65 (100%)	64 (98%)	1 (2%)	57	76
47	V	74/74 (100%)	74 (100%)	0	100	100
48	W	56/56 (100%)	55 (98%)	1 (2%)	51	74
49	X	70/70 (100%)	70 (100%)	0	100	100
50	Y	65/65 (100%)	65 (100%)	0	100	100
51	Z	55/55 (100%)	54 (98%)	1 (2%)	51	74
52	a	110/174 (63%)	109 (99%)	1 (1%)	70	81
All	All	4862/5031 (97%)	4789 (98%)	73 (2%)	55	76

All (73) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	b	48	ILE
1	b	51	ARG
1	b	69	ASN
1	b	104	LEU
1	b	114	GLN
1	b	129	LEU
1	b	267	VAL
2	c	51	THR
3	d	83	VAL
4	e	161	SER
5	f	115	GLN
6	g	5	LEU
7	h	9	GLN
8	i	11	GLN
8	i	12	VAL
9	j	129	GLU
10	k	10	VAL
10	k	13	ASN
10	k	48	PRO
11	l	23	ILE
11	l	76	GLU
11	l	86	GLU
12	m	2	LEU
12	m	7	THR
12	m	17	ASN

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Mol	Chain	Res	Type
12	m	89	VAL
14	o	9	ARG
16	q	16	ILE
16	q	71	ASN
17	r	11	GLN
17	r	23	GLU
17	r	32	THR
20	u	27	VAL
20	u	48	VAL
20	u	68	ASN
20	u	82	VAL
20	u	98	ASN
23	x	12	VAL
24	y	39	GLN
25	z	30	ARG
25	z	48	ASN
25	z	56	VAL
29	D	16	HIS
30	E	28	LEU
31	F	11	CYS
32	G	19	THR
33	H	84	GLU
33	H	187	GLU
33	H	199	VAL
34	I	4	LEU
34	I	159	GLU
34	I	178	GLU
35	J	79	THR
36	K	39	LEU
36	K	75	GLU
37	L	5	VAL
37	L	96	ASN
39	N	57	VAL
39	N	109	GLN
39	N	110	VAL
39	N	119	LYS
40	O	41	PRO
41	P	39	ASN
41	P	64	VAL
43	R	15	VAL
43	R	40	GLU
43	R	95	PRO

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Mol	Chain	Res	Type
45	T	44	GLU
45	T	88	ARG
46	U	36	VAL
48	W	13	THR
51	Z	40	PRO
52	a	174	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (61) such sidechains are listed below:

Mol	Chain	Res	Type
1	b	36	ASN
1	b	45	ASN
1	b	52	HIS
2	c	94	GLN
3	d	92	HIS
4	e	80	GLN
5	f	29	ASN
5	f	103	ASN
6	g	33	GLN
6	g	43	ASN
7	h	9	GLN
8	i	29	GLN
9	j	40	HIS
9	j	58	ASN
10	k	3	GLN
10	k	93	GLN
12	m	45	GLN
13	n	73	ASN
13	n	107	ASN
14	o	19	GLN
14	o	29	HIS
14	o	104	GLN
15	p	6	GLN
15	p	65	ASN
16	q	19	GLN
16	q	80	ASN
17	r	6	GLN
18	s	102	HIS
20	u	68	ASN
22	w	42	HIS
22	w	72	ASN
23	x	16	ASN

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Mol	Chain	Res	Type
24	y	31	GLN
24	y	41	HIS
27	B	18	HIS
29	D	29	GLN
31	F	33	HIS
32	G	38	HIS
32	G	92	ASN
33	H	138	GLN
34	I	35	GLN
34	I	39	GLN
34	I	40	HIS
35	J	76	ASN
35	J	82	HIS
36	K	3	HIS
37	L	27	ASN
37	L	67	ASN
37	L	85	GLN
37	L	147	ASN
39	N	4	GLN
39	N	80	HIS
42	Q	19	ASN
42	Q	28	GLN
46	U	26	ASN
46	U	29	ASN
47	V	8	GLN
48	W	53	GLN
50	Y	2	ASN
50	Y	81	GLN
52	a	24	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
53	3	1538/1539 (99%)	171 (11%)	7 (0%)
54	1	2902/2903 (99%)	354 (12%)	17 (0%)
55	2	119/120 (99%)	9 (7%)	1 (0%)
56	5	76/77 (98%)	11 (14%)	0
56	6	76/77 (98%)	19 (25%)	0
57	4	17/18 (94%)	5 (29%)	0
58	7	76/77 (98%)	11 (14%)	4 (5%)
All	All	4804/4811 (99%)	580 (12%)	29 (0%)

All (580) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
53	3	4	U
53	3	6	G
53	3	7	A
53	3	9	G
53	3	22	G
53	3	32	A
53	3	39	G
53	3	48	C
53	3	50	A
53	3	81	A
53	3	87	C
53	3	100	G
53	3	144	G
53	3	173	U
53	3	183	C
53	3	197	A
53	3	210	C
53	3	214	C
53	3	226	G
53	3	247	G
53	3	251	G
53	3	253	A
53	3	266	G
53	3	267	C
53	3	281	G
53	3	289	G
53	3	328	C
53	3	345	C
53	3	346	G
53	3	352	C
53	3	367	U
53	3	372	C
53	3	398	U
53	3	411	A
53	3	413	G
53	3	422	C
53	3	423	G
53	3	429	U
53	3	467	U
53	3	480	U
53	3	484	G
53	3	485	U

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Mol	Chain	Res	Type
53	3	486	U
53	3	495	A
53	3	497	G
53	3	509	A
53	3	511	C
53	3	518	C
53	3	521	G
53	3	531	U
53	3	532	A
53	3	533	A
53	3	547	A
53	3	561	U
53	3	572	A
53	3	573	A
53	3	575	G
53	3	576	C
53	3	577	G
53	3	615	G
53	3	633	G
53	3	665	A
53	3	688	G
53	3	703	G
53	3	713	G
53	3	723	U
53	3	724	G
53	3	731	G
53	3	748	G
53	3	755	G
53	3	777	A
53	3	793	U
53	3	794	A
53	3	805	C
53	3	814	A
53	3	817	C
53	3	818	G
53	3	819	A
53	3	832	G
53	3	836	G
53	3	842	U
53	3	843	U
53	3	844	G
53	3	846	G

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Mol	Chain	Res	Type
53	3	873	A
53	3	885	G
53	3	890	G
53	3	891	U
53	3	902	G
53	3	914	A
53	3	926	G
53	3	934	C
53	3	935	A
53	3	960	U
53	3	961	U
53	3	966	G
53	3	969	A
53	3	975	A
53	3	976	G
53	3	977	A
53	3	984	C
53	3	992	U
53	3	993	G
53	3	994	A
53	3	1004	A
53	3	1026	G
53	3	1028	C
53	3	1030	U
53	3	1031	C
53	3	1033	G
53	3	1034	G
53	3	1053	G
53	3	1054	C
53	3	1094	G
53	3	1101	A
53	3	1104	G
53	3	1130	A
53	3	1136	C
53	3	1137	C
53	3	1138	G
53	3	1139	G
53	3	1159	U
53	3	1160	G
53	3	1168	U
53	3	1182	G
53	3	1184	G

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Mol	Chain	Res	Type
53	3	1191	A
53	3	1196	A
53	3	1198	G
53	3	1202	U
53	3	1212	U
53	3	1213	A
53	3	1225	A
53	3	1227	A
53	3	1236	A
53	3	1238	A
53	3	1241	G
53	3	1258	G
53	3	1260	G
53	3	1275	A
53	3	1278	G
53	3	1280	A
53	3	1282	C
53	3	1286	U
53	3	1287	A
53	3	1300	G
53	3	1302	C
53	3	1317	C
53	3	1346	A
53	3	1347	G
53	3	1363	A
53	3	1364	U
53	3	1378	C
53	3	1379	G
53	3	1395	C
53	3	1419	G
53	3	1433	A
53	3	1446	A
53	3	1448	C
53	3	1452	C
53	3	1492	A
53	3	1497	G
53	3	1503	A
53	3	1506	U
53	3	1507	A
53	3	1517	G
53	3	1529	G
53	3	1530	G

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Mol	Chain	Res	Type
53	3	1533	C
53	3	1536	C
53	3	1540	U
54	1	10	A
54	1	12	U
54	1	35	G
54	1	39	G
54	1	46	G
54	1	51	G
54	1	63	A
54	1	71	A
54	1	74	A
54	1	75	G
54	1	98	G
54	1	119	A
54	1	120	U
54	1	135	U
54	1	139	U
54	1	140	C
54	1	141	G
54	1	142	A
54	1	162	U
54	1	163	C
54	1	181	A
54	1	196	A
54	1	216	A
54	1	221	A
54	1	222	A
54	1	228	C
54	1	229	C
54	1	248	G
54	1	249	C
54	1	250	G
54	1	255	A
54	1	265	A
54	1	266	G
54	1	276	U
54	1	278	A
54	1	281	C
54	1	294	A
54	1	301	G
54	1	311	A

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Mol	Chain	Res	Type
54	1	323	C
54	1	324	A
54	1	329	G
54	1	330	A
54	1	361	G
54	1	362	A
54	1	367	G
54	1	371	A
54	1	373	U
54	1	386	G
54	1	387	U
54	1	404	A
54	1	405	U
54	1	406	G
54	1	411	G
54	1	422	A
54	1	424	G
54	1	455	C
54	1	457	A
54	1	458	G
54	1	481	G
54	1	491	G
54	1	504	A
54	1	505	A
54	1	529	A
54	1	530	G
54	1	531	C
54	1	532	A
54	1	542	C
54	1	543	G
54	1	547	A
54	1	548	G
54	1	549	G
54	1	563	A
54	1	573	U
54	1	588	U
54	1	603	A
54	1	613	A
54	1	614	A
54	1	627	A
54	1	637	A
54	1	646	U

Continued on next page...

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Mol	Chain	Res	Type
54	1	654	A
54	1	655	A
54	1	686	U
54	1	687	C
54	1	695	G
54	1	730	A
54	1	747	C
54	1	775	G
54	1	776	G
54	1	782	A
54	1	784	G
54	1	785	G
54	1	805	G
54	1	812	C
54	1	819	A
54	1	827	U
54	1	828	U
54	1	830	G
54	1	845	A
54	1	846	U
54	1	847	U
54	1	858	G
54	1	859	G
54	1	860	U
54	1	877	A
54	1	885	C
54	1	886	A
54	1	887	U
54	1	888	C
54	1	896	A
54	1	910	A
54	1	932	U
54	1	941	A
54	1	946	C
54	1	961	C
54	1	974	G
54	1	983	A
54	1	985	C
54	1	995	C
54	1	996	A
54	1	1012	U
54	1	1013	C

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Mol	Chain	Res	Type
54	1	1022	G
54	1	1026	G
54	1	1033	U
54	1	1046	A
54	1	1047	G
54	1	1054	A
54	1	1060	U
54	1	1061	U
54	1	1062	G
54	1	1065	U
54	1	1066	U
54	1	1070	A
54	1	1071	G
54	1	1076	C
54	1	1079	C
54	1	1084	A
54	1	1088	A
54	1	1103	A
54	1	1104	C
54	1	1106	G
54	1	1109	C
54	1	1111	A
54	1	1131	G
54	1	1132	U
54	1	1135	C
54	1	1142	A
54	1	1156	A
54	1	1172	C
54	1	1173	U
54	1	1175	A
54	1	1176	U
54	1	1177	G
54	1	1179	G
54	1	1180	U
54	1	1212	G
54	1	1250	G
54	1	1251	C
54	1	1253	A
54	1	1256	G
54	1	1271	G
54	1	1272	A
54	1	1301	A

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Mol	Chain	Res	Type
54	1	1302	A
54	1	1321	A
54	1	1345	C
54	1	1352	U
54	1	1365	A
54	1	1378	A
54	1	1379	U
54	1	1383	A
54	1	1416	G
54	1	1419	A
54	1	1420	A
54	1	1461	C
54	1	1476	U
54	1	1482	G
54	1	1490	A
54	1	1504	A
54	1	1515	A
54	1	1524	G
54	1	1533	C
54	1	1535	A
54	1	1536	C
54	1	1537	G
54	1	1555	G
54	1	1560	G
54	1	1569	A
54	1	1578	U
54	1	1581	G
54	1	1585	C
54	1	1608	A
54	1	1611	C
54	1	1616	A
54	1	1647	U
54	1	1648	U
54	1	1660	G
54	1	1674	G
54	1	1698	A
54	1	1703	G
54	1	1715	G
54	1	1729	U
54	1	1730	C
54	1	1738	G
54	1	1758	U

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Mol	Chain	Res	Type
54	1	1764	C
54	1	1773	A
54	1	1780	A
54	1	1791	A
54	1	1800	C
54	1	1801	A
54	1	1808	A
54	1	1816	C
54	1	1827	U
54	1	1829	A
54	1	1833	C
54	1	1847	A
54	1	1871	A
54	1	1906	G
54	1	1907	G
54	1	1913	A
54	1	1914	C
54	1	1929	G
54	1	1931	U
54	1	1937	A
54	1	1938	A
54	1	1955	U
54	1	1962	C
54	1	1963	U
54	1	1967	C
54	1	1970	A
54	1	1972	G
54	1	1991	U
54	1	1997	C
54	1	2022	U
54	1	2023	C
54	1	2030	A
54	1	2031	A
54	1	2043	C
54	1	2055	C
54	1	2056	G
54	1	2060	A
54	1	2061	G
54	1	2062	A
54	1	2069	G
54	1	2072	C
54	1	2077	A

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Mol	Chain	Res	Type
54	1	2096	C
54	1	2108	A
54	1	2110	G
54	1	2111	U
54	1	2112	G
54	1	2118	U
54	1	2119	A
54	1	2125	G
54	1	2131	U
54	1	2132	U
54	1	2133	G
54	1	2162	G
54	1	2167	U
54	1	2169	A
54	1	2170	A
54	1	2171	A
54	1	2172	U
54	1	2173	A
54	1	2178	C
54	1	2182	U
54	1	2189	U
54	1	2192	U
54	1	2198	A
54	1	2204	G
54	1	2211	A
54	1	2213	U
54	1	2225	A
54	1	2238	G
54	1	2239	G
54	1	2278	A
54	1	2283	C
54	1	2287	A
54	1	2297	A
54	1	2305	U
54	1	2309	A
54	1	2320	U
54	1	2325	G
54	1	2327	A
54	1	2334	U
54	1	2383	G
54	1	2385	C
54	1	2392	A

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Mol	Chain	Res	Type
54	1	2402	U
54	1	2406	A
54	1	2423	U
54	1	2424	C
54	1	2425	A
54	1	2427	C
54	1	2429	G
54	1	2430	A
54	1	2435	A
54	1	2440	C
54	1	2441	U
54	1	2448	A
54	1	2469	A
54	1	2476	A
54	1	2494	G
54	1	2498	C
54	1	2502	G
54	1	2505	G
54	1	2518	A
54	1	2529	G
54	1	2547	A
54	1	2554	U
54	1	2566	A
54	1	2567	G
54	1	2572	A
54	1	2602	A
54	1	2603	G
54	1	2609	U
54	1	2613	U
54	1	2629	U
54	1	2646	C
54	1	2673	G
54	1	2682	A
54	1	2689	U
54	1	2690	U
54	1	2714	G
54	1	2718	G
54	1	2744	G
54	1	2748	A
54	1	2758	A
54	1	2764	A
54	1	2765	A

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Mol	Chain	Res	Type
54	1	2778	A
54	1	2779	U
54	1	2791	G
54	1	2794	C
54	1	2797	U
54	1	2798	U
54	1	2799	A
54	1	2800	A
54	1	2801	G
54	1	2809	A
54	1	2818	U
54	1	2820	A
54	1	2821	A
54	1	2850	A
54	1	2867	G
54	1	2868	A
54	1	2872	A
54	1	2880	C
54	1	2883	A
54	1	2884	U
54	1	2893	A
55	2	4	C
55	2	24	G
55	2	35	C
55	2	44	G
55	2	56	G
55	2	89	U
55	2	90	C
55	2	108	A
55	2	109	A
56	5	9	G
56	5	17	C
56	5	18	G
56	5	19	G
56	5	20	U
56	5	47	U
56	5	48	C
56	5	49	G
56	5	58	A
56	5	74	C
56	5	76	A
56	6	3	C

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Mol	Chain	Res	Type
56	6	4	G
56	6	8	U
56	6	9	G
56	6	10	G
56	6	14	A
56	6	19	G
56	6	20	U
56	6	21	A
56	6	22	G
56	6	30	G
56	6	33	U
56	6	34	C
56	6	35	A
56	6	47	U
56	6	70	G
56	6	73	A
56	6	74	C
56	6	76	A
57	4	6	G
57	4	7	G
57	4	11	U
57	4	12	A
57	4	13	A
58	7	3	G
58	7	4	C
58	7	5	G
58	7	6	A
58	7	14	A
58	7	18	G
58	7	19	G
58	7	21	A
58	7	41	A
58	7	42	G
58	7	74	C

All (29) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
53	3	421	U
53	3	793	U
53	3	890	G
53	3	960	U

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Mol	Chain	Res	Type
53	3	1190	G
53	3	1201	A
53	3	1432	G
54	1	227	A
54	1	372	G
54	1	421	C
54	1	490	C
54	1	546	U
54	1	774	G
54	1	784	G
54	1	858	G
54	1	859	G
54	1	1130	U
54	1	1475	G
54	1	1609	A
54	1	1930	G
54	1	2296	U
54	1	2326	C
54	1	2391	G
54	1	2808	G
55	2	88	C
58	7	2	G
58	7	3	G
58	7	40	C
58	7	41	A

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](#)

1 ligand is 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	$\# Z > 2$
59	FME	5	101	56	8,9,10	0.48	0	8,9,11	1.05	1 (12%)

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
59	FME	5	101	56	-	1/7/9/11	-

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
59	5	101	FME	O-C-CA	-2.29	118.87	124.77

There are no chirality outliers.

All (1) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
59	5	101	FME	O1-CN-N-CA

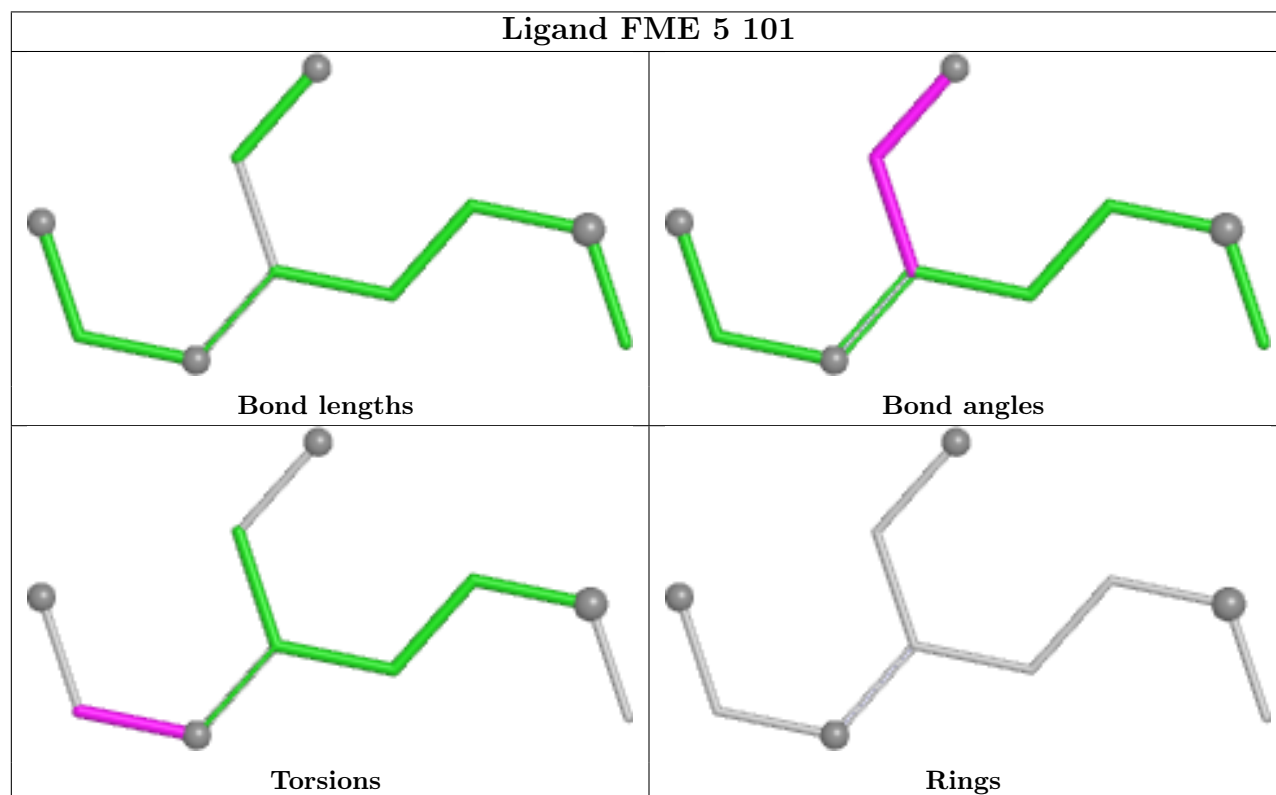
There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
59	5	101	FME	1	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.



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

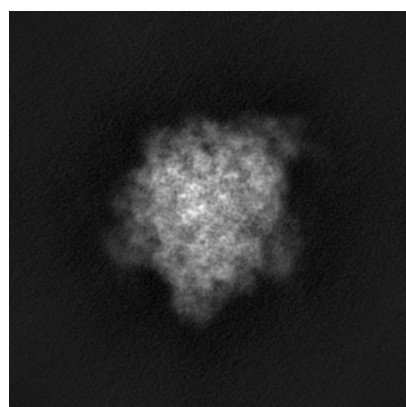
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-22672. These allow visual inspection of the internal detail of the map and identification of artifacts.

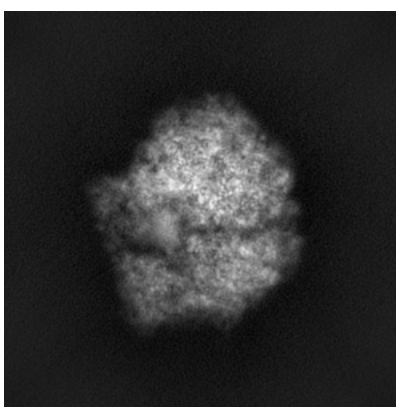
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

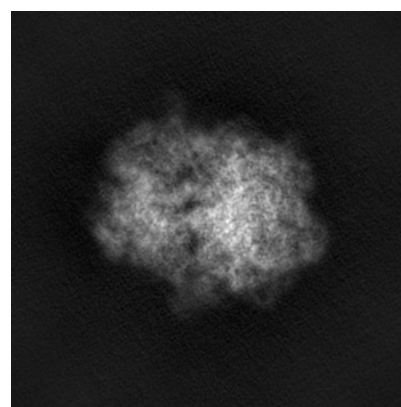
6.1.1 Primary map



X



Y

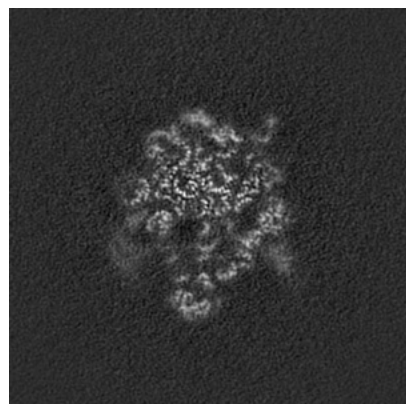


Z

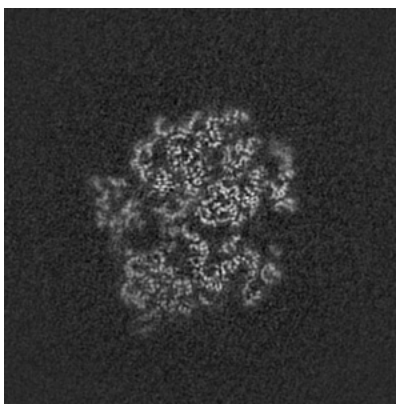
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

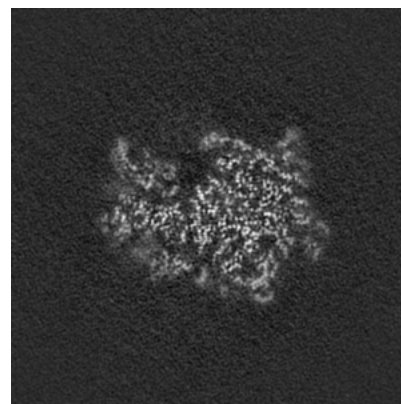
6.2.1 Primary map



X Index: 200



Y Index: 200

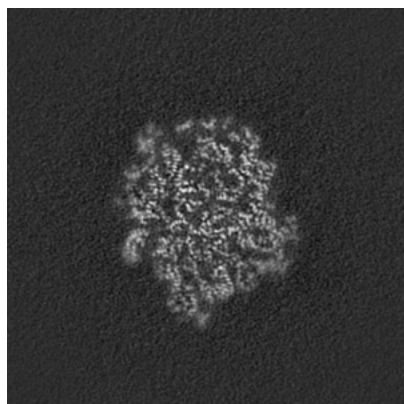


Z Index: 200

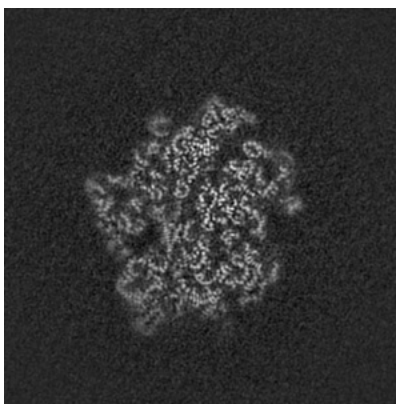
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

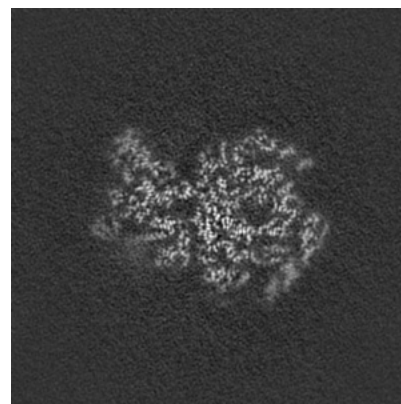
6.3.1 Primary map



X Index: 223



Y Index: 193

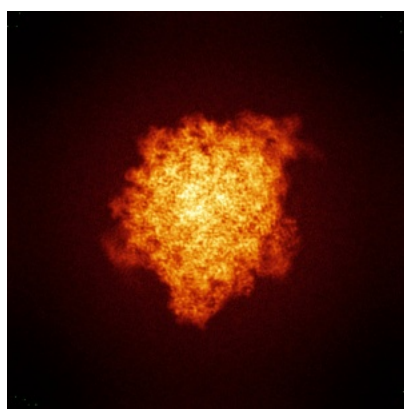


Z Index: 215

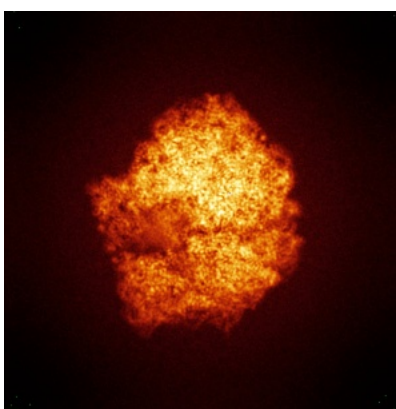
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

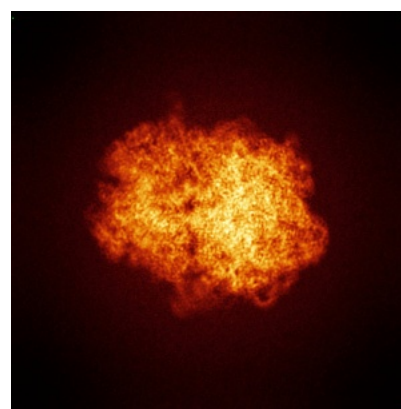
6.4.1 Primary map



X



Y

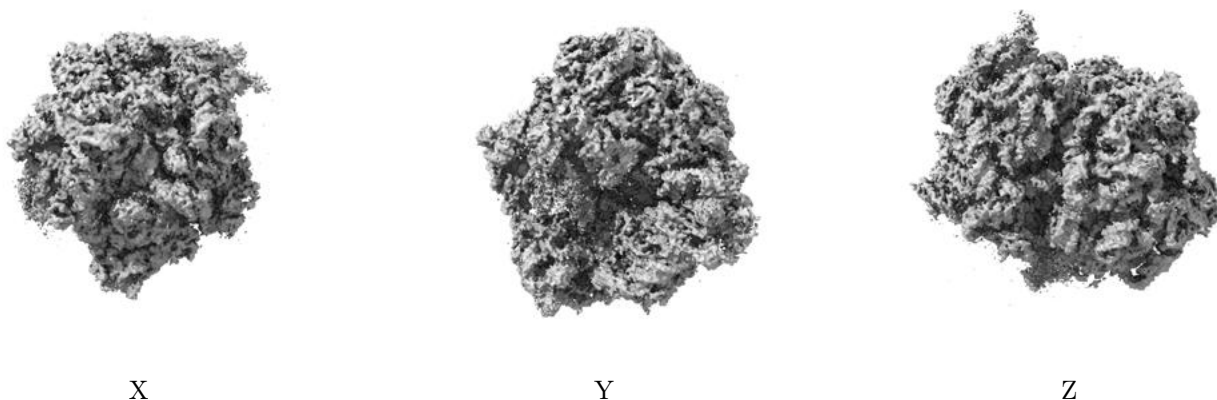


Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 3.7. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

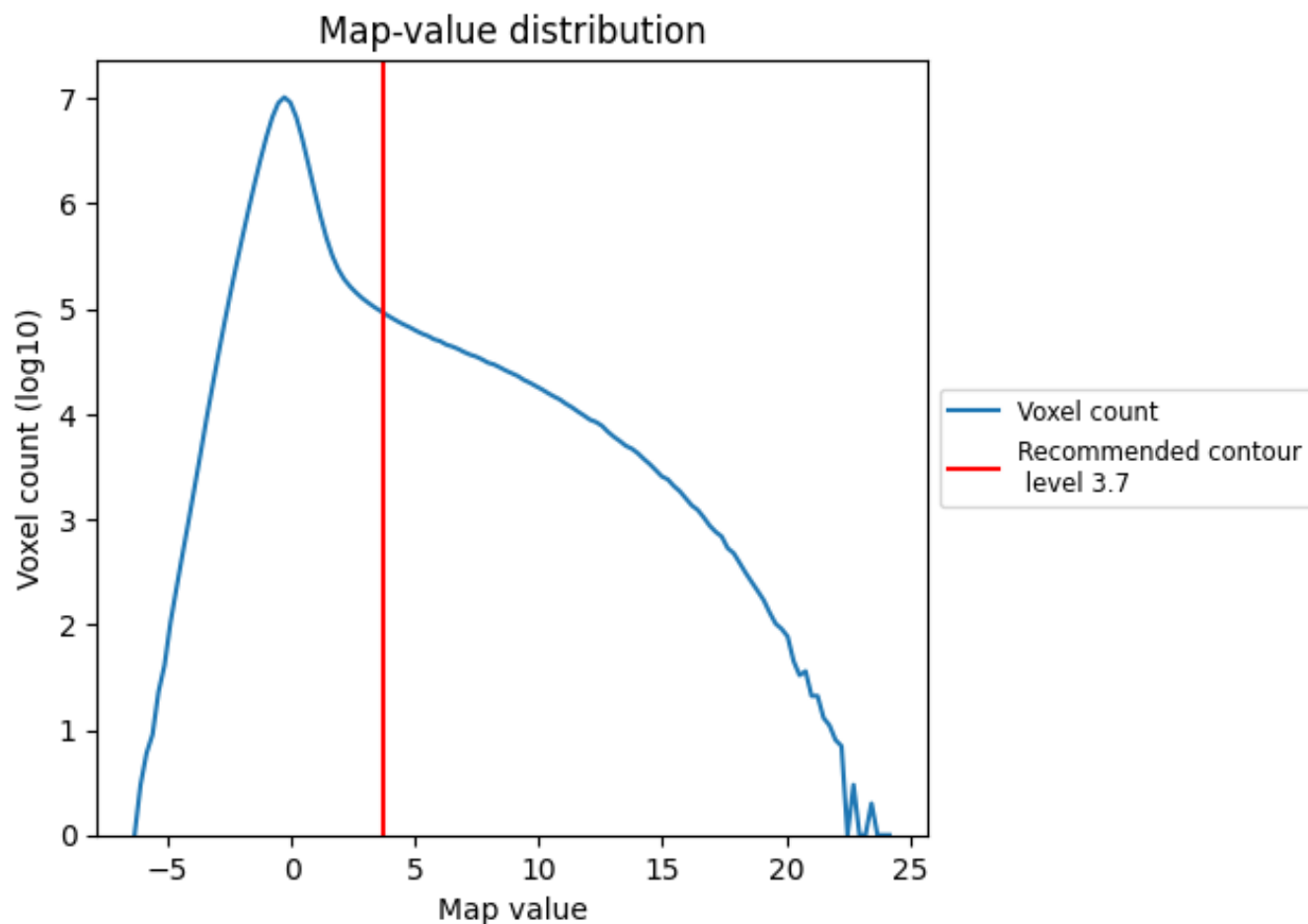
6.6 Mask visualisation [i](#)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis [i](#)

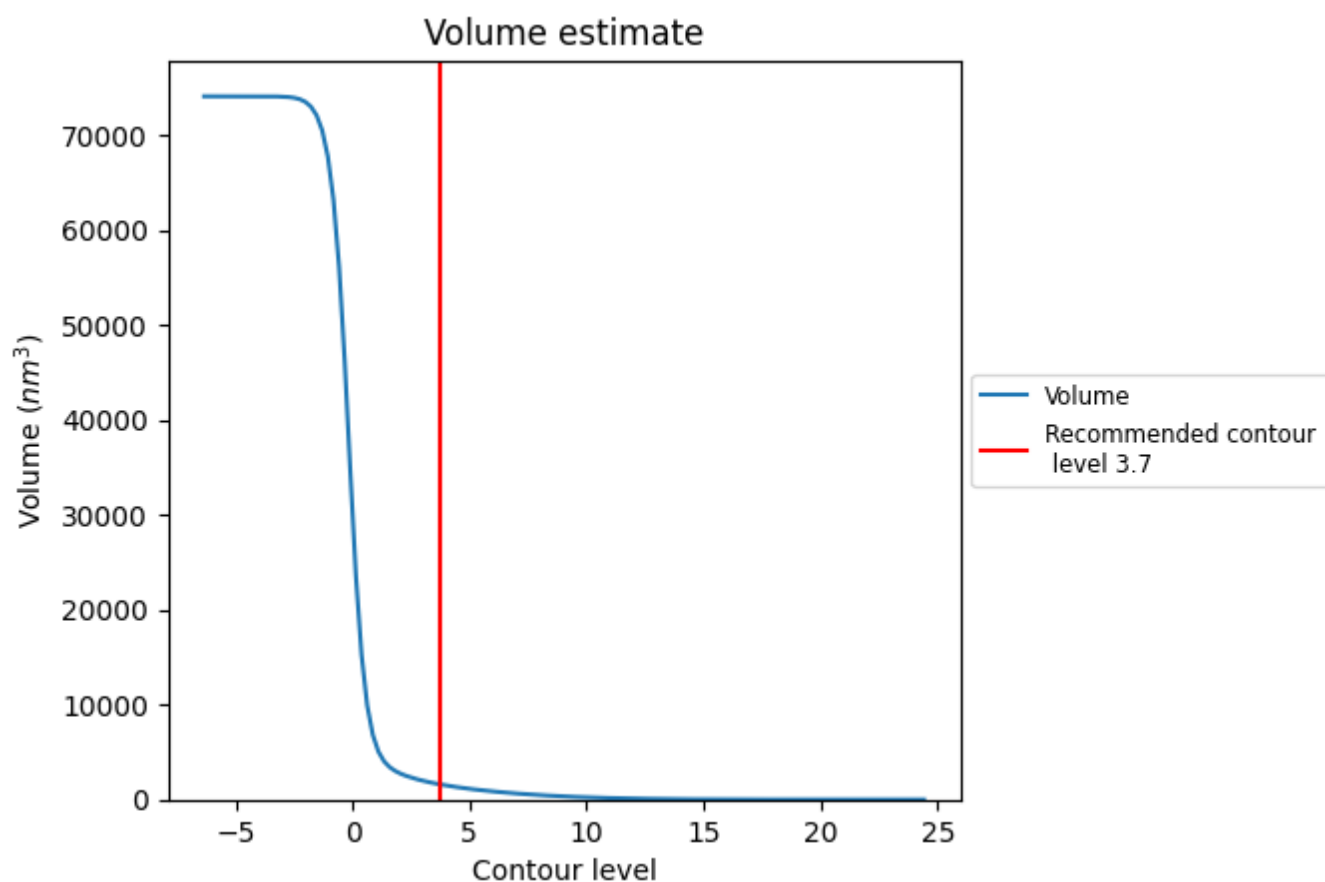
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

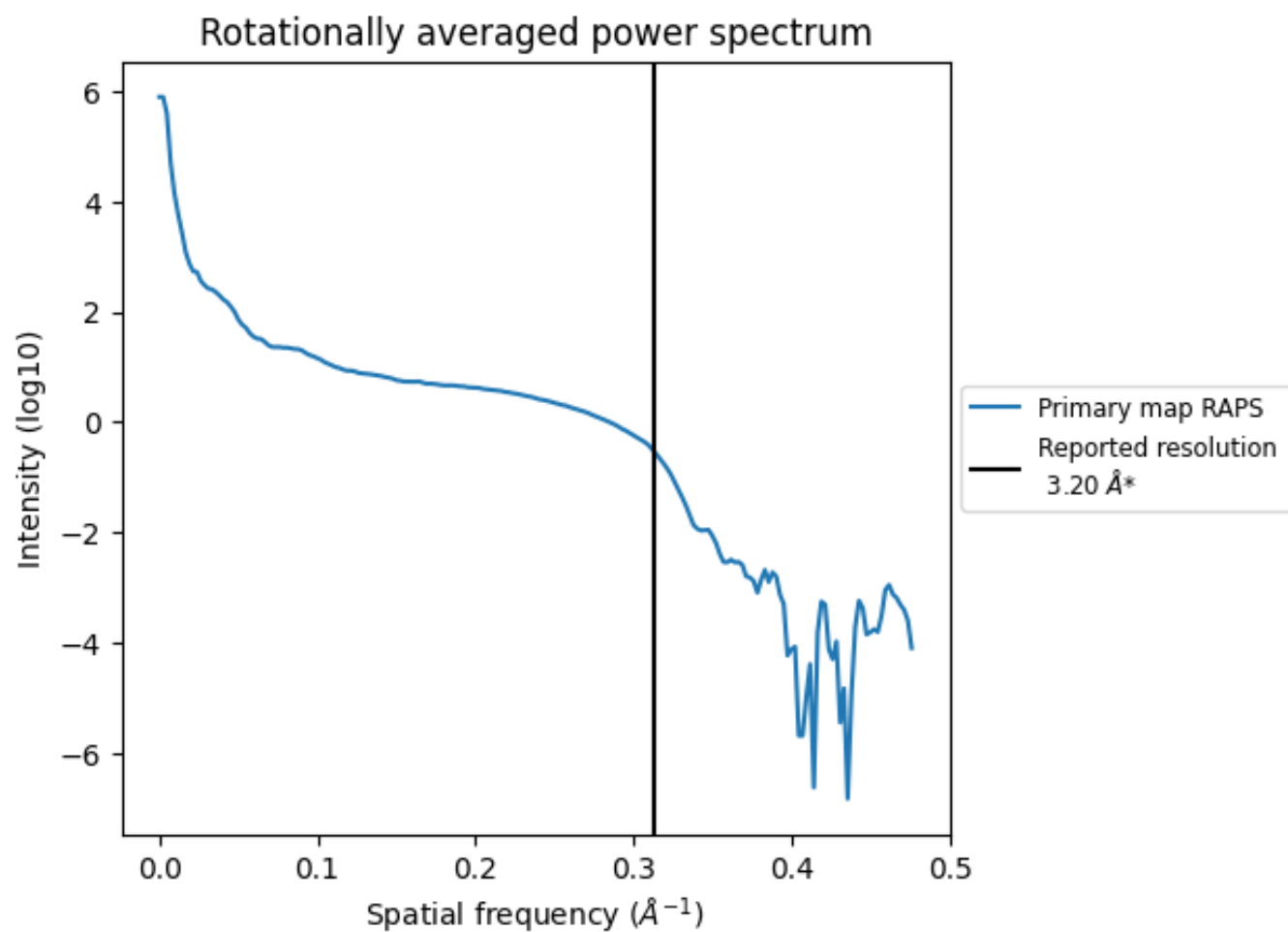
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1619 nm³; this corresponds to an approximate mass of 1462 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum ⓘ



*Reported resolution corresponds to spatial frequency of 0.312 Å⁻¹

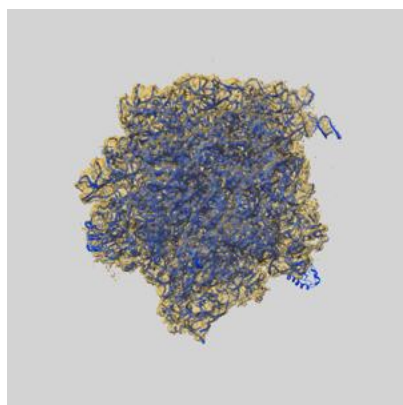
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

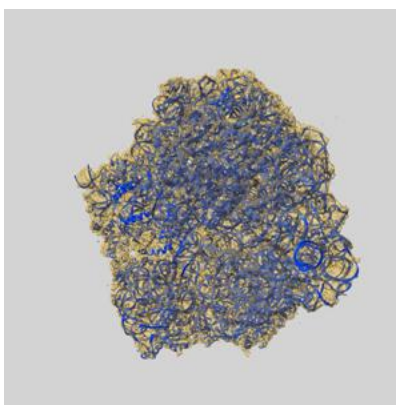
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-22672 and PDB model 7K53. Per-residue inclusion information can be found in section [3](#) on page [16](#).

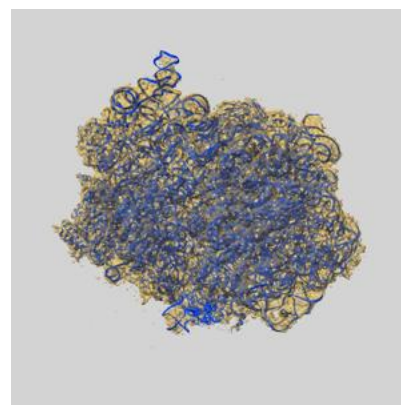
9.1 Map-model overlay [i](#)



X



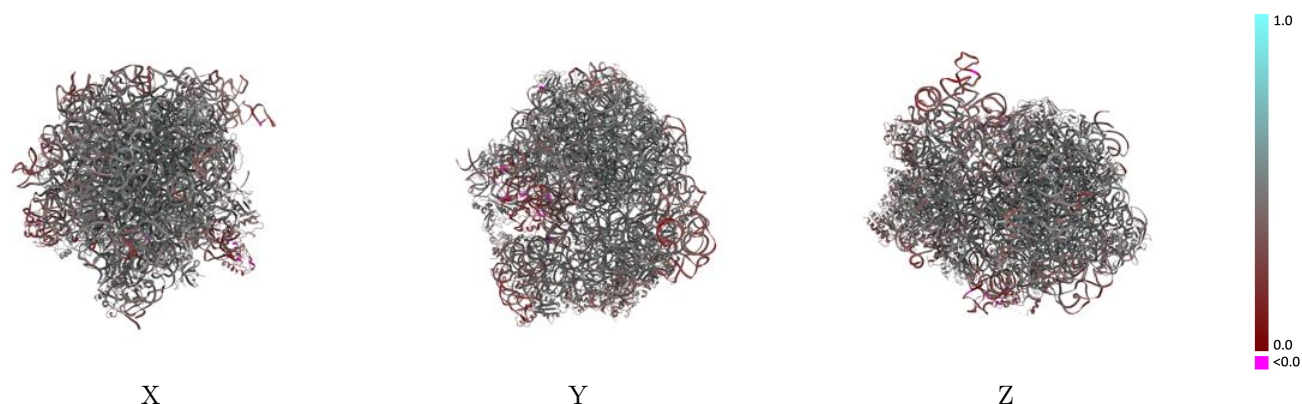
Y



Z

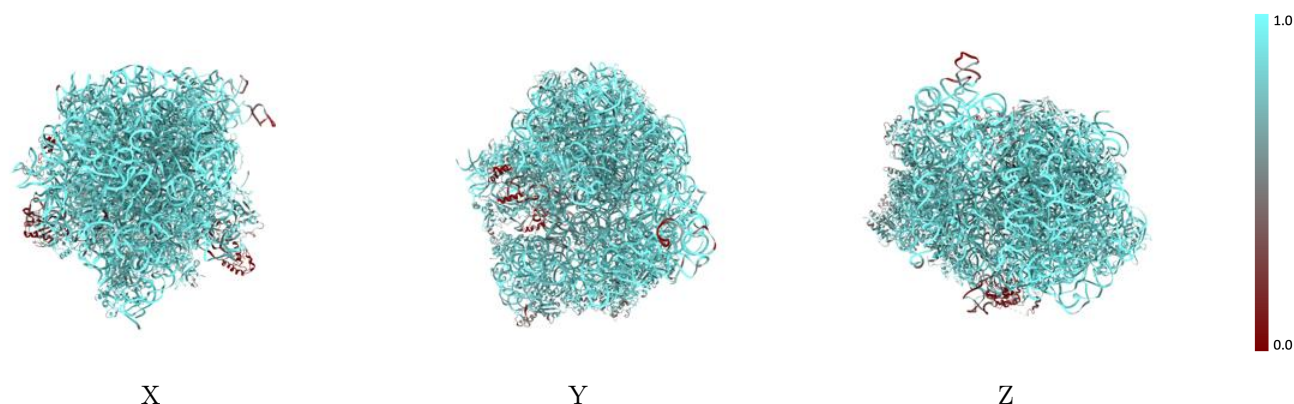
The images above show the 3D surface view of the map at the recommended contour level 3.7 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)



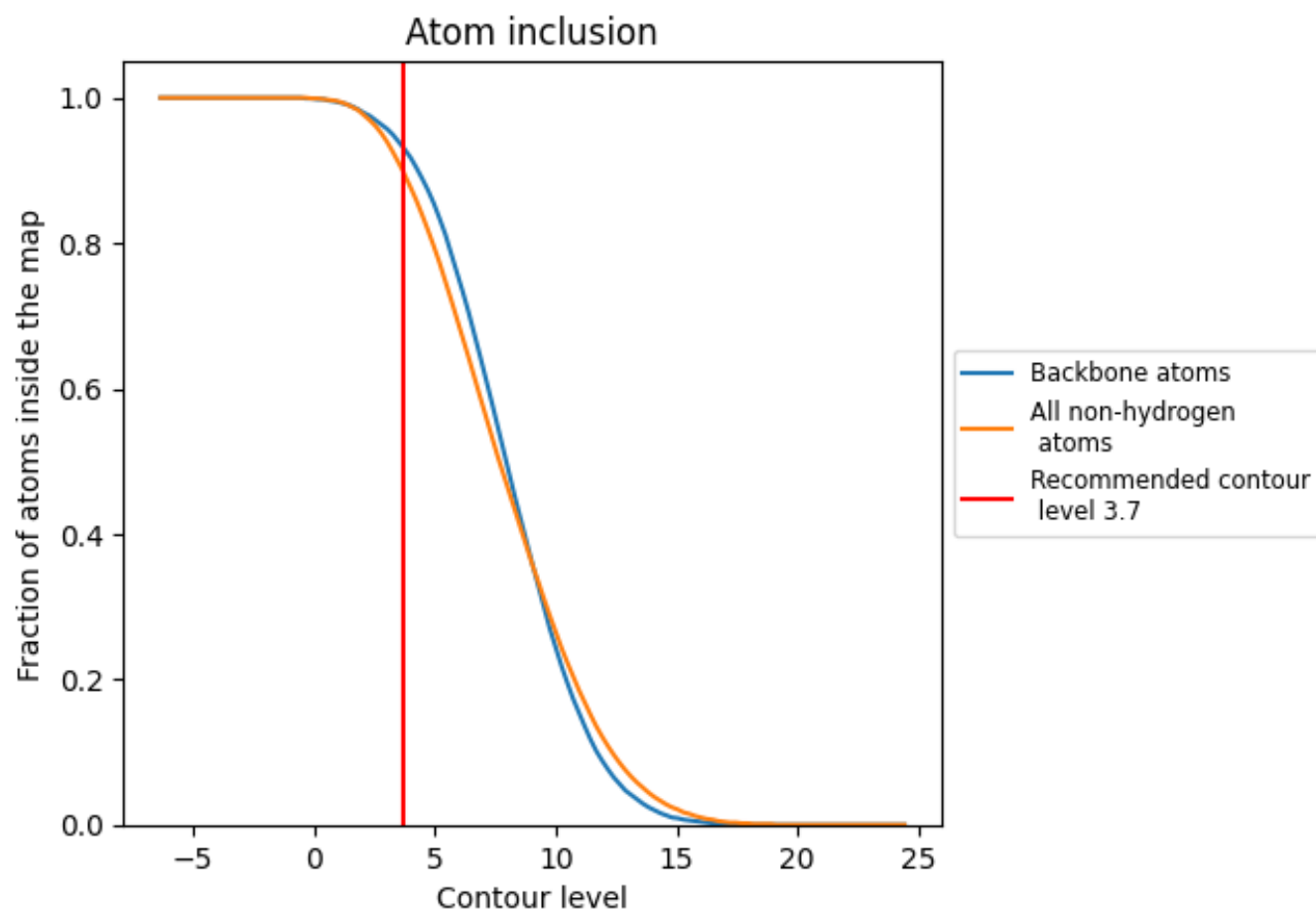
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (3.7).

9.4 Atom inclusion ⓘ



At the recommended contour level, 93% of all backbone atoms, 90% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (3.7) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8980	 0.4370
1	 0.9600	 0.4520
2	 0.9740	 0.4390
3	 0.9480	 0.4300
4	 0.7140	 0.3000
5	 0.9440	 0.4200
6	 0.5080	 0.2160
7	 0.7810	 0.3180
A	 0.7250	 0.3910
B	 0.9370	 0.4880
C	 0.7240	 0.4590
D	 0.9300	 0.5040
E	 0.9160	 0.5050
F	 0.8800	 0.4920
G	 0.6700	 0.3990
H	 0.7830	 0.4460
I	 0.7530	 0.4100
J	 0.8710	 0.4550
K	 0.8390	 0.4160
L	 0.7800	 0.4080
M	 0.8600	 0.4660
N	 0.7650	 0.4110
O	 0.6140	 0.3920
P	 0.8660	 0.4460
Q	 0.8510	 0.4510
R	 0.8120	 0.4150
S	 0.8110	 0.4260
T	 0.8930	 0.4440
U	 0.7880	 0.4340
V	 0.8860	 0.4400
W	 0.8600	 0.4410
X	 0.7940	 0.4030
Y	 0.8110	 0.4130
Z	 0.7240	 0.3640
a	 0.1600	 0.2510



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Chain	Atom inclusion	Q-score
b	 0.9200	 0.5070
c	 0.9010	 0.4820
d	 0.8150	 0.4560
e	 0.8310	 0.4230
f	 0.7900	 0.4130
g	 0.2680	 0.3300
h	 0.0530	 0.1940
i	 0.2140	 0.2370
j	 0.8980	 0.4750
k	 0.8890	 0.4850
l	 0.8870	 0.4790
m	 0.9000	 0.4870
n	 0.9100	 0.4730
o	 0.8580	 0.4360
p	 0.8910	 0.4780
q	 0.9170	 0.4910
r	 0.8580	 0.4690
s	 0.8720	 0.4750
t	 0.8660	 0.4570
u	 0.8360	 0.4280
v	 0.8280	 0.4530
w	 0.8840	 0.4760
x	 0.9030	 0.4890
y	 0.7870	 0.4060
z	 0.8760	 0.4760