Full wwPDB EM Validation Report ⓘ

Jun 19, 2026 – 07:37 am BST

PDB ID	:	6YST / pdb_00006yst
EMDB ID	:	EMD-10907
Title	:	Structure of the P+9 ArfB-ribosome complex with P/E hybrid tRNA in the post-hydrolysis state
Authors	:	Chan, K.-H.; Petrychenko, V.; Mueller, C.; Maracci, C.; Holtkamp, W.; Wilson, D.N.; Fischer, N.; Rodnina, M.V.
Deposited on	:	2020-04-23
Resolution	:	3.20 Å(reported)
Based on initial models	:	4V95, 4RB7, 5O2R, 5AFI

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:

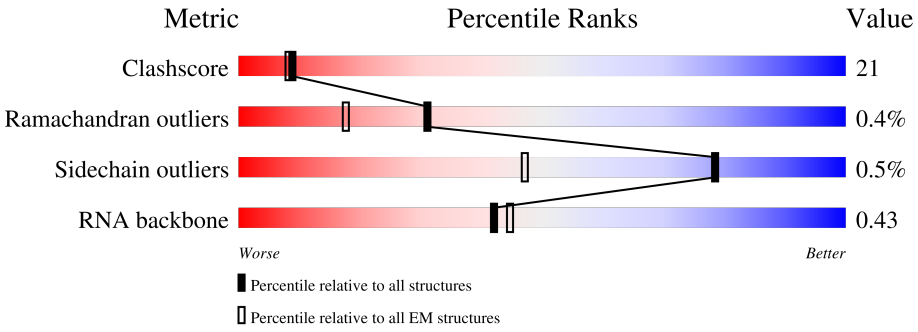
EMDB validation analysis	:	0.0.1.dev132
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

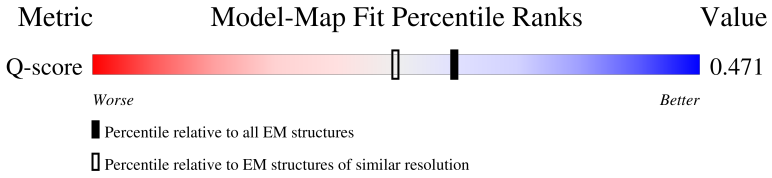
1 Overall quality at a glance

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 <=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	0	57	63% 35% .
2	1	55	44% 47% 9%
3	2	46	63% 37%

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Mol	Chain	Length	Quality of chain
4	3	65	54% 40%
5	4	38	61% 39%
6	5	165	70% 9% 21%
7	6	70	30% 54% 6% 6%
8	A	2903	35% 50% 16%
9	B	120	38% 47% 15%
10	C	273	57% 42%
11	D	209	68% 32%
12	E	201	60% 40%
13	F	179	50% 49%
14	G	177	62% 37%
15	H	149	58% 40%
16	I	142	91% 8%
17	J	142	73% 27%
18	K	123	59% 41%
19	L	144	59% 39%
20	M	136	62% 38%
21	N	127	58% 36% 6%
22	O	117	68% 31%
23	P	115	59% 40%
24	Q	118	72% 27%
25	R	103	56% 44%
26	S	110	67% 33%
27	T	100	58% 35% 7%
28	U	104	60% 36%

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Mol	Chain	Length	Quality of chain
29	V	94	51% 49%
30	W	85	58% 31% 12%
31	X	78	53% 46%
32	Y	63	59% 37%
33	Z	59	56% 42%
34	a	1542	24% 52% 23%
35	b	240	40% 50% 9%
36	c	233	45% 43% 12%
37	d	206	43% 52%
38	e	167	53% 41% 6%
39	f	135	33% 41% 26%
40	g	179	36% 47% 16%
41	h	130	59% 40%
42	i	130	41% 57%
43	j	103	40% 52% 5%
44	k	129	53% 37% 10%
45	l	124	50% 49%
46	m	118	53% 43%
47	n	102	54% 45%
48	o	89	69% 30%
49	p	82	39% 55%
50	q	84	40% 51% 5%
51	r	75	51% 36% 13%
52	s	92	34% 55% 11%
53	t	87	51% 44%

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Mol	Chain	Length	Quality of chain
54	u	71	65% 23% 8%
55	v	14	64% 36%
56	w	76	8% 59% 28% 5%
57	x	15	13% 13% 73%
58	y	140	62% 37%

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
56	MIA	w	37	-	-	X	-
8	3TD	A	1915	-	-	X	-

2 Entry composition

There are 61 unique types of molecules in this entry. The entry contains 146847 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 L32.

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

- Molecule 2 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
2	1	50	409	263	75	71	0	0

- Molecule 3 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	2	46	377	228	90	57	2	0	0

- Molecule 4 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	3	64	504	323	105	74	2	0	0

- Molecule 5 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	4	38	302	185	65	48	4	0	0

- Molecule 6 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
6	5	131	647	385	131	131	0	0

- Molecule 7 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	6	66	Total	C	N	O	S	0	0
			522	323	99	94	6		

- Molecule 8 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	A	2903	Total	C	N	O	P	0	0
			62336	27815	11468	20150	2903		

- Molecule 9 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	B	120	Total	C	N	O	P	0	0
			2570	1144	468	838	120		

- Molecule 10 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	C	271	Total	C	N	O	S	0	0
			2082	1288	423	364	7		

- Molecule 11 is a protein called 50S ribosomal protein L3.

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

- Molecule 12 is a protein called 50S ribosomal protein L4.

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

- Molecule 13 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	F	177	Total	C	N	O	S	0	0
			1410	899	249	256	6		

- Molecule 14 is a protein called 50S ribosomal protein L6.

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

- Molecule 15 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	H	149	Total	C	N	O	S	0	0
			1111	699	197	214	1		

- Molecule 16 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms				AltConf	Trace
16	I	141	Total	C	N	O	0	0
			693	411	141	141		

- Molecule 17 is a protein called 50S ribosomal protein L13.

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

- Molecule 18 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	K	122	Total	C	N	O	S	0	0
			938	587	180	165	6		

- Molecule 19 is a protein called 50S ribosomal protein L15.

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

- Molecule 20 is a protein called 50S ribosomal protein L16.

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

- Molecule 21 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	N	120	Total	C	N	O	S	0	0
			960	593	196	166	5		

- Molecule 22 is a protein called 50S ribosomal protein L18.

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

- Molecule 23 is a protein called 50S ribosomal protein L19.

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

- Molecule 24 is a protein called 50S ribosomal protein L20.

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

- Molecule 25 is a protein called 50S ribosomal protein L21.

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

- Molecule 26 is a protein called 50S ribosomal protein L22.

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

- Molecule 27 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	T	93	Total	C	N	O	S	0	0
			738	466	139	131	2		

- Molecule 28 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	U	102	Total 779	C 492	N 146	O 141	0	0

- Molecule 29 is a protein called 50S ribosomal protein L25.

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

- Molecule 30 is a protein called 50S ribosomal protein L27.

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

- Molecule 31 is a protein called 50S ribosomal protein L28.

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

- Molecule 32 is a protein called 50S ribosomal protein L29.

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

- Molecule 33 is a protein called 50S ribosomal protein L30.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
34	a	1540	Total 33050	C 14748	N 6057	O 10705	P 1540	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
35	b	218	Total	C	N	O	S	0	0
			1704	1081	305	311	7		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
36	c	206	Total	C	N	O	S	0	0
			1624	1028	305	288	3		

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
38	e	157	Total	C	N	O	S	0	0
			1141	709	218	208	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
39	f	100	Total	C	N	O	S	0	0
			817	515	148	148	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
40	g	151	Total	C	N	O	S	0	0
			1181	735	227	215	4		

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
43	j	98	Total	C	N	O	S	0	0
			786	493	150	142	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
44	k	116	Total	C	N	O	S	0	0
			869	535	173	158	3		

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
46	m	114	Total	C	N	O	S	0	0
			883	546	178	156	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
47	n	101	Total	C	N	O	S	0	0
			799	498	165	133	3		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
n	36	ALA	-	insertion	UNP I2X5X6

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
50	q	80	Total	C	N	O	S	0	0
			648	411	121	113	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
51	r	65	Total	C	N	O	S	0	0
			535	339	100	95	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
52	s	82	Total	C	N	O	S	0	0
			658	421	125	110	2		

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

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

- Molecule 54 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	u	65	Total	C	N	O	S	0	0
			506	313	105	87	1		

- Molecule 55 is a protein called Api137.

Mol	Chain	Residues	Atoms				AltConf	Trace
55	v	14	Total 121	C 80	N 25	O 16	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
v	10	ARG	GLN	conflict	UNP Q8WSY8

- Molecule 56 is a RNA chain called P/E-site tRNAPhe.

Mol	Chain	Residues	Atoms						AltConf	Trace
56	w	76	Total 1631	C 731	N 291	O 531	P 76	S 2	0	0

- Molecule 57 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	x	4	Total 82	C 37	N 12	O 29	P 4	0	0

- Molecule 58 is a protein called Alternative stalled-ribosome rescue factor B.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	y	139	Total 1078	C 666	N 215	O 195	S 2	0	0

- Molecule 59 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
59	0	1	Total 1	Mg 1	0
59	4	1	Total 1	Mg 1	0
59	6	1	Total 1	Mg 1	0
59	A	206	Total 206	Mg 206	0
59	B	6	Total 6	Mg 6	0
59	C	1	Total 1	Mg 1	0
59	D	1	Total 1	Mg 1	0

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Mol	Chain	Residues	Atoms	AltConf
59	S	1	Total Mg 1 1	0
59	a	35	Total Mg 35 35	0

- Molecule 60 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	AltConf
60	4	1	Total Zn 1 1	0
60	6	1	Total Zn 1 1	0

- Molecule 61 is SODIUM ION (CCD ID: NA) (formula: Na).

Mol	Chain	Residues	Atoms	AltConf
61	A	1	Total Na 1 1	0
61	M	1	Total Na 1 1	0

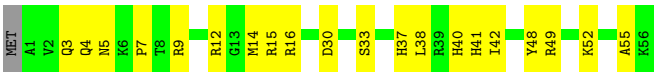
3 Residue-property plots (i)

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 L32

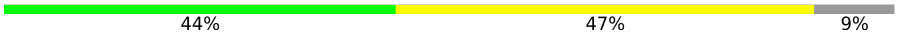
Chain 0:





• Molecule 2: 50S ribosomal protein L33

Chain 1:

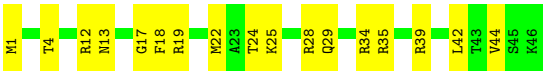




• Molecule 3: 50S ribosomal protein L34

Chain 2:





• Molecule 4: 50S ribosomal protein L35

Chain 3:

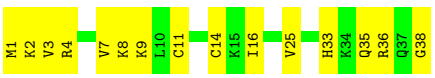




• Molecule 5: 50S ribosomal protein L36

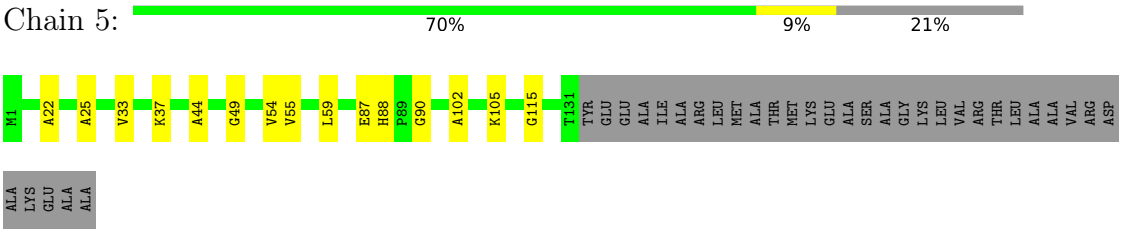
Chain 4:





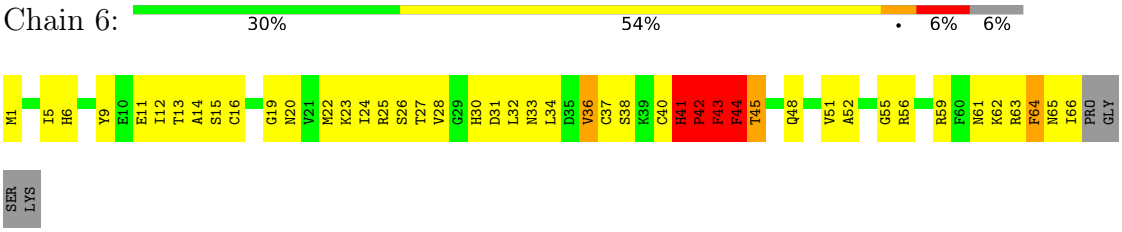
• Molecule 6: 50S ribosomal protein L10

Chain 5:



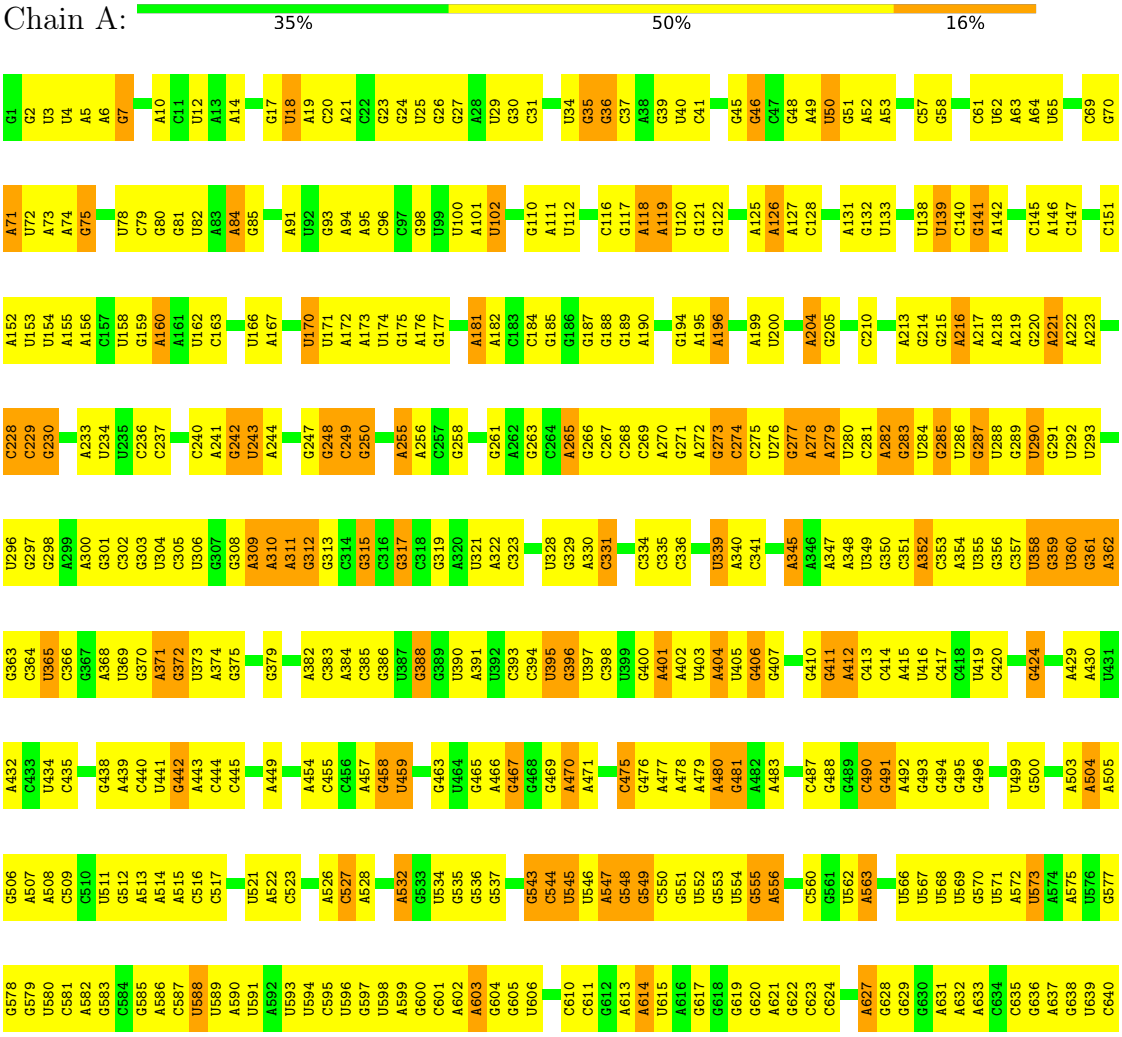
• Molecule 7: 50S ribosomal protein L31

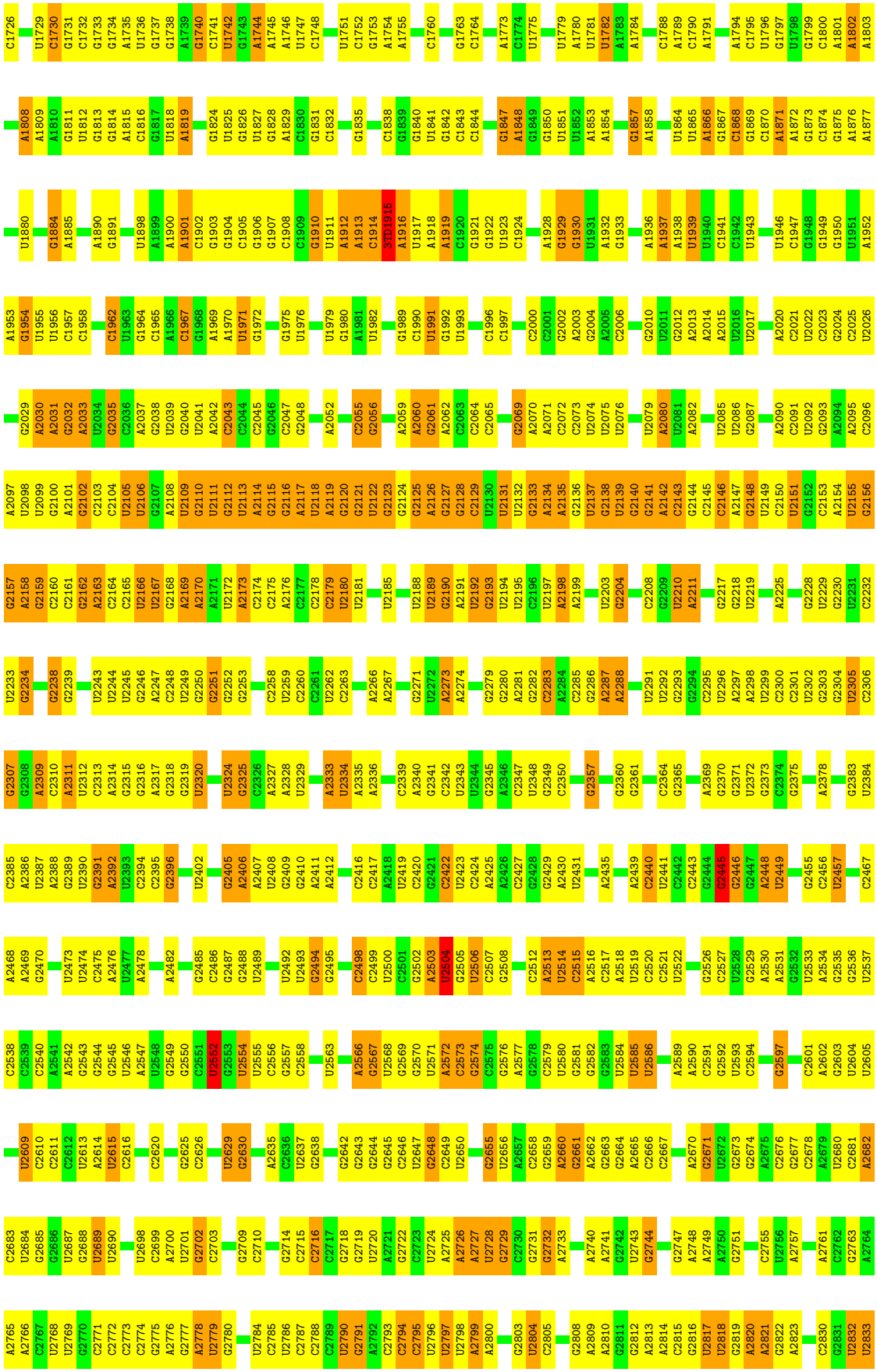
Chain 6:

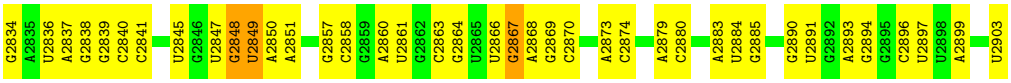


• Molecule 8: 23S ribosomal RNA

Chain A:



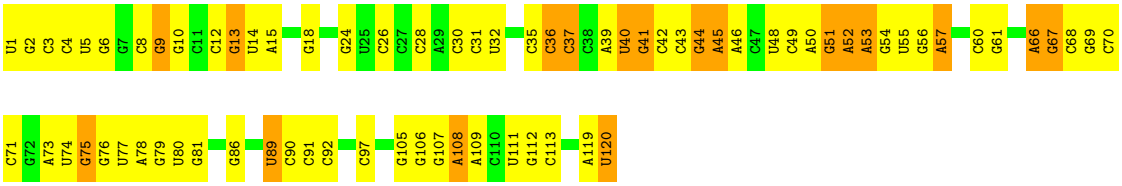




• Molecule 9: 5S ribosomal RNA

Chain B:

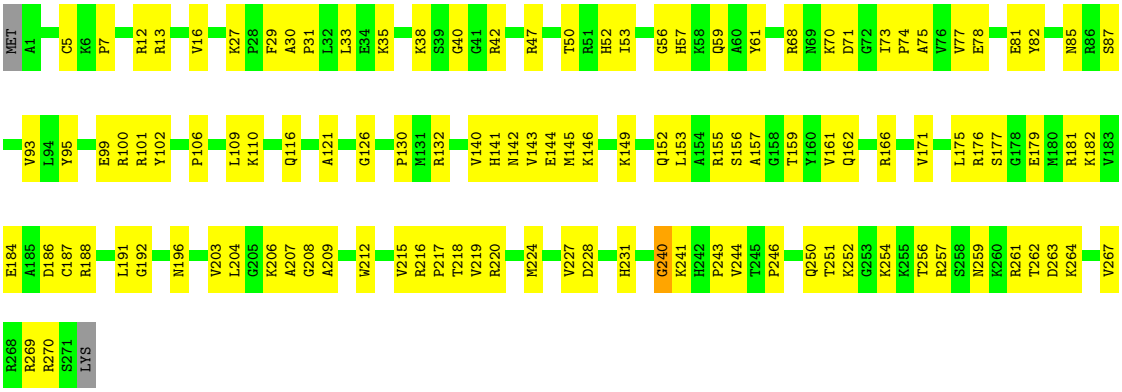




• Molecule 10: 50S ribosomal protein L2

Chain C:

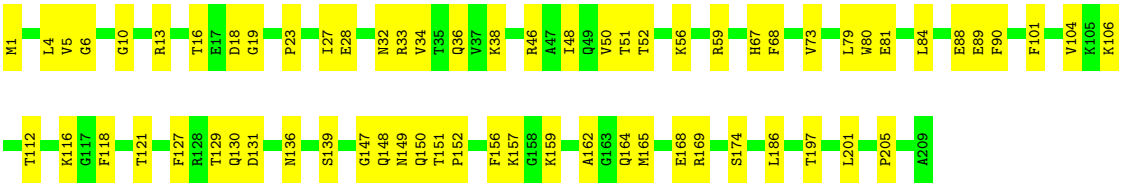




• Molecule 11: 50S ribosomal protein L3

Chain D:

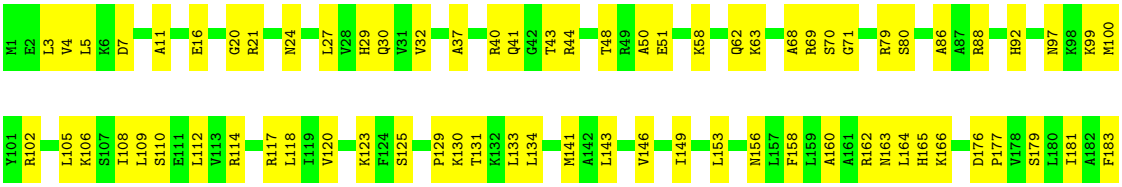


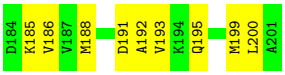


• Molecule 12: 50S ribosomal protein L4

Chain E:







• Molecule 13: 50S ribosomal protein L5

Chain F:

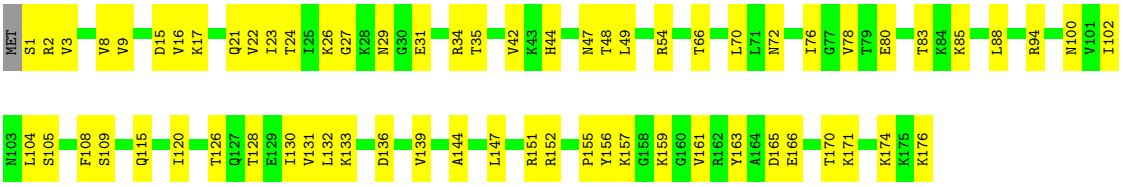




• Molecule 14: 50S ribosomal protein L6

Chain G:

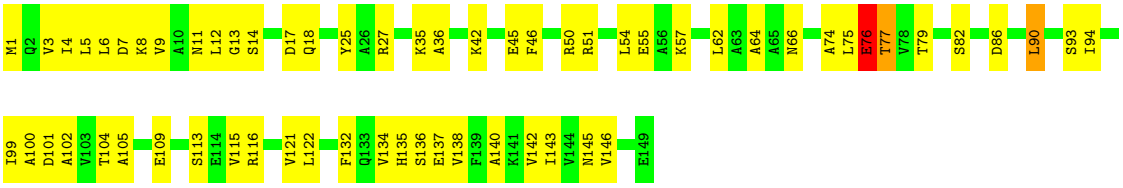




• Molecule 15: 50S ribosomal protein L9

Chain H:

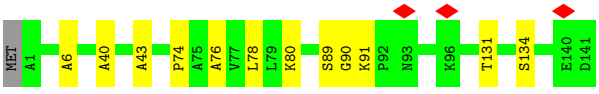




• Molecule 16: 50S ribosomal protein L11

Chain I:

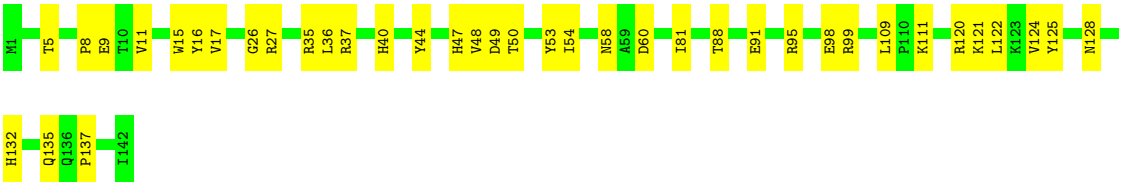




• Molecule 17: 50S ribosomal protein L13

Chain J:

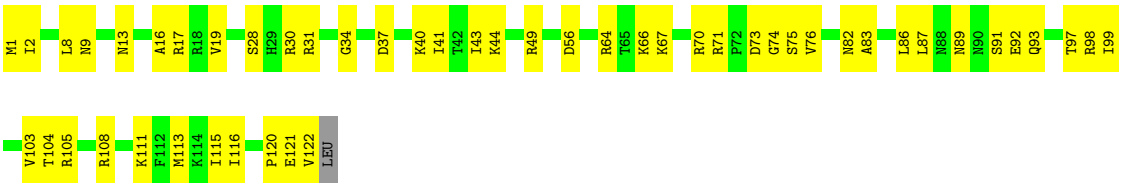




• Molecule 18: 50S ribosomal protein L14

Chain K:

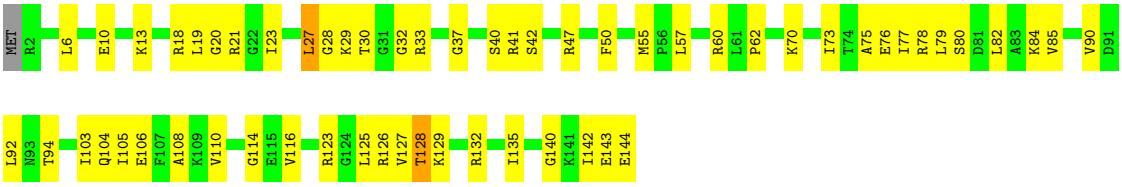




• Molecule 19: 50S ribosomal protein L15

Chain L:

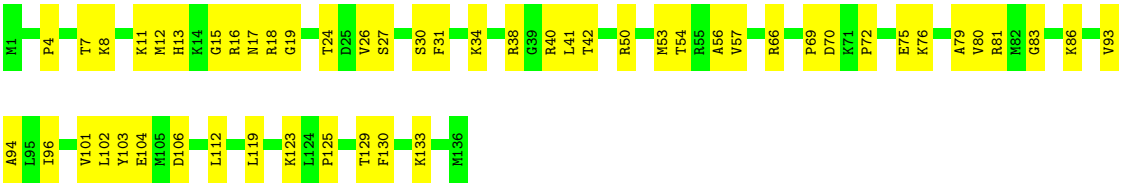




• Molecule 20: 50S ribosomal protein L16

Chain M:

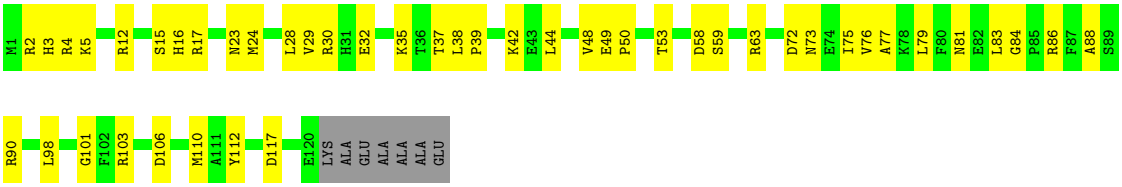




• Molecule 21: 50S ribosomal protein L17

Chain N:

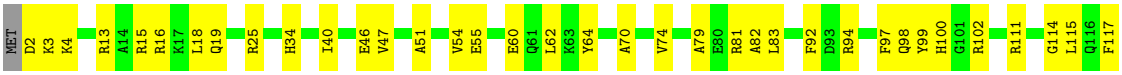




• Molecule 22: 50S ribosomal protein L18

Chain O:

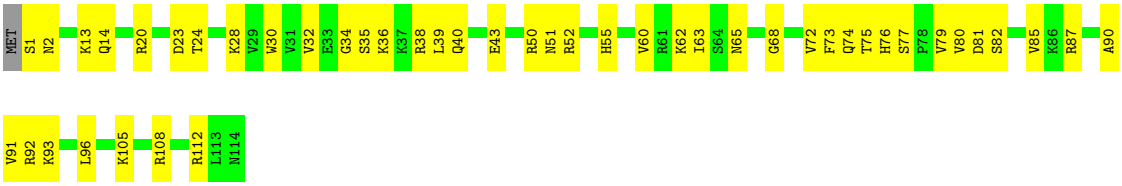




• Molecule 23: 50S ribosomal protein L19

Chain P:





• Molecule 24: 50S ribosomal protein L20

Chain Q:

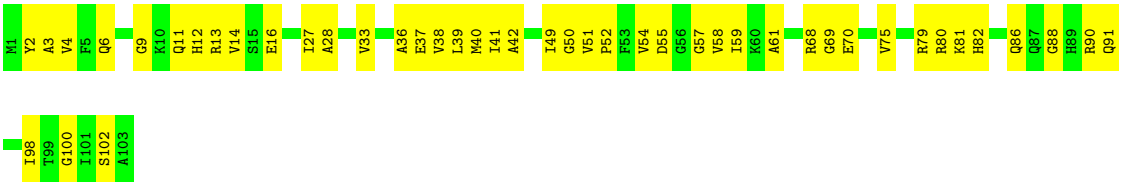




• Molecule 25: 50S ribosomal protein L21

Chain R:





• Molecule 26: 50S ribosomal protein L22

Chain S:





• Molecule 27: 50S ribosomal protein L23

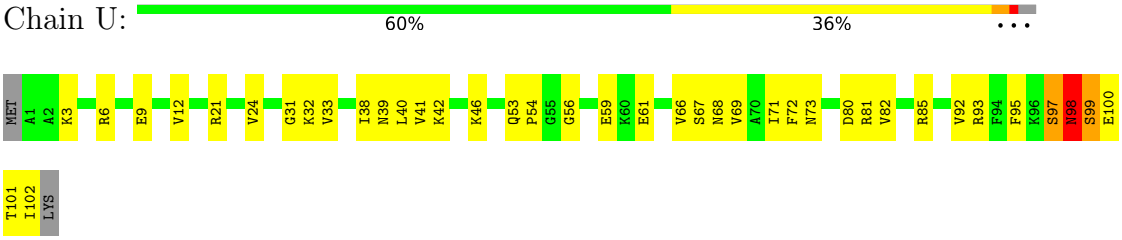
Chain T:





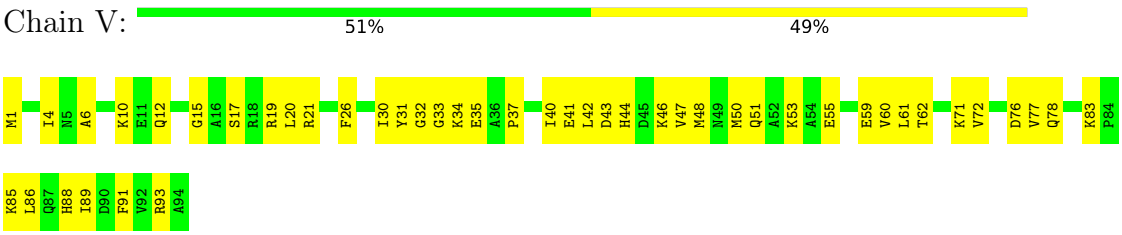
• Molecule 28: 50S ribosomal protein L24

Chain U:



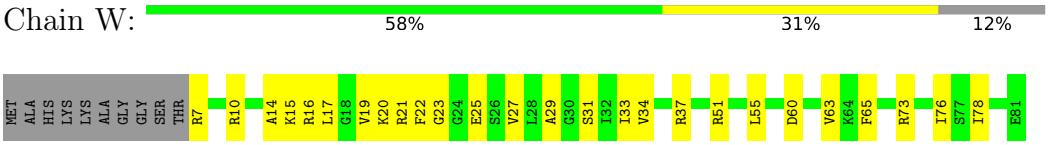
• Molecule 29: 50S ribosomal protein L25

Chain V:



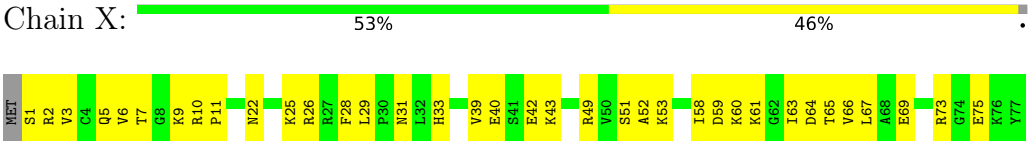
• Molecule 30: 50S ribosomal protein L27

Chain W:



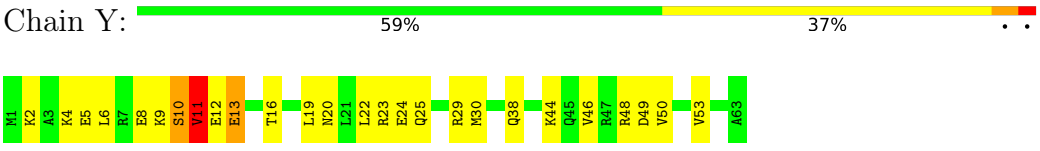
• Molecule 31: 50S ribosomal protein L28

Chain X:



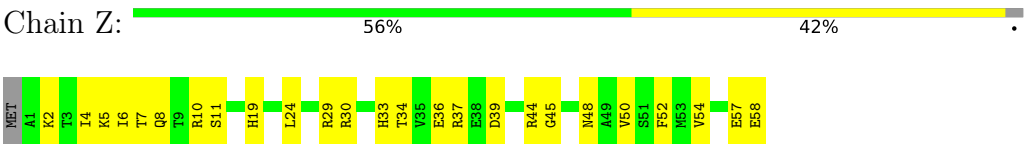
• Molecule 32: 50S ribosomal protein L29

Chain Y:



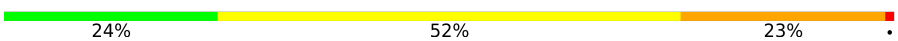
• Molecule 33: 50S ribosomal protein L30

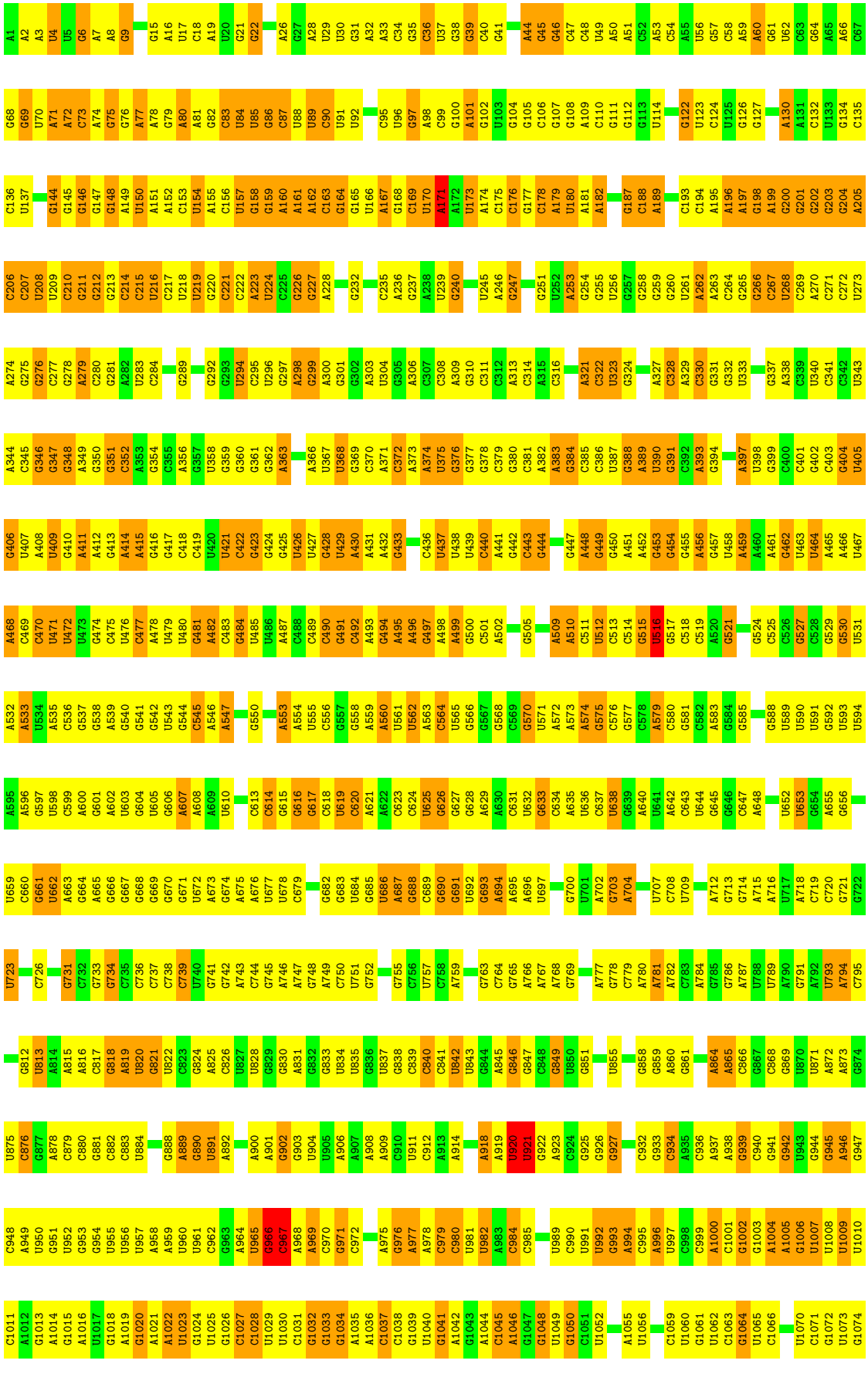
Chain Z:

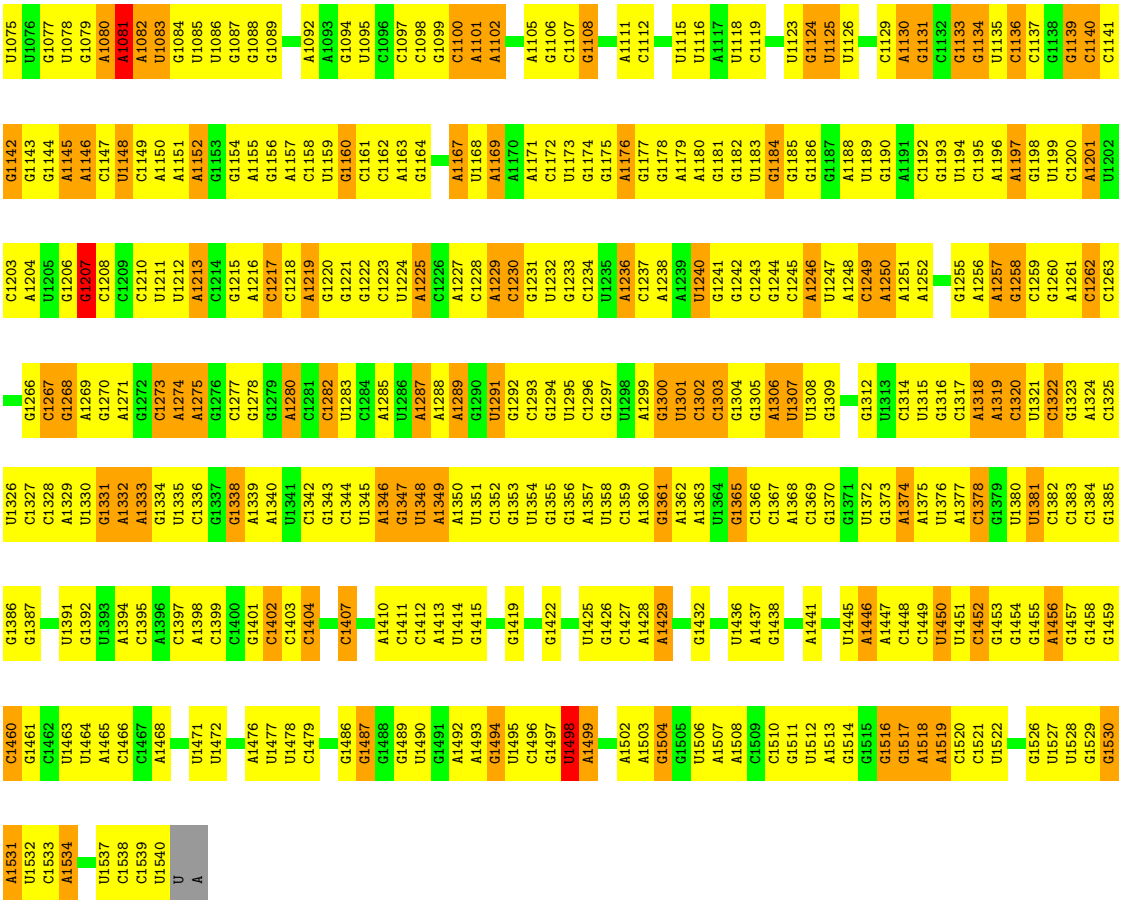


• Molecule 34: 16S ribosomal RNA

Chain a:

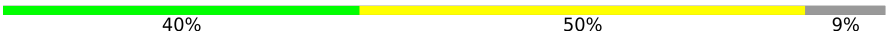






• Molecule 35: 30S ribosomal protein S2

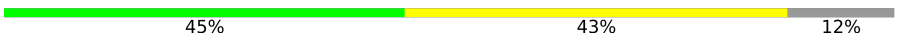
Chain b:

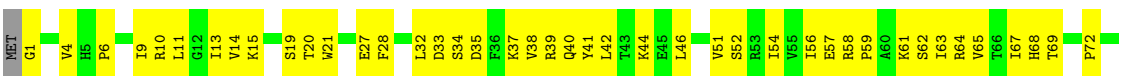


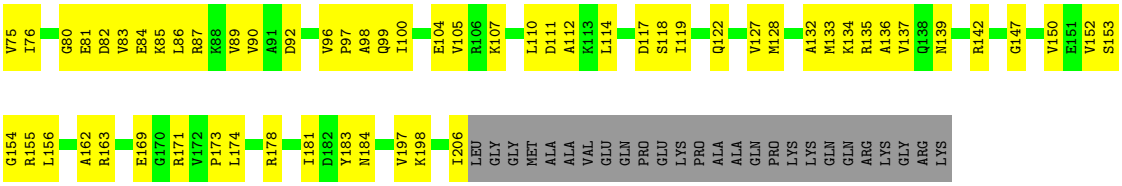


• Molecule 36: 30S ribosomal protein S3

Chain c:

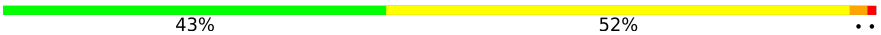


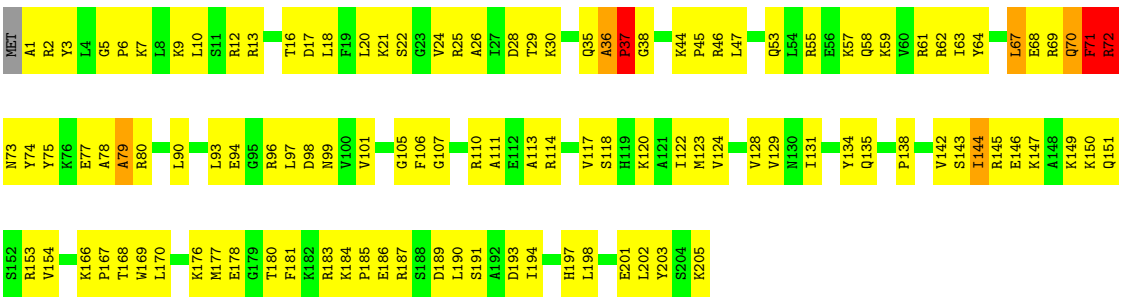




- Molecule 37: 30S ribosomal protein S4

Chain d:

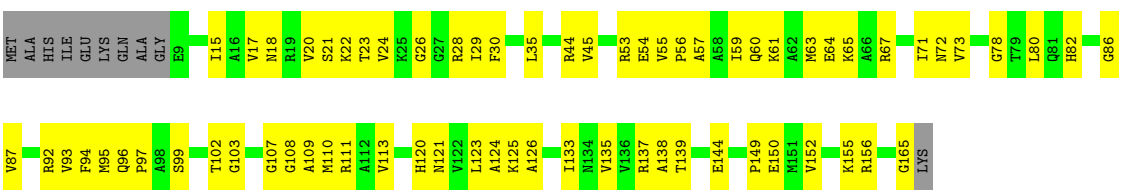




- Molecule 38: 30S ribosomal protein S5

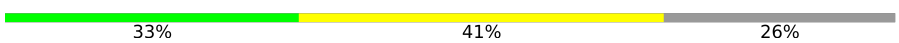
Chain e:

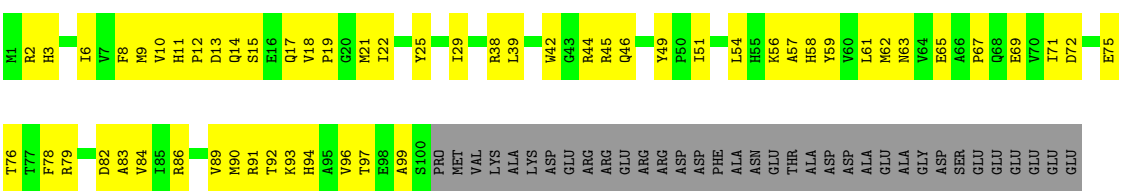




- Molecule 39: 30S ribosomal protein S6

Chain f:

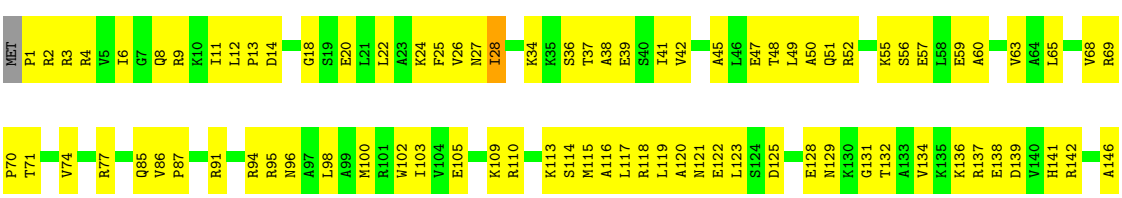


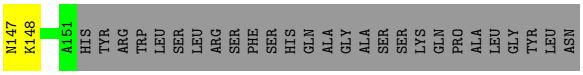


- Molecule 40: 30S ribosomal protein S7

Chain g:



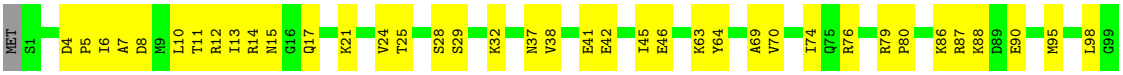


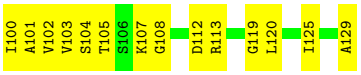


• Molecule 41: 30S ribosomal protein S8

Chain h:

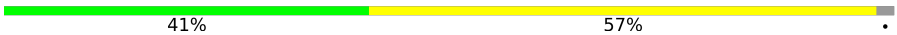


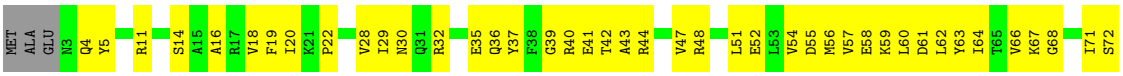




• Molecule 42: 30S ribosomal protein S9

Chain i:



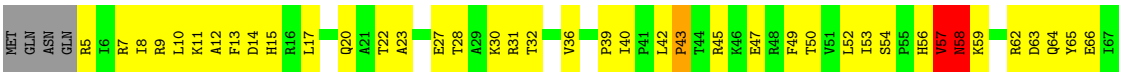




• Molecule 43: 30S ribosomal protein S10

Chain j:



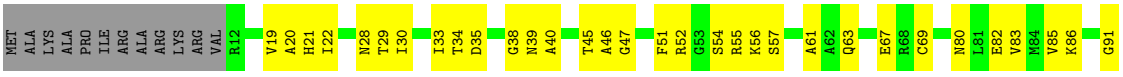


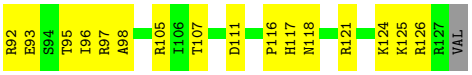


• Molecule 44: 30S ribosomal protein S11

Chain k:







• Molecule 45: 30S ribosomal protein S12

Chain l:



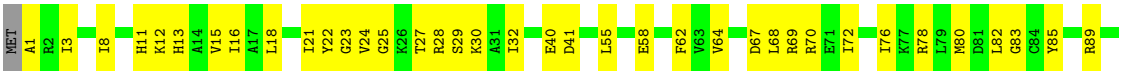




• Molecule 46: 30S ribosomal protein S13

Chain m:







• Molecule 47: 30S ribosomal protein S14

Chain n:

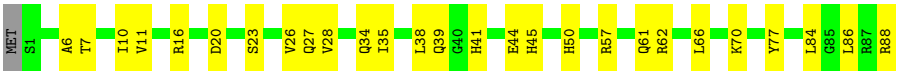




• Molecule 48: 30S ribosomal protein S15

Chain o:

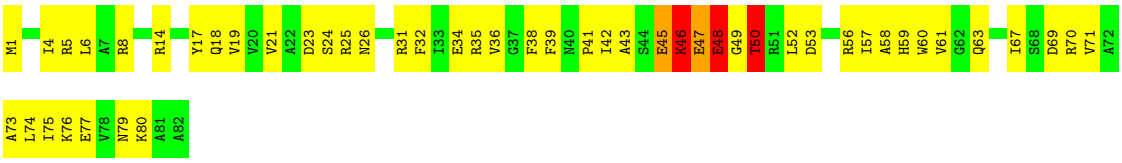




• Molecule 49: 30S ribosomal protein S16

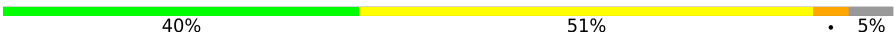
Chain p:

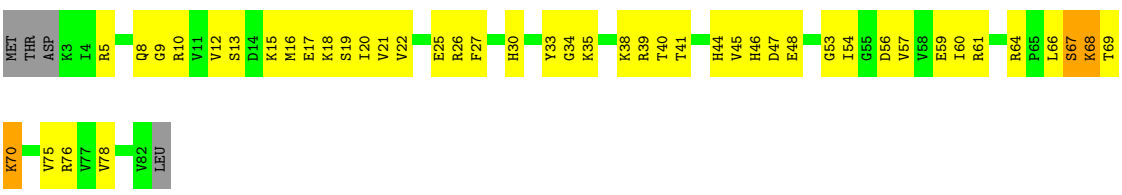




• Molecule 50: 30S ribosomal protein S17

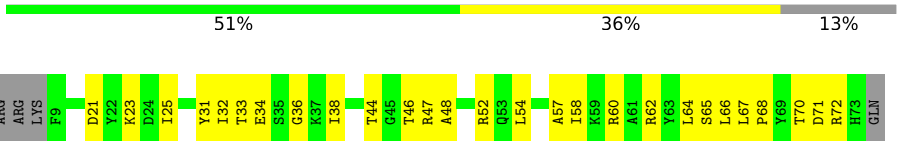
Chain q:





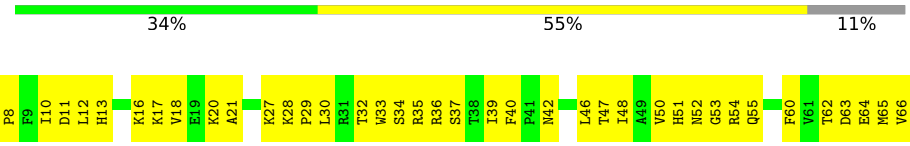
• Molecule 51: 30S ribosomal protein S18

Chain r:



• Molecule 52: 30S ribosomal protein S19

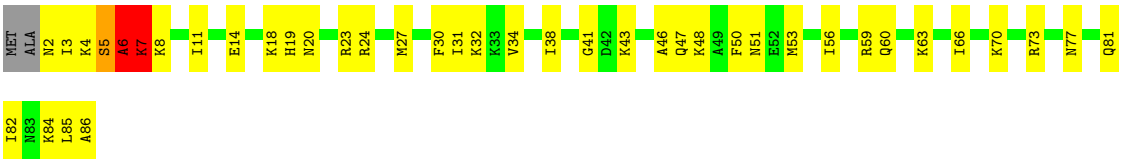
Chain s:



• Molecule 53: 30S ribosomal protein S20

Chain t:





• Molecule 54: 30S ribosomal protein S21

Chain u:

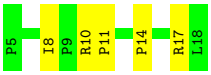




• Molecule 55: Api137

Chain v:





• Molecule 56: P/E-site tRNAPhe

Chain w:





• Molecule 57: mRNA

Chain x:





• Molecule 58: Alternative stalled-ribosome rescue factor B

Chain y:







4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	23340	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	200	Depositor
Maximum defocus (nm)	2.5	Depositor
Magnification	59000	Depositor
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	14.075	Depositor
Minimum map value	-5.703	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	1.000	Depositor
Recommended contour level	0.03	Depositor
Map size (Å)	334.08, 334.08, 334.08	wwPDB
Map dimensions	288, 288, 288	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.16, 1.16, 1.16	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: OMG, MIA, MA6, 5MC, 4SU, 1MG, NA, PSU, OMC, 3TD, MG, 6MZ, OMU, 4OC, UR3, 2MA, 2MG, ZN, G7M, 5MU

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	0	0.37	0/450	0.41	0/599
2	1	0.34	0/416	0.44	0/554
3	2	0.43	0/380	0.47	0/498
4	3	0.41	0/513	0.76	4/676 (0.6%)
5	4	0.35	0/303	0.53	0/397
6	5	0.19	0/646	0.56	0/898
7	6	0.98	2/531 (0.4%)	1.63	17/709 (2.4%)
8	A	0.44	2/69263 (0.0%)	0.39	0/108050
9	B	0.38	1/2873 (0.0%)	0.37	0/4478
10	C	0.44	0/2121	0.52	1/2852 (0.0%)
11	D	0.39	0/1586	0.44	0/2134
12	E	0.36	0/1571	0.46	0/2113
13	F	0.27	0/1434	0.49	0/1926
14	G	0.30	0/1343	0.41	0/1816
15	H	0.37	1/1122 (0.1%)	0.73	7/1515 (0.5%)
16	I	0.18	0/692	0.54	0/960
17	J	0.39	0/1152	0.40	0/1551
18	K	0.41	0/947	0.49	0/1268
19	L	0.39	0/1054	0.54	0/1403
20	M	0.39	0/1093	0.44	0/1460
21	N	0.40	0/973	0.51	0/1301
22	O	0.31	0/902	0.44	0/1209
23	P	0.36	0/929	0.49	0/1242
24	Q	0.45	0/960	0.46	0/1278
25	R	0.39	0/829	0.49	0/1107
26	S	0.37	0/864	0.46	0/1156
27	T	0.33	0/744	0.46	0/994
28	U	0.50	2/787 (0.3%)	0.81	7/1051 (0.7%)
29	V	0.36	0/766	0.48	0/1025
30	W	0.41	0/582	0.43	0/769
31	X	0.39	0/635	0.44	0/848

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
32	Y	0.43	0/510	0.77	3/677 (0.4%)
33	Z	0.38	0/453	0.44	0/605
34	a	0.34	5/36725 (0.0%)	0.41	16/57285 (0.0%)
35	b	0.20	0/1735	0.48	0/2338
36	c	0.25	0/1651	0.46	0/2225
37	d	0.34	0/1665	0.97	19/2227 (0.9%)
38	e	0.29	0/1154	0.44	0/1554
39	f	0.29	0/835	0.48	0/1128
40	g	0.22	0/1195	0.43	0/1602
41	h	0.31	0/989	0.45	0/1326
42	i	0.22	0/1034	0.51	0/1375
43	j	0.64	4/796 (0.5%)	0.90	7/1077 (0.6%)
44	k	0.30	0/885	0.43	0/1195
45	l	0.30	0/969	0.48	0/1300
46	m	0.21	0/892	0.45	0/1193
47	n	0.25	0/811	0.47	0/1081
48	o	0.31	0/722	0.42	0/964
49	p	0.72	2/659 (0.3%)	0.99	9/884 (1.0%)
50	q	0.34	0/657	0.53	0/881
51	r	0.30	0/544	0.47	0/731
52	s	0.21	0/675	0.39	0/908
53	t	0.67	3/671 (0.4%)	0.99	11/888 (1.2%)
54	u	0.75	5/512 (1.0%)	1.02	5/683 (0.7%)
55	v	0.35	0/128	0.43	0/175
56	w	0.55	7/1650 (0.4%)	0.50	3/2569 (0.1%)
57	x	0.18	0/90	0.42	0/137
58	y	0.32	0/1090	0.43	0/1461
All	All	0.40	34/158158 (0.0%)	0.45	109/236306 (0.0%)

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
7	6	0	1
43	j	0	1
49	p	0	3
All	All	0	5

All (34) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	6	42	PRO	N-CA	17.72	1.70	1.47
49	p	48	GLU	C-O	-12.08	1.09	1.23
43	j	58	ASN	C-O	-11.16	1.09	1.24
53	t	6	ALA	C-O	-9.56	1.11	1.24
7	6	44	PHE	C-N	9.16	1.44	1.33
43	j	57	VAL	C-O	-8.59	1.15	1.24
34	a	1081	A	O3'-P	8.15	1.73	1.61
56	w	20	U	C5-C6	7.57	1.49	1.34
56	w	16	U	C5-C6	7.50	1.49	1.34
54	u	32	ARG	CA-C	-7.45	1.45	1.52
8	A	2449	U	C5-C6	7.04	1.48	1.34
53	t	7	LYS	C-O	-6.74	1.15	1.24
49	p	50	THR	C-O	-6.58	1.15	1.23
28	U	98	ASN	C-O	-6.43	1.15	1.24
34	a	921	U	C5'-C4'	6.31	1.60	1.51
34	a	1081	A	C3'-O3'	6.07	1.51	1.42
54	u	31	VAL	C-O	-6.05	1.16	1.24
56	w	20	U	C2-N3	5.98	1.49	1.37
28	U	97	SER	CA-CB	-5.75	1.46	1.53
56	w	16	U	C2-N3	5.74	1.49	1.37
34	a	920	U	O3'-P	5.69	1.69	1.61
53	t	6	ALA	CA-CB	-5.60	1.44	1.53
56	w	20	U	N1-C2	5.59	1.49	1.38
54	u	30	GLU	C-N	-5.56	1.26	1.33
54	u	32	ARG	C-O	5.54	1.30	1.24
9	B	120	U	C1'-N1	5.48	1.56	1.48
15	H	74	ALA	CA-CB	-5.47	1.44	1.53
43	j	56	HIS	C-N	-5.46	1.27	1.33
34	a	921	U	P-O5'	5.42	1.67	1.59
8	A	2449	U	C2-N3	5.42	1.48	1.37
43	j	58	ASN	CA-C	-5.38	1.45	1.52
54	u	31	VAL	CA-C	-5.38	1.46	1.52
56	w	16	U	N1-C2	5.34	1.49	1.38
56	w	46	G7M	O3'-P	5.22	1.61	1.56

All (109) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	6	44	PHE	CA-C-O	-17.00	98.86	119.43
37	d	72	ARG	CB-CA-C	16.23	143.92	109.99
7	6	41	HIS	CA-C-N	13.99	137.32	119.84
7	6	41	HIS	C-N-CA	13.99	137.32	119.84
7	6	41	HIS	O-C-N	-13.80	108.78	121.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	p	48	GLU	CB-CG-CD	13.47	135.50	112.60
43	j	58	ASN	N-CA-C	-12.75	83.65	110.80
37	d	71	PHE	CA-C-N	-11.42	101.15	121.14
37	d	71	PHE	C-N-CA	-11.42	101.15	121.14
53	t	8	LYS	N-CA-C	-11.32	98.69	111.82
34	a	920	U	OP2-P-O3'	-11.25	74.26	108.00
7	6	42	PRO	CA-N-CD	-10.99	96.61	112.00
53	t	5	SER	O-C-N	10.87	133.34	122.03
54	u	32	ARG	N-CA-C	-10.57	97.96	112.12
34	a	1081	A	O3'-P-O5'	10.54	119.82	104.00
34	a	1081	A	P-O3'-C3'	10.50	135.95	120.20
37	d	71	PHE	N-CA-C	-10.20	89.07	110.80
54	u	31	VAL	CA-C-N	-9.34	107.79	122.17
54	u	31	VAL	C-N-CA	-9.34	107.79	122.17
7	6	44	PHE	O-C-N	9.24	134.31	122.39
34	a	920	U	OP1-P-O3'	9.23	135.69	108.00
34	a	921	U	OP1-P-OP2	-9.11	92.27	119.60
7	6	43	PHE	CA-C-N	-8.98	107.11	122.56
7	6	43	PHE	C-N-CA	-8.98	107.11	122.56
7	6	44	PHE	N-CA-C	-8.87	102.38	113.02
37	d	79	ALA	CA-C-N	-8.85	106.86	120.31
37	d	79	ALA	C-N-CA	-8.85	106.86	120.31
54	u	32	ARG	O-C-N	8.69	132.12	121.95
43	j	58	ASN	CA-CB-CG	8.59	121.19	112.60
7	6	42	PRO	N-CA-CB	8.57	112.25	103.25
37	d	72	ARG	N-CA-C	-8.40	102.48	112.89
49	p	47	GLU	N-CA-C	-8.15	98.06	110.70
53	t	8	LYS	CB-CA-C	8.13	126.28	110.67
28	U	97	SER	CA-C-N	8.04	136.89	121.54
28	U	97	SER	C-N-CA	8.04	136.89	121.54
43	j	58	ASN	OD1-CG-ND2	-7.92	114.68	122.60
49	p	45	GLU	O-C-N	-7.88	112.11	122.59
28	U	98	ASN	CA-C-O	-7.79	109.37	120.51
37	d	79	ALA	N-CA-C	-7.76	94.27	110.80
15	H	75	LEU	CA-C-N	7.62	136.10	121.54
15	H	75	LEU	C-N-CA	7.62	136.10	121.54
34	a	920	U	P-O3'-C3'	7.60	131.61	120.20
56	w	55	PSU	OP1-P-O3'	-7.59	85.22	108.00
15	H	74	ALA	CA-C-N	7.57	135.99	121.54
15	H	74	ALA	C-N-CA	7.57	135.99	121.54
56	w	55	PSU	O3'-P-O5'	7.54	115.31	104.00
49	p	50	THR	CB-CA-C	7.38	126.35	111.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
28	U	98	ASN	O-C-N	7.24	132.22	122.59
34	a	921	U	O5'-C5'-C4'	7.12	122.18	111.50
43	j	58	ASN	N-CA-CB	7.10	122.50	110.49
37	d	78	ALA	CA-C-N	7.00	134.91	121.54
37	d	78	ALA	C-N-CA	7.00	134.91	121.54
34	a	920	U	O3'-P-O5'	6.97	114.45	104.00
32	Y	11	VAL	CA-C-N	6.95	135.41	122.84
32	Y	11	VAL	C-N-CA	6.95	135.41	122.84
34	a	921	U	O5'-P-OP2	6.90	128.69	108.00
53	t	7	LYS	N-CA-C	-6.90	104.86	112.72
10	C	132	ARG	N-CA-C	-6.81	105.60	114.04
37	d	71	PHE	N-CA-CB	6.78	121.95	110.49
34	a	1081	A	N9-C1'-C2'	6.61	121.92	112.00
43	j	58	ASN	O-C-N	6.57	131.33	122.59
37	d	72	ARG	CG-CD-NE	6.54	126.40	112.00
28	U	98	ASN	N-CA-C	-6.39	97.18	110.80
4	3	30	HIS	CB-CA-C	6.28	122.92	110.42
53	t	7	LYS	CB-CG-CD	6.28	125.75	111.30
34	a	171	A	C2'-C3'-O3'	-6.25	104.32	113.70
53	t	7	LYS	CG-CD-CE	-6.25	96.92	111.30
56	w	55	PSU	P-O3'-C3'	-6.21	110.88	120.20
15	H	76	GLU	O-C-N	6.17	130.80	122.59
34	a	921	U	C5'-C4'-C3'	6.14	125.21	116.00
7	6	43	PHE	CB-CA-C	6.13	122.62	110.42
34	a	1081	A	C5'-C4'-C3'	6.07	125.10	116.00
49	p	48	GLU	CB-CA-C	-6.05	101.14	111.31
4	3	30	HIS	CA-C-N	5.98	132.74	121.97
4	3	30	HIS	C-N-CA	5.98	132.74	121.97
7	6	40	CYS	CA-C-N	-5.93	109.92	123.15
7	6	40	CYS	C-N-CA	-5.93	109.92	123.15
37	d	79	ALA	N-CA-CB	5.89	120.44	110.49
43	j	58	ASN	CA-C-O	-5.86	112.13	120.51
34	a	921	U	P-O5'-C5'	5.86	129.68	120.90
53	t	8	LYS	CG-CD-CE	5.84	124.73	111.30
37	d	71	PHE	O-C-N	5.66	130.12	122.59
37	d	70	GLN	CA-C-N	5.59	132.22	121.54
37	d	70	GLN	C-N-CA	5.59	132.22	121.54
43	j	57	VAL	CB-CA-C	-5.57	103.01	111.69
15	H	76	GLU	N-CA-CB	5.54	119.86	110.49
53	t	6	ALA	N-CA-CB	-5.51	101.19	110.49
32	Y	13	GLU	CB-CA-C	5.50	121.37	110.42
53	t	8	LYS	N-CA-CB	-5.50	101.76	110.28

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	p	47	GLU	CA-C-N	-5.45	115.28	122.85
49	p	47	GLU	C-N-CA	-5.45	115.28	122.85
49	p	50	THR	CA-C-N	5.42	134.01	121.87
49	p	50	THR	C-N-CA	5.42	134.01	121.87
7	6	44	PHE	N-CA-CB	5.42	118.33	110.47
7	6	44	PHE	CA-C-N	5.39	131.49	121.62
7	6	44	PHE	C-N-CA	5.39	131.49	121.62
28	U	97	SER	CA-C-O	-5.39	115.32	122.44
15	H	76	GLU	CB-CA-C	5.37	121.11	110.42
37	d	72	ARG	CD-NE-CZ	5.27	131.78	124.40
34	a	921	U	O4'-C1'-N1	5.23	116.34	108.50
28	U	98	ASN	CA-CB-CG	5.21	117.81	112.60
54	u	31	VAL	N-CA-CB	-5.18	102.68	111.23
53	t	6	ALA	CA-C-N	5.15	131.01	122.73
53	t	6	ALA	C-N-CA	5.15	131.01	122.73
34	a	1081	A	C5'-C4'-O4'	-5.13	102.10	109.80
7	6	44	PHE	CB-CA-C	5.05	119.37	110.37
37	d	36	ALA	CA-C-N	5.04	126.14	119.84
37	d	36	ALA	C-N-CA	5.04	126.14	119.84
4	3	29	ARG	O-C-N	5.02	128.26	122.09

There are no chirality outliers.

All (5) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
7	6	41	HIS	Mainchain
43	j	58	ASN	Mainchain
49	p	45	GLU	Mainchain
49	p	48	GLU	Mainchain
49	p	50	THR	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	0	444	0	461	24	0
2	1	409	0	440	22	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	2	377	0	418	17	0
4	3	504	0	574	25	0
5	4	302	0	340	12	0
6	5	647	0	336	9	0
7	6	522	0	522	98	0
8	A	62336	0	31370	1659	0
9	B	2570	0	1301	63	0
10	C	2082	0	2157	102	0
11	D	1565	0	1616	51	0
12	E	1552	0	1618	76	0
13	F	1410	0	1447	76	0
14	G	1323	0	1374	54	0
15	H	1111	0	1148	50	0
16	I	693	0	347	11	0
17	J	1129	0	1162	35	0
18	K	938	0	1012	41	0
19	L	1045	0	1117	55	0
20	M	1074	0	1157	35	0
21	N	960	0	1000	37	0
22	O	892	0	923	26	0
23	P	917	0	965	38	0
24	Q	947	0	1022	32	0
25	R	816	0	839	37	0
26	S	857	0	922	30	0
27	T	738	0	807	25	0
28	U	779	0	834	42	0
29	V	753	0	780	35	0
30	W	575	0	592	20	0
31	X	625	0	655	32	0
32	Y	509	0	543	22	0
33	Z	449	0	491	16	0
34	a	33050	0	16648	1415	0
35	b	1704	0	1732	102	0
36	c	1624	0	1699	79	0
37	d	1643	0	1710	139	0
38	e	1141	0	1170	59	0
39	f	817	0	808	51	0
40	g	1181	0	1240	85	0
41	h	979	0	1034	48	0
42	i	1022	0	1070	82	0
43	j	786	0	828	65	0
44	k	869	0	878	43	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
45	l	955	0	1019	57	0
46	m	883	0	944	53	0
47	n	799	0	841	48	0
48	o	714	0	737	22	0
49	p	649	0	666	61	0
50	q	648	0	691	53	0
51	r	535	0	552	22	0
52	s	658	0	685	53	0
53	t	665	0	714	51	0
54	u	506	0	502	19	0
55	v	121	0	128	3	0
56	w	1631	0	836	83	0
57	x	82	0	43	3	0
58	y	1078	0	1134	50	0
59	0	1	0	0	0	0
59	4	1	0	0	0	0
59	6	1	0	0	0	0
59	A	206	0	0	0	0
59	B	6	0	0	0	0
59	C	1	0	0	0	0
59	D	1	0	0	0	0
59	S	1	0	0	0	0
59	a	35	0	0	0	0
60	4	1	0	0	0	0
60	6	1	0	0	0	0
61	A	1	0	0	0	0
61	M	1	0	0	0	0
All	All	146847	0	98599	4991	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 21.

All (4991) 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)
34:a:151:A:C6	34:a:171:A:N1	1.85	1.45
50:q:19:SER:OG	50:q:70:LYS:HD2	1.23	1.36
34:a:151:A:N7	34:a:170:U:N3	1.73	1.35
7:6:42:PRO:N	7:6:42:PRO:CA	1.70	1.32
49:p:43:ALA:HB1	49:p:48:GLU:CB	1.58	1.31
7:6:37:CYS:HA	7:6:44:PHE:CE2	1.66	1.30

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:d:61:ARG:NH2	37:d:71:PHE:HZ	1.27	1.28
56:w:26:A:C2	56:w:44:G:N1	2.02	1.28
49:p:43:ALA:CB	49:p:48:GLU:HB2	1.67	1.25
7:6:37:CYS:CA	7:6:44:PHE:CE2	2.24	1.19
34:a:68:G:H1'	34:a:171:A:C2	1.78	1.19
49:p:39:PHE:HD1	49:p:50:THR:OG1	1.24	1.19
34:a:1160:G:C6	34:a:1176:A:N6	2.11	1.18
34:a:151:A:N7	34:a:171:A:N6	1.91	1.17
34:a:151:A:C5	34:a:171:A:N6	2.12	1.16
34:a:1088:G:N2	34:a:1167:A:H61	1.44	1.15
49:p:38:PHE:O	49:p:50:THR:HG23	1.46	1.14
50:q:19:SER:OG	50:q:70:LYS:CD	1.97	1.12
37:d:12:ARG:CD	37:d:37:PRO:HD3	1.78	1.12
37:d:68:GLU:OE2	37:d:72:ARG:HG3	1.50	1.11
34:a:1061:G:H1'	43:j:58:ASN:HD21	1.09	1.11
53:t:4:LYS:NZ	53:t:6:ALA:HB2	1.64	1.11
37:d:61:ARG:NH2	37:d:71:PHE:CZ	2.06	1.11
34:a:207:C:OP1	34:a:212:G:N7	1.84	1.09
34:a:459:A:N1	34:a:474:G:C6	2.21	1.09
7:6:36:VAL:HG12	7:6:44:PHE:CZ	1.88	1.08
34:a:68:G:C1'	34:a:171:A:C2	2.37	1.08
37:d:12:ARG:HD2	37:d:37:PRO:CD	1.83	1.08
7:6:37:CYS:C	7:6:44:PHE:CD2	2.32	1.07
34:a:1160:G:N1	34:a:1176:A:C6	2.22	1.07
15:H:62:LEU:O	15:H:66:ASN:HB2	1.55	1.07
34:a:292:G:N2	34:a:608:A:H61	1.54	1.06
34:a:68:G:C1'	34:a:171:A:H2	1.70	1.05
37:d:68:GLU:O	37:d:72:ARG:HB2	1.56	1.05
53:t:4:LYS:HE2	53:t:6:ALA:HB3	1.38	1.04
36:c:42:LEU:O	36:c:46:LEU:HB2	1.58	1.03
34:a:68:G:H1'	34:a:171:A:H2	1.14	1.02
37:d:68:GLU:O	37:d:71:PHE:CE2	2.12	1.02
34:a:945:G:H1	34:a:1236:A:N6	1.58	1.01
37:d:68:GLU:HA	37:d:71:PHE:HE2	1.27	0.99
34:a:616:G:O2'	49:p:46:LYS:NZ	1.95	0.99
34:a:458:U:C4	34:a:459:A:N6	2.31	0.99
34:a:1088:G:H21	34:a:1167:A:H61	1.06	0.99
34:a:151:A:N6	34:a:171:A:N1	2.11	0.98
56:w:26:A:N1	56:w:44:G:C6	2.30	0.98
34:a:1088:G:H21	34:a:1167:A:N6	1.59	0.98
53:t:4:LYS:NZ	53:t:6:ALA:CB	2.27	0.97

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:292:G:H21	34:a:608:A:N6	1.62	0.97
7:6:41:HIS:ND1	7:6:42:PRO:HD2	1.81	0.96
34:a:137:U:H3	34:a:226:G:H1	1.02	0.96
49:p:39:PHE:CD1	49:p:50:THR:OG1	2.15	0.96
37:d:68:GLU:HA	37:d:71:PHE:CE2	2.00	0.96
34:a:68:G:N1	34:a:101:A:H2	1.62	0.95
56:w:18:G:O6	56:w:55:PSU:H1'	1.67	0.95
7:6:37:CYS:HA	7:6:44:PHE:HE2	1.12	0.94
34:a:202:G:HO2'	34:a:468:A:HO2'	1.12	0.94
8:A:304:U:H3	8:A:313:G:H1	1.15	0.94
50:q:19:SER:HG	50:q:70:LYS:HD2	0.96	0.94
8:A:1168:G:H1	8:A:1181:U:H3	0.94	0.94
34:a:438:U:C2	34:a:496:A:N6	2.35	0.94
34:a:145:G:N3	34:a:178:C:N4	2.16	0.94
34:a:1445:U:H3	34:a:1457:G:H1	1.12	0.93
34:a:68:G:N1	34:a:101:A:C2	2.34	0.93
56:w:5:G:N2	56:w:68:C:O2	2.01	0.93
53:t:4:LYS:HZ3	53:t:6:ALA:CB	1.82	0.92
34:a:945:G:H1	34:a:1236:A:H61	0.92	0.92
8:A:277:G:H1'	8:A:361:G:H1	1.35	0.92
8:A:895:U:H5"	8:A:896:A:H5'	1.52	0.91
8:A:848:C:H2'	8:A:849:A:H8	1.36	0.91
34:a:62:U:H3	34:a:105:G:H1	0.92	0.91
34:a:151:A:C5	34:a:171:A:C6	2.60	0.90
34:a:210:C:O5'	34:a:212:G:OP2	1.89	0.90
34:a:292:G:H21	34:a:608:A:H61	0.93	0.90
34:a:1061:G:H1'	43:j:58:ASN:ND2	1.87	0.90
34:a:68:G:C4'	34:a:171:A:N3	2.34	0.90
50:q:44:HIS:HB2	50:q:69:THR:O	1.71	0.90
15:H:86:ASP:HB2	39:f:21:MET:HE1	1.51	0.90
34:a:68:G:O2'	34:a:171:A:C2	2.26	0.89
34:a:920:U:O2	34:a:1081:A:O2'	1.89	0.89
56:w:26:A:H2	56:w:44:G:N1	1.60	0.89
34:a:920:U:H3'	34:a:1082:A:P	2.12	0.89
34:a:984:C:N3	34:a:1222:G:N2	2.20	0.89
8:A:882:G:N2	8:A:894:U:O2	2.06	0.88
21:N:37:THR:HG22	21:N:39:PRO:HD2	1.54	0.88
34:a:1061:G:C1'	43:j:58:ASN:HD21	1.86	0.88
9:B:40:U:N3	9:B:44:G:OP2	2.07	0.88
7:6:43:PHE:HE1	7:6:48:GLN:NE2	1.73	0.87
15:H:54:LEU:HA	15:H:57:LYS:HE3	1.54	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:6:36:VAL:HG12	7:6:44:PHE:CE1	2.08	0.87
8:A:746:PSU:HO2'	8:A:2611:C:HO2'	1.13	0.87
34:a:458:U:O2	34:a:474:G:N2	2.07	0.87
34:a:213:G:H1'	34:a:214:C:H2'	1.57	0.87
13:F:115:GLY:HA3	13:F:177:ARG:HA	1.55	0.87
8:A:1093:G:N2	8:A:1099:G:O6	2.08	0.86
8:A:2857:G:N2	8:A:2860:A:OP2	2.09	0.86
34:a:151:A:C8	34:a:171:A:N6	2.38	0.86
7:6:43:PHE:CE1	7:6:48:GLN:NE2	2.43	0.86
7:6:36:VAL:HG12	7:6:44:PHE:HZ	1.34	0.86
37:d:53:GLN:HB3	37:d:202:LEU:HD12	1.54	0.86
53:t:4:LYS:CE	53:t:6:ALA:CB	2.52	0.86
34:a:151:A:C5	34:a:171:A:N1	2.42	0.86
34:a:920:U:H2'	34:a:1081:A:C2'	2.06	0.86
34:a:617:G:H21	49:p:14:ARG:HH12	1.23	0.86
34:a:151:A:N7	34:a:170:U:C2	2.44	0.85
56:w:18:G:H22	56:w:55:PSU:HN3	1.23	0.85
56:w:52:G:N2	56:w:62:C:O2	2.08	0.85
36:c:19:SER:OG	36:c:39:ARG:NH2	2.08	0.85
8:A:2113:U:H5"	8:A:2114:A:H5'	1.58	0.85
34:a:458:U:N3	34:a:459:A:N6	2.24	0.85
34:a:438:U:C2	34:a:496:A:C6	2.65	0.85
56:w:26:A:H2	56:w:44:G:C2	1.95	0.85
8:A:882:G:H1	8:A:894:U:H3	0.89	0.85
3:2:19:ARG:HG3	8:A:126:A:H5"	1.58	0.85
34:a:1006:G:H1	34:a:1023:U:HO2'	1.20	0.85
34:a:1160:G:C2	34:a:1176:A:C6	2.63	0.85
34:a:635:A:HO2'	34:a:636:U:H6	1.21	0.85
7:6:42:PRO:CB	7:6:48:GLN:HG2	2.06	0.84
8:A:1936:A:H2	8:A:1943:U:H3	1.24	0.84
34:a:458:U:H3	34:a:474:G:H1	1.24	0.84
53:t:4:LYS:HE2	53:t:6:ALA:CB	2.07	0.84
34:a:68:G:H4'	34:a:171:A:N3	1.92	0.84
34:a:459:A:N1	34:a:474:G:N1	2.25	0.84
34:a:501:C:OP1	45:l:113:ARG:NH2	2.10	0.84
7:6:36:VAL:C	7:6:44:PHE:CZ	2.56	0.84
8:A:1042:G:H1	8:A:1113:U:H3	0.86	0.84
8:A:1250:G:N7	19:L:18:ARG:NH2	2.25	0.84
15:H:76:GLU:OE1	15:H:76:GLU:HA	1.76	0.84
20:M:24:THR:O	20:M:34:LYS:NZ	2.11	0.83
34:a:111:G:H1	34:a:330:C:H41	1.22	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:68:G:O4'	34:a:171:A:N3	2.11	0.83
34:a:1088:G:N2	34:a:1167:A:N6	2.22	0.83
56:w:18:G:O2'	56:w:57:G:N2	2.12	0.83
7:6:42:PRO:HB2	7:6:48:GLN:HG2	1.61	0.83
36:c:51:VAL:HA	36:c:69:THR:HB	1.59	0.83
53:t:4:LYS:CE	53:t:6:ALA:HB3	2.08	0.83
34:a:151:A:N7	34:a:170:U:C4	2.46	0.83
34:a:490:C:H2'	34:a:491:G:H8	1.42	0.83
8:A:1085:A:H4'	8:A:1104:C:H1'	1.60	0.82
34:a:1432:G:O2'	34:a:1468:A:N6	2.12	0.82
53:t:4:LYS:HZ1	53:t:6:ALA:HB2	1.43	0.82
37:d:68:GLU:CA	37:d:71:PHE:HE2	1.93	0.82
39:f:45:ARG:O	39:f:56:LYS:HA	1.79	0.82
8:A:1253:A:OP1	24:Q:32:ARG:NH1	2.12	0.82
6:5:33:VAL:O	6:5:37:LYS:N	2.12	0.82
34:a:203:G:O2'	34:a:466:A:N6	2.12	0.82
1:0:12:ARG:NH2	8:A:517:C:OP1	2.13	0.82
34:a:495:A:H1'	34:a:496:A:H2'	1.62	0.82
3:2:29:GLN:NE2	8:A:210:C:OP1	2.11	0.81
8:A:1061:U:H2'	8:A:1064:C:H42	1.44	0.81
31:X:58:ILE:HG12	31:X:66:VAL:HG21	1.63	0.81
34:a:151:A:C6	34:a:171:A:C6	2.67	0.81
34:a:1262:C:N4	34:a:1273:C:O2	2.13	0.81
34:a:694:A:N6	34:a:787:A:O2'	2.13	0.81
13:F:73:VAL:HG22	13:F:78:ILE:HG12	1.62	0.81
35:b:82:ALA:HB2	35:b:213:LEU:HB2	1.63	0.81
35:b:183:PHE:HB3	35:b:197:PHE:HB2	1.63	0.81
42:i:129:ARG:NH1	56:w:35:A:OP1	2.13	0.81
56:w:26:A:C2	56:w:44:G:C6	2.69	0.81
35:b:163:ILE:HA	35:b:185:ILE:HD12	1.63	0.81
8:A:2405:G:O2'	8:A:2406:A:OP2	1.98	0.80
28:U:73:ASN:HD21	28:U:98:ASN:HD21	1.27	0.80
8:A:290:U:O2	8:A:350:G:N2	2.14	0.80
8:A:2405:G:O2'	8:A:2411:A:N6	2.14	0.80
34:a:56:U:H2'	34:a:57:G:H8	1.45	0.80
34:a:1301:U:OP2	34:a:1303:C:N4	2.15	0.80
37:d:68:GLU:O	37:d:71:PHE:CD2	2.35	0.80
34:a:179:A:H3'	34:a:180:U:H6	1.46	0.80
34:a:978:A:N7	34:a:1318:A:N6	2.30	0.79
34:a:207:C:OP1	34:a:212:G:C8	2.35	0.79
34:a:267:C:OP2	50:q:68:LYS:HD3	1.83	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:429:U:H4'	34:a:430:A:H5'	1.62	0.79
7:6:41:HIS:ND1	7:6:42:PRO:CD	2.45	0.79
37:d:12:ARG:HD2	37:d:37:PRO:HD3	0.88	0.79
34:a:181:A:H61	34:a:194:C:H3'	1.47	0.79
34:a:1150:A:H4'	43:j:43:PRO:HG3	1.64	0.79
34:a:1160:G:C5	34:a:1176:A:N6	2.50	0.79
34:a:1160:G:N1	34:a:1176:A:C5	2.51	0.79
37:d:149:LYS:O	37:d:151:GLN:NE2	2.14	0.79
8:A:275:C:O2'	8:A:362:A:N6	2.16	0.79
42:i:35:GLU:OE1	42:i:44:ARG:NH1	2.15	0.79
34:a:1061:G:C1'	43:j:58:ASN:ND2	2.44	0.79
28:U:98:ASN:O	28:U:100:GLU:N	2.16	0.79
34:a:429:U:O2'	37:d:21:LYS:NZ	2.16	0.79
34:a:1040:U:H2'	34:a:1041:G:H8	1.48	0.79
34:a:1356:G:H2'	34:a:1357:A:H8	1.46	0.79
8:A:396:G:OP2	31:X:9:LYS:NZ	2.16	0.78
56:w:26:A:N1	56:w:44:G:O6	2.16	0.78
6:5:54:VAL:O	8:A:1084:A:N6	2.17	0.78
34:a:664:G:H22	34:a:741:G:H1	1.28	0.78
8:A:1799:G:OP1	10:C:257:ARG:NH1	2.17	0.78
34:a:1320:C:N3	52:s:35:ARG:NH1	2.30	0.78
37:d:71:PHE:HA	37:d:74:TYR:HB2	1.65	0.78
43:j:52:LEU:HB2	47:n:81:ARG:HD2	1.65	0.78
56:w:33:U:N3	56:w:36:A:OP2	2.17	0.78
8:A:1068:G:O2'	8:A:1070:A:N7	2.15	0.78
49:p:52:LEU:HD11	49:p:74:LEU:HD23	1.65	0.78
34:a:1178:G:N7	42:i:98:ARG:NH1	2.32	0.78
34:a:677:U:H3	34:a:713:G:H22	1.30	0.78
34:a:937:A:N6	34:a:1345:U:O4	2.14	0.78
34:a:714:G:H2'	34:a:715:A:C8	2.19	0.77
40:g:70:PRO:HG3	40:g:98:LEU:HB3	1.66	0.77
8:A:2118:U:OP1	8:A:2119:A:N6	2.15	0.77
25:R:40:MET:HE3	25:R:49:ILE:HG12	1.66	0.77
8:A:1508:A:O2'	8:A:1509:A:O4'	2.02	0.77
8:A:1819:A:H5"	10:C:159:THR:HG21	1.66	0.77
7:6:43:PHE:HE1	7:6:48:GLN:HE22	1.30	0.77
10:C:74:PRO:HA	10:C:116:GLN:HB3	1.66	0.77
38:e:156:ARG:NH2	41:h:42:GLU:OE2	2.17	0.77
9:B:37:C:O2	22:O:100:HIS:NE2	2.16	0.77
34:a:26:A:H61	34:a:558:G:H1'	1.49	0.77
34:a:1032:G:O5'	34:a:1034:G:N2	2.16	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1033:G:N3	34:a:1035:A:N6	2.33	0.77
34:a:309:A:O2'	34:a:607:A:N1	2.17	0.77
34:a:1259:C:O2'	34:a:1283:U:O2	2.01	0.77
53:t:5:SER:C	53:t:7:LYS:H	1.93	0.77
8:A:993:G:N3	25:R:91:GLN:NE2	2.33	0.77
38:e:155:LYS:HG2	41:h:70:VAL:HG23	1.66	0.77
8:A:2573:C:OP2	58:y:32:LYS:NZ	2.17	0.77
34:a:949:A:N7	46:m:104:ASN:ND2	2.33	0.77
8:A:848:C:H2'	8:A:849:A:C8	2.18	0.76
49:p:39:PHE:HD1	49:p:50:THR:HG1	0.79	0.76
8:A:49:A:N6	8:A:177:G:O2'	2.18	0.76
48:o:11:VAL:HA	48:o:26:VAL:HG21	1.65	0.76
8:A:284:U:O2	8:A:356:G:O6	2.02	0.76
8:A:545:U:N3	8:A:548:G:O6	2.16	0.76
12:E:97:ASN:ND2	12:E:100:MET:SD	2.58	0.76
34:a:461:A:N7	34:a:470:C:N4	2.34	0.76
42:i:66:VAL:HB	42:i:78:ILE:HD11	1.67	0.76
8:A:1469:A:H2'	8:A:1470:A:C8	2.20	0.76
34:a:1046:A:N6	34:a:1211:U:O2	2.17	0.76
56:w:2:C:O2	56:w:71:G:N2	2.17	0.76
25:R:50:GLY:HA3	25:R:54:VAL:HG22	1.67	0.76
8:A:1047:G:N2	8:A:1111:A:C8	2.54	0.76
8:A:2683:C:H4'	11:D:13:ARG:HH11	1.51	0.76
37:d:25:ARG:NH1	37:d:26:ALA:O	2.19	0.76
8:A:1056:G:O2'	8:A:1086:A:O2'	2.03	0.76
8:A:2117:A:N6	8:A:2162:G:OP1	2.17	0.76
22:O:99:TYR:OH	22:O:111:ARG:NH1	2.18	0.76
8:A:2134:A:N6	8:A:2137:U:O4	2.19	0.76
34:a:210:C:H5'	34:a:211:G:H5'	1.66	0.76
35:b:119:GLN:HA	35:b:123:GLY:HA3	1.68	0.76
37:d:61:ARG:NH2	37:d:68:GLU:OE1	2.18	0.76
8:A:1093:G:H1	8:A:1097:U:H5"	1.48	0.76
34:a:151:A:N6	34:a:171:A:C2	2.53	0.76
8:A:1042:G:N2	8:A:1113:U:O2	2.15	0.76
22:O:55:GLU:OE1	22:O:81:ARG:NH1	2.19	0.76
34:a:151:A:N1	34:a:171:A:N1	2.34	0.76
34:a:920:U:H2'	34:a:1081:A:O2'	1.86	0.76
8:A:1063:G:N2	16:I:131:THR:O	2.18	0.75
34:a:1328:C:H5"	46:m:27:THR:HG21	1.67	0.75
40:g:139:ASP:OD1	40:g:142:ARG:NH2	2.19	0.75
8:A:1044:C:O2'	8:A:1111:A:N1	2.19	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:l:55:ARG:NH2	45:l:59:GLY:O	2.18	0.75
34:a:875:U:O2'	41:h:14:ARG:NH1	2.19	0.75
4:3:38:LYS:NZ	8:A:2365:G:N7	2.34	0.75
15:H:104:THR:HG23	15:H:105:ALA:H	1.50	0.75
34:a:1377:A:OP2	40:g:8:GLN:NE2	2.20	0.75
7:6:37:CYS:N	7:6:44:PHE:CE2	2.54	0.75
17:J:58:ASN:HD21	17:J:128:ASN:HD22	1.34	0.75
34:a:188:C:O2'	34:a:189:A:O4'	2.05	0.75
46:m:105:ALA:O	46:m:109:LYS:HB2	1.87	0.75
13:F:47:LYS:O	13:F:51:ASN:ND2	2.18	0.74
34:a:996:A:N1	34:a:1045:C:O2'	2.17	0.74
34:a:1009:U:H3	34:a:1020:G:H1	0.79	0.74
7:6:26:SER:HB2	13:F:101:ARG:HD3	1.69	0.74
34:a:84:U:O4	34:a:87:C:N4	2.17	0.74
34:a:426:U:OP1	37:d:35:GLN:NE2	2.15	0.74
34:a:920:U:H2'	34:a:1081:A:H2'	1.66	0.74
35:b:17:HIS:ND1	35:b:187:ASP:OD2	2.20	0.74
8:A:234:U:O4	8:A:263:G:N2	2.19	0.74
34:a:673:A:H2'	34:a:674:G:C8	2.22	0.74
34:a:1013:G:N2	34:a:1016:A:OP2	2.20	0.74
8:A:1082:U:H2'	8:A:1083:U:H4'	1.67	0.74
34:a:85:U:O2'	34:a:86:G:OP2	2.05	0.74
37:d:68:GLU:OE2	37:d:72:ARG:CG	2.32	0.74
8:A:881:G:N1	8:A:895:U:C2	2.55	0.74
15:H:77:THR:HG22	15:H:145:ASN:HB2	1.69	0.74
34:a:959:A:N1	34:a:1221:G:O2'	2.21	0.74
36:c:154:GLY:O	36:c:162:ALA:HA	1.86	0.74
41:h:76:ARG:NH1	41:h:125:ILE:O	2.20	0.74
8:A:974:G:H8	8:A:990:A:H62	1.33	0.74
38:e:45:VAL:O	38:e:71:ILE:N	2.19	0.74
44:k:19:VAL:HG23	44:k:34:THR:HG23	1.69	0.74
8:A:878:A:H3'	8:A:879:G:H8	1.53	0.74
34:a:826:C:O2	41:h:15:ASN:ND2	2.21	0.74
35:b:182:VAL:O	35:b:196:ASP:N	2.16	0.74
40:g:71:THR:HA	40:g:95:ARG:HH12	1.52	0.74
8:A:881:G:N2	8:A:895:U:O2	2.21	0.74
8:A:2591:C:H2'	8:A:2592:G:H8	1.51	0.74
34:a:1032:G:OP2	34:a:1034:G:N1	2.21	0.74
37:d:77:GLU:HA	37:d:80:ARG:HB3	1.69	0.74
34:a:159:G:H5'	34:a:160:A:H2'	1.70	0.73
34:a:715:A:H2'	34:a:716:A:C8	2.23	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:w:52:G:N1	56:w:62:C:N3	2.30	0.73
8:A:585:G:N7	24:Q:5:ARG:NH1	2.36	0.73
8:A:704:G:H2'	8:A:726:G:H22	1.53	0.73
34:a:68:G:O2'	34:a:171:A:H2	1.65	0.73
34:a:920:U:H3'	34:a:1082:A:O5'	1.88	0.73
8:A:1250:G:OP2	19:L:21:ARG:NH2	2.22	0.73
34:a:1080:A:C8	34:a:1081:A:H1'	2.22	0.73
8:A:572:A:OP2	25:R:80:ARG:NH1	2.22	0.73
8:A:888:C:N4	52:s:27:LYS:O	2.19	0.73
56:w:55:PSU:H2'	56:w:57:G:OP2	1.89	0.73
8:A:781:A:OP1	10:C:216:ARG:NH2	2.21	0.73
8:A:1059:G:H21	16:I:76:ALA:H	1.35	0.73
30:W:22:PHE:N	30:W:25:GLU:OE1	2.22	0.73
34:a:946:A:H2'	34:a:947:G:H8	1.52	0.73
34:a:1160:G:C6	34:a:1176:A:C6	2.72	0.73
38:e:156:ARG:HA	41:h:63:LYS:HZ1	1.53	0.73
5:4:38:GLY:OXT	8:A:1031:G:N2	2.19	0.73
8:A:475:C:O2	8:A:479:A:N6	2.22	0.73
53:t:4:LYS:CE	53:t:6:ALA:HB2	2.16	0.73
4:3:7:ARG:NH1	8:A:243:U:OP2	2.22	0.73
8:A:1248:G:OP1	12:E:44:ARG:NH1	2.21	0.73
8:A:2364:C:OP1	30:W:51:ARG:NH1	2.21	0.73
8:A:2537:U:H2'	8:A:2538:C:C6	2.22	0.73
50:q:59:GLU:OE1	50:q:76:ARG:NH1	2.22	0.73
2:1:30:PRO:O	2:1:32:LYS:NZ	2.22	0.73
7:6:20:ASN:ND2	7:6:37:CYS:SG	2.62	0.73
34:a:946:A:H2'	34:a:947:G:C8	2.24	0.73
37:d:68:GLU:C	37:d:71:PHE:CE2	2.66	0.73
56:w:36:A:H61	56:w:37:MIA:H152	1.53	0.73
8:A:1093:G:H5'	8:A:1094:U:H4'	1.71	0.73
8:A:1715:G:N2	8:A:1744:A:OP2	2.22	0.73
34:a:68:G:H1	34:a:101:A:H2	0.83	0.73
37:d:144:ILE:HD13	37:d:149:LYS:HG3	1.71	0.73
34:a:1060:U:H5"	43:j:53:ILE:HG22	1.70	0.72
42:i:112:ARG:NH2	43:j:64:GLN:OE1	2.22	0.72
8:A:500:G:H22	8:A:503:A:H5'	1.53	0.72
34:a:151:A:C6	34:a:171:A:C2	2.75	0.72
8:A:1062:G:N2	16:I:134:SER:O	2.22	0.72
8:A:2788:C:O2'	8:A:2809:A:N3	2.21	0.72
34:a:942:G:H21	42:i:125:GLN:HE22	1.37	0.72
8:A:881:G:N1	8:A:895:U:N3	2.37	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:U:39:ASN:O	28:U:61:GLU:HA	1.89	0.72
37:d:68:GLU:CA	37:d:71:PHE:CE2	2.72	0.72
49:p:50:THR:HG21	49:p:74:LEU:CD2	2.19	0.72
56:w:26:A:C2	56:w:44:G:C2	2.75	0.72
34:a:1118:U:H2'	34:a:1119:C:H6	1.53	0.72
34:a:1213:A:O2'	34:a:1215:G:N7	2.21	0.72
34:a:1347:G:N2	34:a:1374:A:OP2	2.22	0.72
43:j:28:THR:O	43:j:31:ARG:NH1	2.23	0.72
51:r:36:GLY:O	51:r:62:ARG:NH2	2.23	0.72
8:A:187:G:O3'	31:X:10:ARG:NH2	2.22	0.72
22:O:40:ILE:HG12	22:O:47:VAL:HG12	1.72	0.72
34:a:1266:G:N1	34:a:1269:A:OP2	2.20	0.72
8:A:291:G:O6	8:A:349:U:O2	2.08	0.72
18:K:70:ARG:HG2	18:K:76:VAL:HG12	1.70	0.72
34:a:60:A:OP1	34:a:331:G:N1	2.18	0.72
34:a:1347:G:O6	42:i:11:ARG:NH2	2.23	0.72
37:d:99:ASN:OD1	37:d:110:ARG:NH2	2.23	0.72
8:A:1378:A:O2'	8:A:1380:G:N7	2.23	0.71
34:a:68:G:C2'	34:a:171:A:H2	2.03	0.71
7:6:37:CYS:N	7:6:44:PHE:CZ	2.58	0.71
8:A:242:G:N2	8:A:255:A:OP2	2.23	0.71
28:U:97:SER:O	28:U:97:SER:OG	2.01	0.71
34:a:1497:G:H1'	34:a:1518:MA6:H2	1.71	0.71
37:d:168:THR:O	37:d:183:ARG:NH1	2.19	0.71
43:j:32:THR:HB	43:j:83:THR:HG21	1.70	0.71
8:A:319:G:H1	8:A:323:C:H5	1.36	0.71
8:A:820:A:H4'	8:A:836:G:H22	1.54	0.71
11:D:33:ARG:HD3	11:D:73:VAL:HB	1.72	0.71
45:l:99:GLY:HA3	45:l:117:GLY:HA3	1.70	0.71
56:w:23:A:H2'	56:w:24:G:H8	1.54	0.71
7:6:41:HIS:CG	7:6:42:PRO:HD3	2.25	0.71
8:A:1296:G:OP1	8:A:2709:G:O2'	2.06	0.71
34:a:279:A:H5'	34:a:280:C:H2'	1.72	0.71
34:a:1003:G:O3'	34:a:1024:G:N2	2.23	0.71
49:p:75:ILE:O	49:p:79:ASN:ND2	2.23	0.71
8:A:84:A:N1	8:A:98:G:O2'	2.23	0.71
15:H:51:ARG:HB2	15:H:54:LEU:HB2	1.73	0.71
34:a:45:G:H2'	34:a:46:G:H8	1.54	0.71
7:6:1:MET:N	9:B:44:G:OP1	2.23	0.71
35:b:57:ASN:HB3	35:b:219:THR:HG22	1.72	0.71
36:c:52:SER:N	36:c:68:HIS:O	2.21	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1093:G:N1	8:A:1097:U:H5”	2.06	0.71
8:A:2584:U:H3’	8:A:2585:U:H5”	1.72	0.71
34:a:1359:C:H3’	47:n:75:ARG:HH22	1.55	0.71
45:l:52:CYS:HB3	45:l:66:ILE:HD11	1.72	0.71
8:A:2797:U:H5”	8:A:2798:U:H5	1.55	0.71
8:A:2165:C:H41	8:A:2170:A:H62	1.36	0.70
35:b:67:LEU:HB2	35:b:153:MET:HE1	1.71	0.70
8:A:2143:C:H42	8:A:2148:G:H1’	1.54	0.70
13:F:66:ILE:O	13:F:68:LYS:NZ	2.23	0.70
34:a:1328:C:OP1	46:m:27:THR:OG1	2.09	0.70
4:3:22:LYS:NZ	8:A:631:A:OP2	2.23	0.70
34:a:438:U:O2	34:a:496:A:C6	2.44	0.70
34:a:921:U:H6	34:a:1082:A:OP2	1.74	0.70
34:a:1218:C:H2’	34:a:1219:A:C8	2.24	0.70
34:a:403:C:H2’	34:a:404:G:H8	1.55	0.70
34:a:574:A:O2’	34:a:882:C:O2’	2.05	0.70
8:A:2555:U:O4	58:y:73:LYS:NZ	2.19	0.70
8:A:2658:C:H5”	14:G:157:LYS:HE3	1.74	0.70
34:a:1233:G:OP1	42:i:118:ARG:NH1	2.24	0.70
5:4:16:ILE:HG12	5:4:25:VAL:HG22	1.72	0.70
34:a:56:U:H2’	34:a:57:G:C8	2.25	0.70
34:a:1403:C:O2’	34:a:1499:A:N1	2.24	0.70
43:j:8:ILE:HB	43:j:74:VAL:HB	1.73	0.70
8:A:1364:G:N2	8:A:1367:A:OP2	2.24	0.70
34:a:1160:G:N1	34:a:1176:A:N6	2.35	0.70
34:a:1222:G:OP2	34:a:1322:C:N4	2.24	0.70
47:n:35:ALA:HB1	47:n:41:ARG:H	1.56	0.70
8:A:1915:3TD:H6	58:y:102:LYS:HZ1	1.56	0.70
2:1:24:LYS:NZ	2:1:31:GLU:O	2.25	0.69
8:A:2391:G:H1’	8:A:2424:C:H41	1.57	0.69
34:a:62:U:O2	34:a:379:C:O2’	2.10	0.69
34:a:921:U:O5’	34:a:1082:A:O5’	2.10	0.69
47:n:37:SER:HA	47:n:41:ARG:HD3	1.73	0.69
8:A:1469:A:H2’	8:A:1470:A:H8	1.56	0.69
34:a:525:C:OP1	45:l:85:ARG:NH2	2.23	0.69
34:a:601:G:H2’	34:a:602:A:C8	2.27	0.69
34:a:1152:A:H5’	43:j:15:HIS:CD2	2.27	0.69
8:A:955:PSU:OP1	20:M:86:LYS:NZ	2.22	0.69
21:N:12:ARG:O	21:N:17:ARG:NH2	2.26	0.69
34:a:9:G:H4’	38:e:108:GLY:H	1.56	0.69
34:a:744:C:H2’	34:a:745:G:H8	1.57	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2105:U:H3'	8:A:2106:U:H5"	1.73	0.69
28:U:73:ASN:ND2	28:U:80:ASP:OD2	2.21	0.69
34:a:1308:U:H2'	34:a:1309:G:H8	1.57	0.69
36:c:134:LYS:NZ	36:c:169:GLU:OE1	2.25	0.69
44:k:29:THR:HG21	44:k:91:GLY:HA3	1.73	0.69
49:p:43:ALA:CB	49:p:48:GLU:C	2.66	0.69
15:H:101:ASP:OD1	15:H:102:ALA:N	2.26	0.69
34:a:45:G:H2'	34:a:46:G:C8	2.26	0.69
34:a:859:G:OP2	34:a:869:G:N1	2.19	0.69
36:c:122:GLN:HG3	36:c:127:VAL:HG11	1.75	0.69
8:A:2114:A:H1'	8:A:2166:U:H3	1.58	0.69
23:P:105:LYS:O	23:P:108:ARG:NH2	2.19	0.69
34:a:68:G:O6	34:a:101:A:N1	2.25	0.69
34:a:673:A:O3'	39:f:86:ARG:NH2	2.25	0.69
38:e:155:LYS:O	41:h:63:LYS:NZ	2.26	0.69
8:A:729:G:H5'	8:A:730:A:H5"	1.75	0.69
8:A:6:A:N3	17:J:135:GLN:NE2	2.39	0.69
8:A:752:A:O2'	8:A:753:A:OP2	2.11	0.69
8:A:1093:G:N2	8:A:1098:A:OP2	2.26	0.69
8:A:1818:U:OP2	10:C:155:ARG:NH1	2.26	0.69
34:a:933:G:O6	40:g:2:ARG:NH2	2.25	0.69
34:a:964:A:N7	34:a:965:U:N3	2.41	0.69
34:a:1004:A:H2'	34:a:1005:A:C8	2.27	0.69
34:a:1125:U:H2'	34:a:1126:U:H2'	1.75	0.69
42:i:51:LEU:HA	42:i:54:VAL:HG12	1.75	0.69
45:l:82:ARG:NH1	45:l:83:GLY:O	2.26	0.69
49:p:41:PRO:HG2	49:p:42:ILE:HG12	1.73	0.69
8:A:691:C:OP1	10:C:216:ARG:NH1	2.25	0.69
8:A:1796:U:H2'	8:A:1797:G:H8	1.58	0.69
8:A:2126:A:C4	8:A:2163:A:H5'	2.28	0.69
26:S:82:MET:HB2	26:S:98:LYS:HB2	1.73	0.69
34:a:656:G:O2'	48:o:27:GLN:OE1	2.09	0.69
41:h:86:LYS:HD2	41:h:90:GLU:HB3	1.75	0.69
11:D:46:ARG:HG2	11:D:84:LEU:HB2	1.74	0.69
34:a:449:G:N1	34:a:484:G:O6	2.18	0.69
38:e:96:GLN:HE21	38:e:123:LEU:HD12	1.57	0.69
8:A:1482:G:H2'	8:A:1483:G:H8	1.57	0.68
8:A:2591:C:H2'	8:A:2592:G:C8	2.28	0.68
8:A:2689:U:OP1	8:A:2719:G:N1	2.19	0.68
34:a:716:A:O2'	44:k:118:ASN:ND2	2.26	0.68
34:a:1203:C:H4'	47:n:67:THR:HG21	1.74	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:569:U:O2'	8:A:983:A:N1	2.25	0.68
8:A:1245:G:OP1	19:L:13:LYS:NZ	2.25	0.68
28:U:95:PHE:O	28:U:99:SER:HA	1.94	0.68
34:a:1035:A:H2'	34:a:1036:A:C8	2.28	0.68
8:A:1481:U:H3	8:A:1510:G:H1	1.40	0.68
28:U:98:ASN:O	28:U:100:GLU:HB2	1.92	0.68
29:V:42:LEU:HD13	29:V:47:VAL:HG21	1.74	0.68
34:a:565:U:H3'	34:a:566:G:H2'	1.75	0.68
8:A:2573:C:N4	58:y:34:SER:OG	2.25	0.68
12:E:41:GLN:HG2	12:E:43:THR:HG23	1.74	0.68
36:c:27:GLU:N	36:c:27:GLU:OE1	2.26	0.68
8:A:1358:G:C8	8:A:1371:G:O6	2.47	0.68
8:A:1386:C:H2'	8:A:1387:A:C8	2.29	0.68
10:C:161:VAL:HG23	10:C:175:LEU:HA	1.74	0.68
17:J:88:THR:N	17:J:91:GLU:OE1	2.25	0.68
8:A:819:A:OP2	8:A:1187:G:N2	2.23	0.68
34:a:1163:A:H2'	34:a:1164:G:H8	1.58	0.68
46:m:27:THR:HA	46:m:30:LYS:HE3	1.74	0.68
56:w:62:C:H2'	56:w:63:G:H8	1.59	0.68
32:Y:13:GLU:O	32:Y:16:THR:HB	1.93	0.68
42:i:62:LEU:HB3	42:i:64:ILE:HD11	1.75	0.68
8:A:190:A:OP2	31:X:25:LYS:NZ	2.27	0.68
8:A:1047:G:HO2'	8:A:1110:G:H1	1.31	0.68
8:A:1587:G:H2'	8:A:1588:G:H8	1.58	0.68
34:a:182:A:N6	34:a:194:C:O2	2.27	0.68
34:a:1376:U:O4	40:g:9:ARG:NH1	2.26	0.68
54:u:32:ARG:O	54:u:35:GLU:N	2.14	0.68
18:K:34:GLY:N	18:K:37:ASP:OD2	2.27	0.68
34:a:1218:C:H2'	34:a:1219:A:H8	1.59	0.68
8:A:694:U:H3	8:A:768:G:H1	1.42	0.68
8:A:2620:C:O2'	11:D:162:ALA:O	2.12	0.68
10:C:250:GLN:NE2	10:C:251:THR:O	2.26	0.68
13:F:135:ILE:HA	13:F:140:ILE:HD13	1.75	0.68
34:a:1221:G:OP1	34:a:1321:U:N3	2.25	0.68
8:A:2127:G:N2	8:A:2162:G:O2'	2.25	0.67
14:G:17:LYS:NZ	14:G:31:GLU:OE2	2.27	0.67
34:a:151:A:C8	34:a:170:U:C4	2.81	0.67
35:b:113:LEU:HD22	35:b:143:LEU:HB3	1.76	0.67
40:g:129:ASN:HA	40:g:134:VAL:HG11	1.76	0.67
7:6:41:HIS:CG	7:6:42:PRO:CD	2.77	0.67
8:A:849:A:H2'	8:A:850:U:H6	1.60	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1827:U:OP2	10:C:220:ARG:NH1	2.25	0.67
8:A:2157:G:H21	8:A:2158:A:H61	1.41	0.67
17:J:125:TYR:OH	17:J:132:HIS:NE2	2.21	0.67
36:c:156:LEU:O	36:c:163:ARG:NH2	2.26	0.67
8:A:1310:G:H1'	8:A:1611:C:H5"	1.76	0.67
34:a:1241:G:OP1	40:g:34:LYS:NZ	2.26	0.67
34:a:1267:C:H42	34:a:1328:C:H5'	1.58	0.67
37:d:29:THR:HG23	37:d:30:LYS:HG3	1.75	0.67
44:k:20:ALA:HB3	44:k:83:VAL:HG12	1.75	0.67
45:l:85:ARG:HG2	45:l:87:LYS:H	1.58	0.67
8:A:310:A:O2'	8:A:311:A:O5'	2.12	0.67
8:A:1135:C:N4	8:A:1138:G:OP2	2.25	0.67
9:B:56:G:H4'	9:B:57:A:H5'	1.75	0.67
10:C:143:VAL:HB	10:C:153:LEU:HB2	1.74	0.67
10:C:181:ARG:HG2	10:C:182:LYS:H	1.59	0.67
32:Y:4:LYS:O	32:Y:8:GLU:HB2	1.93	0.67
34:a:921:U:C5'	34:a:1081:A:H3'	2.25	0.67
52:s:50:VAL:HG13	52:s:74:ALA:HB2	1.76	0.67
1:0:9:ARG:NH1	8:A:516:C:OP1	2.27	0.67
2:1:6:GLU:OE1	2:1:27:ARG:NH1	2.28	0.67
6:5:44:ALA:O	6:5:49:GLY:N	2.26	0.67
8:A:1645:G:H5"	8:A:1646:C:H5'	1.76	0.67
14:G:21:GLN:OE1	14:G:54:ARG:NH2	2.27	0.67
34:a:35:G:N2	45:l:114:SER:OG	2.26	0.67
34:a:89:U:H5"	34:a:90:C:H5	1.59	0.67
34:a:1162:C:H2'	34:a:1163:A:H8	1.59	0.67
8:A:881:G:C2	8:A:895:U:O2	2.48	0.67
8:A:1255:U:H5"	8:A:1256:G:H5"	1.75	0.67
8:A:2157:G:H21	8:A:2158:A:N6	1.93	0.67
8:A:2500:U:O2'	8:A:2504:PSU:OP1	2.12	0.67
34:a:219:U:H2'	34:a:220:G:H8	1.60	0.67
34:a:737:C:H2'	34:a:738:C:H6	1.58	0.67
35:b:169:HIS:HA	35:b:172:ILE:HD12	1.77	0.67
1:0:4:GLN:OE1	8:A:2056:G:O2'	2.11	0.67
23:P:20:ARG:N	23:P:23:ASP:OD2	2.28	0.67
27:T:11:LEU:O	32:Y:29:ARG:NH1	2.28	0.67
34:a:137:U:O2	34:a:226:G:N2	2.25	0.67
34:a:1219:A:H2'	34:a:1220:G:H8	1.58	0.67
35:b:67:LEU:HD21	35:b:91:VAL:HG23	1.77	0.67
39:f:38:ARG:HB3	39:f:63:ASN:HB2	1.76	0.67
21:N:30:ARG:NH2	21:N:72:ASP:OD2	2.28	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:707:U:H4'	44:k:21:HIS:HD2	1.60	0.67
34:a:769:G:H4'	34:a:1513:A:H4'	1.76	0.67
34:a:1237:C:H3'	34:a:1238:A:H5'	1.77	0.67
34:a:1445:U:O2	34:a:1457:G:N2	2.27	0.67
35:b:46:VAL:HG23	35:b:47:PRO:HD3	1.77	0.67
8:A:568:U:O4	25:R:81:LYS:NZ	2.27	0.67
8:A:1028:A:H2'	8:A:1029:A:C8	2.30	0.67
8:A:1168:G:O6	8:A:1181:U:O4	2.13	0.67
8:A:2816:G:N3	8:A:2883:A:O2'	2.27	0.67
30:W:55:LEU:HD12	30:W:76:ILE:HD12	1.77	0.67
34:a:1306:A:N6	34:a:1331:G:O2'	2.28	0.67
41:h:21:LYS:O	41:h:64:TYR:OH	2.11	0.67
8:A:2110:G:C2	8:A:2120:G:H5'	2.29	0.66
34:a:539:A:H2'	34:a:540:G:H8	1.60	0.66
34:a:1355:G:H2'	34:a:1356:G:C8	2.30	0.66
46:m:18:LEU:HD22	46:m:29:SER:HA	1.78	0.66
9:B:60:C:H2'	9:B:61:G:H8	1.58	0.66
12:E:48:THR:HG22	12:E:86:ALA:HB3	1.76	0.66
34:a:256:U:OP1	50:q:18:LYS:NZ	2.23	0.66
34:a:921:U:H6	34:a:1082:A:P	2.18	0.66
34:a:954:G:H2'	34:a:955:U:C6	2.29	0.66
50:q:46:HIS:NE2	50:q:48:GLU:OE2	2.29	0.66
8:A:720:U:H2'	8:A:721:A:C8	2.30	0.66
24:Q:47:ARG:NH2	24:Q:51:GLN:OE1	2.29	0.66
12:E:58:LYS:NZ	12:E:70:SER:O	2.28	0.66
34:a:791:G:N1	34:a:1498:UR3:OP1	2.28	0.66
34:a:713:G:H2'	34:a:714:G:C8	2.29	0.66
34:a:718:A:OP2	34:a:720:C:N4	2.28	0.66
34:a:1374:A:N6	34:a:1375:A:N1	2.44	0.66
38:e:22:LYS:HB3	38:e:29:ILE:HB	1.76	0.66
8:A:747:5MC:O2'	26:S:92:ARG:NH2	2.25	0.66
44:k:22:ILE:HG21	44:k:95:THR:HG21	1.77	0.66
34:a:36:C:O2'	45:l:113:ARG:NH2	2.28	0.66
34:a:490:C:H2'	34:a:491:G:C8	2.28	0.66
8:A:1826:G:O2'	8:A:1971:U:OP2	2.14	0.66
8:A:2189:U:H2'	8:A:2190:G:C8	2.31	0.66
18:K:76:VAL:HG22	23:P:72:VAL:HB	1.78	0.66
19:L:132:ARG:NH1	19:L:144:GLU:OE2	2.29	0.66
34:a:299:G:H2'	34:a:300:A:C8	2.31	0.66
34:a:667:G:H2'	34:a:668:G:H8	1.61	0.66
34:a:1368:A:OP1	42:i:112:ARG:NH2	2.29	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:s:76:THR:OG1	52:s:77:ARG:NH1	2.28	0.66
19:L:75:ALA:HB2	19:L:105:ILE:HD12	1.75	0.66
8:A:577:G:O2'	8:A:1254:A:OP1	2.13	0.66
8:A:2076:U:OP2	8:A:2238:G:N2	2.24	0.66
34:a:1023:U:H2'	34:a:1024:G:H8	1.61	0.66
34:a:1151:A:O2'	34:a:1152:A:O5'	2.14	0.66
44:k:19:VAL:HG12	44:k:82:GLU:HG3	1.78	0.66
8:A:672:C:OP2	19:L:42:SER:OG	2.11	0.65
8:A:891:G:H2'	8:A:892:A:H8	1.61	0.65
9:B:9:G:O6	9:B:111:U:O2	2.13	0.65
42:i:129:ARG:NH2	56:w:35:A:OP2	2.30	0.65
8:A:240:C:OP2	8:A:241:A:O2'	2.11	0.65
8:A:371:A:H61	8:A:401:A:H3'	1.61	0.65
8:A:764:A:OP1	10:C:206:LYS:NZ	2.29	0.65
8:A:1529:G:H1	8:A:1542:U:H3	1.42	0.65
8:A:2151:U:O2	8:A:2153:C:N4	2.16	0.65
8:A:2773:C:OP1	11:D:169:ARG:NH2	2.28	0.65
56:w:27:G:H2'	56:w:28:G:C8	2.31	0.65
8:A:818:G:N1	8:A:1188:U:OP2	2.25	0.65
8:A:1915:3TD:H3'	8:A:1916:A:H8	1.61	0.65
34:a:864:A:H2'	34:a:865:A:C8	2.32	0.65
34:a:1355:G:H2'	34:a:1356:G:H8	1.62	0.65
1:0:48:TYR:OH	8:A:2883:A:OP1	2.14	0.65
34:a:179:A:N6	34:a:195:A:N7	2.44	0.65
34:a:1032:G:H3'	34:a:1034:G:N2	2.11	0.65
52:s:18:VAL:HG13	52:s:42:ASN:HD21	1.61	0.65
8:A:1085:A:O2'	8:A:1086:A:O4'	2.10	0.65
37:d:90:LEU:HD21	37:d:194:ILE:HG21	1.77	0.65
49:p:76:LYS:NZ	49:p:77:GLU:OE2	2.30	0.65
56:w:23:A:H2'	56:w:24:G:C8	2.32	0.65
8:A:1061:U:H2'	8:A:1064:C:N4	2.10	0.65
8:A:1084:A:N3	8:A:1105:U:O2'	2.30	0.65
8:A:1864:U:OP1	8:A:2410:G:O2'	2.15	0.65
8:A:2635:A:O2'	11:D:81:GLU:OE1	2.15	0.65
10:C:68:ARG:NH2	10:C:126:GLY:O	2.19	0.65
34:a:145:G:N2	34:a:177:G:O6	2.29	0.65
34:a:154:U:H2'	34:a:155:A:H8	1.61	0.65
34:a:235:C:H2'	34:a:236:A:C8	2.32	0.65
34:a:401:C:O2'	34:a:621:A:N3	2.27	0.65
37:d:96:ARG:HB2	37:d:99:ASN:HB3	1.79	0.65
42:i:57:VAL:HG23	42:i:58:GLU:H	1.61	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:m:82:LEU:HD23	52:s:65:MET:HG2	1.78	0.65
3:2:1:MET:N	8:A:1619:G:O2'	2.30	0.65
4:3:23:HIS:ND1	4:3:24:LYS:O	2.24	0.65
7:6:36:VAL:HG13	7:6:41:HIS:CE1	2.32	0.65
8:A:1813:G:H21	10:C:50:THR:HG22	1.62	0.65
8:A:1869:G:N2	8:A:1872:A:OP2	2.30	0.65
9:B:77:U:OP1	29:V:21:ARG:NH2	2.30	0.65
34:a:8:A:N6	37:d:201:GLU:O	2.30	0.65
34:a:684:U:O2'	44:k:40:ALA:O	2.12	0.65
34:a:1160:G:H8	34:a:1182:G:H22	1.44	0.65
36:c:4:VAL:HG21	36:c:9:ILE:HD13	1.79	0.65
8:A:1779:U:OP2	8:A:1784:A:N6	2.28	0.65
25:R:51:VAL:HB	25:R:52:PRO:HD2	1.79	0.65
34:a:921:U:P	34:a:1081:A:H3'	2.36	0.65
34:a:1115:U:H3	34:a:1185:G:H1	0.75	0.65
43:j:7:ARG:HA	43:j:75:ASP:HA	1.78	0.65
8:A:1597:A:H5"	8:A:1598:A:H5'	1.78	0.65
8:A:1857:G:O2'	8:A:1885:A:N6	2.30	0.65
15:H:121:VAL:HG23	15:H:122:LEU:H	1.62	0.65
34:a:332:G:OP2	53:t:2:ASN:N	2.30	0.65
34:a:539:A:H2'	34:a:540:G:C8	2.32	0.65
40:g:113:LYS:HB3	40:g:117:LEU:HD13	1.79	0.65
8:A:1000:A:H2'	8:A:1001:A:C8	2.32	0.64
10:C:87:SER:O	10:C:196:ASN:ND2	2.23	0.64
11:D:48:ILE:HG23	11:D:84:LEU:HD21	1.79	0.64
23:P:38:ARG:NH2	34:a:346:G:OP1	2.30	0.64
26:S:60:HIS:ND1	26:S:61:ASN:OD1	2.24	0.64
34:a:168:G:H2'	34:a:169:C:C6	2.33	0.64
46:m:32:ILE:HD12	46:m:58:GLU:HG3	1.79	0.64
8:A:287:G:H2'	8:A:288:U:C6	2.32	0.64
8:A:1794:A:H2'	8:A:1795:C:C6	2.32	0.64
34:a:30:U:H3	34:a:553:A:N6	1.95	0.64
34:a:1027:C:H42	34:a:1034:G:H8	1.45	0.64
34:a:1251:A:H2'	34:a:1252:A:C8	2.32	0.64
35:b:132:GLU:OE1	35:b:136:ARG:NH1	2.30	0.64
8:A:285:G:H1	8:A:355:U:H3	1.43	0.64
8:A:774:G:O2'	8:A:775:G:O5'	2.15	0.64
12:E:130:LYS:HB2	12:E:133:LEU:HG	1.79	0.64
36:c:64:ARG:HA	36:c:99:GLN:O	1.98	0.64
8:A:2204:G:OP2	10:C:146:LYS:NZ	2.28	0.64
12:E:21:ARG:HH11	12:E:106:LYS:HD2	1.62	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:661:G:O2'	34:a:662:U:OP1	2.16	0.64
34:a:991:U:O2	34:a:1213:A:N7	2.31	0.64
42:i:105:ARG:O	42:i:105:ARG:NH1	2.26	0.64
8:A:270:A:N1	8:A:369:U:O2'	2.30	0.64
8:A:1429:G:H2'	8:A:1430:G:H8	1.63	0.64
8:A:2313:C:O4'	13:F:36:ASN:ND2	2.30	0.64
8:A:2533:U:OP1	8:A:2665:A:O2'	2.15	0.64
10:C:244:VAL:HG12	10:C:250:GLN:HA	1.79	0.64
11:D:151:THR:HB	11:D:152:PRO:HD3	1.79	0.64
13:F:14:LYS:NZ	13:F:18:GLU:OE1	2.24	0.64
34:a:159:G:C4	34:a:164:G:H5"	2.33	0.64
34:a:166:U:O4	34:a:167:A:N6	2.30	0.64
34:a:1296:C:H4'	34:a:1302:C:C4	2.33	0.64
36:c:10:ARG:NH2	36:c:174:LEU:O	2.31	0.64
40:g:14:ASP:O	40:g:18:GLY:N	2.22	0.64
49:p:69:ASP:OD1	49:p:70:ARG:N	2.29	0.64
56:w:54:5MU:C5'	56:w:55:PSU:OP2	2.46	0.64
8:A:29:U:H1'	24:Q:10:ARG:HH22	1.63	0.64
8:A:1019:U:H3	8:A:1142:A:H62	1.45	0.64
33:Z:7:THR:HG22	33:Z:34:THR:HB	1.79	0.64
34:a:957:U:OP1	52:s:80:ARG:NH2	2.31	0.64
35:b:100:LEU:HB2	35:b:174:GLU:HG2	1.80	0.64
40:g:45:ALA:HB2	40:g:116:ALA:HA	1.79	0.64
50:q:10:ARG:HG3	50:q:57:VAL:HG22	1.79	0.64
12:E:58:LYS:HG2	12:E:71:GLY:HA2	1.80	0.64
34:a:690:G:O6	44:k:52:ARG:NH2	2.31	0.64
34:a:934:C:O2'	34:a:1344:C:OP2	2.16	0.64
40:g:55:LYS:HB3	40:g:59:GLU:HG3	1.78	0.64
8:A:2134:A:H4'	8:A:2158:A:H1'	1.80	0.64
10:C:259:ASN:ND2	10:C:262:THR:OG1	2.30	0.64
16:I:40:ALA:HA	16:I:43:ALA:HB3	1.80	0.64
34:a:146:G:H2'	34:a:147:G:C8	2.33	0.64
34:a:197:A:N1	34:a:220:G:O2'	2.23	0.64
34:a:459:A:C6	34:a:474:G:N1	2.66	0.64
34:a:993:G:O2'	34:a:994:A:N7	2.30	0.64
34:a:1282:C:H2'	34:a:1283:U:C6	2.33	0.64
38:e:165:GLY:HA2	41:h:113:ARG:HH21	1.63	0.64
41:h:10:LEU:HD22	41:h:74:ILE:HD11	1.79	0.64
52:s:54:ARG:HG3	52:s:55:GLN:HG2	1.80	0.64
8:A:383:C:H5'	8:A:384:A:H5"	1.79	0.64
8:A:1274:A:N1	8:A:1644:C:O2'	2.27	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:V:72:VAL:HG12	29:V:93:ARG:HA	1.79	0.64
34:a:203:G:H2'	34:a:206:C:N4	2.13	0.64
36:c:65:VAL:HB	36:c:100:ILE:HG22	1.80	0.64
42:i:20:ILE:HB	42:i:60:LEU:HD21	1.80	0.64
7:6:26:SER:OG	7:6:27:THR:N	2.27	0.63
8:A:1913:A:OP1	34:a:1494:G:O2'	2.16	0.63
34:a:64:G:OP1	34:a:382:A:N6	2.31	0.63
34:a:68:G:H5'	34:a:171:A:H1'	1.79	0.63
8:A:2116:G:H21	8:A:2164:C:H41	1.46	0.63
9:B:5:U:H2'	9:B:6:G:H8	1.63	0.63
14:G:23:ILE:HD11	14:G:42:VAL:HG11	1.78	0.63
19:L:29:LYS:O	19:L:30:THR:OG1	2.13	0.63
34:a:207:C:H1'	34:a:212:G:O4'	1.98	0.63
34:a:1142:G:H3'	34:a:1143:G:C8	2.34	0.63
8:A:475:C:N3	8:A:479:A:N7	2.46	0.63
12:E:176:ASP:OD1	12:E:179:SER:OG	2.14	0.63
34:a:1163:A:H2'	34:a:1164:G:C8	2.34	0.63
55:v:10:ARG:HG2	55:v:11:PRO:HD2	1.80	0.63
8:A:1638:C:O3'	8:A:2709:G:N2	2.31	0.63
13:F:113:PHE:CZ	13:F:115:GLY:HA2	2.33	0.63
18:K:13:ASN:OD1	18:K:98:ARG:N	2.31	0.63
34:a:1375:A:N7	40:g:9:ARG:NH2	2.46	0.63
39:f:3:HIS:NE2	39:f:65:GLU:OE1	2.31	0.63
50:q:44:HIS:ND1	50:q:69:THR:CG2	2.62	0.63
8:A:370:G:O2'	8:A:424:G:OP1	2.17	0.63
8:A:624:C:O2'	8:A:657:U:OP1	2.16	0.63
8:A:1042:G:O6	8:A:1113:U:O4	2.15	0.63
8:A:1170:C:N4	8:A:1171:G:O6	2.31	0.63
8:A:2314:A:H2'	8:A:2315:G:H8	1.63	0.63
8:A:2328:A:H2'	8:A:2329:U:C6	2.32	0.63
12:E:134:LEU:HD23	12:E:164:LEU:HD12	1.80	0.63
34:a:616:G:H1'	49:p:46:LYS:HE3	1.80	0.63
43:j:65:TYR:OH	47:n:85:ARG:HG3	1.99	0.63
8:A:500:G:N1	8:A:503:A:OP2	2.30	0.63
8:A:1946:U:H2'	8:A:1947:C:C6	2.33	0.63
34:a:356:A:N3	34:a:368:U:O2'	2.28	0.63
34:a:1048:G:OP1	47:n:3:GLN:NE2	2.31	0.63
51:r:21:ASP:OD2	51:r:23:LYS:NZ	2.31	0.63
7:6:37:CYS:C	7:6:44:PHE:CE2	2.65	0.63
8:A:947:A:H2'	8:A:948:C:C6	2.33	0.63
8:A:1178:C:H2'	8:A:1179:G:C8	2.34	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:198:G:H2'	34:a:199:A:H8	1.64	0.63
34:a:546:A:O5'	37:d:67:LEU:HD13	1.99	0.63
34:a:1115:U:O2	34:a:1185:G:N2	2.22	0.63
35:b:137:THR:HA	35:b:140:LEU:HD12	1.79	0.63
8:A:1059:G:H3'	8:A:1060:U:C5	2.34	0.63
10:C:5:CYS:SG	10:C:12:ARG:NE	2.72	0.63
30:W:14:ALA:O	30:W:16:ARG:NH1	2.30	0.63
34:a:715:A:H2'	34:a:716:A:H8	1.62	0.63
35:b:95:TRP:NE1	35:b:174:GLU:OE1	2.31	0.63
36:c:135:ARG:O	36:c:139:ASN:ND2	2.32	0.63
8:A:2194:U:H2'	8:A:2195:U:H6	1.63	0.63
8:A:2305:U:O4	13:F:37:MET:HA	1.99	0.63
34:a:3:A:C6	34:a:629:A:H4'	2.33	0.63
34:a:410:G:OP1	37:d:30:LYS:NZ	2.32	0.63
34:a:514:C:H2'	34:a:515:G:H8	1.64	0.63
34:a:637:C:H2'	34:a:638:U:H6	1.63	0.63
56:w:2:C:N3	56:w:71:G:N1	2.41	0.63
8:A:704:G:H1'	8:A:727:A:H61	1.64	0.62
8:A:1110:G:O2'	8:A:1111:A:O5'	2.16	0.62
33:Z:4:ILE:HG13	33:Z:58:GLU:HA	1.81	0.62
34:a:1178:G:O6	42:i:98:ARG:NH2	2.27	0.62
34:a:1348:U:H2'	34:a:1349:A:H8	1.63	0.62
37:d:12:ARG:HD3	37:d:35:GLN:HB2	1.81	0.62
46:m:23:GLY:O	46:m:28:ARG:NH1	2.29	0.62
2:1:8:ILE:HD13	2:1:24:LYS:HD2	1.81	0.62
7:6:36:VAL:HA	7:6:41:HIS:CG	2.34	0.62
7:6:36:VAL:CG1	7:6:44:PHE:CE1	2.80	0.62
8:A:291:G:O6	8:A:349:U:C2	2.52	0.62
8:A:514:A:N3	8:A:581:C:O2'	2.28	0.62
14:G:174:LYS:HG3	14:G:176:LYS:HD3	1.81	0.62
28:U:3:LYS:O	28:U:93:ARG:NH2	2.32	0.62
34:a:158:G:H8	34:a:159:G:N2	1.97	0.62
34:a:159:G:H22	34:a:163:C:H5'	1.64	0.62
34:a:409:U:O4	34:a:433:G:O6	2.17	0.62
52:s:34:SER:HG	52:s:37:SER:HG	1.44	0.62
8:A:1085:A:O2'	8:A:1104:C:O2	2.17	0.62
15:H:115:VAL:O	15:H:116:ARG:NE	2.31	0.62
17:J:49:ASP:OD1	17:J:121:LYS:NZ	2.33	0.62
26:S:84:ARG:HB2	26:S:96:ILE:HG23	1.82	0.62
34:a:380:G:N2	34:a:383:A:OP2	2.31	0.62
34:a:921:U:P	34:a:1082:A:C8	2.93	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1071:C:H2'	34:a:1072:G:C8	2.34	0.62
34:a:1115:U:O4	34:a:1185:G:O6	2.16	0.62
40:g:28:ILE:HG13	40:g:100:MET:SD	2.40	0.62
8:A:479:A:H4'	8:A:480:A:H5'	1.80	0.62
8:A:636:G:OP1	19:L:129:LYS:NZ	2.28	0.62
8:A:1176:U:H2'	8:A:1177:G:C8	2.35	0.62
8:A:1744:A:H3'	8:A:1745:A:H8	1.65	0.62
34:a:17:U:H2'	34:a:18:C:C6	2.34	0.62
34:a:663:A:H61	34:a:742:G:H1	1.47	0.62
34:a:1318:A:O2'	52:s:36:ARG:NE	2.32	0.62
34:a:1357:A:OP2	34:a:1359:C:N4	2.32	0.62
37:d:117:VAL:HG22	37:d:122:ILE:HG21	1.81	0.62
46:m:23:GLY:HA2	46:m:68:LEU:HD22	1.81	0.62
8:A:306:U:H3	8:A:310:A:H62	1.47	0.62
8:A:568:U:O5'	8:A:945:A:N6	2.32	0.62
8:A:594:U:H2'	8:A:595:C:C6	2.35	0.62
23:P:43:GLU:N	23:P:43:GLU:OE2	2.33	0.62
27:T:56:GLU:HG3	27:T:57:VAL:HG23	1.79	0.62
34:a:544:G:OP1	37:d:55:ARG:NH2	2.33	0.62
34:a:617:G:N3	49:p:14:ARG:NH2	2.46	0.62
35:b:159:ALA:HB1	35:b:183:PHE:HZ	1.63	0.62
38:e:152:VAL:HG11	41:h:98:LEU:HD13	1.81	0.62
42:i:71:ILE:HG13	42:i:72:SER:H	1.64	0.62
8:A:2:G:H2'	8:A:3:U:C6	2.34	0.62
8:A:910:A:H62	20:M:12:MET:HA	1.64	0.62
8:A:1434:A:H2'	8:A:1435:G:H8	1.64	0.62
34:a:62:U:O2'	34:a:379:C:O2	2.17	0.62
34:a:324:G:N1	34:a:327:A:OP2	2.32	0.62
34:a:1242:G:N2	34:a:1295:U:O2	2.33	0.62
36:c:139:ASN:OD1	36:c:142:ARG:NH1	2.32	0.62
8:A:1056:G:O2'	8:A:1103:A:N6	2.31	0.62
8:A:1083:U:H2'	8:A:1084:A:H3'	1.80	0.62
11:D:164:GLN:NE2	11:D:165:MET:O	2.32	0.62
34:a:37:U:OP1	45:l:120:ARG:N	2.23	0.62
34:a:180:U:H2'	34:a:181:A:C8	2.35	0.62
34:a:945:G:N2	34:a:1236:A:N1	2.42	0.62
34:a:1039:G:H2'	34:a:1040:U:C6	2.34	0.62
34:a:1268:G:O2'	34:a:1269:A:O4'	2.14	0.62
49:p:50:THR:HG21	49:p:74:LEU:HD21	1.79	0.62
52:s:17:LYS:HE3	52:s:30:LEU:HD22	1.80	0.62
8:A:1869:G:O2'	8:A:1872:A:N6	2.32	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:F:162:ASP:O	13:F:166:ARG:HG2	2.00	0.62
34:a:80:A:N6	34:a:91:U:O2	2.33	0.62
34:a:1040:U:H2'	34:a:1041:G:C8	2.31	0.62
34:a:1071:C:H2'	34:a:1072:G:H8	1.65	0.62
34:a:1151:A:H5'	43:j:43:PRO:HA	1.81	0.62
37:d:24:VAL:HG23	37:d:25:ARG:H	1.65	0.62
42:i:44:ARG:HB2	42:i:48:ARG:HH12	1.65	0.62
56:w:35:A:H2'	56:w:36:A:C8	2.35	0.62
8:A:891:G:H2'	8:A:892:A:C8	2.34	0.62
8:A:1089:A:O2'	8:A:1090:A:H8	1.82	0.62
8:A:1447:C:O2'	8:A:1544:A:N3	2.29	0.62
8:A:2728:U:H2'	8:A:2729:G:H8	1.64	0.62
34:a:643:C:H2'	34:a:644:U:H6	1.65	0.62
39:f:19:PRO:HA	39:f:22:ILE:HD12	1.81	0.62
40:g:47:GLU:OE1	40:g:51:GLN:NE2	2.33	0.62
47:n:8:ARG:HD3	47:n:12:ARG:HH22	1.65	0.62
8:A:1483:G:H2'	8:A:1484:U:C6	2.35	0.61
8:A:2487:G:H2'	8:A:2488:G:H8	1.65	0.61
40:g:11:ILE:HG23	40:g:20:GLU:HB2	1.82	0.61
3:2:19:ARG:NE	8:A:125:A:OP2	2.27	0.61
8:A:1223:G:N1	8:A:1226:A:OP2	2.32	0.61
10:C:38:LYS:NZ	10:C:57:HIS:O	2.33	0.61
34:a:164:G:H2'	34:a:165:G:C8	2.35	0.61
34:a:570:G:O3'	34:a:819:A:O2'	2.18	0.61
34:a:683:G:N2	44:k:38:GLY:O	2.33	0.61
34:a:846:G:H2'	34:a:847:G:C8	2.35	0.61
34:a:876:C:H1'	41:h:11:THR:HG21	1.81	0.61
34:a:1175:G:H2'	34:a:1176:A:H5"	1.82	0.61
46:m:1:ALA:HA	46:m:8:ILE:HG12	1.81	0.61
8:A:639:U:H2'	8:A:640:C:C6	2.35	0.61
8:A:1056:G:O3'	8:A:1087:G:N2	2.32	0.61
8:A:2812:G:H2'	8:A:2813:A:C8	2.35	0.61
34:a:151:A:C5	34:a:170:U:N3	2.62	0.61
36:c:152:VAL:HG23	36:c:156:LEU:HD13	1.81	0.61
42:i:5:TYR:HB3	42:i:88:GLU:HG3	1.82	0.61
43:j:63:ASP:OD2	47:n:98:LYS:NZ	2.32	0.61
8:A:1294:U:O2	21:N:23:ASN:ND2	2.33	0.61
8:A:1788:C:OP1	10:C:220:ARG:NH2	2.32	0.61
8:A:1869:G:H2'	8:A:1871:A:OP2	2.00	0.61
8:A:2572:A:OP2	11:D:149:ASN:HB3	2.01	0.61
8:A:2683:C:OP1	23:P:50:ARG:NH2	2.33	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:763:G:H2'	34:a:764:C:C6	2.35	0.61
8:A:639:U:H2'	8:A:640:C:H6	1.65	0.61
8:A:715:A:N3	48:o:39:GLN:NE2	2.37	0.61
18:K:43:ILE:HD12	18:K:56:ASP:HB2	1.83	0.61
26:S:1:MET:SD	26:S:2:GLU:N	2.71	0.61
34:a:1329:A:N7	34:a:1331:G:N2	2.49	0.61
36:c:81:GLU:OE1	36:c:81:GLU:N	2.28	0.61
42:i:20:ILE:HD12	42:i:60:LEU:HD11	1.83	0.61
4:3:11:LYS:NZ	8:A:249:C:O2	2.33	0.61
7:6:36:VAL:CG1	7:6:44:PHE:CZ	2.76	0.61
8:A:414:C:H2'	8:A:415:A:C8	2.36	0.61
8:A:876:C:H2'	8:A:877:A:C4	2.35	0.61
8:A:2165:C:N4	8:A:2170:A:H62	1.98	0.61
8:A:2343:U:HO2'	8:A:2373:G:HO2'	1.47	0.61
34:a:1304:G:H21	34:a:1333:A:H62	1.47	0.61
35:b:66:ILE:HB	35:b:88:GLN:HG2	1.82	0.61
35:b:113:LEU:HB2	35:b:143:LEU:HD13	1.82	0.61
35:b:187:ASP:OD1	35:b:188:THR:N	2.30	0.61
8:A:160:A:N3	8:A:2208:C:O2'	2.33	0.61
8:A:2116:G:N2	8:A:2164:C:H41	1.98	0.61
8:A:2726:A:O2'	8:A:2727:A:O5'	2.17	0.61
14:G:1:SER:OG	14:G:2:ARG:N	2.34	0.61
34:a:606:G:N2	34:a:632:U:OP1	2.26	0.61
34:a:1366:C:O2'	43:j:62:ARG:NH1	2.32	0.61
34:a:1372:U:H3'	34:a:1373:G:H8	1.65	0.61
8:A:720:U:H2'	8:A:721:A:H8	1.65	0.61
8:A:930:G:H1'	33:Z:24:LEU:HD21	1.83	0.61
34:a:26:A:N6	34:a:558:G:H1'	2.14	0.61
34:a:1507:A:H2'	34:a:1508:A:C8	2.36	0.61
35:b:33:ALA:HA	35:b:39:ILE:HG22	1.83	0.61
14:G:17:LYS:HB2	14:G:24:THR:HB	1.82	0.61
34:a:100:G:H3'	34:a:101:A:H8	1.66	0.61
34:a:200:G:O2'	34:a:201:G:OP1	2.18	0.61
47:n:30:ILE:O	47:n:41:ARG:NH2	2.34	0.61
56:w:50:U:H2'	56:w:51:C:C6	2.35	0.61
7:6:42:PRO:N	7:6:42:PRO:C	2.55	0.61
8:A:1607:C:N4	8:A:1622:G:OP2	2.28	0.61
8:A:1915:3TD:H6	58:y:102:LYS:NZ	2.16	0.61
9:B:14:U:OP2	9:B:70:C:O2'	2.19	0.61
34:a:347:G:H2'	34:a:348:G:O4'	2.00	0.61
34:a:1401:G:O6	34:a:1504:G:N2	2.34	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:d:25:ARG:NH1	37:d:28:ASP:OD1	2.31	0.61
37:d:166:LYS:HZ2	37:d:168:THR:HG23	1.65	0.61
39:f:46:GLN:HB2	39:f:56:LYS:HZ3	1.66	0.61
52:s:10:ILE:HG13	52:s:37:SER:HB3	1.83	0.61
8:A:221:A:N1	8:A:265:A:O2'	2.32	0.60
8:A:282:A:H2'	8:A:283:G:C8	2.36	0.60
8:A:598:U:H2'	8:A:599:A:H8	1.66	0.60
8:A:877:A:N7	8:A:899:A:N6	2.48	0.60
8:A:1047:G:C2	8:A:1111:A:N7	2.68	0.60
8:A:2192:U:H2'	8:A:2193:G:C8	2.36	0.60
34:a:68:G:C1'	34:a:171:A:N3	2.64	0.60
34:a:891:U:OP2	34:a:906:A:N6	2.30	0.60
34:a:1244:G:H2'	34:a:1245:C:C6	2.35	0.60
34:a:1251:A:H2'	34:a:1252:A:H8	1.65	0.60
34:a:1308:U:H2'	34:a:1309:G:C8	2.35	0.60
7:6:65:ASN:HB2	52:s:7:GLY:HA3	1.83	0.60
8:A:1779:U:H5	8:A:1784:A:N7	1.99	0.60
8:A:2684:U:O4'	18:K:70:ARG:NH1	2.34	0.60
8:A:2720:U:OP1	23:P:52:ARG:NH2	2.34	0.60
8:A:2809:A:OP2	8:A:2890:G:N1	2.27	0.60
34:a:127:G:O2'	50:q:5:ARG:NH1	2.35	0.60
34:a:674:G:H2'	34:a:675:A:C8	2.37	0.60
34:a:979:C:O2	47:n:59:ARG:NH1	2.34	0.60
52:s:29:PRO:HG3	52:s:47:THR:HG23	1.82	0.60
8:A:277:G:H1'	8:A:361:G:N1	2.12	0.60
8:A:587:C:O2	19:L:33:ARG:NH1	2.34	0.60
8:A:1223:G:OP1	25:R:68:ARG:NH2	2.33	0.60
8:A:1405:U:H2'	8:A:1406:U:C6	2.37	0.60
12:E:165:HIS:CD2	12:E:166:LYS:HG3	2.36	0.60
21:N:32:GLU:OE2	21:N:86:ARG:NH2	2.31	0.60
34:a:544:G:OP1	37:d:62:ARG:NH2	2.34	0.60
34:a:601:G:H2'	34:a:602:A:H8	1.64	0.60
37:d:58:GLN:HB3	37:d:62:ARG:HE	1.66	0.60
49:p:43:ALA:HB1	49:p:48:GLU:CG	2.29	0.60
56:w:19:G:H5"	56:w:20:U:C5	2.35	0.60
58:y:70:ILE:HG21	58:y:94:MET:HE1	1.84	0.60
2:1:43:ARG:O	2:1:44:GLN:NE2	2.34	0.60
8:A:481:G:O2'	8:A:506:G:N2	2.35	0.60
8:A:888:C:H42	52:s:29:PRO:HD3	1.65	0.60
8:A:989:G:OP2	33:Z:11:SER:OG	2.15	0.60
8:A:2698:U:H2'	8:A:2699:C:C6	2.37	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:D:6:GLY:O	11:D:201:LEU:HB2	2.02	0.60
34:a:68:G:C2'	34:a:171:A:C2	2.82	0.60
34:a:1287:A:H2'	34:a:1288:A:C8	2.36	0.60
34:a:1360:A:OP2	47:n:75:ARG:NH2	2.35	0.60
7:6:9:TYR:CZ	7:6:25:ARG:HG3	2.37	0.60
10:C:40:GLY:O	10:C:42:ARG:NH1	2.34	0.60
10:C:145:MET:HE3	10:C:153:LEU:HD21	1.83	0.60
25:R:70:GLU:OE1	25:R:70:GLU:N	2.33	0.60
34:a:375:U:OP1	49:p:70:ARG:NH1	2.32	0.60
34:a:1160:G:C2	34:a:1176:A:N1	2.69	0.60
34:a:1222:G:H5"	52:s:77:ARG:HH11	1.66	0.60
34:a:1222:G:OP1	52:s:77:ARG:NH1	2.33	0.60
34:a:1382:C:H2'	34:a:1383:C:H6	1.66	0.60
35:b:166:ASP:OD2	35:b:189:ASN:ND2	2.34	0.60
36:c:13:ILE:HG22	36:c:14:VAL:HG13	1.82	0.60
37:d:59:LYS:NZ	37:d:193:ASP:O	2.33	0.60
38:e:150:GLU:CD	38:e:150:GLU:H	2.09	0.60
8:A:1582:C:O2'	8:A:1585:C:N4	2.33	0.60
8:A:2812:G:H2'	8:A:2813:A:H8	1.65	0.60
13:F:56:LEU:HD13	13:F:88:VAL:HG23	1.84	0.60
21:N:38:LEU:HD11	21:N:42:LYS:HE2	1.83	0.60
34:a:994:A:H61	34:a:1046:A:H2	1.46	0.60
34:a:1219:A:H2'	34:a:1220:G:C8	2.36	0.60
43:j:47:GLU:OE1	47:n:76:LYS:NZ	2.35	0.60
7:6:56:ARG:HD3	46:m:78:ARG:HH21	1.65	0.60
8:A:601:C:O2'	12:E:99:LYS:NZ	2.32	0.60
26:S:24:ILE:HD13	26:S:36:LEU:HD11	1.83	0.60
29:V:1:MET:SD	29:V:62:THR:OG1	2.60	0.60
34:a:169:C:H2'	34:a:170:U:H4'	1.82	0.60
34:a:323:U:H2'	34:a:324:G:O4'	2.01	0.60
34:a:693:G:N2	56:w:37:MIA:S10	2.67	0.60
34:a:739:C:OP1	39:f:2:ARG:NH2	2.34	0.60
34:a:966:2MG:O2'	34:a:967:5MC:O5'	2.18	0.60
49:p:19:VAL:HB	49:p:36:VAL:O	2.02	0.60
3:2:18:PHE:HB3	8:A:126:A:H5'	1.82	0.60
8:A:2161:C:H2'	8:A:2162:G:H4'	1.84	0.60
8:A:2495:G:OP1	20:M:81:ARG:NH1	2.34	0.60
34:a:159:G:N2	34:a:163:C:H5'	2.17	0.60
34:a:246:A:N1	34:a:278:G:O2'	2.35	0.60
34:a:430:A:H5"	37:d:6:PRO:HB3	1.83	0.60
34:a:944:G:N1	34:a:1338:G:OP2	2.28	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1149:C:O2'	34:a:1280:A:N1	2.32	0.60
37:d:13:ARG:HH11	37:d:36:ALA:HB1	1.66	0.60
8:A:1510:G:H2'	8:A:1511:G:H8	1.67	0.60
8:A:1688:U:O2'	8:A:1700:A:N7	2.29	0.60
8:A:2095:A:H5"	15:H:11:ASN:HD22	1.66	0.60
14:G:108:PHE:HE1	14:G:151:ARG:HE	1.47	0.60
18:K:2:ILE:HG21	18:K:8:LEU:HD11	1.83	0.60
31:X:73:ARG:NH1	31:X:75:GLU:OE2	2.34	0.60
33:Z:4:ILE:HG23	33:Z:6:ILE:HD11	1.83	0.60
34:a:1357:A:H61	34:a:1365:G:H1	1.48	0.60
39:f:51:ILE:HD13	39:f:86:ARG:HG3	1.81	0.60
34:a:521:G:O2'	45:l:69:GLU:OE2	2.19	0.60
35:b:71:THR:OG1	35:b:167:HIS:ND1	2.35	0.60
35:b:76:SER:OG	35:b:92:ASN:O	2.17	0.60
35:b:144:GLU:OE1	35:b:145:ASN:ND2	2.35	0.60
46:m:106:ARG:NH2	46:m:110:GLY:O	2.23	0.60
2:1:25:ASN:HD22	8:A:2285:C:P	2.25	0.59
8:A:404:A:H1'	8:A:406:G:C4	2.37	0.59
8:A:476:G:N1	8:A:479:A:OP2	2.34	0.59
8:A:1212:G:O2'	8:A:1236:G:N2	2.34	0.59
8:A:1213:A:OP2	8:A:1235:G:N1	2.32	0.59
8:A:2832:U:H5"	8:A:2833:U:H2'	1.83	0.59
28:U:98:ASN:O	28:U:99:SER:C	2.45	0.59
34:a:8:A:C4	37:d:205:LYS:HD3	2.36	0.59
34:a:377:G:OP1	49:p:5:ARG:NH1	2.35	0.59
34:a:547:A:OP2	37:d:1:ALA:N	2.33	0.59
7:6:41:HIS:HB3	7:6:44:PHE:CD1	2.37	0.59
8:A:1631:G:N1	8:A:1634:A:OP2	2.29	0.59
8:A:2327:A:H2'	8:A:2328:A:C8	2.36	0.59
8:A:2540:C:O2'	8:A:2740:A:N3	2.29	0.59
15:H:27:ARG:NH1	31:X:59:ASP:OD2	2.35	0.59
34:a:1020:G:H2'	34:a:1021:A:H8	1.67	0.59
34:a:1060:U:H2'	34:a:1061:G:H8	1.67	0.59
34:a:1130:A:H5'	34:a:1146:A:H2	1.67	0.59
34:a:1178:G:N2	34:a:1181:G:OP2	2.35	0.59
34:a:1288:A:H2'	34:a:1289:A:C8	2.37	0.59
37:d:101:VAL:HG13	37:d:106:PHE:HB2	1.83	0.59
44:k:95:THR:HG23	44:k:96:ILE:HD12	1.84	0.59
56:w:7:A:H5"	56:w:8:4SU:H5	1.83	0.59
7:6:38:SER:N	7:6:44:PHE:CD2	2.69	0.59
8:A:910:A:H2'	8:A:911:A:C8	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1720:U:O2	8:A:1740:G:O6	2.20	0.59
8:A:2314:A:H2'	8:A:2315:G:C8	2.37	0.59
13:F:37:MET:HE1	13:F:56:LEU:HG	1.83	0.59
21:N:2:ARG:O	21:N:2:ARG:HD3	2.02	0.59
23:P:1:SER:OG	23:P:2:ASN:N	2.25	0.59
34:a:401:C:OP2	37:d:69:ARG:NH2	2.35	0.59
8:A:1149:G:H2'	8:A:1150:C:C6	2.38	0.59
10:C:7:PRO:HB3	10:C:13:ARG:HG3	1.84	0.59
34:a:403:C:H2'	34:a:404:G:C8	2.37	0.59
34:a:674:G:H2'	34:a:675:A:H8	1.67	0.59
34:a:1356:G:H2'	34:a:1357:A:C8	2.34	0.59
40:g:24:LYS:O	40:g:28:ILE:HG13	2.02	0.59
43:j:47:GLU:O	43:j:66:GLU:HA	2.03	0.59
58:y:64:ILE:HG12	58:y:70:ILE:HG12	1.83	0.59
8:A:1753:G:H5"	23:P:92:ARG:HD3	1.82	0.59
8:A:1954:G:O2'	8:A:1956:U:O4	2.17	0.59
8:A:2700:A:H2'	8:A:2701:U:C6	2.37	0.59
12:E:97:ASN:O	12:E:100:MET:N	2.35	0.59
31:X:5:GLN:OE1	31:X:49:ARG:N	2.31	0.59
33:Z:2:LYS:NZ	33:Z:39:ASP:OD2	2.32	0.59
34:a:259:G:H2'	34:a:260:G:H8	1.67	0.59
34:a:384:G:H2'	34:a:385:C:C6	2.37	0.59
34:a:542:G:OP1	37:d:9:LYS:NZ	2.22	0.59
34:a:1261:A:N1	34:a:1274:A:O2'	2.30	0.59
34:a:1301:U:H5'	34:a:1303:C:H5	1.67	0.59
37:d:144:ILE:HB	37:d:177:MET:HB3	1.84	0.59
48:o:6:ALA:O	48:o:10:ILE:HG12	2.03	0.59
8:A:967:U:H2'	8:A:968:C:C6	2.37	0.59
8:A:1949:G:H2'	8:A:1950:G:H8	1.66	0.59
26:S:17:VAL:HA	26:S:43:ALA:HB1	1.85	0.59
34:a:401:C:H2'	34:a:402:G:H8	1.67	0.59
34:a:878:A:OP1	41:h:79:ARG:NH1	2.33	0.59
36:c:72:PRO:HA	36:c:75:VAL:HB	1.85	0.59
44:k:80:ASN:HB3	44:k:105:ARG:HB3	1.84	0.59
8:A:1039:A:H2'	8:A:1040:A:O4'	2.03	0.59
8:A:1143:A:N7	17:J:27:ARG:NH1	2.51	0.59
13:F:9:ASP:OD1	13:F:10:GLU:N	2.36	0.59
34:a:481:G:O2'	34:a:483:C:N4	2.36	0.59
34:a:515:G:O2'	34:a:516:PSU:H6	1.86	0.59
34:a:1009:U:O2	34:a:1020:G:N2	2.25	0.59
34:a:1348:U:H2'	34:a:1349:A:C8	2.38	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:605:G:OP1	12:E:99:LYS:NZ	2.35	0.59
8:A:687:C:O2'	8:A:1780:A:N1	2.33	0.59
10:C:156:SER:O	10:C:159:THR:OG1	2.21	0.59
50:q:19:SER:OG	50:q:70:LYS:HD3	2.00	0.59
5:4:2:LYS:NZ	8:A:2478:A:OP2	2.25	0.59
8:A:849:A:H2'	8:A:850:U:C6	2.37	0.59
8:A:1112:G:O2'	14:G:2:ARG:NH1	2.36	0.59
8:A:2092:U:OP1	8:A:2199:A:O2'	2.20	0.59
8:A:2133:G:O2'	8:A:2158:A:N1	2.35	0.59
8:A:2682:A:H61	8:A:2728:U:H1'	1.68	0.59
21:N:79:LEU:HD23	21:N:83:LEU:HD12	1.85	0.59
34:a:437:U:O4	34:a:495:A:N7	2.36	0.59
34:a:1347:G:H5"	42:i:108:ARG:HB2	1.84	0.59
34:a:1410:A:H2'	34:a:1411:C:C6	2.37	0.59
44:k:111:ASP:HB3	54:u:3:ILE:HG23	1.85	0.59
8:A:586:A:N1	8:A:809:G:O2'	2.28	0.59
8:A:1802:A:H2'	8:A:1803:A:C8	2.37	0.59
8:A:2194:U:H2'	8:A:2195:U:C6	2.37	0.59
21:N:58:ASP:OD1	21:N:59:SER:N	2.36	0.59
35:b:11:ALA:O	35:b:14:HIS:ND1	2.34	0.59
36:c:19:SER:HG	36:c:39:ARG:NH2	2.01	0.59
46:m:100:ARG:HH21	46:m:102:LYS:HD2	1.68	0.59
7:6:28:VAL:HG12	13:F:139:GLU:HA	1.84	0.58
8:A:971:G:OP1	8:A:974:G:O2'	2.20	0.58
8:A:995:C:OP2	24:Q:53:LYS:NZ	2.25	0.58
8:A:1515:A:H1'	8:A:1557:C:H1'	1.85	0.58
8:A:2246:G:H2'	8:A:2247:A:H8	1.67	0.58
8:A:2848:G:O2'	8:A:2868:A:N6	2.36	0.58
24:Q:73:ILE:HD12	24:Q:113:LYS:HE3	1.85	0.58
34:a:967:5MC:H4'	42:i:126:PHE:HE1	1.68	0.58
34:a:1161:C:H2'	34:a:1162:C:C6	2.37	0.58
34:a:1331:G:H5'	34:a:1332:A:OP1	2.03	0.58
34:a:1427:C:H2'	34:a:1428:A:H8	1.68	0.58
44:k:82:GLU:HB3	44:k:107:THR:HB	1.83	0.58
53:t:47:GLN:O	53:t:51:ASN:ND2	2.36	0.58
8:A:1171:G:H2'	8:A:1172:C:C6	2.38	0.58
34:a:313:A:H2'	34:a:314:C:C6	2.38	0.58
34:a:1107:C:C4	34:a:1108:G:C8	2.91	0.58
36:c:57:GLU:OE1	36:c:64:ARG:NH2	2.35	0.58
36:c:84:GLU:HG2	36:c:87:ARG:HH22	1.67	0.58
49:p:43:ALA:HB1	49:p:48:GLU:HB2	0.72	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:w:62:C:H2'	56:w:63:G:C8	2.37	0.58
8:A:1140:C:H5'	17:J:26:GLY:HA3	1.84	0.58
8:A:2637:U:H2'	8:A:2638:G:O4'	2.03	0.58
34:a:35:G:H21	45:l:114:SER:HG	1.52	0.58
34:a:270:A:H2'	34:a:271:C:H6	1.67	0.58
34:a:276:G:H2'	34:a:277:C:H6	1.68	0.58
34:a:390:U:H2'	34:a:391:G:C8	2.38	0.58
34:a:409:U:H3	34:a:433:G:H1	1.49	0.58
34:a:689:C:OP2	44:k:52:ARG:NH1	2.37	0.58
34:a:993:G:N7	34:a:1213:A:N6	2.51	0.58
34:a:1144:G:N2	34:a:1147:C:N3	2.51	0.58
39:f:38:ARG:HB2	39:f:97:THR:HG22	1.85	0.58
42:i:18:VAL:HG12	42:i:64:ILE:HG23	1.84	0.58
8:A:1949:G:H2'	8:A:1950:G:C8	2.37	0.58
8:A:2406:A:OP2	8:A:2411:A:N6	2.36	0.58
34:a:21:G:H2'	34:a:22:G:C8	2.38	0.58
34:a:62:U:O4	34:a:105:G:O6	2.21	0.58
34:a:781:A:OP1	44:k:124:LYS:NZ	2.36	0.58
34:a:1064:G:O2'	34:a:1190:G:N2	2.36	0.58
34:a:1142:G:H3'	34:a:1143:G:H8	1.65	0.58
34:a:1256:A:O2'	34:a:1278:G:O6	2.19	0.58
34:a:1377:A:OP1	40:g:91:ARG:NH2	2.30	0.58
35:b:167:HIS:O	35:b:169:HIS:ND1	2.37	0.58
39:f:13:ASP:OD1	39:f:13:ASP:N	2.33	0.58
54:u:31:VAL:HG23	54:u:31:VAL:O	2.03	0.58
8:A:1570:A:H2'	8:A:1571:A:C8	2.38	0.58
8:A:2140:G:H2'	8:A:2141:G:C8	2.38	0.58
33:Z:10:ARG:NH2	33:Z:52:PHE:O	2.37	0.58
47:n:8:ARG:HB3	47:n:12:ARG:HH12	1.68	0.58
8:A:284:U:H2'	8:A:285:G:C8	2.39	0.58
8:A:286:U:H2'	8:A:287:G:H8	1.67	0.58
8:A:2809:A:H2'	8:A:2810:A:C8	2.39	0.58
12:E:16:GLU:HG2	12:E:20:GLY:HA3	1.86	0.58
34:a:921:U:P	34:a:1081:A:H2'	2.43	0.58
34:a:1009:U:O4	34:a:1020:G:O6	2.22	0.58
34:a:1048:G:O2'	34:a:1050:G:OP1	2.19	0.58
39:f:72:ASP:HA	39:f:75:GLU:HG2	1.86	0.58
8:A:884:U:H3'	8:A:885:C:C5'	2.33	0.58
8:A:1482:G:H2'	8:A:1483:G:C8	2.37	0.58
8:A:2249:U:O2'	8:A:2252:G:OP2	2.17	0.58
15:H:94:ILE:HB	15:H:122:LEU:HD12	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:J:98:GLU:OE1	17:J:98:GLU:N	2.33	0.58
34:a:464:U:C4	34:a:466:A:C5	2.91	0.58
34:a:477:C:H2'	34:a:478:A:C8	2.38	0.58
34:a:757:U:OP1	34:a:822:U:O2'	2.20	0.58
34:a:1059:C:O3'	47:n:85:ARG:NH2	2.36	0.58
34:a:1064:G:H21	34:a:1190:G:H1'	1.69	0.58
34:a:1345:U:H5"	42:i:121:ARG:HH12	1.69	0.58
44:k:54:SER:O	44:k:57:SER:OG	2.22	0.58
1:0:12:ARG:NH1	8:A:1263:U:OP1	2.36	0.58
8:A:340:A:H2'	8:A:341:C:O4'	2.02	0.58
8:A:1013:C:H2'	8:A:1014:A:H8	1.69	0.58
34:a:179:A:H3'	34:a:180:U:C6	2.34	0.58
34:a:459:A:C6	34:a:474:G:C6	2.91	0.58
34:a:979:C:OP1	34:a:1223:C:N4	2.36	0.58
36:c:133:MET:HE2	36:c:150:VAL:HG23	1.85	0.58
7:6:1:MET:HA	9:B:43:C:H5"	1.84	0.58
8:A:335:C:O2	28:U:67:SER:OG	2.22	0.58
8:A:2258:C:O2'	8:A:2427:C:OP2	2.21	0.58
8:A:2804:U:H2'	8:A:2805:C:H6	1.69	0.58
34:a:82:G:C5	34:a:83:C:H1'	2.39	0.58
35:b:105:THR:O	35:b:108:GLN:HG2	2.04	0.58
38:e:15:ILE:HG12	38:e:109:ALA:HA	1.85	0.58
8:A:1028:A:H2'	8:A:1029:A:H8	1.68	0.58
8:A:1197:G:H2'	8:A:1198:U:H6	1.69	0.58
8:A:1198:U:H2'	8:A:1199:U:C6	2.39	0.58
34:a:59:A:H3'	34:a:331:G:H22	1.69	0.58
34:a:204:G:H2'	34:a:205:A:H4'	1.86	0.58
34:a:253:A:P	50:q:68:LYS:HZ1	2.27	0.58
34:a:276:G:H2'	34:a:277:C:C6	2.39	0.58
34:a:623:C:H2'	34:a:624:C:C6	2.39	0.58
34:a:1134:G:O2'	34:a:1135:U:O4'	2.19	0.58
34:a:1345:U:O2'	34:a:1346:A:OP2	2.21	0.58
34:a:1372:U:OP1	42:i:73:GLY:N	2.34	0.58
35:b:186:VAL:HG21	35:b:195:VAL:HG11	1.85	0.58
42:i:83:THR:HG21	42:i:102:PHE:HB3	1.86	0.58
8:A:603:A:N6	8:A:655:A:O4'	2.37	0.57
8:A:754:U:O2'	8:A:1272:A:N1	2.36	0.57
8:A:993:G:OP2	24:Q:50:ARG:NH2	2.37	0.57
8:A:1433:A:H2'	8:A:1434:A:C8	2.39	0.57
8:A:1629:U:O4	8:A:1630:A:N6	2.38	0.57
12:E:97:ASN:HB2	12:E:100:MET:HG3	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:262:A:H2'	34:a:263:A:C8	2.39	0.57
34:a:604:G:H2'	34:a:605:U:O4'	2.04	0.57
34:a:860:A:N6	34:a:869:G:O2'	2.37	0.57
35:b:45:THR:HA	35:b:48:MET:HE3	1.85	0.57
35:b:68:PHE:H	35:b:90:PHE:HA	1.68	0.57
39:f:8:PHE:HB2	39:f:84:VAL:HG13	1.86	0.57
8:A:2554:U:O4	58:y:73:LYS:NZ	2.36	0.57
8:A:2615:U:H2'	8:A:2616:C:H6	1.69	0.57
8:A:2718:G:O2'	8:A:2847:U:OP1	2.20	0.57
13:F:59:ILE:HD11	13:F:140:ILE:HD11	1.85	0.57
34:a:921:U:OP2	34:a:1082:A:C8	2.57	0.57
34:a:1296:C:H3'	34:a:1297:G:C8	2.40	0.57
35:b:103:TRP:HA	35:b:106:VAL:HB	1.86	0.57
40:g:22:LEU:O	40:g:26:VAL:HG23	2.04	0.57
44:k:33:ILE:HG12	44:k:69:CYS:SG	2.44	0.57
46:m:13:HIS:ND1	46:m:41:ASP:O	2.36	0.57
3:2:34:ARG:HD3	8:A:467:G:OP2	2.04	0.57
8:A:414:C:H2'	8:A:415:A:H8	1.69	0.57
8:A:1915:3TD:O2'	58:y:103:LYS:O	2.22	0.57
8:A:2129:C:H42	8:A:2160:C:N4	2.02	0.57
10:C:140:VAL:HG12	10:C:191:LEU:HD23	1.86	0.57
20:M:41:LEU:HG	20:M:96:ILE:HG13	1.85	0.57
34:a:146:G:N1	34:a:176:C:N3	2.52	0.57
34:a:476:U:H5"	34:a:477:C:H5	1.69	0.57
34:a:667:G:H2'	34:a:668:G:C8	2.38	0.57
44:k:92:ARG:NH2	44:k:111:ASP:OD2	2.35	0.57
7:6:44:PHE:N	7:6:44:PHE:HD1	2.03	0.57
8:A:4:U:H2'	8:A:5:A:H8	1.69	0.57
8:A:1429:G:H2'	8:A:1430:G:C8	2.40	0.57
8:A:1441:G:H2'	8:A:1442:U:C6	2.39	0.57
10:C:159:THR:HG22	10:C:176:ARG:HG2	1.86	0.57
19:L:19:LEU:HD12	19:L:27:LEU:HD13	1.86	0.57
33:Z:36:GLU:O	33:Z:37:ARG:NH1	2.37	0.57
34:a:264:C:O2'	50:q:64:ARG:NE	2.34	0.57
34:a:474:G:H2'	34:a:475:C:C6	2.39	0.57
34:a:521:G:H4'	45:l:69:GLU:HG3	1.86	0.57
34:a:643:C:H2'	34:a:644:U:C6	2.39	0.57
34:a:1238:A:H2	34:a:1241:G:N3	2.02	0.57
34:a:1269:A:N3	34:a:1326:U:H1'	2.19	0.57
34:a:1315:U:H2'	34:a:1316:G:C8	2.39	0.57
43:j:57:VAL:HG13	43:j:57:VAL:O	2.02	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:k:28:ASN:OD1	44:k:29:THR:N	2.35	0.57
45:l:33:CYS:HA	45:l:54:VAL:HG12	1.86	0.57
8:A:371:A:N3	31:X:60:LYS:NZ	2.52	0.57
8:A:2127:G:O2'	8:A:2128:G:O4'	2.20	0.57
8:A:2334:U:O2'	22:O:13:ARG:NH1	2.38	0.57
8:A:2757:A:N1	14:G:66:THR:OG1	2.35	0.57
10:C:250:GLN:HB3	10:C:254:LYS:HD2	1.86	0.57
34:a:102:G:HO2'	34:a:151:A:HO2'	1.50	0.57
34:a:254:G:N2	50:q:17:GLU:OE1	2.35	0.57
34:a:407:U:H5"	37:d:111:ALA:HB1	1.85	0.57
34:a:458:U:O4	34:a:459:A:N6	2.38	0.57
8:A:2333:A:OP1	30:W:73:ARG:NH1	2.38	0.57
8:A:2848:G:H2'	8:A:2867:G:N2	2.19	0.57
14:G:22:VAL:HA	14:G:35:THR:HA	1.85	0.57
34:a:749:A:H2'	34:a:750:C:O4'	2.05	0.57
34:a:824:G:H2'	34:a:825:A:H8	1.69	0.57
34:a:920:U:C2'	34:a:1081:A:H2'	2.34	0.57
34:a:1158:C:O2'	35:b:131:LYS:HB2	2.03	0.57
36:c:76:ILE:HB	36:c:80:GLY:HA2	1.87	0.57
36:c:112:ALA:HB3	36:c:184:ASN:HD22	1.69	0.57
8:A:365:U:H2'	8:A:366:C:C6	2.39	0.57
8:A:419:U:H2'	8:A:420:C:C6	2.40	0.57
8:A:1483:G:H2'	8:A:1484:U:H6	1.69	0.57
17:J:36:LEU:O	17:J:121:LYS:NZ	2.36	0.57
34:a:144:G:H3'	34:a:145:G:H8	1.70	0.57
34:a:733:G:O2'	34:a:734:G:OP1	2.20	0.57
34:a:981:U:O3'	47:n:63:ARG:NH2	2.37	0.57
34:a:1162:C:H2'	34:a:1163:A:C8	2.39	0.57
34:a:1300:G:N3	34:a:1303:C:N4	2.52	0.57
34:a:1357:A:N6	34:a:1365:G:H1	2.01	0.57
45:l:72:ASN:ND2	45:l:104:SER:OG	2.38	0.57
8:A:880:G:H2'	8:A:881:G:C8	2.39	0.57
8:A:1057:A:O4'	8:A:1087:G:N2	2.30	0.57
8:A:1064:C:O2'	8:A:1076:C:O2	2.23	0.57
8:A:1239:G:H2'	8:A:1240:U:O4'	2.05	0.57
8:A:2728:U:H2'	8:A:2729:G:C8	2.38	0.57
14:G:88:LEU:HD11	14:G:130:ILE:HG13	1.86	0.57
30:W:21:ARG:HB2	30:W:33:ILE:HG23	1.87	0.57
34:a:297:G:N2	34:a:300:A:OP2	2.34	0.57
34:a:381:C:H2'	34:a:382:A:O4'	2.05	0.57
34:a:546:A:P	37:d:67:LEU:HD13	2.45	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1217:C:H2'	34:a:1218:C:H6	1.70	0.57
34:a:1414:U:H2'	34:a:1415:G:H8	1.68	0.57
35:b:68:PHE:HB3	35:b:79:VAL:HG13	1.87	0.57
36:c:183:TYR:CE1	36:c:198:LYS:HB2	2.39	0.57
38:e:93:VAL:HG11	38:e:139:THR:HG22	1.86	0.57
58:y:44:ARG:HG2	58:y:57:LEU:HD11	1.87	0.57
1:0:30:ASP:OD2	1:0:33:SER:OG	2.22	0.57
8:A:49:A:H4'	8:A:50:U:H5'	1.85	0.57
8:A:1579:A:H2'	8:A:1580:A:C8	2.39	0.57
10:C:146:LYS:HB2	10:C:149:LYS:HB2	1.87	0.57
12:E:195:GLN:O	12:E:199:MET:HE2	2.05	0.57
23:P:62:LYS:HG2	23:P:63:ILE:N	2.19	0.57
29:V:48:MET:O	29:V:51:GLN:NE2	2.30	0.57
34:a:439:U:H4'	37:d:120:LYS:HZ2	1.70	0.57
34:a:676:A:H1'	44:k:116:PRO:HB3	1.87	0.57
49:p:58:ALA:HA	49:p:61:VAL:HG22	1.86	0.57
8:A:391:A:O2'	8:A:410:G:OP1	2.17	0.57
8:A:1538:G:H2'	8:A:1539:U:C6	2.40	0.57
8:A:1796:U:H2'	8:A:1797:G:C8	2.37	0.57
8:A:2000:C:OP1	21:N:5:LYS:NZ	2.31	0.57
8:A:2064:C:H2'	8:A:2065:C:C6	2.39	0.57
8:A:2135:A:C8	8:A:2158:A:H4'	2.40	0.57
8:A:2537:U:H2'	8:A:2538:C:H6	1.68	0.57
34:a:358:U:H2'	34:a:359:G:H8	1.70	0.57
34:a:855:U:OP2	34:a:871:U:N3	2.36	0.57
34:a:1157:A:N6	34:a:1178:G:H1'	2.19	0.57
37:d:97:LEU:HB2	37:d:134:TYR:HB3	1.86	0.57
41:h:12:ARG:NH1	41:h:25:THR:O	2.38	0.57
42:i:41:GLU:HA	42:i:44:ARG:NH2	2.19	0.57
42:i:83:THR:HB	42:i:97:LEU:HD21	1.85	0.57
8:A:319:G:N1	8:A:323:C:H5	2.03	0.56
8:A:987:C:O2'	8:A:1000:A:N3	2.32	0.56
8:A:1110:G:O2'	8:A:1111:A:H8	1.87	0.56
8:A:2125:G:N2	8:A:2173:A:N7	2.53	0.56
8:A:2847:U:H2'	8:A:2848:G:O4'	2.05	0.56
9:B:30:C:H1'	9:B:57:A:H61	1.70	0.56
12:E:165:HIS:HD2	12:E:166:LYS:HG3	1.70	0.56
17:J:109:LEU:O	17:J:111:LYS:NZ	2.38	0.56
34:a:8:A:C5	37:d:205:LYS:HD3	2.40	0.56
34:a:66:A:C2	34:a:104:G:H1'	2.40	0.56
34:a:719:C:O2	51:r:38:ILE:N	2.33	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1005:A:C5	34:a:1006:G:H1'	2.40	0.56
56:w:12:U:H2'	56:w:13:C:O4'	2.04	0.56
4:3:25:HIS:NE2	4:3:47:ALA:HB2	2.19	0.56
8:A:1299:G:N1	8:A:1640:A:OP2	2.29	0.56
8:A:1433:A:H2'	8:A:1434:A:H8	1.70	0.56
8:A:1579:A:H2'	8:A:1580:A:H8	1.70	0.56
8:A:1589:U:H2'	8:A:1590:A:C8	2.40	0.56
8:A:2299:U:O4	8:A:2318:G:N2	2.37	0.56
8:A:2552:OMU:H2'	8:A:2554:U:OP2	2.06	0.56
8:A:2659:G:N2	8:A:2662:A:OP2	2.38	0.56
8:A:2728:U:O2'	8:A:2729:G:O5'	2.20	0.56
32:Y:19:LEU:HB3	32:Y:23:ARG:HH21	1.70	0.56
34:a:1169:A:O2'	35:b:138:ARG:NH2	2.38	0.56
34:a:1312:G:H5'	52:s:4:LEU:HD11	1.87	0.56
34:a:1497:G:C6	34:a:1498:UR3:H3U2	2.40	0.56
38:e:30:PHE:HE2	58:y:131:MET:HG2	1.71	0.56
47:n:32:ASP:O	47:n:41:ARG:NH1	2.38	0.56
8:A:18:U:OP1	24:Q:29:ARG:NH1	2.30	0.56
8:A:288:U:H2'	8:A:289:G:H8	1.68	0.56
8:A:347:A:H2'	8:A:348:A:C8	2.39	0.56
8:A:573:U:O4	8:A:2029:G:O2'	2.23	0.56
8:A:1266:G:O2'	8:A:2012:G:O6	2.13	0.56
8:A:1710:G:H4'	8:A:2858:C:O2	2.05	0.56
8:A:2047:C:O2'	8:A:2823:A:N1	2.36	0.56
8:A:2648:G:H2'	8:A:2649:C:C6	2.40	0.56
9:B:2:G:H2'	9:B:3:C:H6	1.70	0.56
14:G:29:ASN:ND2	14:G:80:GLU:O	2.38	0.56
15:H:5:LEU:HD13	15:H:14:SER:H	1.70	0.56
34:a:44:A:H2'	34:a:45:G:C8	2.41	0.56
34:a:217:C:H2'	34:a:218:U:C6	2.41	0.56
34:a:789:U:OP1	56:w:37:MIA:O2'	2.23	0.56
34:a:951:G:HO2'	34:a:970:C:HO2'	1.50	0.56
34:a:1258:G:H2'	34:a:1259:C:H6	1.70	0.56
35:b:195:VAL:HG13	35:b:198:VAL:HG22	1.86	0.56
37:d:169:TRP:HB2	37:d:183:ARG:HB2	1.88	0.56
40:g:68:VAL:HA	40:g:137:ARG:HD3	1.88	0.56
40:g:138:GLU:OE2	40:g:142:ARG:NE	2.29	0.56
8:A:1594:U:H2'	8:A:1595:C:C6	2.41	0.56
8:A:1952:A:OP1	18:K:44:LYS:NZ	2.32	0.56
27:T:21:SER:O	27:T:25:GLU:HG2	2.05	0.56
28:U:85:ARG:NH2	28:U:101:THR:OG1	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:U:98:ASN:O	28:U:100:GLU:CB	2.53	0.56
34:a:1261:A:H1'	34:a:1275:A:N1	2.20	0.56
35:b:17:HIS:CE1	35:b:18:GLN:HE21	2.23	0.56
39:f:12:PRO:O	39:f:44:ARG:NH1	2.36	0.56
53:t:77:ASN:O	53:t:81:GLN:HG2	2.06	0.56
8:A:598:U:H2'	8:A:599:A:C8	2.41	0.56
8:A:958:U:H2'	9:B:89:U:C2	2.40	0.56
8:A:1130:U:N3	8:A:2025:C:OP1	2.31	0.56
8:A:2845:U:H5"	23:P:51:ASN:O	2.06	0.56
15:H:9:VAL:H	15:H:13:GLY:HA3	1.69	0.56
34:a:160:A:O2'	34:a:162:A:OP2	2.19	0.56
34:a:203:G:H4'	34:a:466:A:N1	2.21	0.56
34:a:1116:U:O2	34:a:1184:G:O6	2.23	0.56
34:a:1296:C:H3'	34:a:1297:G:H8	1.70	0.56
37:d:94:GLU:O	37:d:99:ASN:ND2	2.39	0.56
40:g:45:ALA:HB1	40:g:119:LEU:HB3	1.86	0.56
40:g:70:PRO:HG2	40:g:95:ARG:HA	1.88	0.56
47:n:8:ARG:HB3	47:n:12:ARG:NH1	2.20	0.56
1:0:3:GLN:HA	8:A:2615:U:C2	2.41	0.56
8:A:52:A:H2'	8:A:53:A:H8	1.71	0.56
8:A:2291:U:H2'	8:A:2292:U:C6	2.41	0.56
34:a:591:U:H2'	34:a:592:G:C8	2.41	0.56
34:a:714:G:H2'	34:a:715:A:H8	1.65	0.56
40:g:52:ARG:HH22	40:g:121:ASN:HA	1.71	0.56
7:6:11:GLU:HB2	7:6:25:ARG:HE	1.70	0.56
8:A:371:A:N6	8:A:401:A:H3'	2.21	0.56
8:A:638:G:C4	8:A:651:G:N2	2.74	0.56
8:A:782:A:C8	10:C:219:VAL:HG21	2.41	0.56
8:A:1076:C:H1'	16:I:90:GLY:HA2	1.87	0.56
8:A:2099:U:H3	8:A:2190:G:H1	1.54	0.56
34:a:166:U:H2'	34:a:167:A:H5'	1.86	0.56
34:a:350:G:OP1	53:t:2:ASN:ND2	2.38	0.56
36:c:119:ILE:HD11	36:c:136:ALA:HB2	1.87	0.56
37:d:181:PHE:HZ	37:d:184:LYS:HA	1.70	0.56
8:A:303:G:H2'	8:A:304:U:C6	2.41	0.56
8:A:1306:C:H41	8:A:1606:C:H2'	1.71	0.56
34:a:170:U:O2'	34:a:170:U:O2	2.23	0.56
34:a:176:C:H5"	53:t:63:LYS:NZ	2.20	0.56
38:e:54:GLU:HG3	38:e:56:PRO:HD2	1.88	0.56
39:f:59:TYR:OH	51:r:65:SER:OG	2.24	0.56
53:t:46:ALA:HB1	53:t:82:ILE:HG12	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:6:41:HIS:ND1	7:6:44:PHE:CE1	2.74	0.56
8:A:1563:U:H2'	8:A:1564:C:C6	2.41	0.56
8:A:1794:A:H2'	8:A:1795:C:H6	1.68	0.56
11:D:32:ASN:HD22	11:D:52:THR:HB	1.71	0.56
12:E:188:MET:HE2	12:E:193:VAL:HG22	1.88	0.56
18:K:92:GLU:HG3	18:K:111:LYS:HD3	1.88	0.56
34:a:1130:A:H8	34:a:1146:A:C2	2.23	0.56
34:a:1314:C:O2	34:a:1319:A:N6	2.39	0.56
37:d:138:PRO:HA	37:d:181:PHE:HB3	1.88	0.56
37:d:149:LYS:HG2	37:d:150:LYS:H	1.71	0.56
7:6:43:PHE:CD1	7:6:48:GLN:NE2	2.74	0.56
8:A:1028:A:N3	8:A:2486:C:O2'	2.25	0.56
8:A:1339:G:OP2	27:T:15:HIS:NE2	2.31	0.56
8:A:1402:U:O2'	8:A:1470:A:N1	2.33	0.56
8:A:1448:G:H2'	8:A:1449:G:H8	1.71	0.56
18:K:105:ARG:NH2	23:P:40:GLN:OE1	2.39	0.56
25:R:33:VAL:HG13	25:R:61:ALA:HB3	1.88	0.56
34:a:44:A:H2'	34:a:45:G:H8	1.70	0.56
34:a:1323:G:H2'	34:a:1324:A:C8	2.41	0.56
36:c:51:VAL:HG13	36:c:67:ILE:HG23	1.87	0.56
37:d:71:PHE:H	37:d:73:ASN:H	1.53	0.56
39:f:49:TYR:HE1	39:f:86:ARG:HH22	1.53	0.56
42:i:57:VAL:HG22	42:i:59:LYS:HE2	1.88	0.56
43:j:15:HIS:HB3	43:j:70:HIS:NE2	2.21	0.56
46:m:11:HIS:ND1	46:m:11:HIS:O	2.36	0.56
50:q:30:HIS:HB3	50:q:34:GLY:H	1.71	0.56
54:u:20:ARG:HE	54:u:24:LYS:HE2	1.71	0.56
8:A:2647:U:H2'	8:A:2648:G:H8	1.71	0.55
9:B:31:C:O2'	9:B:53:A:N1	2.38	0.55
10:C:7:PRO:HA	10:C:13:ARG:HA	1.87	0.55
10:C:204:LEU:O	10:C:206:LYS:N	2.36	0.55
18:K:1:MET:HE3	18:K:67:LYS:HE2	1.88	0.55
29:V:30:ILE:HA	29:V:91:PHE:O	2.06	0.55
34:a:337:G:H2'	34:a:338:A:C8	2.41	0.55
34:a:972:C:OP2	43:j:59:LYS:NZ	2.38	0.55
34:a:1288:A:H2'	34:a:1289:A:H8	1.71	0.55
46:m:85:TYR:O	46:m:89:ARG:HG2	2.07	0.55
8:A:194:G:H2'	8:A:195:A:O4'	2.07	0.55
8:A:463:G:N2	8:A:466:A:OP2	2.34	0.55
8:A:649:G:H2'	8:A:650:C:C6	2.42	0.55
8:A:1089:A:O2'	8:A:1090:A:O5'	2.23	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1847:G:O2'	8:A:1848:A:O5'	2.24	0.55
8:A:2109:U:O2'	8:A:2110:G:O5'	2.22	0.55
8:A:2556:C:H2'	8:A:2557:G:O4'	2.06	0.55
8:A:2710:C:OP1	21:N:15:SER:OG	2.23	0.55
9:B:5:U:H2'	9:B:6:G:C8	2.41	0.55
15:H:104:THR:OG1	15:H:109:GLU:OE1	2.20	0.55
34:a:391:G:O3'	49:p:8:ARG:NH2	2.39	0.55
34:a:964:A:O2'	34:a:1198:G:H4'	2.06	0.55
40:g:49:LEU:HD22	40:g:123:LEU:HD13	1.88	0.55
43:j:31:ARG:NH1	43:j:32:THR:OG1	2.38	0.55
45:l:98:ARG:NE	45:l:104:SER:O	2.39	0.55
7:6:37:CYS:CA	7:6:44:PHE:CD2	2.72	0.55
7:6:42:PRO:O	7:6:45:THR:N	2.38	0.55
8:A:303:G:H2'	8:A:304:U:H6	1.71	0.55
8:A:548:G:C8	8:A:549:G:H1'	2.41	0.55
8:A:2820:A:O2'	8:A:2821:A:OP1	2.22	0.55
14:G:85:LYS:HG3	14:G:131:VAL:HG22	1.88	0.55
19:L:123:ARG:NE	19:L:143:GLU:OE1	2.37	0.55
38:e:78:GLY:O	38:e:120:HIS:N	2.30	0.55
38:e:135:VAL:O	38:e:139:THR:HG23	2.07	0.55
8:A:1657:U:H2'	8:A:1658:C:H6	1.71	0.55
10:C:56:GLY:HA2	10:C:212:TRP:HA	1.88	0.55
34:a:157:U:O2'	34:a:159:G:O6	2.23	0.55
34:a:198:G:H2'	34:a:199:A:C8	2.41	0.55
34:a:900:A:H2'	34:a:901:A:C8	2.41	0.55
34:a:971:G:H1'	34:a:1365:G:O2'	2.06	0.55
41:h:46:GLU:HG3	41:h:63:LYS:HB2	1.88	0.55
43:j:54:SER:O	47:n:81:ARG:NH1	2.27	0.55
8:A:503:A:H4'	8:A:504:A:H5'	1.88	0.55
8:A:1012:U:OP2	24:Q:69:ARG:NH1	2.39	0.55
8:A:1104:C:H2'	8:A:1105:U:C6	2.41	0.55
8:A:1278:C:H2'	8:A:1279:G:H8	1.71	0.55
8:A:2317:A:H2'	8:A:2318:G:O4'	2.06	0.55
15:H:12:LEU:HD21	15:H:25:TYR:HE2	1.70	0.55
34:a:9:G:OP2	38:e:125:LYS:NZ	2.26	0.55
34:a:633:G:H2'	34:a:634:C:C6	2.41	0.55
34:a:868:C:H2'	34:a:869:G:O4'	2.07	0.55
8:A:213:A:H2'	8:A:214:G:C8	2.41	0.55
8:A:627:A:O2'	19:L:76:GLU:OE1	2.23	0.55
8:A:881:G:C6	8:A:895:U:N3	2.74	0.55
8:A:1510:G:H2'	8:A:1511:G:C8	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2246:G:H2'	8:A:2247:A:C8	2.41	0.55
12:E:146:VAL:HG12	12:E:185:LYS:HB2	1.88	0.55
20:M:57:VAL:HG12	20:M:112:LEU:HD12	1.89	0.55
31:X:3:VAL:HG12	31:X:10:ARG:HB3	1.89	0.55
34:a:514:C:H2'	34:a:515:G:C8	2.41	0.55
34:a:1002:G:C6	34:a:1003:G:C5	2.94	0.55
34:a:1052:U:O2	34:a:1206:G:O6	2.25	0.55
34:a:1329:A:H5"	46:m:25:GLY:H	1.72	0.55
34:a:1354:U:H2'	34:a:1355:G:C8	2.42	0.55
35:b:54:ALA:HA	35:b:57:ASN:ND2	2.21	0.55
35:b:165:ALA:HB3	35:b:190:SER:HB3	1.89	0.55
39:f:63:ASN:ND2	39:f:96:VAL:O	2.39	0.55
8:A:2292:U:H2'	8:A:2293:G:H8	1.72	0.55
8:A:2531:A:N3	8:A:2658:C:O2'	2.37	0.55
12:E:21:ARG:O	12:E:114:ARG:NH1	2.35	0.55
23:P:28:LYS:HB2	23:P:82:SER:HB3	1.87	0.55
28:U:9:GLU:OE2	28:U:21:ARG:HG2	2.07	0.55
28:U:73:ASN:ND2	28:U:98:ASN:HD21	2.00	0.55
8:A:127:A:H5'	8:A:128:C:O4'	2.07	0.55
8:A:617:G:OP1	12:E:102:ARG:NH2	2.40	0.55
8:A:1568:G:H5'	10:C:59:GLN:HA	1.88	0.55
8:A:1794:A:HO2'	8:A:1900:A:HO2'	1.53	0.55
8:A:2139:U:H2'	8:A:2140:G:H4'	1.88	0.55
8:A:2307:G:N2	8:A:2311:A:N7	2.55	0.55
10:C:179:GLU:OE1	10:C:269:ARG:NH2	2.40	0.55
27:T:14:PRO:HD3	32:Y:30:MET:SD	2.47	0.55
34:a:110:C:O2'	49:p:25:ARG:O	2.19	0.55
34:a:158:G:C8	34:a:159:G:N2	2.75	0.55
34:a:1118:U:H2'	34:a:1119:C:C6	2.40	0.55
36:c:34:SER:OG	36:c:58:ARG:NH2	2.40	0.55
43:j:23:ALA:O	43:j:27:GLU:HG2	2.07	0.55
8:A:301:G:OP2	28:U:81:ARG:NH1	2.40	0.55
8:A:1567:G:OP2	10:C:82:TYR:OH	2.22	0.55
8:A:2557:G:H2'	8:A:2558:C:C6	2.42	0.55
18:K:120:PRO:HG2	18:K:121:GLU:OE1	2.07	0.55
27:T:4:GLU:OE1	32:Y:23:ARG:NH1	2.39	0.55
31:X:64:ASP:OD1	31:X:65:THR:N	2.40	0.55
34:a:1244:G:H2'	34:a:1245:C:H6	1.71	0.55
34:a:1328:C:H42	34:a:1329:A:N6	2.03	0.55
34:a:1367:C:H4'	43:j:50:THR:HG21	1.88	0.55
34:a:1464:U:H2'	34:a:1465:A:H8	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:b:69:VAL:HB	35:b:168:GLU:HG2	1.88	0.55
41:h:105:THR:OG1	41:h:108:GLY:O	2.18	0.55
42:i:28:VAL:HG13	42:i:63:TYR:HA	1.89	0.55
43:j:77:VAL:HG12	43:j:78:GLU:CD	2.32	0.55
8:A:438:G:H2'	8:A:439:A:C8	2.42	0.55
8:A:522:A:H2'	8:A:523:C:C6	2.42	0.55
8:A:1484:U:H2'	8:A:1485:U:C6	2.42	0.55
8:A:2849:U:N3	8:A:2867:G:O4'	2.36	0.55
41:h:10:LEU:HD12	41:h:76:ARG:HB2	1.88	0.55
8:A:971:G:H2'	8:A:972:A:O4'	2.08	0.54
8:A:1028:A:OP2	8:A:1126:A:N6	2.39	0.54
8:A:1055:G:H2'	8:A:1056:G:O4'	2.07	0.54
8:A:2138:G:O2'	8:A:2139:U:OP1	2.24	0.54
34:a:384:G:H2'	34:a:385:C:H6	1.70	0.54
34:a:635:A:O2'	34:a:636:U:H6	1.86	0.54
34:a:881:G:OP2	45:l:5:GLN:NE2	2.25	0.54
34:a:921:U:P	34:a:1081:A:C3'	2.95	0.54
34:a:1258:G:H2'	34:a:1259:C:C6	2.42	0.54
35:b:49:PHE:CD1	35:b:199:ILE:HG21	2.42	0.54
40:g:60:ALA:HA	40:g:63:VAL:HG12	1.88	0.54
40:g:96:ASN:O	40:g:100:MET:HG3	2.08	0.54
2:1:39:ASP:O	2:1:43:ARG:N	2.37	0.54
4:3:24:LYS:HB3	19:L:62:PRO:HG2	1.88	0.54
8:A:2055:C:H2'	8:A:2504:PSU:H4'	1.88	0.54
8:A:2638:G:O2'	8:A:2778:A:N6	2.39	0.54
12:E:7:ASP:OD1	12:E:7:ASP:N	2.39	0.54
17:J:37:ARG:NH1	17:J:44:TYR:OH	2.41	0.54
30:W:29:ALA:N	30:W:60:ASP:OD1	2.40	0.54
34:a:102:G:O2'	34:a:151:A:O2'	2.15	0.54
34:a:373:A:H61	34:a:391:G:H1'	1.71	0.54
34:a:412:A:N6	34:a:414:A:O4'	2.41	0.54
34:a:443:C:C4	34:a:444:G:N7	2.74	0.54
34:a:952:U:H2'	34:a:953:G:H8	1.72	0.54
34:a:1001:C:H2'	34:a:1002:G:C8	2.42	0.54
34:a:1007:U:H2'	34:a:1008:U:C6	2.43	0.54
40:g:24:LYS:O	40:g:28:ILE:CG1	2.54	0.54
41:h:87:ARG:H	41:h:90:GLU:HB2	1.72	0.54
49:p:34:GLU:OE2	49:p:60:TRP:NE1	2.39	0.54
49:p:46:LYS:C	49:p:48:GLU:N	2.65	0.54
55:v:17:ARG:NH2	58:y:28:GLN:HE22	2.06	0.54
1:0:16:ARG:NH1	26:S:15:GLN:OE1	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:181:A:H2'	8:A:182:A:C8	2.42	0.54
8:A:288:U:H2'	8:A:289:G:C8	2.41	0.54
8:A:728:G:H4'	10:C:12:ARG:HD3	1.90	0.54
8:A:881:G:N2	8:A:897:C:O2	2.41	0.54
8:A:904:G:H2'	8:A:905:A:C8	2.42	0.54
8:A:1011:G:OP2	24:Q:65:ASN:ND2	2.40	0.54
8:A:1746:A:H2'	8:A:1747:U:C6	2.43	0.54
34:a:157:U:H1'	34:a:164:G:C6	2.41	0.54
34:a:167:A:H2'	34:a:168:G:C8	2.42	0.54
34:a:309:A:H2'	34:a:310:G:H8	1.71	0.54
34:a:358:U:H2'	34:a:359:G:C8	2.43	0.54
34:a:708:C:H2'	34:a:709:U:C6	2.42	0.54
34:a:1046:A:H61	34:a:1211:U:H1'	1.72	0.54
35:b:172:ILE:HG23	35:b:182:VAL:HG11	1.89	0.54
38:e:94:PHE:O	38:e:124:ALA:HA	2.06	0.54
41:h:63:LYS:O	41:h:70:VAL:HG12	2.08	0.54
8:A:904:G:H2'	8:A:905:A:H8	1.73	0.54
8:A:1024:G:O2'	8:A:1144:A:O2'	2.25	0.54
8:A:2113:U:N3	56:w:19:G:N7	2.55	0.54
8:A:2155:U:H3'	8:A:2156:G:O4'	2.06	0.54
8:A:2771:C:H2'	8:A:2772:C:C6	2.43	0.54
9:B:80:U:H2'	9:B:81:G:H8	1.73	0.54
12:E:40:ARG:HD2	12:E:92:HIS:ND1	2.23	0.54
20:M:15:GLY:O	20:M:16:ARG:NH1	2.35	0.54
26:S:1:MET:O	26:S:108:SER:HA	2.07	0.54
31:X:11:PRO:HA	31:X:28:PHE:O	2.07	0.54
34:a:210:C:C5'	34:a:212:G:OP2	2.55	0.54
34:a:299:G:N2	34:a:566:G:O6	2.40	0.54
34:a:492:C:H4'	34:a:493:A:C8	2.43	0.54
34:a:707:U:H2'	34:a:708:C:C6	2.42	0.54
34:a:741:G:H2'	34:a:742:G:O4'	2.07	0.54
36:c:82:ASP:O	36:c:85:LYS:HG2	2.06	0.54
37:d:123:MET:HB2	37:d:128:VAL:HG22	1.88	0.54
38:e:63:MET:O	38:e:67:ARG:HD3	2.08	0.54
40:g:102:TRP:HD1	40:g:136:LYS:HZ3	1.56	0.54
41:h:7:ALA:O	41:h:11:THR:HG23	2.07	0.54
8:A:64:A:H2'	8:A:65:U:C6	2.43	0.54
8:A:2655:G:O2'	8:A:2656:U:OP2	2.25	0.54
13:F:133:GLU:OE1	13:F:135:ILE:HG12	2.07	0.54
16:I:74:PRO:O	16:I:78:LEU:CB	2.56	0.54
24:Q:105:PHE:O	24:Q:109:VAL:HG23	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:216:U:H3'	34:a:216:U:H6	1.72	0.54
34:a:825:A:O2'	41:h:8:ASP:OD2	2.23	0.54
40:g:49:LEU:HD22	40:g:123:LEU:HB3	1.89	0.54
40:g:115:MET:HE3	40:g:119:LEU:HD12	1.89	0.54
45:l:110:LYS:HE3	45:l:121:PRO:HG3	1.90	0.54
7:6:12:ILE:HG23	7:6:31:ASP:HA	1.90	0.54
7:6:56:ARG:HD3	46:m:78:ARG:NH2	2.23	0.54
8:A:85:G:OP1	28:U:6:ARG:N	2.41	0.54
8:A:263:G:O2'	8:A:429:A:N3	2.41	0.54
8:A:602:A:O2'	8:A:604:G:O2'	2.18	0.54
8:A:1087:G:H2'	8:A:1089:A:O4'	2.07	0.54
12:E:118:LEU:HA	12:E:186:VAL:HG13	1.88	0.54
13:F:146:ASP:OD1	13:F:146:ASP:N	2.34	0.54
23:P:63:ILE:HA	23:P:68:GLY:HA2	1.89	0.54
34:a:1397:C:OP2	38:e:28:ARG:NH2	2.41	0.54
35:b:54:ALA:HA	35:b:57:ASN:HD21	1.71	0.54
46:m:113:LYS:HB3	46:m:114:PRO:HD3	1.90	0.54
7:6:32:LEU:HD22	13:F:138:PRO:HB3	1.89	0.54
8:A:181:A:H2'	8:A:182:A:H8	1.71	0.54
8:A:200:U:OP1	31:X:22:ASN:ND2	2.39	0.54
8:A:1092:C:H3'	8:A:1093:G:H4'	1.88	0.54
8:A:1548:A:H2'	8:A:1549:A:C8	2.43	0.54
8:A:1667:G:N2	8:A:1992:G:OP2	2.35	0.54
8:A:1853:A:H2'	8:A:1854:A:C8	2.42	0.54
9:B:39:A:H2'	9:B:40:U:C6	2.43	0.54
10:C:52:HIS:CE1	10:C:218:THR:HA	2.43	0.54
21:N:35:LYS:HB2	21:N:112:TYR:CE1	2.42	0.54
29:V:77:VAL:HG23	29:V:89:ILE:HG12	1.90	0.54
34:a:72:A:N6	34:a:97:G:O6	2.39	0.54
34:a:164:G:O2'	34:a:165:G:O4'	2.17	0.54
34:a:454:G:O6	34:a:478:A:N1	2.40	0.54
34:a:585:G:OP1	50:q:38:LYS:NZ	2.32	0.54
38:e:110:MET:HG2	38:e:139:THR:HG21	1.89	0.54
45:l:43:LYS:O	58:y:118:ARG:NH2	2.34	0.54
4:3:13:PHE:O	4:3:14:LYS:HE2	2.08	0.54
8:A:170:U:H2'	8:A:171:U:C6	2.43	0.54
8:A:782:A:N7	10:C:219:VAL:HG21	2.22	0.54
8:A:1144:A:H2'	8:A:1145:C:H6	1.73	0.54
8:A:2039:U:H2'	8:A:2040:G:C8	2.42	0.54
8:A:2141:G:H2'	8:A:2142:A:C5	2.43	0.54
8:A:2333:A:P	30:W:73:ARG:HH12	2.30	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2676:C:OP1	18:K:31:ARG:NH2	2.40	0.54
19:L:135:ILE:HG22	19:L:140:GLY:HA3	1.90	0.54
34:a:456:A:H2'	34:a:457:G:C8	2.42	0.54
35:b:169:HIS:CD2	35:b:170:ILE:HG13	2.42	0.54
37:d:44:LYS:O	37:d:46:ARG:NH1	2.41	0.54
8:A:248:G:H5'	8:A:250:G:N7	2.23	0.54
8:A:828:U:O2'	8:A:829:A:O4'	2.20	0.54
8:A:1434:A:H2'	8:A:1435:G:C8	2.43	0.54
8:A:2071:A:H2'	8:A:2072:C:C6	2.43	0.54
8:A:2197:U:H1'	8:A:2198:A:C8	2.42	0.54
8:A:2648:G:H2'	8:A:2649:C:H6	1.73	0.54
8:A:2726:A:H8	8:A:2726:A:OP1	1.90	0.54
13:F:111:ARG:O	13:F:111:ARG:NH2	2.38	0.54
14:G:9:VAL:HA	14:G:48:THR:HA	1.90	0.54
15:H:113:SER:O	15:H:116:ARG:NH2	2.41	0.54
18:K:13:ASN:ND2	18:K:97:THR:OG1	2.40	0.54
25:R:75:VAL:HG22	25:R:86:GLN:HG2	1.90	0.54
30:W:33:ILE:HD11	30:W:78:ILE:HD11	1.89	0.54
34:a:385:C:H2'	34:a:386:C:C6	2.42	0.54
35:b:159:ALA:HB1	35:b:183:PHE:CZ	2.43	0.54
46:m:24:VAL:HG13	46:m:28:ARG:HB2	1.90	0.54
49:p:38:PHE:CE2	49:p:49:GLY:O	2.61	0.54
8:A:282:A:H2'	8:A:283:G:H8	1.70	0.54
8:A:465:G:N2	8:A:684:G:H1'	2.23	0.54
8:A:537:G:O2'	8:A:556:A:N6	2.41	0.54
8:A:704:G:H1'	8:A:727:A:N6	2.23	0.54
8:A:2006:C:O2'	8:A:2823:A:N3	2.40	0.54
9:B:91:C:OP2	20:M:18:ARG:NE	2.30	0.54
10:C:257:ARG:NH2	10:C:263:ASP:OD1	2.39	0.54
11:D:46:ARG:NH2	11:D:89:GLU:OE1	2.40	0.54
34:a:671:G:O2'	39:f:79:ARG:NH2	2.40	0.54
34:a:1160:G:C6	34:a:1161:C:C4	2.95	0.54
35:b:42:LEU:O	35:b:45:THR:OG1	2.26	0.54
50:q:30:HIS:N	50:q:35:LYS:O	2.40	0.54
52:s:51:HIS:CD2	52:s:53:GLY:H	2.26	0.54
54:u:48:LYS:O	54:u:52:VAL:HG23	2.07	0.54
7:6:44:PHE:CD1	7:6:44:PHE:N	2.76	0.53
8:A:48:G:N1	8:A:177:G:OP2	2.42	0.53
8:A:118:A:OP2	8:A:119:A:H5"	2.07	0.53
8:A:189:G:O6	8:A:205:G:O2'	2.19	0.53
8:A:1050:A:H3'	8:A:1051:G:H8	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1169:A:H2'	8:A:1170:C:H6	1.72	0.53
8:A:1782:U:H1'	8:A:2609:U:H5"	1.90	0.53
8:A:2661:G:H8	8:A:2661:G:OP2	1.90	0.53
15:H:1:MET:SD	15:H:1:MET:N	2.73	0.53
28:U:12:VAL:HA	28:U:69:VAL:HG12	1.90	0.53
34:a:135:C:H2'	34:a:136:C:H5'	1.90	0.53
34:a:462:G:O6	34:a:470:C:N4	2.41	0.53
34:a:1015:G:H2'	34:a:1016:A:C8	2.42	0.53
38:e:57:ALA:HA	38:e:60:GLN:HE21	1.73	0.53
42:i:11:ARG:NE	42:i:106:ASP:OD2	2.41	0.53
56:w:61:C:H2'	56:w:62:C:H6	1.73	0.53
7:6:41:HIS:HD1	7:6:42:PRO:HD2	1.68	0.53
8:A:980:A:N3	8:A:2037:A:O2'	2.34	0.53
8:A:1359:A:OP2	8:A:1371:G:N2	2.36	0.53
8:A:1550:C:OP1	8:A:1720:U:O2'	2.21	0.53
8:A:2324:U:H4'	8:A:2325:G:OP2	2.07	0.53
8:A:2514:U:H4'	17:J:81:ILE:HG12	1.90	0.53
9:B:48:U:H4'	22:O:100:HIS:HD2	1.72	0.53
24:Q:67:ALA:O	24:Q:71:ASN:ND2	2.31	0.53
27:T:62:VAL:HG22	27:T:81:LYS:HE2	1.90	0.53
34:a:90:C:H2'	34:a:90:C:O2	2.06	0.53
34:a:421:U:O2'	34:a:423:G:N7	2.36	0.53
34:a:470:C:H2'	34:a:471:U:O2	2.08	0.53
34:a:662:U:H2'	34:a:663:A:C8	2.43	0.53
34:a:686:U:O4	34:a:703:G:H2'	2.08	0.53
34:a:1125:U:OP2	34:a:1145:A:N6	2.41	0.53
34:a:1139:G:H4'	34:a:1140:C:H5'	1.90	0.53
36:c:19:SER:HB3	36:c:21:TRP:HE1	1.73	0.53
44:k:35:ASP:OD1	44:k:39:ASN:N	2.36	0.53
45:l:86:VAL:HG13	45:l:88:ASP:H	1.73	0.53
8:A:886:A:N6	8:A:888:C:O2'	2.40	0.53
8:A:1604:C:O2'	8:A:1610:A:N1	2.40	0.53
8:A:2031:A:N3	8:A:2455:G:O2'	2.38	0.53
8:A:2590:A:H2'	8:A:2591:C:H6	1.73	0.53
21:N:103:ARG:HD3	21:N:110:MET:HE2	1.89	0.53
25:R:58:VAL:O	25:R:102:SER:OG	2.25	0.53
27:T:4:GLU:OE2	32:Y:23:ARG:NH2	2.42	0.53
34:a:640:A:O3'	41:h:107:LYS:NZ	2.41	0.53
34:a:1023:U:H2'	34:a:1024:G:C8	2.43	0.53
49:p:23:ASP:HB3	49:p:26:ASN:HD22	1.72	0.53
7:6:36:VAL:HB	13:F:105:ILE:HA	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:6:36:VAL:HG21	13:F:109:ARG:HB2	1.90	0.53
8:A:1141:U:H4'	8:A:1142:A:O4'	2.08	0.53
8:A:1363:C:O2'	8:A:1809:A:N3	2.34	0.53
8:A:1448:G:H2'	8:A:1449:G:C8	2.43	0.53
8:A:1581:G:H2'	8:A:1582:C:C6	2.44	0.53
8:A:1724:G:O6	8:A:1737:G:N2	2.41	0.53
8:A:2025:C:H2'	8:A:2026:U:C6	2.43	0.53
8:A:2247:A:H2'	8:A:2248:C:H6	1.73	0.53
8:A:2422:C:H5'	56:w:76:A:H62	1.73	0.53
8:A:2581:G:N2	8:A:2581:G:OP2	2.41	0.53
14:G:34:ARG:CZ	14:G:70:LEU:HD13	2.38	0.53
34:a:33:A:H2'	34:a:34:C:C6	2.43	0.53
34:a:616:G:H1'	49:p:46:LYS:CE	2.38	0.53
34:a:1280:A:P	43:j:9:ARG:HH12	2.31	0.53
34:a:1347:G:HO2'	34:a:1348:U:P	2.30	0.53
34:a:1380:U:C4	40:g:2:ARG:HG2	2.43	0.53
39:f:82:ASP:OD1	39:f:82:ASP:N	2.38	0.53
8:A:247:G:OP2	8:A:249:C:N4	2.41	0.53
8:A:536:G:H21	17:J:47:HIS:CG	2.27	0.53
8:A:594:U:H2'	8:A:595:C:H6	1.71	0.53
8:A:2114:A:H5"	8:A:2119:A:H2	1.74	0.53
8:A:2515:C:H2'	8:A:2516:A:H8	1.74	0.53
8:A:2809:A:H2'	8:A:2810:A:H8	1.74	0.53
31:X:5:GLN:O	31:X:73:ARG:NH2	2.41	0.53
34:a:830:G:H2'	34:a:831:A:C8	2.44	0.53
34:a:890:G:H1'	34:a:906:A:N6	2.23	0.53
34:a:921:U:OP2	34:a:1082:A:N9	2.42	0.53
34:a:977:A:N6	34:a:1224:U:O4'	2.42	0.53
34:a:1249:C:O3'	42:i:74:GLN:NE2	2.40	0.53
40:g:36:SER:OG	40:g:37:THR:N	2.42	0.53
50:q:12:VAL:HB	50:q:21:VAL:HG13	1.90	0.53
52:s:62:THR:HB	52:s:65:MET:HG3	1.90	0.53
7:6:41:HIS:CE1	7:6:42:PRO:CD	2.92	0.53
8:A:811:U:H2'	19:L:21:ARG:HA	1.88	0.53
15:H:94:ILE:HG22	15:H:99:ILE:HG13	1.90	0.53
17:J:16:TYR:HB2	17:J:54:ILE:HG12	1.91	0.53
34:a:9:G:H5'	38:e:107:GLY:HA3	1.89	0.53
34:a:266:G:OP2	34:a:267:C:N4	2.42	0.53
34:a:512:U:H2'	34:a:513:C:H6	1.74	0.53
34:a:513:C:H2'	34:a:514:C:H6	1.74	0.53
34:a:521:G:N7	45:l:49:ARG:NH1	2.55	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:644:U:C2	34:a:645:G:C8	2.96	0.53
34:a:1458:G:H3'	34:a:1459:G:H8	1.74	0.53
47:n:46:LEU:O	47:n:49:GLN:HG2	2.08	0.53
48:o:20:ASP:OD2	48:o:23:SER:HB3	2.08	0.53
56:w:26:A:H2'	56:w:27:G:C8	2.43	0.53
56:w:36:A:N6	56:w:37:MIA:H152	2.23	0.53
8:A:2673:G:H2'	8:A:2674:G:H8	1.73	0.53
8:A:2740:A:OP2	8:A:2763:G:N1	2.31	0.53
9:B:2:G:H2'	9:B:3:C:C6	2.44	0.53
10:C:70:LYS:HD3	10:C:95:TYR:CD2	2.44	0.53
14:G:26:LYS:NZ	14:G:27:GLY:O	2.30	0.53
34:a:68:G:C6	34:a:101:A:N1	2.77	0.53
34:a:1073:U:O2	35:b:102:ASN:ND2	2.41	0.53
35:b:65:LYS:HD3	35:b:153:MET:HG2	1.90	0.53
35:b:86:CYS:HB2	35:b:221:ARG:HG3	1.90	0.53
36:c:59:PRO:HG3	36:c:64:ARG:NH2	2.22	0.53
50:q:10:ARG:H	50:q:22:VAL:HG23	1.73	0.53
5:4:4:ARG:HD2	5:4:35:GLN:HG2	1.91	0.53
8:A:171:U:C2	8:A:172:A:C8	2.97	0.53
8:A:184:C:H2'	8:A:185:G:H8	1.73	0.53
8:A:527:C:N4	8:A:2779:U:OP2	2.35	0.53
8:A:1549:A:O3'	8:A:1740:G:N2	2.42	0.53
8:A:2266:A:H4'	8:A:2267:A:C2	2.44	0.53
11:D:1:MET:HG2	11:D:205:PRO:HG2	1.91	0.53
15:H:9:VAL:N	15:H:13:GLY:HA3	2.24	0.53
23:P:60:VAL:HB	23:P:73:PHE:HE2	1.74	0.53
24:Q:99:VAL:O	24:Q:102:LYS:NZ	2.42	0.53
34:a:112:G:H21	34:a:354:G:H5'	1.74	0.53
34:a:744:C:H2'	34:a:745:G:C8	2.40	0.53
34:a:949:A:O2'	34:a:971:G:O6	2.18	0.53
34:a:971:G:C8	34:a:1365:G:H4'	2.43	0.53
34:a:1161:C:H2'	34:a:1162:C:H6	1.73	0.53
36:c:183:TYR:HE1	36:c:198:LYS:HB2	1.74	0.53
7:6:42:PRO:HB3	7:6:48:GLN:HG2	1.87	0.53
8:A:1544:A:H2'	8:A:1545:A:C8	2.44	0.53
8:A:1831:G:H2'	8:A:1832:C:C6	2.43	0.53
8:A:2133:G:N2	8:A:2155:U:O3'	2.42	0.53
8:A:2300:C:H2'	8:A:2301:C:H6	1.74	0.53
8:A:2815:C:H2'	8:A:2816:G:H8	1.74	0.53
14:G:136:ASP:HB3	14:G:139:VAL:HB	1.91	0.53
17:J:8:PRO:HG3	17:J:48:VAL:HG13	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:144:G:O6	34:a:178:C:N4	2.40	0.53
34:a:181:A:N6	34:a:194:C:H3'	2.20	0.53
34:a:424:G:H2'	34:a:425:G:C8	2.44	0.53
34:a:1384:C:H2'	34:a:1385:G:C8	2.44	0.53
7:6:14:ALA:HB3	7:6:22:MET:H	1.73	0.53
8:A:1168:G:H2'	8:A:1169:A:C8	2.44	0.53
8:A:1281:G:H2'	8:A:1282:U:C6	2.43	0.53
8:A:1475:G:O2'	8:A:1476:U:H6	1.92	0.53
8:A:1918:A:O2'	8:A:1919:A:N7	2.38	0.53
8:A:1919:A:N1	34:a:1495:U:O2'	2.38	0.53
14:G:100:ASN:ND2	14:G:115:GLN:OE1	2.42	0.53
29:V:43:ASP:OD1	29:V:44:HIS:N	2.42	0.53
34:a:401:C:H2'	34:a:402:G:C8	2.43	0.53
34:a:431:A:H3'	34:a:432:A:H8	1.74	0.53
34:a:529:G:O6	58:y:122:LYS:NZ	2.42	0.53
34:a:1516:2MG:H2'	34:a:1518:MA6:OP2	2.09	0.53
37:d:12:ARG:NH1	37:d:35:GLN:OE1	2.41	0.53
46:m:40:GLU:HG2	46:m:41:ASP:H	1.74	0.53
52:s:37:SER:HB2	52:s:70:LEU:HD13	1.91	0.53
7:6:65:ASN:HB2	52:s:8:PRO:HD2	1.90	0.52
8:A:813:U:H2'	8:A:814:C:C6	2.44	0.52
8:A:1341:G:OP2	8:A:1394:U:O2'	2.16	0.52
8:A:1716:U:H2'	8:A:1717:A:C8	2.44	0.52
8:A:1840:G:H2'	8:A:1841:U:C6	2.44	0.52
8:A:2116:G:H2'	8:A:2117:A:C8	2.44	0.52
14:G:83:THR:HG22	14:G:133:LYS:HG2	1.90	0.52
20:M:4:PRO:HG3	20:M:70:ASP:HA	1.91	0.52
34:a:219:U:H2'	34:a:220:G:C8	2.43	0.52
34:a:268:U:H2'	34:a:269:C:H6	1.73	0.52
34:a:990:C:H2'	34:a:991:U:C6	2.44	0.52
34:a:1391:U:H2'	34:a:1392:G:C8	2.44	0.52
35:b:160:LEU:HD21	35:b:171:ALA:HB1	1.90	0.52
37:d:18:LEU:HD13	37:d:62:ARG:HB3	1.91	0.52
37:d:98:ASP:HB3	37:d:117:VAL:HG21	1.91	0.52
41:h:112:ASP:N	41:h:112:ASP:OD1	2.40	0.52
8:A:255:A:H2'	8:A:256:A:O4'	2.08	0.52
8:A:494:G:H4'	26:S:6:LYS:HB2	1.90	0.52
8:A:1873:G:H2'	8:A:1874:C:C6	2.44	0.52
8:A:2456:C:N4	8:A:2457:PSU:O2	2.42	0.52
9:B:1:U:N3	9:B:2:G:N7	2.58	0.52
9:B:119:A:C8	9:B:120:U:C5	2.97	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:J:17:VAL:HG23	17:J:137:PRO:HB2	1.90	0.52
34:a:1060:U:C5	36:c:1:GLY:HA2	2.44	0.52
34:a:1347:G:H2'	34:a:1373:G:H1	1.74	0.52
34:a:1530:G:O2'	34:a:1531:A:H5'	2.09	0.52
44:k:22:ILE:HB	44:k:85:VAL:HG23	1.92	0.52
56:w:22:G:H2'	56:w:23:A:C8	2.43	0.52
2:1:40:PRO:HG3	8:A:2348:U:H4'	1.91	0.52
8:A:434:U:O2	8:A:435:C:N4	2.31	0.52
8:A:1061:U:H3'	8:A:1062:G:C5'	2.39	0.52
8:A:1199:U:H2'	8:A:1200:C:C6	2.45	0.52
8:A:1482:G:O2'	8:A:1483:G:H5'	2.08	0.52
8:A:1725:U:H2'	8:A:1726:C:C6	2.45	0.52
15:H:14:SER:OG	15:H:17:ASP:OD2	2.27	0.52
30:W:19:VAL:HG13	30:W:34:VAL:HG22	1.89	0.52
34:a:59:A:H5'	34:a:387:U:H5"	1.90	0.52
34:a:137:U:O4	34:a:226:G:O6	2.26	0.52
34:a:411:A:OP1	37:d:30:LYS:NZ	2.38	0.52
34:a:599:C:H2'	34:a:600:A:H8	1.73	0.52
34:a:626:G:H2'	34:a:627:G:C8	2.44	0.52
34:a:672:U:H3	34:a:734:G:H1	1.56	0.52
35:b:65:LYS:HZ1	35:b:155:GLY:H	1.58	0.52
39:f:17:GLN:HB3	39:f:21:MET:HE2	1.91	0.52
41:h:12:ARG:HB3	41:h:24:VAL:HG11	1.91	0.52
44:k:124:LYS:HG3	44:k:125:LYS:H	1.74	0.52
46:m:82:LEU:HD13	52:s:68:HIS:HE1	1.73	0.52
6:5:25:ALA:HA	6:5:115:GLY:HA3	1.90	0.52
7:6:41:HIS:CE1	7:6:42:PRO:HD2	2.43	0.52
8:A:78:U:H2'	8:A:79:C:C6	2.45	0.52
8:A:704:G:HO2'	8:A:705:A:P	2.31	0.52
8:A:1180:U:H2'	8:A:1181:U:C6	2.44	0.52
34:a:17:U:OP1	38:e:18:ASN:ND2	2.43	0.52
34:a:519:C:N4	34:a:529:G:O2'	2.29	0.52
34:a:617:G:H8	34:a:617:G:OP2	1.93	0.52
34:a:908:A:H2'	34:a:909:A:H8	1.73	0.52
34:a:939:G:H2'	34:a:940:C:C6	2.43	0.52
34:a:958:A:C2	52:s:54:ARG:HB3	2.44	0.52
34:a:1354:U:H2'	34:a:1355:G:H8	1.74	0.52
36:c:63:ILE:HG23	36:c:98:ALA:HA	1.92	0.52
38:e:55:VAL:O	38:e:59:ILE:HG13	2.10	0.52
47:n:73:PHE:CZ	47:n:78:GLY:HA2	2.44	0.52
51:r:25:ILE:HD11	51:r:66:LEU:HB3	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:71:A:H4'	8:A:72:U:H5"	1.92	0.52
8:A:588:U:H2'	8:A:589:U:C6	2.44	0.52
8:A:888:C:N4	52:s:28:LYS:HA	2.25	0.52
8:A:1059:G:H21	16:I:76:ALA:N	2.05	0.52
8:A:1086:A:O2'	8:A:1087:G:N2	2.32	0.52
8:A:1418:G:N1	8:A:1579:A:OP2	2.37	0.52
8:A:2320:U:C2	8:A:2333:A:N6	2.77	0.52
11:D:18:ASP:OD1	11:D:18:ASP:N	2.39	0.52
12:E:117:ARG:NH2	12:E:183:PHE:O	2.41	0.52
12:E:129:PRO:HG3	12:E:156:ASN:HA	1.91	0.52
28:U:41:VAL:O	28:U:59:GLU:HA	2.10	0.52
34:a:8:A:C6	37:d:205:LYS:HB2	2.44	0.52
34:a:951:G:O2'	34:a:970:C:O2'	2.23	0.52
34:a:1106:G:H2'	34:a:1107:C:C6	2.45	0.52
34:a:1118:U:H1'	34:a:1179:A:C8	2.44	0.52
36:c:105:VAL:HG22	36:c:107:LYS:H	1.74	0.52
8:A:69:C:O2	8:A:73:A:O2'	2.22	0.52
8:A:100:U:H4'	8:A:101:A:H5'	1.91	0.52
8:A:271:G:O2'	8:A:272:A:OP2	2.23	0.52
8:A:547:A:H1'	8:A:548:G:N7	2.24	0.52
8:A:1827:U:OP1	8:A:1971:U:O2'	2.20	0.52
8:A:1857:G:C6	8:A:1884:G:C6	2.98	0.52
8:A:2375:G:N2	8:A:2378:A:OP2	2.42	0.52
10:C:77:VAL:HG12	10:C:93:VAL:HG22	1.91	0.52
25:R:2:TYR:H	25:R:42:ALA:HB3	1.75	0.52
26:S:53:SER:O	26:S:57:ASN:ND2	2.43	0.52
28:U:33:VAL:HG13	28:U:66:VAL:HG22	1.92	0.52
29:V:4:ILE:HD12	29:V:61:LEU:HD23	1.91	0.52
34:a:17:U:O2'	34:a:1079:G:H1'	2.09	0.52
34:a:338:A:H61	34:a:351:G:H1	1.57	0.52
34:a:363:A:OP1	45:l:29:LYS:HA	2.09	0.52
34:a:409:U:OP1	37:d:22:SER:N	2.36	0.52
34:a:794:A:H2'	34:a:795:C:C6	2.45	0.52
34:a:1220:G:N2	52:s:53:GLY:O	2.42	0.52
37:d:18:LEU:HA	37:d:63:ILE:HD13	1.91	0.52
39:f:15:SER:OG	39:f:58:HIS:ND1	2.43	0.52
42:i:51:LEU:HB3	42:i:56:MET:HE3	1.90	0.52
46:m:95:PRO:HG2	46:m:101:THR:HG22	1.92	0.52
51:r:31:TYR:CG	51:r:54:LEU:HD11	2.44	0.52
8:A:742:A:H2'	8:A:743:A:C8	2.45	0.52
8:A:1014:A:H2'	8:A:1015:U:C6	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1014:A:H2'	8:A:1015:U:H6	1.74	0.52
8:A:2597:G:H8	8:A:2597:G:OP2	1.93	0.52
23:P:23:ASP:HB3	23:P:85:VAL:HG23	1.92	0.52
26:S:27:LYS:O	26:S:71:VAL:HG12	2.10	0.52
34:a:38:G:H22	34:a:397:A:H5'	1.75	0.52
34:a:53:A:H2'	34:a:54:C:O4'	2.09	0.52
34:a:162:A:N6	34:a:343:U:O2'	2.37	0.52
37:d:2:ARG:NH1	37:d:3:TYR:H	2.08	0.52
53:t:81:GLN:O	53:t:84:LYS:HG3	2.10	0.52
4:3:53:ASP:HB3	19:L:57:LEU:HD22	1.92	0.52
5:4:9:LYS:HG3	5:4:14:CYS:HB2	1.92	0.52
8:A:309:A:H8	8:A:309:A:OP2	1.92	0.52
8:A:490:C:H4'	8:A:491:G:OP2	2.10	0.52
8:A:1199:U:H2'	8:A:1200:C:H6	1.75	0.52
8:A:2070:A:H2'	8:A:2071:A:C8	2.44	0.52
8:A:2554:U:H2'	8:A:2555:U:H6	1.73	0.52
8:A:2554:U:H2'	8:A:2555:U:C6	2.44	0.52
8:A:2655:G:O2'	8:A:2664:G:N1	2.30	0.52
15:H:93:SER:OG	15:H:94:ILE:N	2.42	0.52
18:K:105:ARG:HA	18:K:108:ARG:HG3	1.91	0.52
19:L:79:LEU:HB3	19:L:116:VAL:HB	1.92	0.52
27:T:37:ASP:OD1	27:T:38:ALA:N	2.40	0.52
29:V:46:LYS:O	29:V:50:MET:HG3	2.10	0.52
34:a:215:C:O2	34:a:215:C:H2'	2.08	0.52
39:f:11:HIS:ND1	39:f:13:ASP:OD1	2.42	0.52
50:q:13:SER:HA	50:q:54:ILE:HG12	1.92	0.52
7:6:11:GLU:HA	7:6:25:ARG:HA	1.92	0.52
8:A:4:U:H2'	8:A:5:A:C8	2.44	0.52
8:A:195:A:O3'	19:L:47:ARG:NH2	2.39	0.52
8:A:635:C:OP2	19:L:126:ARG:NH2	2.43	0.52
8:A:1084:A:H5'	8:A:1084:A:H8	1.75	0.52
8:A:1169:A:H2'	8:A:1170:C:C6	2.45	0.52
8:A:1915:3TD:H1'	58:y:105:ARG:HB2	1.92	0.52
8:A:2125:G:H2'	8:A:2173:A:C2	2.45	0.52
8:A:2649:C:H2'	8:A:2650:U:H6	1.74	0.52
19:L:103:ILE:HG13	19:L:104:GLN:N	2.25	0.52
33:Z:19:HIS:CD2	33:Z:52:PHE:HZ	2.27	0.52
34:a:499:A:O3'	34:a:500:G:H8	1.93	0.52
34:a:615:G:O6	34:a:626:G:C6	2.63	0.52
34:a:948:C:P	46:m:106:ARG:H	2.32	0.52
34:a:1157:A:H1'	34:a:1181:G:N2	2.25	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1496:C:H2'	34:a:1497:G:O4'	2.09	0.52
35:b:82:ALA:CB	35:b:213:LEU:HB2	2.38	0.52
36:c:63:ILE:HG22	36:c:96:VAL:HG23	1.92	0.52
52:s:39:ILE:HG21	52:s:65:MET:O	2.10	0.52
7:6:55:GLY:O	7:6:59:ARG:NH2	2.29	0.52
8:A:580:U:H2'	8:A:581:C:C6	2.45	0.52
8:A:1842:G:H2'	8:A:1843:C:H6	1.75	0.52
8:A:1907:G:O6	8:A:1923:U:O2	2.28	0.52
8:A:2259:U:H2'	8:A:2260:C:H6	1.75	0.52
12:E:149:ILE:HB	12:E:188:MET:HG2	1.92	0.52
19:L:80:SER:HB3	19:L:114:GLY:HA3	1.92	0.52
21:N:73:ASN:HA	21:N:76:VAL:HG12	1.91	0.52
22:O:83:LEU:HD11	22:O:114:GLY:HA3	1.91	0.52
34:a:666:G:H5'	34:a:726:C:H1'	1.92	0.52
34:a:934:C:O2	34:a:938:A:N6	2.43	0.52
34:a:1009:U:H2'	34:a:1010:U:C6	2.45	0.52
34:a:1359:C:OP1	47:n:62:ASN:ND2	2.35	0.52
34:a:1386:G:H2'	34:a:1387:G:H8	1.75	0.52
53:t:41:GLY:HA2	53:t:85:LEU:HD21	1.91	0.52
8:A:1178:C:C2	8:A:1179:G:N7	2.78	0.51
8:A:1386:C:H2'	8:A:1387:A:H8	1.72	0.51
8:A:1503:A:OP1	8:A:1503:A:H4'	2.09	0.51
8:A:2147:A:N7	8:A:2148:G:N2	2.58	0.51
8:A:2468:A:O2'	8:A:2469:A:O5'	2.26	0.51
20:M:129:THR:OG1	20:M:130:PHE:N	2.43	0.51
25:R:2:TYR:CE1	25:R:42:ALA:HB2	2.45	0.51
29:V:10:LYS:HD2	29:V:10:LYS:H	1.75	0.51
31:X:11:PRO:HB3	31:X:29:LEU:HD23	1.93	0.51
34:a:376:G:OP1	49:p:5:ARG:HB2	2.09	0.51
34:a:513:C:H2'	34:a:514:C:C6	2.45	0.51
34:a:555:U:H2'	34:a:556:C:C6	2.46	0.51
46:m:21:ILE:HB	46:m:24:VAL:HB	1.92	0.51
4:3:10:ALA:HA	4:3:61:LEU:HD21	1.93	0.51
8:A:188:G:P	31:X:10:ARG:HH22	2.33	0.51
8:A:852:U:H2'	8:A:853:C:H6	1.75	0.51
8:A:871:U:H2'	8:A:872:U:C6	2.45	0.51
8:A:1591:A:H2'	8:A:1592:C:C6	2.45	0.51
8:A:2085:U:O2	8:A:2234:G:O6	2.28	0.51
8:A:2121:G:H21	8:A:2179:C:N4	2.07	0.51
8:A:2266:A:H4'	8:A:2267:A:N3	2.25	0.51
15:H:90:LEU:HD21	15:H:93:SER:HA	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:J:48:VAL:HG12	17:J:50:THR:HG23	1.93	0.51
26:S:17:VAL:HG12	26:S:76:VAL:HG21	1.93	0.51
34:a:481:G:H8	34:a:482:A:H62	1.54	0.51
34:a:708:C:H2'	34:a:709:U:H6	1.74	0.51
34:a:745:G:H2'	34:a:746:A:C8	2.45	0.51
34:a:778:G:O2'	44:k:121:ARG:O	2.28	0.51
34:a:1277:C:H1'	34:a:1282:C:C2	2.46	0.51
34:a:1287:A:N1	34:a:1370:G:N2	2.54	0.51
34:a:1342:C:H2'	34:a:1343:G:C8	2.45	0.51
43:j:52:LEU:HG	43:j:62:ARG:HG3	1.91	0.51
50:q:20:ILE:HG23	50:q:47:ASP:HB2	1.92	0.51
52:s:10:ILE:HG21	52:s:40:PHE:CE2	2.45	0.51
8:A:223:A:N1	8:A:407:G:O2'	2.42	0.51
8:A:323:C:O2'	8:A:1205:A:N6	2.43	0.51
8:A:544:C:H2'	8:A:545:U:C6	2.45	0.51
8:A:2646:C:OP2	8:A:2732:G:O2'	2.26	0.51
13:F:124:ARG:O	13:F:126:ASN:ND2	2.43	0.51
24:Q:93:ILE:HG23	25:R:13:ARG:HB2	1.92	0.51
32:Y:8:GLU:C	32:Y:10:SER:H	2.17	0.51
34:a:618:C:N4	34:a:621:A:OP2	2.40	0.51
34:a:908:A:H2'	34:a:909:A:C8	2.45	0.51
34:a:1174:G:H2'	34:a:1175:G:C8	2.46	0.51
52:s:18:VAL:HG13	52:s:42:ASN:ND2	2.25	0.51
52:s:30:LEU:HB2	52:s:48:ILE:HD12	1.93	0.51
54:u:40:PRO:O	54:u:43:GLU:HG2	2.10	0.51
56:w:2:C:H2'	56:w:3:C:C6	2.45	0.51
56:w:6:G:H2'	56:w:7:A:C8	2.45	0.51
8:A:242:G:O2'	8:A:243:U:P	2.69	0.51
8:A:1857:G:H22	8:A:1884:G:H2'	1.75	0.51
8:A:2311:A:O2'	8:A:2312:U:O4'	2.27	0.51
8:A:2487:G:H2'	8:A:2488:G:C8	2.44	0.51
13:F:30:VAL:HG22	13:F:157:THR:HG22	1.91	0.51
14:G:27:GLY:HA3	14:G:78:VAL:HB	1.91	0.51
14:G:44:HIS:CE1	14:G:47:ASN:HA	2.45	0.51
18:K:71:ARG:HH22	18:K:105:ARG:HG2	1.76	0.51
34:a:413:G:H1'	34:a:428:G:N2	2.26	0.51
35:b:96:LEU:H	35:b:99:MET:HE3	1.76	0.51
37:d:25:ARG:HH22	37:d:26:ALA:HB3	1.75	0.51
40:g:26:VAL:HG22	40:g:42:VAL:HG11	1.93	0.51
40:g:87:PRO:HG2	40:g:148:LYS:HD3	1.93	0.51
40:g:102:TRP:HA	40:g:136:LYS:NZ	2.25	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:i:71:ILE:HG13	42:i:72:SER:N	2.26	0.51
1:0:12:ARG:HD3	1:0:16:ARG:CZ	2.40	0.51
4:3:8:GLY:O	4:3:12:ARG:NH2	2.36	0.51
8:A:102:U:H3	32:Y:2:LYS:H	1.56	0.51
8:A:284:U:O2	8:A:356:G:C6	2.64	0.51
8:A:776:G:N7	8:A:793:A:O2'	2.38	0.51
8:A:1359:A:OP2	8:A:1371:G:N1	2.39	0.51
8:A:1575:C:H2'	8:A:1576:U:C6	2.45	0.51
8:A:1614:A:C2	26:S:93:ALA:HB2	2.45	0.51
8:A:1730:C:H1'	8:A:1731:G:C2	2.45	0.51
8:A:1915:3TD:C4	58:y:105:ARG:HD2	2.41	0.51
8:A:1992:G:N2	8:A:1996:C:O2'	2.44	0.51
8:A:2514:U:H2'	8:A:2515:C:C6	2.45	0.51
9:B:3:C:H2'	9:B:4:C:H6	1.75	0.51
15:H:121:VAL:O	15:H:122:LEU:HG	2.10	0.51
34:a:15:G:N2	38:e:21:SER:O	2.40	0.51
34:a:1130:A:H3'	34:a:1131:G:H8	1.76	0.51
34:a:1345:U:H5"	42:i:121:ARG:NH1	2.24	0.51
36:c:56:ILE:HD12	36:c:65:VAL:HG22	1.93	0.51
36:c:117:ASP:OD1	36:c:118:SER:N	2.44	0.51
42:i:79:ARG:O	42:i:83:THR:HG23	2.11	0.51
1:0:40:HIS:ND1	8:A:2816:G:O4'	2.44	0.51
8:A:297:G:H2'	8:A:298:G:O4'	2.10	0.51
8:A:1278:C:H2'	8:A:1279:G:C8	2.44	0.51
8:A:1466:U:O3'	8:A:1546:G:O2'	2.29	0.51
8:A:2030:6MZ:N3	8:A:2499:C:H5"	2.25	0.51
8:A:2262:U:H2'	8:A:2263:C:H6	1.75	0.51
8:A:2549:G:H2'	8:A:2550:G:H8	1.76	0.51
8:A:2590:A:H2'	8:A:2591:C:C6	2.45	0.51
8:A:2820:A:H4'	21:N:3:HIS:CD2	2.45	0.51
14:G:126:THR:HG22	14:G:128:THR:H	1.74	0.51
15:H:104:THR:HG23	15:H:105:ALA:N	2.22	0.51
34:a:50:A:O2'	34:a:360:G:N2	2.41	0.51
34:a:294:U:OP1	34:a:610:U:O2'	2.25	0.51
34:a:359:G:C6	34:a:360:G:C5	2.98	0.51
34:a:579:A:H2'	34:a:580:C:C6	2.46	0.51
34:a:890:G:H4'	34:a:891:U:O5'	2.09	0.51
34:a:925:G:C2	34:a:927:G:C8	2.99	0.51
34:a:1516:2MG:N2	34:a:1519:MA6:OP2	2.32	0.51
54:u:30:GLU:C	54:u:32:ARG:H	2.19	0.51
2:1:35:LEU:HD11	8:A:2286:G:C8	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:629:G:OP1	8:A:650:C:O2'	2.27	0.51
8:A:1047:G:N3	8:A:1111:A:N7	2.58	0.51
8:A:2109:U:O4	8:A:2180:U:N3	2.22	0.51
8:A:2674:G:H4'	18:K:30:ARG:HD2	1.93	0.51
32:Y:20:ASN:O	32:Y:24:GLU:HG2	2.11	0.51
34:a:221:C:H2'	34:a:222:C:C6	2.45	0.51
34:a:308:C:H2'	34:a:309:A:H8	1.75	0.51
34:a:828:U:OP1	41:h:21:LYS:NZ	2.33	0.51
34:a:945:G:C2	34:a:946:A:C8	2.99	0.51
34:a:999:C:H2'	34:a:1000:A:C8	2.46	0.51
34:a:1063:C:O3'	34:a:1386:G:H4'	2.11	0.51
34:a:1119:C:P	42:i:84:ARG:HH12	2.34	0.51
35:b:93:HIS:ND1	35:b:145:ASN:O	2.44	0.51
8:A:522:A:H2'	8:A:523:C:H6	1.76	0.51
8:A:704:G:H2'	8:A:726:G:N2	2.23	0.51
8:A:852:U:H2'	8:A:853:C:C6	2.46	0.51
8:A:1032:A:H2	8:A:1122:G:H22	1.58	0.51
8:A:1406:U:H2'	8:A:1407:G:C8	2.45	0.51
8:A:2097:A:H2'	8:A:2098:U:C6	2.44	0.51
9:B:48:U:H4'	22:O:100:HIS:CD2	2.45	0.51
9:B:60:C:H2'	9:B:61:G:C8	2.43	0.51
17:J:9:GLU:H	17:J:9:GLU:CD	2.19	0.51
20:M:53:MET:HE1	20:M:103:TYR:CG	2.46	0.51
34:a:173:U:H5"	34:a:197:A:O4'	2.11	0.51
34:a:438:U:N1	34:a:496:A:N6	2.59	0.51
34:a:684:U:H2'	34:a:685:G:O4'	2.11	0.51
34:a:1062:U:H2'	34:a:1063:C:C6	2.46	0.51
34:a:1280:A:OP2	43:j:9:ARG:NH2	2.36	0.51
34:a:1345:U:OP1	42:i:121:ARG:NH1	2.44	0.51
34:a:1363:A:H2'	34:a:1365:G:C8	2.46	0.51
42:i:79:ARG:HD3	42:i:102:PHE:CD1	2.45	0.51
46:m:95:PRO:HG3	46:m:105:ALA:HB1	1.93	0.51
56:w:27:G:H2'	56:w:28:G:H8	1.76	0.51
7:6:37:CYS:H	7:6:41:HIS:HB2	1.74	0.51
8:A:415:A:H2'	8:A:416:U:C6	2.46	0.51
8:A:613:A:H5"	8:A:614:A:N7	2.26	0.51
8:A:1197:G:H2'	8:A:1198:U:C6	2.46	0.51
8:A:2116:G:H2'	8:A:2117:A:N7	2.26	0.51
34:a:151:A:C4	34:a:152:A:C8	2.99	0.51
34:a:202:G:C6	34:a:216:U:N3	2.62	0.51
34:a:464:U:C2	34:a:466:A:N6	2.79	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:512:U:H2'	34:a:513:C:C6	2.45	0.51
34:a:625:U:H2'	34:a:626:G:C8	2.45	0.51
34:a:678:U:H2'	34:a:679:C:H6	1.76	0.51
34:a:1007:U:H2'	34:a:1008:U:H6	1.75	0.51
34:a:1232:U:H5'	42:i:125:GLN:HG2	1.93	0.51
34:a:1251:A:N1	34:a:1354:U:O2'	2.40	0.51
34:a:1293:C:H2'	34:a:1294:G:O4'	2.10	0.51
34:a:1329:A:OP1	46:m:25:GLY:N	2.43	0.51
7:6:63:ARG:O	7:6:65:ASN:N	2.44	0.51
8:A:871:U:H2'	8:A:872:U:H6	1.76	0.51
8:A:1250:G:H5"	24:Q:5:ARG:HD3	1.92	0.51
8:A:1853:A:N3	8:A:2233:U:O2'	2.43	0.51
14:G:83:THR:OG1	14:G:85:LYS:NZ	2.43	0.51
23:P:32:VAL:HG12	23:P:34:GLY:H	1.74	0.51
34:a:255:G:H4'	50:q:18:LYS:HB3	1.93	0.51
34:a:858:G:N2	34:a:859:G:N7	2.59	0.51
34:a:1367:C:H5'	43:j:62:ARG:NH1	2.26	0.51
35:b:96:LEU:O	35:b:99:MET:HG3	2.11	0.51
37:d:61:ARG:NH2	37:d:71:PHE:CE2	2.75	0.51
39:f:13:ASP:HA	39:f:44:ARG:HH22	1.76	0.51
41:h:95:MET:SD	41:h:129:ALA:HB1	2.51	0.51
42:i:106:ASP:OD1	42:i:108:ARG:NH1	2.43	0.51
45:l:6:LEU:HB3	50:q:33:TYR:CE2	2.46	0.51
45:l:67:GLY:O	45:l:98:ARG:NH1	2.44	0.51
1:0:37:HIS:ND1	1:0:38:LEU:O	2.42	0.50
3:2:24:THR:O	3:2:28:ARG:HG3	2.11	0.50
7:6:28:VAL:O	7:6:30:HIS:ND1	2.44	0.50
8:A:1103:A:O5'	8:A:1104:C:H5	1.94	0.50
8:A:1168:G:H2'	8:A:1169:A:H8	1.77	0.50
8:A:1814:G:OP2	8:A:1815:A:O2'	2.18	0.50
8:A:2245:U:H5"	8:A:2246:G:H5'	1.92	0.50
8:A:2445:2MG:H5"	8:A:2445:2MG:H8	1.76	0.50
8:A:2660:A:H2'	8:A:2661:G:C8	2.46	0.50
11:D:149:ASN:OD1	11:D:150:GLN:N	2.36	0.50
12:E:153:LEU:HD11	12:E:158:PHE:HB2	1.93	0.50
18:K:19:VAL:HG12	18:K:43:ILE:HA	1.93	0.50
34:a:126:G:OP1	34:a:605:U:O2'	2.24	0.50
34:a:146:G:O6	34:a:176:C:N4	2.45	0.50
34:a:202:G:N2	34:a:216:U:H1'	2.26	0.50
34:a:633:G:H2'	34:a:634:C:H6	1.77	0.50
34:a:1372:U:H3'	34:a:1373:G:C8	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:d:7:LYS:HB3	37:d:20:LEU:HB2	1.93	0.50
37:d:28:ASP:OD1	37:d:28:ASP:N	2.43	0.50
44:k:47:GLY:HA2	44:k:56:LYS:HB2	1.93	0.50
8:A:729:G:O2'	8:A:763:G:H4'	2.11	0.50
8:A:1090:A:O2'	8:A:1091:G:O4'	2.21	0.50
8:A:1358:G:N1	8:A:1372:U:OP2	2.31	0.50
8:A:1458:U:H5'	8:A:1459:G:OP1	2.11	0.50
8:A:2192:U:O2'	8:A:2193:G:OP1	2.24	0.50
8:A:2563:U:N3	8:A:2566:A:OP2	2.36	0.50
14:G:120:ILE:HG21	14:G:132:LEU:HD23	1.93	0.50
14:G:155:PRO:O	14:G:171:LYS:N	2.40	0.50
19:L:127:VAL:HG23	19:L:132:ARG:HB2	1.92	0.50
34:a:110:C:H2'	34:a:111:G:O4'	2.11	0.50
34:a:159:G:H21	34:a:163:C:P	2.35	0.50
34:a:456:A:H2	34:a:476:U:H3	1.57	0.50
34:a:678:U:H2'	34:a:679:C:C6	2.46	0.50
35:b:95:TRP:CZ2	35:b:99:MET:HB2	2.47	0.50
37:d:143:SER:O	37:d:145:ARG:N	2.44	0.50
48:o:70:LYS:HD3	48:o:77:TYR:CE2	2.47	0.50
4:3:7:ARG:NH2	8:A:244:A:OP2	2.35	0.50
4:3:11:LYS:NZ	8:A:247:G:O6	2.30	0.50
8:A:284:U:C2	8:A:356:G:O6	2.64	0.50
8:A:674:G:O2'	12:E:62:GLN:NE2	2.32	0.50
8:A:700:G:O2'	8:A:1632:A:N3	2.34	0.50
8:A:1252:G:H1	24:Q:36:GLN:HE21	1.58	0.50
8:A:1254:A:H5"	8:A:1255:U:H5'	1.93	0.50
8:A:1319:C:O2'	8:A:1320:C:H5'	2.11	0.50
8:A:1485:U:H2'	8:A:1486:U:O4'	2.12	0.50
34:a:151:A:N7	34:a:171:A:H61	1.47	0.50
34:a:270:A:H2'	34:a:271:C:C6	2.46	0.50
34:a:294:U:H2'	34:a:295:C:C6	2.46	0.50
34:a:875:U:O2'	41:h:14:ARG:HD2	2.11	0.50
34:a:920:U:H3'	34:a:1082:A:OP1	2.10	0.50
34:a:1399:C:O2	34:a:1502:A:N6	2.45	0.50
35:b:95:TRP:HZ2	35:b:100:LEU:HG	1.75	0.50
38:e:35:LEU:HD22	38:e:133:ILE:HD13	1.92	0.50
47:n:15:LEU:HG	47:n:55:SER:HB2	1.93	0.50
48:o:35:ILE:O	48:o:39:GLN:HG2	2.11	0.50
49:p:18:GLN:CD	49:p:35:ARG:HE	2.20	0.50
50:q:19:SER:CB	50:q:70:LYS:HD2	2.32	0.50
58:y:134:LYS:HD2	58:y:136:ARG:NH1	2.27	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:6:16:CYS:SG	7:6:19:GLY:N	2.84	0.50
8:A:657:U:H2'	8:A:658:U:C6	2.47	0.50
8:A:876:C:H2'	8:A:877:A:N9	2.26	0.50
8:A:1178:C:H2'	8:A:1179:G:H8	1.77	0.50
8:A:2724:U:OP1	11:D:116:LYS:NZ	2.45	0.50
12:E:105:LEU:HA	12:E:108:ILE:HG22	1.93	0.50
17:J:122:LEU:HG	17:J:124:VAL:HG23	1.94	0.50
18:K:103:VAL:O	18:K:122:VAL:HB	2.11	0.50
20:M:12:MET:SD	20:M:72:PRO:HD2	2.51	0.50
25:R:27:ILE:HG22	25:R:28:ALA:H	1.76	0.50
34:a:1306:A:N1	34:a:1332:A:H1'	2.27	0.50
34:a:1382:C:H2'	34:a:1383:C:C6	2.46	0.50
40:g:56:SER:OG	40:g:57:GLU:N	2.45	0.50
56:w:69:G:H2'	56:w:70:G:H8	1.76	0.50
4:3:44:ARG:NH2	8:A:2349:G:OP1	2.44	0.50
8:A:170:U:H2'	8:A:171:U:H6	1.77	0.50
8:A:348:A:H2'	8:A:349:U:O4'	2.12	0.50
8:A:1306:C:N4	8:A:1606:C:H2'	2.26	0.50
8:A:2816:G:O2'	8:A:2817:U:H5'	2.10	0.50
8:A:2850:A:N7	8:A:2868:A:O2'	2.41	0.50
13:F:37:MET:HB2	13:F:86:CYS:SG	2.52	0.50
34:a:46:G:H2'	34:a:366:A:N7	2.27	0.50
34:a:235:C:H2'	34:a:236:A:H8	1.76	0.50
34:a:516:PSU:C2	34:a:517:G:C6	2.99	0.50
34:a:830:G:H2'	34:a:831:A:H8	1.76	0.50
34:a:1000:A:H2'	34:a:1001:C:H6	1.76	0.50
34:a:1146:A:H2'	34:a:1147:C:O4'	2.10	0.50
34:a:1157:A:H4'	34:a:1158:C:O4'	2.12	0.50
34:a:1198:G:H2'	34:a:1199:U:C6	2.46	0.50
36:c:20:THR:OG1	36:c:57:GLU:HG2	2.12	0.50
38:e:86:GLY:O	38:e:138:ALA:HB1	2.11	0.50
53:t:4:LYS:CE	53:t:6:ALA:H	2.24	0.50
3:2:4:THR:O	8:A:686:U:O2'	2.26	0.50
4:3:30:HIS:C	4:3:32:LEU:H	2.20	0.50
8:A:350:G:H2'	8:A:351:C:C6	2.46	0.50
8:A:893:C:H2'	8:A:894:U:C6	2.45	0.50
8:A:1092:C:N4	8:A:1093:G:N3	2.59	0.50
8:A:2070:A:H2'	8:A:2071:A:H8	1.76	0.50
8:A:2119:A:O2'	8:A:2169:A:N1	2.40	0.50
8:A:2191:A:H2'	8:A:2192:U:C6	2.46	0.50
23:P:50:ARG:HG3	23:P:52:ARG:NH1	2.27	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:483:C:H2'	34:a:484:G:C8	2.46	0.50
34:a:501:C:H2'	34:a:502:A:C8	2.46	0.50
34:a:977:A:N6	34:a:1224:U:O5'	2.42	0.50
34:a:1330:U:H5	34:a:1331:G:N3	2.10	0.50
36:c:41:TYR:HD2	36:c:42:LEU:HD22	1.76	0.50
40:g:70:PRO:HA	40:g:141:HIS:NE2	2.27	0.50
42:i:78:ILE:O	42:i:82:ILE:HG13	2.12	0.50
1:0:48:TYR:CD1	1:0:49:ARG:HG3	2.47	0.50
7:6:36:VAL:HA	7:6:41:HIS:CD2	2.46	0.50
8:A:291:G:C6	8:A:349:U:O2	2.65	0.50
8:A:1353:A:H2'	8:A:1354:A:C8	2.46	0.50
8:A:2700:A:H2'	8:A:2701:U:H6	1.74	0.50
12:E:102:ARG:HG2	12:E:200:LEU:HD13	1.94	0.50
12:E:146:VAL:HA	12:E:185:LYS:O	2.11	0.50
14:G:26:LYS:HD3	14:G:31:GLU:HB2	1.94	0.50
30:W:17:LEU:O	30:W:20:LYS:NZ	2.43	0.50
34:a:374:A:O2'	34:a:451:A:OP1	2.26	0.50
34:a:437:U:H5'	37:d:151:GLN:OE1	2.12	0.50
34:a:459:A:C2	34:a:474:G:C2	2.99	0.50
34:a:957:U:O3'	52:s:78:THR:OG1	2.30	0.50
34:a:1130:A:O3'	42:i:4:GLN:NE2	2.44	0.50
36:c:39:ARG:NH1	36:c:54:ILE:O	2.44	0.50
37:d:185:PRO:HB2	37:d:190:LEU:HG	1.94	0.50
42:i:113:LYS:HA	42:i:120:ALA:HB2	1.92	0.50
46:m:28:ARG:HG2	46:m:62:PHE:CZ	2.46	0.50
53:t:66:ILE:HD12	53:t:70:LYS:HB3	1.93	0.50
8:A:441:U:H2'	8:A:442:G:C8	2.46	0.50
8:A:492:A:H2'	8:A:493:G:O4'	2.12	0.50
8:A:918:A:H5"	9:B:97:C:O2'	2.12	0.50
8:A:1075:C:H2'	8:A:1076:C:C6	2.47	0.50
8:A:1176:U:C2	8:A:1177:G:C6	3.00	0.50
8:A:1182:G:H2'	8:A:1183:U:O4'	2.11	0.50
8:A:2576:G:O2'	8:A:2579:C:OP2	2.24	0.50
8:A:2869:G:H2'	8:A:2870:C:C6	2.46	0.50
9:B:75:G:H5'	29:V:12:GLN:CD	2.37	0.50
18:K:120:PRO:HG3	23:P:65:ASN:HD21	1.76	0.50
31:X:6:VAL:HG12	31:X:7:THR:HG23	1.94	0.50
34:a:105:G:H2'	34:a:106:C:C6	2.46	0.50
34:a:151:A:C8	34:a:170:U:O4	2.65	0.50
34:a:407:U:H2'	34:a:408:A:H8	1.75	0.50
34:a:409:U:H2'	34:a:410:G:O4'	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:598:U:H2'	34:a:599:C:C6	2.47	0.50
34:a:779:C:H2'	34:a:780:A:O4'	2.10	0.50
34:a:921:U:O5'	34:a:1081:A:H3'	2.11	0.50
34:a:939:G:O2'	34:a:1375:A:O2'	2.25	0.50
34:a:1374:A:C6	34:a:1375:A:N1	2.80	0.50
54:u:8:ASN:HB2	54:u:10:PRO:HD2	1.93	0.50
6:5:88:HIS:O	6:5:90:GLY:N	2.43	0.50
8:A:153:U:H2'	8:A:154:U:C6	2.47	0.50
8:A:521:U:H2'	8:A:522:A:C8	2.47	0.50
8:A:596:U:C2	8:A:597:G:C8	3.00	0.50
8:A:1041:G:C2	8:A:1042:G:C8	3.00	0.50
8:A:1104:C:O2'	8:A:1105:U:O4'	2.27	0.50
8:A:1244:A:O2'	12:E:29:HIS:NE2	2.41	0.50
8:A:1445:G:H2'	8:A:1446:C:H6	1.76	0.50
8:A:2650:U:C2	8:A:2671:G:N2	2.80	0.50
8:A:2840:C:H2'	8:A:2841:C:H6	1.76	0.50
23:P:36:LYS:HE2	23:P:38:ARG:HB2	1.94	0.50
34:a:259:G:C4	34:a:260:G:C8	2.99	0.50
34:a:501:C:H2'	34:a:502:A:H8	1.76	0.50
34:a:1015:G:H2'	34:a:1016:A:H8	1.75	0.50
34:a:1115:U:C4	34:a:1116:U:C4	2.99	0.50
34:a:1267:C:H2'	34:a:1268:G:C4	2.46	0.50
34:a:1287:A:H2'	34:a:1288:A:O4'	2.12	0.50
37:d:98:ASP:HA	37:d:101:VAL:HB	1.93	0.50
44:k:93:GLU:O	44:k:97:ARG:HG2	2.12	0.50
8:A:880:G:C2	8:A:898:C:C2	3.00	0.49
8:A:1079:C:N4	8:A:1087:G:OP1	2.42	0.49
8:A:1196:C:H2'	8:A:1197:G:H8	1.76	0.49
8:A:1341:G:OP1	8:A:1397:U:N3	2.39	0.49
8:A:1682:G:OP1	8:A:1699:G:N1	2.45	0.49
8:A:1865:U:O2'	8:A:1866:A:H8	1.95	0.49
8:A:2024:G:C4	8:A:2040:G:N2	2.80	0.49
9:B:70:C:H2'	9:B:71:C:H6	1.77	0.49
18:K:74:GLY:O	23:P:74:GLN:NE2	2.36	0.49
34:a:268:U:H2'	34:a:269:C:C6	2.47	0.49
34:a:432:A:H3'	34:a:433:G:H8	1.76	0.49
34:a:1178:G:H22	34:a:1181:G:H5'	1.76	0.49
34:a:1307:U:H2'	34:a:1308:U:C6	2.46	0.49
35:b:20:ARG:C	35:b:22:TRP:H	2.19	0.49
8:A:1053:C:H42	8:A:1054:A:H62	1.59	0.49
8:A:2229:U:O2	31:X:33:HIS:HE1	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2405:G:H1'	8:A:2412:A:N6	2.27	0.49
10:C:99:GLU:OE2	10:C:101:ARG:NE	2.44	0.49
10:C:209:ALA:HA	10:C:212:TRP:CE2	2.47	0.49
15:H:3:VAL:HG22	15:H:36:ALA:HB1	1.93	0.49
15:H:100:ALA:O	15:H:104:THR:HG22	2.12	0.49
25:R:14:VAL:HG21	25:R:98:ILE:HG13	1.94	0.49
33:Z:29:ARG:HB2	33:Z:30:ARG:HD3	1.93	0.49
33:Z:39:ASP:OD2	33:Z:44:ARG:NH2	2.45	0.49
34:a:415:A:H2'	34:a:416:G:O4'	2.12	0.49
34:a:575:G:O2'	34:a:821:G:H5'	2.12	0.49
34:a:920:U:O2'	34:a:1080:A:N6	2.44	0.49
34:a:1074:G:O3'	35:b:101:THR:OG1	2.28	0.49
34:a:1291:U:H2'	34:a:1292:G:H8	1.77	0.49
34:a:1307:U:O3'	46:m:108:ARG:HD3	2.12	0.49
34:a:1350:A:OP2	42:i:119:LYS:NZ	2.33	0.49
35:b:212:TYR:O	35:b:216:VAL:HG22	2.12	0.49
37:d:61:ARG:HH21	37:d:71:PHE:HZ	0.70	0.49
37:d:117:VAL:HA	37:d:122:ILE:HG22	1.93	0.49
37:d:124:VAL:HA	37:d:142:VAL:O	2.12	0.49
51:r:57:ALA:HA	51:r:60:ARG:HE	1.77	0.49
56:w:14:A:N6	56:w:22:G:C5	2.80	0.49
1:0:3:GLN:NE2	8:A:1263:U:O2'	2.42	0.49
8:A:458:G:H1'	8:A:459:U:H5	1.77	0.49
8:A:458:G:O2'	8:A:459:U:P	2.70	0.49
8:A:627:A:N1	8:A:636:G:O2'	2.45	0.49
8:A:644:A:C2	8:A:2369:A:H1'	2.47	0.49
8:A:674:G:H1'	12:E:69:ARG:HD3	1.93	0.49
8:A:1524:G:H2'	8:A:1525:A:H8	1.78	0.49
8:A:2292:U:H2'	8:A:2293:G:C8	2.47	0.49
8:A:2533:U:H2'	8:A:2534:A:O4'	2.12	0.49
8:A:2830:C:O3'	11:D:56:LYS:NZ	2.46	0.49
23:P:24:THR:HB	23:P:87:ARG:HB3	1.93	0.49
24:Q:86:SER:O	25:R:52:PRO:HD3	2.12	0.49
34:a:111:G:H1	34:a:330:C:N4	2.02	0.49
34:a:340:U:H2'	34:a:341:C:C6	2.47	0.49
34:a:685:G:N2	34:a:704:A:OP2	2.45	0.49
34:a:903:G:H2'	34:a:904:U:H6	1.77	0.49
38:e:23:THR:HA	38:e:28:ARG:HA	1.94	0.49
42:i:79:ARG:HD3	42:i:102:PHE:HD1	1.76	0.49
44:k:63:GLN:O	44:k:67:GLU:HG2	2.12	0.49
49:p:43:ALA:CB	49:p:48:GLU:CB	2.53	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:q:53:GLY:N	50:q:56:ASP:OD2	2.45	0.49
56:w:19:G:H3'	56:w:20:U:C6	2.46	0.49
7:6:36:VAL:C	7:6:44:PHE:HZ	2.14	0.49
8:A:176:A:O2'	8:A:177:G:H5'	2.13	0.49
8:A:290:U:O2	8:A:350:G:C2	2.66	0.49
8:A:817:C:H2'	8:A:818:G:O4'	2.12	0.49
8:A:1047:G:O2'	8:A:1110:G:N1	2.30	0.49
8:A:1710:G:H2'	8:A:1711:A:C8	2.47	0.49
8:A:2156:G:H4'	8:A:2157:G:OP2	2.10	0.49
18:K:108:ARG:HG2	18:K:116:ILE:HG12	1.94	0.49
22:O:82:ALA:HB3	22:O:115:LEU:HD11	1.93	0.49
34:a:134:G:H2'	34:a:135:C:O4'	2.12	0.49
34:a:616:G:C1'	49:p:46:LYS:HE3	2.42	0.49
34:a:1022:A:H3'	34:a:1023:U:C6	2.48	0.49
34:a:1071:C:H5"	38:e:53:ARG:NH2	2.27	0.49
34:a:1266:G:H2'	34:a:1268:G:N7	2.27	0.49
34:a:1268:G:H1'	34:a:1326:U:O2'	2.12	0.49
35:b:43:GLU:OE1	35:b:43:GLU:N	2.36	0.49
36:c:33:ASP:O	36:c:37:LYS:HG2	2.12	0.49
36:c:42:LEU:HD12	36:c:67:ILE:HD11	1.94	0.49
36:c:64:ARG:HA	36:c:99:GLN:HG3	1.94	0.49
42:i:19:PHE:HB2	42:i:63:TYR:HD2	1.77	0.49
46:m:13:HIS:ND1	46:m:41:ASP:HB2	2.27	0.49
7:6:13:THR:HA	7:6:23:LYS:HD2	1.93	0.49
8:A:151:C:H2'	8:A:152:A:H8	1.77	0.49
8:A:310:A:O2'	8:A:311:A:H2'	2.11	0.49
8:A:526:A:O2'	8:A:2043:C:O2	2.29	0.49
8:A:721:A:H2'	8:A:722:A:C8	2.47	0.49
8:A:1048:A:C8	8:A:1111:A:C6	3.00	0.49
8:A:1387:A:H5'	8:A:1469:A:H1'	1.94	0.49
8:A:1410:G:H2'	8:A:1411:U:C6	2.48	0.49
8:A:1442:U:H2'	8:A:1443:U:C6	2.47	0.49
8:A:2121:G:H21	8:A:2179:C:H42	1.61	0.49
8:A:2162:G:H3'	8:A:2163:A:H8	1.78	0.49
8:A:2804:U:H2'	8:A:2805:C:C6	2.47	0.49
9:B:106:G:H2'	9:B:107:G:O4'	2.12	0.49
12:E:3:LEU:HB3	12:E:120:VAL:HG11	1.94	0.49
13:F:31:GLU:OE1	13:F:31:GLU:N	2.46	0.49
15:H:122:LEU:HD22	15:H:146:VAL:HG21	1.93	0.49
20:M:26:VAL:HB	20:M:133:LYS:HA	1.94	0.49
29:V:32:GLY:O	29:V:93:ARG:NH1	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:Z:5:LYS:HB2	33:Z:57:GLU:HG3	1.95	0.49
34:a:38:G:N2	34:a:397:A:H5'	2.27	0.49
34:a:564:C:OP1	45:l:11:ARG:NE	2.33	0.49
34:a:1149:C:H2'	34:a:1150:A:C8	2.47	0.49
34:a:1206:G:H2'	34:a:1207:2MG:O4'	2.12	0.49
34:a:1296:C:OP1	46:m:13:HIS:NE2	2.46	0.49
1:0:4:GLN:O	8:A:2017:U:H4'	2.11	0.49
8:A:52:A:OP2	8:A:117:G:N1	2.35	0.49
8:A:1005:C:H1'	8:A:1012:U:N3	2.28	0.49
8:A:1910:G:C2	8:A:1921:G:C2	3.00	0.49
10:C:184:GLU:HG2	10:C:186:ASP:H	1.77	0.49
13:F:33:ILE:HG12	13:F:155:ILE:HG23	1.93	0.49
22:O:18:LEU:HD13	22:O:25:ARG:HD2	1.95	0.49
34:a:176:C:H5"	53:t:63:LYS:HZ1	1.77	0.49
34:a:200:G:H2'	34:a:201:G:C8	2.47	0.49
34:a:967:5MC:OP2	34:a:968:A:H2'	2.13	0.49
34:a:982:U:H5"	47:n:5:MET:HE1	1.95	0.49
34:a:1297:G:N2	40:g:113:LYS:O	2.45	0.49
35:b:120:SER:OG	35:b:121:GLN:N	2.45	0.49
40:g:69:ARG:HD2	40:g:95:ARG:HD3	1.94	0.49
58:y:11:PRO:HD2	58:y:14:GLU:HG2	1.95	0.49
2:1:12:SER:HB2	2:1:48:TYR:CZ	2.48	0.49
4:3:61:LEU:HD22	4:3:64:ALA:HB3	1.95	0.49
7:6:41:HIS:ND1	7:6:44:PHE:HE1	2.09	0.49
8:A:35:G:H1'	8:A:454:A:C4	2.47	0.49
8:A:217:A:C4	8:A:218:A:C8	3.00	0.49
8:A:521:U:H2'	8:A:522:A:H8	1.78	0.49
8:A:1412:U:H2'	8:A:1413:A:C8	2.48	0.49
8:A:1478:G:H1	8:A:1513:U:H3	1.60	0.49
8:A:1842:G:H2'	8:A:1843:C:C6	2.48	0.49
8:A:2467:C:O2	20:M:123:LYS:NZ	2.29	0.49
8:A:2823:A:OP1	11:D:118:PHE:HB2	2.13	0.49
17:J:8:PRO:HA	17:J:11:VAL:HG12	1.94	0.49
27:T:37:ASP:CG	27:T:38:ALA:H	2.21	0.49
34:a:263:A:OP1	53:t:73:ARG:NH2	2.36	0.49
34:a:637:C:H2'	34:a:638:U:C6	2.44	0.49
34:a:731:G:H5'	34:a:766:A:H4'	1.93	0.49
34:a:1027:C:H5"	34:a:1028:C:C5	2.47	0.49
34:a:1436:U:H2'	34:a:1437:A:C8	2.47	0.49
36:c:83:VAL:O	36:c:100:ILE:HD11	2.12	0.49
36:c:127:VAL:HG22	36:c:128:MET:H	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:d:75:TYR:CE2	37:d:203:TYR:HB3	2.48	0.49
39:f:10:VAL:HB	39:f:58:HIS:HB3	1.95	0.49
8:A:1045:C:OP1	8:A:1047:G:H5"	2.13	0.49
8:A:1451:C:H4'	8:A:1452:G:O5'	2.13	0.49
8:A:1454:C:O5'	21:N:63:ARG:NH2	2.46	0.49
8:A:2446:G:N2	8:A:2449:U:O2	2.43	0.49
34:a:64:G:N2	34:a:69:G:N7	2.61	0.49
34:a:1100:C:H5"	35:b:94:ARG:HE	1.77	0.49
34:a:1162:C:C2	34:a:1163:A:N7	2.81	0.49
37:d:12:ARG:CD	37:d:37:PRO:CD	2.65	0.49
37:d:67:LEU:O	37:d:71:PHE:CE2	2.66	0.49
37:d:69:ARG:C	37:d:72:ARG:H	2.20	0.49
37:d:149:LYS:HG2	37:d:154:VAL:HG11	1.95	0.49
39:f:6:ILE:O	39:f:62:MET:HB2	2.13	0.49
40:g:69:ARG:HD3	40:g:95:ARG:HB3	1.95	0.49
42:i:14:SER:OG	42:i:68:GLY:O	2.16	0.49
43:j:88:MET:SD	43:j:89:ARG:N	2.85	0.49
45:l:69:GLU:OE1	45:l:109:ARG:NH1	2.46	0.49
50:q:16:MET:HG3	50:q:19:SER:HB3	1.95	0.49
51:r:33:THR:OG1	51:r:34:GLU:OE1	2.29	0.49
8:A:2:G:H2'	8:A:3:U:H6	1.75	0.49
8:A:605:G:H2'	8:A:606:U:O4'	2.12	0.49
8:A:959:A:H2'	8:A:960:A:C8	2.48	0.49
8:A:1260:A:H2'	8:A:1261:C:O4'	2.13	0.49
8:A:1747:U:H2'	8:A:1748:C:C6	2.48	0.49
8:A:2123:G:N2	8:A:2125:G:N3	2.60	0.49
10:C:42:ARG:HA	10:C:47:ARG:O	2.12	0.49
14:G:155:PRO:HG2	14:G:156:TYR:CE2	2.47	0.49
34:a:253:A:P	50:q:68:LYS:NZ	2.86	0.49
34:a:825:A:H2'	34:a:826:C:C6	2.47	0.49
34:a:842:U:H4'	34:a:846:G:O6	2.13	0.49
34:a:1052:U:O2'	34:a:1055:A:OP2	2.17	0.49
34:a:1320:C:OP2	52:s:69:LYS:NZ	2.27	0.49
38:e:95:MET:HG2	38:e:124:ALA:HB2	1.95	0.49
43:j:59:LYS:HE2	43:j:62:ARG:CZ	2.43	0.49
46:m:40:GLU:HG2	46:m:41:ASP:N	2.28	0.49
54:u:23:GLU:O	54:u:24:LYS:NZ	2.34	0.49
8:A:312:G:H5'	8:A:331:C:O2'	2.12	0.49
8:A:568:U:N3	8:A:571:U:OP2	2.33	0.49
8:A:753:A:H2'	8:A:754:U:H6	1.77	0.49
8:A:764:A:H5"	10:C:208:GLY:CA	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2512:C:O2'	11:D:159:LYS:NZ	2.34	0.49
18:K:120:PRO:CG	23:P:65:ASN:HD21	2.26	0.49
34:a:101:A:H2'	34:a:102:G:H8	1.78	0.49
34:a:154:U:H2'	34:a:155:A:C8	2.45	0.49
34:a:303:A:H2'	34:a:304:U:O4'	2.13	0.49
34:a:527:G7M:HN71	45:l:45:ASN:HD21	1.77	0.49
34:a:529:G:N7	58:y:122:LYS:NZ	2.61	0.49
34:a:953:G:H2'	34:a:954:G:C8	2.48	0.49
34:a:1032:G:N3	34:a:1034:G:N2	2.61	0.49
47:n:66:GLN:HG2	47:n:79:LEU:HD22	1.95	0.49
2:1:35:LEU:HD11	8:A:2286:G:N7	2.28	0.48
8:A:290:U:H3	8:A:350:G:H1	1.61	0.48
8:A:499:U:H4'	28:U:42:LYS:HB2	1.95	0.48
8:A:2731:G:O2'	8:A:2732:G:H5'	2.12	0.48
12:E:80:SER:O	12:E:80:SER:OG	2.30	0.48
15:H:132:PHE:HB2	15:H:140:ALA:HB3	1.95	0.48
20:M:17:ASN:O	20:M:38:ARG:NH1	2.45	0.48
21:N:84:GLY:O	21:N:88:ALA:HB2	2.12	0.48
34:a:527:G7M:O2'	34:a:535:A:N1	2.41	0.48
34:a:600:A:H5'	41:h:120:LEU:HA	1.95	0.48
34:a:613:C:H2'	34:a:614:C:C6	2.48	0.48
34:a:621:A:H5'	37:d:135:GLN:HE22	1.78	0.48
34:a:921:U:C6	34:a:1082:A:OP2	2.60	0.48
34:a:976:G:OP2	34:a:1358:U:O2'	2.31	0.48
34:a:1078:U:H4'	38:e:137:ARG:CZ	2.42	0.48
34:a:1100:C:H5'	34:a:1101:A:OP2	2.12	0.48
34:a:1477:U:H2'	34:a:1478:U:H6	1.78	0.48
43:j:5:ARG:HH11	43:j:78:GLU:HA	1.77	0.48
43:j:40:ILE:HD13	43:j:73:LEU:HD22	1.95	0.48
43:j:42:LEU:HB3	43:j:71:LEU:HD23	1.94	0.48
45:l:98:ARG:HB2	45:l:116:TYR:HA	1.95	0.48
52:s:52:ASN:OD1	52:s:55:GLN:N	2.24	0.48
7:6:56:ARG:HB3	52:s:66:VAL:HB	1.95	0.48
8:A:550:C:H2'	8:A:551:G:H8	1.78	0.48
8:A:774:G:HO2'	8:A:775:G:P	2.35	0.48
8:A:1060:U:H1'	8:A:1087:G:O6	2.13	0.48
8:A:1196:C:C2	8:A:1197:G:C8	3.01	0.48
8:A:2522:U:O2'	8:A:2647:U:OP1	2.21	0.48
8:A:2649:C:H2'	8:A:2650:U:C6	2.48	0.48
11:D:106:LYS:HB3	11:D:174:SER:HA	1.95	0.48
12:E:177:PRO:O	12:E:181:ILE:HG13	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:R:3:ALA:HA	25:R:40:MET:O	2.13	0.48
26:S:17:VAL:HG11	26:S:103:ILE:HG12	1.95	0.48
28:U:71:ILE:O	28:U:71:ILE:HG13	2.13	0.48
34:a:560:A:H4'	34:a:561:U:H5"	1.95	0.48
34:a:991:U:H1'	34:a:993:G:C8	2.48	0.48
34:a:1427:C:H2'	34:a:1428:A:C8	2.48	0.48
36:c:61:LYS:O	36:c:61:LYS:HD2	2.13	0.48
54:u:32:ARG:C	54:u:34:ARG:N	2.69	0.48
58:y:95:ILE:O	58:y:99:THR:OG1	2.27	0.48
8:A:1047:G:H1'	8:A:1111:A:H62	1.79	0.48
8:A:1086:A:H5"	8:A:1087:G:H5'	1.95	0.48
8:A:1361:G:H2'	8:A:1362:C:C6	2.48	0.48
8:A:1589:U:H2'	8:A:1590:A:H8	1.78	0.48
8:A:1703:G:H2'	8:A:1704:C:C6	2.48	0.48
8:A:2874:C:OP1	21:N:4:ARG:HD2	2.13	0.48
28:U:12:VAL:HG21	28:U:38:ILE:HG21	1.95	0.48
34:a:332:G:OP2	53:t:3:ILE:N	2.46	0.48
34:a:464:U:C4	34:a:466:A:N7	2.81	0.48
34:a:736:C:H2'	34:a:737:C:C6	2.48	0.48
34:a:881:G:H2'	34:a:882:C:O4'	2.13	0.48
34:a:947:G:H2'	34:a:948:C:H6	1.78	0.48
34:a:1218:C:O2'	34:a:1219:A:H5'	2.13	0.48
8:A:546:U:O2'	8:A:547:A:N3	2.47	0.48
8:A:716:A:H2'	8:A:717:C:O4'	2.12	0.48
8:A:1703:G:H2'	8:A:1704:C:H6	1.79	0.48
8:A:1865:U:HO2'	8:A:1866:A:H8	1.60	0.48
8:A:2033:A:H1'	8:A:2035:G:OP2	2.13	0.48
8:A:2667:C:N3	14:G:109:SER:OG	2.45	0.48
26:S:1:MET:N	26:S:109:ASP:HB2	2.29	0.48
34:a:405:U:OP1	34:a:406:G:O2'	2.13	0.48
34:a:921:U:O4'	34:a:1081:A:H5'	2.14	0.48
34:a:1348:U:C2	34:a:1349:A:C8	3.00	0.48
37:d:9:LYS:HE3	37:d:37:PRO:HB3	1.94	0.48
39:f:12:PRO:HB3	39:f:56:LYS:O	2.12	0.48
54:u:30:GLU:C	54:u:32:ARG:N	2.70	0.48
8:A:45:G:H5'	8:A:46:G:H5'	1.95	0.48
8:A:155:A:H2'	8:A:156:A:C8	2.49	0.48
8:A:158:U:H2'	8:A:159:G:O4'	2.14	0.48
8:A:677:A:O2'	8:A:2070:A:O2'	2.29	0.48
8:A:1009:A:N3	8:A:1153:C:O2'	2.45	0.48
8:A:1188:U:H4'	25:R:81:LYS:O	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1300:G:H4'	8:A:1301:A:H5'	1.94	0.48
8:A:1394:U:H2'	8:A:1395:A:O4'	2.13	0.48
10:C:269:ARG:HG3	10:C:270:ARG:H	1.78	0.48
21:N:28:LEU:HD23	21:N:48:VAL:HG11	1.94	0.48
34:a:438:U:O2	34:a:496:A:C5	2.66	0.48
34:a:455:G:C6	34:a:478:A:N1	2.81	0.48
34:a:542:G:H2'	34:a:543:U:H6	1.78	0.48
34:a:751:U:H5'	48:o:20:ASP:OD1	2.12	0.48
34:a:1006:G:N3	34:a:1006:G:H2'	2.28	0.48
34:a:1174:G:H2'	34:a:1175:G:H8	1.77	0.48
34:a:1314:C:H2'	34:a:1315:U:C6	2.48	0.48
34:a:1412:C:H5"	45:l:53:ARG:HH22	1.78	0.48
35:b:66:ILE:HD12	35:b:159:ALA:HB3	1.95	0.48
36:c:35:ASP:OD1	36:c:39:ARG:NE	2.46	0.48
37:d:64:TYR:CE2	37:d:93:LEU:HB3	2.48	0.48
46:m:72:ILE:O	46:m:76:ILE:HG12	2.14	0.48
50:q:27:PHE:HD1	50:q:38:LYS:HG2	1.77	0.48
53:t:19:HIS:HE1	53:t:23:ARG:HE	1.60	0.48
8:A:388:G:N7	8:A:390:U:H2'	2.29	0.48
8:A:1693:U:H5"	8:A:1694:C:H5	1.78	0.48
8:A:1979:U:O2'	8:A:1980:G:H5'	2.14	0.48
8:A:2519:U:C4	8:A:2542:A:C5	3.01	0.48
10:C:75:ALA:HB2	10:C:95:TYR:CD2	2.49	0.48
10:C:116:GLN:NE2	10:C:121:ALA:HA	2.29	0.48
11:D:51:THR:HB	11:D:79:LEU:HD23	1.96	0.48
12:E:51:GLU:OE2	12:E:88:ARG:NH1	2.47	0.48
13:F:98:PHE:HD2	13:F:101:ARG:HH12	1.60	0.48
18:K:19:VAL:HB	18:K:41:ILE:HD12	1.94	0.48
34:a:157:U:O2'	34:a:158:G:OP2	2.32	0.48
34:a:414:A:C4	34:a:415:A:C8	3.02	0.48
34:a:499:A:C2	34:a:547:A:C5	3.02	0.48
34:a:903:G:H2'	34:a:904:U:C6	2.49	0.48
34:a:1035:A:H2'	34:a:1036:A:H8	1.77	0.48
37:d:68:GLU:OE2	37:d:203:TYR:OH	2.31	0.48
40:g:1:PRO:HB2	40:g:4:ARG:HB2	1.95	0.48
40:g:47:GLU:O	40:g:51:GLN:HG2	2.12	0.48
1:0:52:LYS:HE2	1:0:55:ALA:H	1.77	0.48
5:4:11:CYS:HB3	5:4:33:HIS:CE1	2.49	0.48
8:A:300:A:H8	28:U:81:ARG:HH22	1.62	0.48
8:A:580:U:H2'	8:A:581:C:H6	1.78	0.48
8:A:941:A:H2'	8:A:942:G:O4'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:998:C:H2'	8:A:999:U:O4'	2.13	0.48
8:A:1394:U:H4'	8:A:1603:A:H4'	1.93	0.48
8:A:1536:C:H4'	8:A:1537:G:C8	2.48	0.48
8:A:1681:G:N2	8:A:1763:G:OP2	2.35	0.48
13:F:116:LEU:HD23	13:F:175:PRO:HG2	1.95	0.48
19:L:82:LEU:HD11	19:L:90:VAL:HG11	1.96	0.48
34:a:101:A:H2'	34:a:102:G:C8	2.48	0.48
34:a:160:A:O2'	34:a:161:A:H3'	2.13	0.48
34:a:237:G:OP1	50:q:41:THR:OG1	2.28	0.48
34:a:1489:G:H2'	34:a:1490:U:O4'	2.13	0.48
35:b:65:LYS:NZ	35:b:155:GLY:H	2.11	0.48
37:d:151:GLN:HB2	37:d:153:ARG:HG2	1.96	0.48
37:d:201:GLU:OE1	38:e:111:ARG:NH1	2.47	0.48
50:q:44:HIS:CE1	50:q:69:THR:HG21	2.49	0.48
58:y:39:LEU:O	58:y:71:VAL:HA	2.14	0.48
8:A:444:C:OP2	12:E:44:ARG:NE	2.46	0.48
8:A:582:A:H2'	8:A:583:G:C8	2.49	0.48
8:A:610:C:H2'	8:A:611:C:C6	2.49	0.48
8:A:920:A:H2'	8:A:921:C:H6	1.79	0.48
8:A:1243:C:O2'	19:L:6:LEU:O	2.30	0.48
8:A:2128:G:O2'	8:A:2129:C:OP1	2.28	0.48
9:B:113:C:H1'	22:O:46:GLU:HA	1.96	0.48
15:H:14:SER:HG	15:H:17:ASP:CG	2.21	0.48
27:T:6:ARG:O	27:T:10:VAL:HG23	2.13	0.48
27:T:39:THR:O	27:T:43:ILE:HG13	2.13	0.48
34:a:206:C:H42	34:a:465:A:H61	1.60	0.48
34:a:663:A:N6	34:a:742:G:H1	2.12	0.48
34:a:1261:A:H1'	34:a:1275:A:C2	2.48	0.48
34:a:1463:U:H2'	34:a:1464:U:C6	2.49	0.48
40:g:138:GLU:CD	40:g:142:ARG:HE	2.20	0.48
52:s:33:TRP:CD1	52:s:51:HIS:HD1	2.32	0.48
58:y:53:LYS:O	58:y:57:LEU:HG	2.13	0.48
8:A:875:G:N1	8:A:903:C:N3	2.62	0.48
8:A:1183:U:H2'	8:A:1184:U:C6	2.49	0.48
8:A:1527:G:N1	8:A:1544:A:OP2	2.40	0.48
8:A:1915:3TD:C1'	58:y:105:ARG:HB2	2.44	0.48
8:A:2030:6MZ:C2	8:A:2499:C:H5"	2.43	0.48
8:A:2304:G:H4'	13:F:129:MET:HA	1.96	0.48
8:A:2702:G:H2'	8:A:2703:C:C6	2.49	0.48
9:B:45:A:C4	9:B:46:A:C8	3.01	0.48
20:M:40:ARG:O	20:M:41:LEU:HD23	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:V:55:GLU:HB3	29:V:59:GLU:OE1	2.14	0.48
31:X:39:VAL:HG12	31:X:42:GLU:H	1.79	0.48
34:a:30:U:H3	34:a:553:A:H61	1.61	0.48
34:a:696:A:H2'	34:a:697:U:H6	1.79	0.48
34:a:967:5MC:HM51	34:a:968:A:C4	2.48	0.48
34:a:1250:A:H2'	34:a:1251:A:O4'	2.14	0.48
34:a:1319:A:C6	34:a:1323:G:C2	3.01	0.48
35:b:30:ILE:HG22	35:b:32:GLY:H	1.79	0.48
39:f:42:TRP:HE1	39:f:61:LEU:HD22	1.79	0.48
45:l:69:GLU:OE1	45:l:69:GLU:N	2.46	0.48
53:t:5:SER:C	53:t:7:LYS:N	2.61	0.48
58:y:41:PHE:HZ	58:y:48:LEU:HD11	1.79	0.48
8:A:30:G:H2'	8:A:31:C:C6	2.49	0.48
8:A:116:C:O2'	8:A:126:A:H1'	2.13	0.48
8:A:1070:A:N6	8:A:1096:A:H4'	2.28	0.48
8:A:1248:G:P	12:E:44:ARG:HH12	2.36	0.48
8:A:1316:U:H2'	8:A:1317:G:H8	1.79	0.48
8:A:2024:G:H2'	8:A:2025:C:H6	1.79	0.48
23:P:77:SER:OG	23:P:79:VAL:HG22	2.14	0.48
32:Y:5:GLU:HA	32:Y:8:GLU:HB2	1.96	0.48
34:a:148:G:H1'	34:a:1446:A:N3	2.29	0.48
34:a:221:C:H2'	34:a:222:C:H6	1.78	0.48
34:a:428:G:H4'	34:a:429:U:OP1	2.14	0.48
34:a:511:C:O2'	34:a:512:U:O5'	2.28	0.48
34:a:620:C:H4'	37:d:134:TYR:HE1	1.79	0.48
34:a:766:A:OP2	34:a:812:G:N2	2.47	0.48
34:a:1250:A:H2	34:a:1370:G:H1'	1.78	0.48
34:a:1256:A:H4'	34:a:1257:A:H5'	1.96	0.48
35:b:9:LEU:HD12	35:b:14:HIS:CE1	2.49	0.48
39:f:44:ARG:HA	39:f:57:ALA:O	2.14	0.48
50:q:9:GLY:O	50:q:57:VAL:HG13	2.13	0.48
8:A:71:A:H5"	8:A:73:A:C8	2.49	0.47
8:A:756:A:H2'	8:A:757:G:O4'	2.14	0.47
8:A:1000:A:OP2	8:A:1154:G:N1	2.30	0.47
8:A:1079:C:H4'	8:A:1080:A:H5'	1.95	0.47
8:A:1286:A:H1'	8:A:1288:G:OP2	2.14	0.47
8:A:1915:3TD:H2'	58:y:102:LYS:NZ	2.29	0.47
8:A:2040:G:H2'	8:A:2041:U:O4'	2.14	0.47
8:A:2896:C:H2'	8:A:2897:U:C6	2.49	0.47
9:B:9:G:N2	9:B:10:G:H1'	2.28	0.47
9:B:77:U:OP1	29:V:17:SER:OG	2.32	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:458:U:O2	34:a:474:G:C2	2.67	0.47
34:a:747:A:H2'	34:a:748:G:C8	2.49	0.47
34:a:1002:G:C6	34:a:1039:G:N1	2.82	0.47
34:a:1369:C:H2'	34:a:1370:G:C8	2.49	0.47
34:a:1477:U:H2'	34:a:1478:U:C6	2.49	0.47
39:f:6:ILE:HG12	39:f:89:VAL:HG22	1.96	0.47
40:g:25:PHE:HD2	40:g:100:MET:HG2	1.78	0.47
45:l:49:ARG:HB3	45:l:65:TYR:HE1	1.79	0.47
57:x:18:C:H2'	57:x:19:A:C8	2.49	0.47
8:A:121:G:H2'	8:A:122:G:H8	1.78	0.47
8:A:1055:G:H21	8:A:1086:A:H8	1.61	0.47
8:A:1144:A:H2'	8:A:1145:C:C6	2.49	0.47
8:A:1297:C:OP1	8:A:2710:C:H4'	2.14	0.47
8:A:1475:G:HO2'	8:A:1476:U:H6	1.62	0.47
8:A:1733:G:H2'	8:A:1734:G:H8	1.78	0.47
8:A:2597:G:H5'	10:C:240:GLY:HA3	1.95	0.47
9:B:44:G:H5'	9:B:46:A:H62	1.79	0.47
11:D:112:THR:HA	11:D:168:GLU:O	2.13	0.47
27:T:43:ILE:O	27:T:47:VAL:HG23	2.13	0.47
31:X:65:THR:O	31:X:69:GLU:HG3	2.14	0.47
34:a:591:U:H2'	34:a:592:G:H8	1.79	0.47
34:a:1296:C:H4'	34:a:1302:C:N4	2.29	0.47
35:b:152:ASP:OD1	35:b:152:ASP:N	2.47	0.47
37:d:7:LYS:HB3	37:d:20:LEU:CB	2.43	0.47
40:g:3:ARG:HG3	40:g:4:ARG:HE	1.79	0.47
42:i:87:MET:O	42:i:91:GLU:HB3	2.14	0.47
43:j:66:GLU:OE2	43:j:68:ARG:N	2.47	0.47
52:s:17:LYS:HB3	52:s:30:LEU:HD22	1.95	0.47
56:w:19:G:H5"	56:w:20:U:C4	2.49	0.47
58:y:112:ARG:NH1	58:y:115:LYS:HD3	2.28	0.47
8:A:547:A:O2'	8:A:548:G:O5'	2.28	0.47
8:A:881:G:C2	8:A:895:U:C2	3.01	0.47
8:A:1042:G:H2'	8:A:1043:C:C6	2.49	0.47
8:A:1052:C:O5'	8:A:1052:C:H6	1.97	0.47
8:A:2372:U:H2'	8:A:2373:G:H8	1.80	0.47
9:B:3:C:H2'	9:B:4:C:C6	2.48	0.47
10:C:30:ALA:HB3	10:C:31:PRO:HD3	1.96	0.47
12:E:106:LYS:HG3	12:E:200:LEU:HD12	1.96	0.47
18:K:73:ASP:OD1	18:K:75:SER:OG	2.17	0.47
25:R:36:ALA:HA	25:R:58:VAL:HG23	1.94	0.47
34:a:64:G:H2'	34:a:99:C:H41	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1119:C:H5”	42:i:84:ARG:HH22	1.79	0.47
34:a:1300:G:H4’	34:a:1301:U:O5’	2.14	0.47
35:b:128:LEU:HD12	35:b:132:GLU:HB3	1.96	0.47
35:b:135:MET:SD	35:b:136:ARG:NH1	2.87	0.47
41:h:101:ALA:O	41:h:103:VAL:HG13	2.13	0.47
49:p:43:ALA:HB1	49:p:48:GLU:C	2.35	0.47
49:p:73:ALA:O	49:p:76:LYS:HG2	2.15	0.47
3:2:44:VAL:HG13	3:2:44:VAL:O	2.15	0.47
5:4:1:MET:SD	5:4:36:ARG:HB2	2.54	0.47
8:A:196:A:P	19:L:47:ARG:HH22	2.36	0.47
8:A:345:A:N3	8:A:347:A:N6	2.62	0.47
8:A:537:G:H5”	17:J:5:THR:HG21	1.95	0.47
8:A:857:G:H2’	8:A:858:G:C8	2.50	0.47
8:A:993:G:H1’	25:R:91:GLN:NE2	2.30	0.47
8:A:1177:G:C6	8:A:1178:C:C2	3.02	0.47
8:A:1352:U:H2’	8:A:1353:A:H5’	1.96	0.47
8:A:1458:U:H4’	8:A:1459:G:O5’	2.13	0.47
8:A:2387:U:O4’	30:W:37:ARG:NH1	2.47	0.47
8:A:2542:A:H5”	8:A:2766:A:O2’	2.14	0.47
8:A:2743:U:OP2	8:A:2755:C:N4	2.48	0.47
14:G:17:LYS:O	14:G:23:ILE:HA	2.14	0.47
26:S:108:SER:C	26:S:110:ARG:H	2.22	0.47
34:a:39:G:H2’	34:a:40:C:O4’	2.15	0.47
34:a:921:U:P	34:a:1082:A:O5’	2.72	0.47
34:a:947:G:H2’	34:a:948:C:C6	2.49	0.47
34:a:1087:G:N1	34:a:1088:G:C6	2.82	0.47
34:a:1092:A:H8	34:a:1092:A:O5’	1.97	0.47
34:a:1323:G:H2’	34:a:1324:A:H8	1.79	0.47
35:b:135:MET:SD	35:b:136:ARG:HG3	2.53	0.47
39:f:51:ILE:O	39:f:54:LEU:HB3	2.14	0.47
40:g:68:VAL:HG21	40:g:103:ILE:HD11	1.96	0.47
1:0:15:ARG:NH1	8:A:1264:A:OP1	2.44	0.47
8:A:487:C:H2’	8:A:488:G:O4’	2.14	0.47
8:A:643:A:N1	8:A:2369:A:O2’	2.45	0.47
8:A:708:G:H2’	8:A:709:U:C6	2.49	0.47
8:A:874:G:N1	8:A:904:G:C6	2.82	0.47
8:A:895:U:O2’	8:A:896:A:N7	2.47	0.47
8:A:1181:U:H2’	8:A:1182:G:C8	2.49	0.47
8:A:1385:A:H1’	8:A:1386:C:C6	2.49	0.47
8:A:1734:G:H2’	8:A:1735:A:H8	1.79	0.47
8:A:2074:U:H2’	8:A:2075:U:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:F:111:ARG:HD3	13:F:111:ARG:H	1.80	0.47
19:L:128:THR:OG1	19:L:129:LYS:N	2.48	0.47
27:T:33:LYS:HG2	27:T:80:TRP:CZ3	2.50	0.47
34:a:170:U:H2'	34:a:171:A:C5	2.49	0.47
34:a:247:G:C6	34:a:278:G:C2	3.02	0.47
34:a:471:U:H5"	34:a:472:U:C5	2.49	0.47
34:a:1179:A:H2'	34:a:1180:A:O4'	2.13	0.47
34:a:1250:A:C2	34:a:1370:G:H1'	2.50	0.47
34:a:1291:U:O2'	42:i:39:GLY:O	2.28	0.47
34:a:1347:G:H1'	34:a:1348:U:H5	1.80	0.47
34:a:1518:MA6:H8	34:a:1518:MA6:O5'	2.14	0.47
36:c:86:LEU:HA	36:c:89:VAL:HG12	1.95	0.47
38:e:103:GLY:O	38:e:121:ASN:HA	2.14	0.47
42:i:16:ALA:HB1	42:i:78:ILE:HD13	1.97	0.47
45:l:105:GLY:HA3	45:l:118:VAL:HG22	1.95	0.47
54:u:32:ARG:O	54:u:34:ARG:N	2.47	0.47
1:0:41:HIS:HD2	21:N:101:GLY:H	1.63	0.47
8:A:5:A:H2'	8:A:6:A:H8	1.79	0.47
8:A:310:A:HO2'	8:A:311:A:P	2.38	0.47
8:A:416:U:H2'	8:A:417:C:H6	1.78	0.47
8:A:543:G:H2'	8:A:544:C:C6	2.48	0.47
8:A:546:U:H1'	8:A:548:G:C6	2.49	0.47
8:A:1604:C:H2'	8:A:1605:C:C6	2.49	0.47
15:H:77:THR:HG23	15:H:143:ILE:HG22	1.96	0.47
25:R:51:VAL:O	25:R:52:PRO:C	2.58	0.47
29:V:20:LEU:HD11	29:V:41:GLU:HB2	1.96	0.47
34:a:1368:A:H5'	43:j:64:GLN:HE22	1.80	0.47
41:h:42:GLU:HG2	41:h:100:ILE:HD13	1.97	0.47
50:q:44:HIS:HB2	50:q:69:THR:C	2.38	0.47
50:q:61:ARG:HD3	50:q:75:VAL:HG22	1.97	0.47
1:0:14:MET:HE3	8:A:2045:C:H5"	1.96	0.47
8:A:7:G:H4'	17:J:15:TRP:HH2	1.79	0.47
8:A:175:G:H2'	8:A:176:A:H8	1.80	0.47
8:A:416:U:H2'	8:A:417:C:C6	2.50	0.47
8:A:553:G:H2'	8:A:554:U:O4'	2.14	0.47
8:A:570:G:OP1	8:A:972:A:O2'	2.20	0.47
8:A:600:G:H1'	12:E:100:MET:HG2	1.97	0.47
8:A:714:U:P	48:o:88:ARG:HH21	2.38	0.47
8:A:1074:G:N3	8:A:1074:G:H2'	2.29	0.47
8:A:1104:C:O2'	8:A:1105:U:O5'	2.33	0.47
8:A:1208:C:C2	8:A:1239:G:N2	2.83	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1636:U:H2'	8:A:1637:A:H8	1.79	0.47
8:A:1716:U:C2	8:A:1744:A:N7	2.83	0.47
8:A:1799:G:O2'	10:C:179:GLU:OE2	2.20	0.47
8:A:2111:U:H2'	8:A:2112:G:H4'	1.96	0.47
8:A:2115:G:O2'	8:A:2117:A:OP1	2.25	0.47
8:A:2131:U:OP2	8:A:2131:U:H4'	2.14	0.47
8:A:2168:G:OP1	8:A:2168:G:N2	2.47	0.47
8:A:2364:C:H2'	8:A:2365:G:O4'	2.14	0.47
8:A:2682:A:C2	11:D:23:PRO:HB3	2.49	0.47
8:A:2726:A:O4'	18:K:1:MET:HE1	2.15	0.47
8:A:2821:A:H2'	8:A:2822:G:O4'	2.14	0.47
10:C:29:PHE:CE2	10:C:31:PRO:HD2	2.50	0.47
10:C:153:LEU:HD13	10:C:175:LEU:HD21	1.97	0.47
13:F:169:LEU:HD13	13:F:174:PHE:CE2	2.49	0.47
19:L:135:ILE:HB	19:L:142:ILE:HD11	1.97	0.47
20:M:30:SER:OG	20:M:106:ASP:OD1	2.20	0.47
24:Q:25:GLY:O	24:Q:29:ARG:HG3	2.14	0.47
29:V:61:LEU:O	29:V:71:LYS:HA	2.15	0.47
31:X:51:SER:OG	31:X:52:ALA:N	2.47	0.47
34:a:369:G:C2	34:a:393:A:C2	3.03	0.47
34:a:413:G:N2	34:a:428:G:H1'	2.29	0.47
34:a:417:G:H2'	34:a:418:C:H6	1.78	0.47
34:a:492:C:H4'	34:a:493:A:H8	1.79	0.47
34:a:718:A:C8	44:k:117:HIS:CG	3.02	0.47
34:a:741:G:OP1	48:o:34:GLN:NE2	2.47	0.47
34:a:824:G:H2'	34:a:825:A:C8	2.49	0.47
34:a:878:A:H2'	34:a:879:C:C6	2.50	0.47
34:a:968:A:C8	34:a:1062:U:H4'	2.49	0.47
34:a:1000:A:C6	34:a:1041:G:C6	3.03	0.47
34:a:1005:A:H8	34:a:1005:A:OP2	1.98	0.47
34:a:1178:G:N2	34:a:1180:A:H3'	2.30	0.47
34:a:1206:G:C2'	34:a:1207:2MG:H5'	2.45	0.47
34:a:1227:A:O2'	46:m:114:PRO:HG2	2.14	0.47
34:a:1410:A:H2'	34:a:1411:C:H6	1.77	0.47
34:a:1412:C:H2'	34:a:1413:A:C8	2.49	0.47
34:a:1527:U:H2'	34:a:1528:U:C6	2.50	0.47
37:d:113:ALA:O	37:d:117:VAL:HG23	2.14	0.47
39:f:92:THR:O	39:f:93:LYS:HG2	2.14	0.47
40:g:115:MET:O	40:g:119:LEU:HB2	2.15	0.47
42:i:48:ARG:O	42:i:52:GLU:N	2.30	0.47
45:l:2:THR:O	45:l:5:GLN:N	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:w:6:G:N1	56:w:68:C:N3	2.62	0.47
7:6:36:VAL:CG1	7:6:44:PHE:HE1	2.26	0.47
7:6:65:ASN:ND2	47:n:42:TRP:HB2	2.30	0.47
8:A:277:G:C1'	8:A:361:G:H1	2.19	0.47
8:A:286:U:H2'	8:A:287:G:C8	2.50	0.47
8:A:875:G:H2'	8:A:876:C:O4'	2.15	0.47
8:A:994:C:O2'	8:A:996:A:OP1	2.32	0.47
8:A:1053:C:O2	8:A:1053:C:H2'	2.15	0.47
8:A:1851:U:H1'	56:w:71:G:H1'	1.96	0.47
8:A:2143:C:N4	8:A:2148:G:H1'	2.26	0.47
8:A:2328:A:H2'	8:A:2329:U:H6	1.76	0.47
8:A:2629:U:HO2'	8:A:2630:G:P	2.38	0.47
10:C:141:HIS:HD2	10:C:142:ASN:HB2	1.80	0.47
10:C:181:ARG:HG2	10:C:182:LYS:N	2.28	0.47
19:L:73:ILE:HB	19:L:106:GLU:HG3	1.97	0.47
34:a:2:A:N3	34:a:613:C:O2'	2.48	0.47
34:a:602:A:H2'	34:a:603:U:O2	2.14	0.47
34:a:1055:A:N3	36:c:155:ARG:NH1	2.62	0.47
34:a:1302:C:O2	46:m:16:ILE:HG13	2.14	0.47
35:b:161:PHE:CZ	35:b:216:VAL:HG11	2.49	0.47
36:c:40:GLN:O	36:c:44:LYS:HB2	2.15	0.47
44:k:118:ASN:H	54:u:34:ARG:NH1	2.12	0.47
46:m:89:ARG:NE	46:m:95:PRO:O	2.48	0.47
52:s:34:SER:O	52:s:34:SER:OG	2.33	0.47
53:t:43:LYS:HE3	53:t:86:ALA:HA	1.97	0.47
5:4:8:LYS:NZ	8:A:2467:C:OP1	2.33	0.47
8:A:30:G:H2'	8:A:31:C:H6	1.79	0.47
8:A:365:U:H2'	8:A:366:C:H6	1.80	0.47
8:A:1064:C:N4	8:A:1069:A:OP2	2.47	0.47
8:A:1103:A:H5"	8:A:1104:C:OP2	2.15	0.47
8:A:1287:A:C2	8:A:1649:G:H4'	2.50	0.47
8:A:1922:G:H2'	8:A:1923:U:O4'	2.15	0.47
8:A:1937:A:H1'	8:A:1939:5MU:H72	1.97	0.47
8:A:2543:G:H2'	8:A:2544:G:C8	2.50	0.47
8:A:2786:U:H2'	8:A:2787:C:H6	1.80	0.47
9:B:31:C:H1'	9:B:53:A:H61	1.80	0.47
10:C:254:LYS:O	10:C:256:THR:HG23	2.15	0.47
20:M:7:THR:OG1	20:M:8:LYS:N	2.48	0.47
21:N:2:ARG:HA	21:N:5:LYS:HD2	1.96	0.47
34:a:160:A:O2'	34:a:161:A:O5'	2.32	0.47
34:a:417:G:H2'	34:a:418:C:C6	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:515:G:O2'	34:a:516:PSU:O4'	2.33	0.47
34:a:911:U:H2'	34:a:912:C:C6	2.49	0.47
34:a:1130:A:C8	34:a:1146:A:C6	3.03	0.47
37:d:105:GLY:O	37:d:107:GLY:N	2.48	0.47
39:f:17:GLN:O	39:f:21:MET:HE2	2.15	0.47
39:f:25:TYR:O	39:f:29:ILE:HG12	2.14	0.47
43:j:17:LEU:O	43:j:20:GLN:HG2	2.15	0.47
8:A:228:C:H4'	8:A:229:C:O5'	2.14	0.47
8:A:263:G:H1'	8:A:430:A:N3	2.30	0.47
8:A:920:A:H2'	8:A:921:C:C6	2.50	0.47
8:A:1045:C:C2	8:A:1047:G:C2	3.03	0.47
8:A:1106:G:C2	8:A:1107:G:C8	3.03	0.47
8:A:1388:G:O2'	8:A:1525:A:O2'	2.33	0.47
8:A:1808:A:H3'	8:A:1809:A:C8	2.50	0.47
8:A:2060:A:O2'	8:A:2061:G:OP2	2.29	0.47
8:A:2601:C:N4	8:A:2603:G:O6	2.48	0.47
8:A:2744:G:C6	8:A:2761:A:C6	3.03	0.47
10:C:61:TYR:HA	10:C:85:ASN:HD21	1.79	0.47
10:C:157:ALA:HB1	10:C:196:ASN:HB3	1.97	0.47
12:E:143:LEU:HB3	12:E:146:VAL:HG11	1.97	0.47
15:H:46:PHE:HB3	15:H:50:ARG:NE	2.30	0.47
18:K:105:ARG:HE	18:K:122:VAL:HG13	1.80	0.47
22:O:94:ARG:HB3	22:O:97:PHE:O	2.15	0.47
29:V:10:LYS:HD2	29:V:10:LYS:N	2.30	0.47
34:a:457:G:N2	34:a:476:U:C2	2.83	0.47
34:a:462:G:H1	34:a:470:C:H42	1.62	0.47
34:a:589:U:H2'	34:a:590:U:C6	2.50	0.47
34:a:947:G:HO2'	34:a:1306:A:HO2'	1.34	0.47
34:a:1092:A:H5"	40:g:3:ARG:NH1	2.30	0.47
34:a:1129:C:H1'	34:a:1146:A:H61	1.80	0.47
34:a:1278:G:N3	34:a:1278:G:H5'	2.30	0.47
35:b:51:GLU:OE2	35:b:55:GLU:HG2	2.15	0.47
40:g:74:VAL:HB	40:g:85:GLN:HB3	1.96	0.47
43:j:9:ARG:HG2	43:j:71:LEU:HD11	1.96	0.47
50:q:44:HIS:ND1	50:q:69:THR:HG22	2.30	0.47
53:t:7:LYS:O	53:t:7:LYS:CD	2.63	0.47
56:w:37:MIA:H2'	56:w:38:A:O4'	2.15	0.47
56:w:69:G:H2'	56:w:70:G:C8	2.50	0.47
2:1:52:LYS:HE2	2:1:52:LYS:HB2	1.80	0.46
3:2:35:ARG:HG3	3:2:42:LEU:HD21	1.96	0.46
8:A:45:G:H5'	8:A:46:G:OP1	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:81:G:H2'	8:A:82:U:O4'	2.15	0.46
8:A:278:A:O2'	8:A:279:A:O5'	2.29	0.46
8:A:755:U:H2'	8:A:756:A:C8	2.50	0.46
8:A:875:G:C6	8:A:876:C:N3	2.83	0.46
8:A:1964:G:O2'	8:A:1967:C:OP2	2.32	0.46
8:A:2506:U:H1'	58:y:28:GLN:HE21	1.81	0.46
8:A:2567:G:H2'	8:A:2568:U:C6	2.50	0.46
10:C:130:PRO:HA	10:C:188:ARG:HA	1.96	0.46
10:C:231:HIS:NE2	10:C:243:PRO:HA	2.31	0.46
28:U:3:LYS:HB3	28:U:82:VAL:HG21	1.96	0.46
29:V:78:GLN:HB2	29:V:88:HIS:HB3	1.97	0.46
34:a:627:G:H2'	34:a:628:G:O4'	2.15	0.46
34:a:891:U:H2'	34:a:892:A:H8	1.79	0.46
34:a:921:U:P	34:a:1081:A:C2'	3.04	0.46
34:a:981:U:H4'	47:n:61:ARG:HG2	1.97	0.46
34:a:1171:A:H2'	34:a:1172:C:C6	2.50	0.46
36:c:41:TYR:CD2	36:c:42:LEU:HD22	2.50	0.46
37:d:25:ARG:NH2	37:d:26:ALA:HB3	2.30	0.46
43:j:13:PHE:HE2	47:n:94:PRO:HB2	1.79	0.46
43:j:42:LEU:HB2	43:j:71:LEU:O	2.15	0.46
46:m:82:LEU:HD13	52:s:68:HIS:CE1	2.49	0.46
58:y:88:LEU:O	58:y:92:VAL:HG22	2.14	0.46
4:3:16:THR:OG1	4:3:20:GLY:O	2.29	0.46
7:6:38:SER:N	7:6:44:PHE:HD2	2.13	0.46
7:6:64:PHE:O	7:6:64:PHE:CG	2.68	0.46
8:A:196:A:C2	19:L:50:PHE:HZ	2.34	0.46
8:A:397:U:O5'	8:A:397:U:H6	1.98	0.46
8:A:878:A:C2	8:A:879:G:H1'	2.50	0.46
8:A:894:U:O2'	8:A:895:U:H5'	2.16	0.46
8:A:966:G:O4'	8:A:2267:A:N6	2.48	0.46
8:A:2838:G:C4	8:A:2839:G:C8	3.03	0.46
11:D:88:GLU:HG3	11:D:90:PHE:HE1	1.80	0.46
14:G:102:ILE:HG22	14:G:104:LEU:HG	1.96	0.46
18:K:104:THR:OG1	18:K:105:ARG:N	2.47	0.46
19:L:103:ILE:HG13	19:L:104:GLN:H	1.80	0.46
20:M:66:ARG:HB2	20:M:101:VAL:O	2.15	0.46
29:V:17:SER:OG	29:V:21:ARG:NH2	2.48	0.46
34:a:6:G:H5"	34:a:298:A:H4'	1.97	0.46
34:a:216:U:C6	34:a:216:U:C3'	2.98	0.46
34:a:253:A:OP1	50:q:68:LYS:NZ	2.48	0.46
34:a:389:A:C6	34:a:390:U:H1'	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:542:G:H5'	37:d:38:GLY:CA	2.44	0.46
34:a:938:A:O3'	40:g:94:ARG:NH2	2.49	0.46
34:a:1270:G:H2'	34:a:1271:A:H8	1.80	0.46
34:a:1436:U:H2'	34:a:1437:A:H8	1.80	0.46
41:h:11:THR:HG22	41:h:14:ARG:HH12	1.81	0.46
43:j:45:ARG:HB3	43:j:69:THR:CG2	2.44	0.46
45:l:86:VAL:C	45:l:88:ASP:H	2.23	0.46
46:m:22:TYR:HE2	46:m:69:ARG:HG2	1.81	0.46
51:r:68:PRO:HB2	51:r:70:THR:O	2.16	0.46
7:6:16:CYS:SG	7:6:20:ASN:N	2.86	0.46
7:6:42:PRO:O	7:6:44:PHE:N	2.48	0.46
8:A:851:C:H2'	8:A:852:U:C6	2.50	0.46
8:A:1230:A:H2'	8:A:1231:U:O4'	2.14	0.46
8:A:1654:A:O2'	11:D:118:PHE:O	2.28	0.46
10:C:71:ASP:O	10:C:73:ILE:N	2.42	0.46
18:K:9:ASN:HB2	18:K:83:ALA:HB2	1.98	0.46
20:M:76:LYS:HB3	20:M:80:VAL:HG21	1.97	0.46
23:P:13:LYS:HD2	23:P:75:THR:O	2.15	0.46
23:P:77:SER:O	23:P:80:VAL:HG12	2.16	0.46
24:Q:25:GLY:HA2	24:Q:29:ARG:NH1	2.31	0.46
25:R:55:ASP:OD1	25:R:55:ASP:N	2.47	0.46
27:T:14:PRO:HA	27:T:32:LEU:HA	1.97	0.46
34:a:28:A:H2'	34:a:29:U:O4'	2.15	0.46
34:a:261:U:N3	34:a:264:C:OP2	2.46	0.46
34:a:438:U:C2	34:a:496:A:C5	3.03	0.46
34:a:461:A:H2'	34:a:462:G:N2	2.30	0.46
34:a:939:G:H2'	34:a:940:C:H6	1.79	0.46
34:a:1041:G:C2	34:a:1042:A:C5	3.03	0.46
35:b:125:PHE:HZ	35:b:136:ARG:HB3	1.81	0.46
36:c:34:SER:O	36:c:38:VAL:HG13	2.16	0.46
39:f:49:TYR:OH	39:f:86:ARG:NH1	2.47	0.46
40:g:102:TRP:HA	40:g:136:LYS:HZ3	1.81	0.46
50:q:15:LYS:HG3	50:q:54:ILE:HD11	1.98	0.46
3:2:13:ASN:O	3:2:17:GLY:N	2.42	0.46
7:6:1:MET:HE3	7:6:6:HIS:HD2	1.80	0.46
8:A:372:G:O2'	8:A:400:G:O6	2.22	0.46
8:A:568:U:H1'	8:A:2030:6MZ:H9C1	1.98	0.46
8:A:596:U:H2'	8:A:597:G:H8	1.81	0.46
8:A:753:A:H2'	8:A:754:U:C6	2.50	0.46
8:A:793:A:OP2	8:A:2071:A:O2'	2.32	0.46
8:A:1405:U:H2'	8:A:1406:U:H6	1.78	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1507:C:H2'	8:A:1508:A:O4'	2.16	0.46
8:A:1511:G:H2'	8:A:1512:C:C6	2.51	0.46
8:A:2232:C:P	31:X:26:ARG:HH12	2.39	0.46
8:A:2281:A:O2'	8:A:2282:G:H5'	2.15	0.46
8:A:2448:A:H3'	8:A:2449:U:H2'	1.96	0.46
8:A:2584:U:H3'	8:A:2585:U:C5'	2.43	0.46
32:Y:44:LYS:O	32:Y:48:ARG:HG2	2.15	0.46
34:a:89:U:H3'	34:a:90:C:C5	2.50	0.46
34:a:109:A:C8	34:a:327:A:O4'	2.68	0.46
34:a:123:U:H2'	34:a:124:C:H6	1.80	0.46
34:a:696:A:N3	34:a:786:G:O2'	2.38	0.46
34:a:953:G:C6	34:a:1229:A:C6	3.03	0.46
34:a:999:C:H2'	34:a:1000:A:H8	1.80	0.46
34:a:1351:U:H2'	34:a:1352:C:H6	1.79	0.46
42:i:87:MET:SD	42:i:94:ARG:NH2	2.87	0.46
46:m:15:VAL:HG13	46:m:40:GLU:O	2.15	0.46
58:y:3:VAL:HA	58:y:9:ALA:HA	1.97	0.46
8:A:493:G:H2'	8:A:494:G:O4'	2.16	0.46
8:A:875:G:C5	8:A:876:C:N3	2.84	0.46
8:A:1073:A:C5	8:A:1074:G:H1'	2.51	0.46
8:A:1085:A:C8	8:A:1086:A:C5	3.04	0.46
8:A:1735:A:H2'	8:A:1736:U:C6	2.50	0.46
8:A:1746:A:H2'	8:A:1747:U:H6	1.77	0.46
8:A:2771:C:H2'	8:A:2772:C:H6	1.79	0.46
10:C:61:TYR:HA	10:C:85:ASN:ND2	2.31	0.46
22:O:16:ARG:NE	22:O:19:GLN:OE1	2.44	0.46
28:U:21:ARG:O	28:U:38:ILE:HD11	2.16	0.46
29:V:1:MET:HE1	29:V:60:VAL:HB	1.98	0.46
34:a:28:A:O2'	34:a:296:U:OP1	2.33	0.46
34:a:180:U:H2'	34:a:181:A:H8	1.80	0.46
40:g:132:THR:O	40:g:136:LYS:HG3	2.15	0.46
49:p:23:ASP:OD1	49:p:25:ARG:N	2.39	0.46
53:t:32:LYS:HB3	53:t:32:LYS:HE2	1.72	0.46
53:t:48:LYS:HB2	53:t:48:LYS:HE2	1.69	0.46
7:6:37:CYS:O	7:6:44:PHE:CD2	2.65	0.46
8:A:139:U:H5'	8:A:140:C:C5	2.50	0.46
8:A:1146:C:C2	8:A:1147:A:C8	3.03	0.46
8:A:1678:A:H2'	8:A:1679:A:O4'	2.14	0.46
8:A:1901:A:OP2	10:C:252:LYS:NZ	2.32	0.46
8:A:1912:A:N1	34:a:1407:5MC:O2'	2.35	0.46
8:A:2047:C:H2'	8:A:2048:G:H8	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2114:A:H1'	8:A:2166:U:N3	2.29	0.46
8:A:2324:U:H5"	8:A:2325:G:O5'	2.15	0.46
8:A:2673:G:H2'	8:A:2674:G:C8	2.49	0.46
8:A:2840:C:H2'	8:A:2841:C:C6	2.51	0.46
11:D:129:THR:HG22	11:D:130:GLN:O	2.16	0.46
15:H:79:THR:HA	15:H:145:ASN:O	2.16	0.46
34:a:8:A:N6	37:d:205:LYS:HB2	2.30	0.46
34:a:360:G:C6	34:a:361:G:C6	3.03	0.46
34:a:1020:G:H2'	34:a:1021:A:C8	2.48	0.46
34:a:1255:G:O2'	34:a:1258:G:N3	2.37	0.46
35:b:89:PHE:CD2	35:b:153:MET:HG3	2.50	0.46
43:j:14:ASP:OD1	43:j:17:LEU:N	2.49	0.46
45:l:30:ARG:HG2	45:l:57:THR:HG23	1.96	0.46
53:t:5:SER:O	53:t:7:LYS:N	2.47	0.46
2:1:33:LEU:HD11	8:A:2286:G:C2	2.51	0.46
7:6:36:VAL:C	7:6:44:PHE:CE2	2.93	0.46
8:A:5:A:H2'	8:A:6:A:C8	2.49	0.46
8:A:412:A:N7	8:A:2411:A:H2	2.13	0.46
8:A:708:G:H2'	8:A:709:U:H6	1.80	0.46
8:A:1496:A:H2'	8:A:1498:C:C5	2.49	0.46
8:A:1716:U:H2'	8:A:1717:A:H8	1.80	0.46
11:D:36:GLN:OE1	11:D:38:LYS:NZ	2.27	0.46
11:D:139:SER:O	11:D:139:SER:OG	2.32	0.46
13:F:127:TYR:CZ	13:F:174:PHE:HZ	2.34	0.46
18:K:49:ARG:NH1	34:a:1422:G:O3'	2.49	0.46
26:S:36:LEU:HD13	26:S:47:VAL:HG23	1.97	0.46
34:a:308:C:H2'	34:a:309:A:C8	2.50	0.46
34:a:432:A:C4	34:a:433:G:C8	3.04	0.46
34:a:588:G:N2	34:a:653:U:O4	2.46	0.46
34:a:781:A:O2'	34:a:1522:U:O2	2.30	0.46
34:a:932:C:H2'	34:a:933:G:C8	2.51	0.46
34:a:1130:A:H5'	34:a:1146:A:C2	2.49	0.46
34:a:1135:U:H2'	34:a:1136:C:H3'	1.98	0.46
34:a:1412:C:H2'	34:a:1413:A:H8	1.80	0.46
39:f:75:GLU:OE2	39:f:89:VAL:HG21	2.16	0.46
40:g:105:GLU:O	40:g:109:LYS:HG2	2.15	0.46
49:p:6:LEU:HD13	49:p:17:TYR:CG	2.51	0.46
8:A:289:G:H2'	8:A:290:U:C6	2.51	0.46
8:A:438:G:H2'	8:A:439:A:H8	1.81	0.46
8:A:710:U:N3	8:A:711:G:N7	2.63	0.46
8:A:1457:U:H5"	8:A:1458:U:OP1	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1484:U:H2'	8:A:1485:U:H6	1.79	0.46
8:A:1867:G:H2'	8:A:1868:C:O4'	2.16	0.46
8:A:2014:A:H2'	8:A:2015:A:C8	2.51	0.46
8:A:2119:A:H4'	8:A:2120:G:H2'	1.98	0.46
8:A:2210:U:H4'	8:A:2211:A:H5'	1.97	0.46
9:B:8:C:H2'	9:B:9:G:O4'	2.16	0.46
9:B:51:G:H5"	22:O:64:TYR:CD2	2.50	0.46
10:C:141:HIS:ND1	10:C:192:GLY:O	2.29	0.46
12:E:4:VAL:HA	12:E:11:ALA:HA	1.98	0.46
14:G:8:VAL:O	14:G:49:LEU:HB2	2.16	0.46
15:H:82:SER:HB2	15:H:94:ILE:HD11	1.97	0.46
21:N:12:ARG:HB3	21:N:16:HIS:HB3	1.96	0.46
22:O:98:GLN:O	22:O:100:HIS:N	2.48	0.46
34:a:223:A:H2'	34:a:224:U:C6	2.51	0.46
34:a:328:C:H4'	34:a:329:A:H5'	1.97	0.46
34:a:464:U:N3	34:a:466:A:C6	2.84	0.46
34:a:553:A:C6	34:a:554:A:C5	3.04	0.46
34:a:1145:A:N3	34:a:1147:C:N4	2.64	0.46
34:a:1350:A:H2'	34:a:1351:U:O4'	2.16	0.46
34:a:1531:A:H2'	34:a:1532:U:C6	2.51	0.46
35:b:162:VAL:HG12	35:b:164:ASP:H	1.81	0.46
50:q:25:GLU:N	50:q:25:GLU:OE2	2.48	0.46
2:1:25:ASN:ND2	8:A:2285:C:OP1	2.47	0.46
6:5:22:ALA:HB3	6:5:87:GLU:O	2.16	0.46
8:A:7:G:H4'	17:J:15:TRP:CH2	2.51	0.46
8:A:296:U:H2'	8:A:297:G:C8	2.51	0.46
8:A:555:G:O2'	8:A:556:A:P	2.74	0.46
8:A:705:A:OP2	8:A:725:G:N1	2.40	0.46
8:A:822:G:H2'	8:A:823:C:C6	2.51	0.46
8:A:1268:A:H2'	8:A:1269:A:O4'	2.15	0.46
8:A:1320:C:H2'	8:A:1329:U:OP1	2.16	0.46
10:C:143:VAL:HG21	10:C:161:VAL:HG11	1.97	0.46
11:D:16:THR:O	11:D:19:GLY:N	2.45	0.46
13:F:35:LEU:HD21	13:F:98:PHE:CZ	2.51	0.46
19:L:80:SER:O	19:L:84:LYS:NZ	2.49	0.46
19:L:85:VAL:HG21	19:L:90:VAL:HG22	1.97	0.46
19:L:110:VAL:O	19:L:128:THR:HG23	2.16	0.46
20:M:66:ARG:NH1	20:M:104:GLU:OE2	2.49	0.46
34:a:232:G:H1'	34:a:262:A:N1	2.31	0.46
34:a:1124:G:N2	34:a:1125:U:O4	2.31	0.46
34:a:1242:G:C6	34:a:1243:C:C4	3.04	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1246:A:H2'	34:a:1247:U:C6	2.50	0.46
34:a:1333:A:H2'	34:a:1334:G:O4'	2.15	0.46
34:a:1403:C:H2'	34:a:1404:C:C6	2.50	0.46
34:a:1463:U:H2'	34:a:1464:U:H6	1.81	0.46
35:b:13:VAL:O	35:b:13:VAL:HG12	2.16	0.46
35:b:105:THR:HG23	35:b:108:GLN:NE2	2.31	0.46
42:i:129:ARG:HH22	56:w:35:A:P	2.39	0.46
7:6:59:ARG:HA	7:6:62:LYS:HB2	1.98	0.46
8:A:57:C:H2'	8:A:58:G:O4'	2.15	0.46
8:A:1251:C:OP2	24:Q:5:ARG:HD2	2.15	0.46
8:A:2091:C:OP2	8:A:2092:U:O2'	2.19	0.46
8:A:2167:U:H2'	8:A:2170:A:H61	1.79	0.46
8:A:2642:G:H2'	8:A:2643:G:H8	1.81	0.46
8:A:2644:G:O2'	8:A:2645:G:H5'	2.15	0.46
8:A:2740:A:H2'	8:A:2741:A:C8	2.50	0.46
10:C:143:VAL:O	10:C:152:GLN:N	2.41	0.46
12:E:112:LEU:HD13	12:E:186:VAL:HG11	1.98	0.46
13:F:134:GLN:O	13:F:137:PHE:HD1	1.99	0.46
13:F:140:ILE:HG22	13:F:142:TYR:H	1.81	0.46
34:a:153:C:H2'	34:a:154:U:C6	2.50	0.46
34:a:280:C:N3	50:q:40:THR:OG1	2.44	0.46
34:a:489:C:H2'	34:a:490:C:C5	2.51	0.46
34:a:499:A:N1	34:a:546:A:H2'	2.30	0.46
34:a:524:G:H2'	34:a:525:C:C6	2.51	0.46
34:a:692:U:H2'	34:a:693:G:H5"	1.97	0.46
34:a:1130:A:H8	34:a:1146:A:N1	2.14	0.46
34:a:1155:A:H2'	34:a:1156:G:O4'	2.16	0.46
34:a:1203:C:C2	34:a:1204:A:C8	3.04	0.46
34:a:1323:G:C2	34:a:1324:A:C5	3.03	0.46
37:d:176:LYS:HE2	37:d:176:LYS:HB3	1.78	0.46
38:e:30:PHE:CE2	58:y:131:MET:HG2	2.51	0.46
40:g:65:LEU:HD23	40:g:69:ARG:HH21	1.81	0.46
43:j:11:LYS:HG2	43:j:97:ASP:HB3	1.97	0.46
53:t:27:MET:HE1	53:t:66:ILE:HG21	1.98	0.46
54:u:32:ARG:O	54:u:33:ARG:C	2.59	0.46
56:w:61:C:H2'	56:w:62:C:C6	2.51	0.46
4:3:35:LYS:HB2	4:3:40:LYS:HE2	1.97	0.45
8:A:216:A:C8	8:A:432:A:C6	3.04	0.45
8:A:242:G:H1'	8:A:243:U:H5	1.81	0.45
8:A:532:A:H3'	24:Q:27:ARG:NH1	2.31	0.45
8:A:644:A:H2'	8:A:645:C:O4'	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:684:G:N2	8:A:788:A:OP2	2.38	0.45
8:A:760:G:H2'	8:A:761:A:O4'	2.16	0.45
8:A:805:G:OP2	8:A:806:C:N4	2.40	0.45
8:A:871:U:C2	8:A:907:G:C6	3.04	0.45
8:A:1321:A:C4	8:A:1322:A:C8	3.04	0.45
8:A:1858:A:N6	8:A:1884:G:O2'	2.49	0.45
8:A:2072:C:H2'	8:A:2073:C:H6	1.82	0.45
8:A:2395:C:H2'	8:A:2396:G:O4'	2.16	0.45
10:C:27:LYS:HA	10:C:27:LYS:HD3	1.79	0.45
10:C:259:ASN:C	10:C:261:ARG:H	2.24	0.45
13:F:28:PRO:HB3	13:F:159:ALA:HB2	1.97	0.45
13:F:113:PHE:CE2	13:F:115:GLY:HA2	2.50	0.45
16:I:78:LEU:O	16:I:80:LYS:N	2.47	0.45
22:O:51:ALA:O	22:O:74:VAL:HG13	2.15	0.45
34:a:107:G:H2'	34:a:108:G:O4'	2.16	0.45
34:a:159:G:O3'	34:a:160:A:H3'	2.15	0.45
34:a:471:U:H5"	34:a:472:U:H5	1.81	0.45
34:a:562:U:O2'	45:l:13:ARG:NH2	2.33	0.45
34:a:1087:G:C5	34:a:1099:G:N2	2.84	0.45
34:a:1359:C:O5'	47:n:75:ARG:NH2	2.49	0.45
36:c:11:LEU:HA	36:c:15:LYS:HB2	1.97	0.45
36:c:69:THR:O	36:c:104:GLU:HA	2.16	0.45
58:y:43:ILE:HD11	58:y:70:ILE:HG13	1.97	0.45
8:A:373:U:H2'	8:A:374:A:H8	1.81	0.45
8:A:579:G:H2'	8:A:580:U:C6	2.51	0.45
8:A:817:C:O2'	8:A:839:U:H5"	2.16	0.45
8:A:886:A:N6	8:A:888:C:HO2'	2.14	0.45
8:A:1353:A:O3'	10:C:35:LYS:NZ	2.44	0.45
8:A:1435:G:H2'	8:A:1436:G:H8	1.80	0.45
8:A:1592:C:H2'	8:A:1593:A:C8	2.51	0.45
8:A:1957:C:H2'	8:A:1958:C:C6	2.51	0.45
8:A:2372:U:H2'	8:A:2373:G:C8	2.52	0.45
8:A:2391:G:H4'	8:A:2392:A:O5'	2.16	0.45
8:A:2545:G:H2'	8:A:2546:U:O4'	2.17	0.45
8:A:2570:G:H2'	8:A:2571:U:O4'	2.16	0.45
8:A:2615:U:H2'	8:A:2616:C:C6	2.51	0.45
8:A:2722:G:H4'	21:N:4:ARG:HB3	1.98	0.45
9:B:49:C:H2'	9:B:50:A:C8	2.52	0.45
11:D:4:LEU:HD13	11:D:101:PHE:CE2	2.51	0.45
13:F:133:GLU:O	13:F:136:ILE:HG12	2.16	0.45
17:J:58:ASN:HD21	17:J:128:ASN:ND2	2.09	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:107:G:H22	53:t:4:LYS:NZ	2.14	0.45
34:a:207:C:O2	34:a:212:G:N3	2.49	0.45
34:a:406:G:C5	34:a:495:A:C5	3.04	0.45
34:a:647:C:H2'	34:a:648:A:H8	1.80	0.45
34:a:921:U:O5'	34:a:1082:A:C5'	2.65	0.45
34:a:922:G:H2'	34:a:923:A:C8	2.51	0.45
34:a:1194:U:H2'	34:a:1195:C:C6	2.51	0.45
34:a:1377:A:H4'	34:a:1378:C:C6	2.50	0.45
34:a:1530:G:O6	54:u:45:LYS:NZ	2.28	0.45
36:c:6:PRO:O	36:c:9:ILE:HG22	2.16	0.45
40:g:25:PHE:CD2	40:g:100:MET:HG2	2.51	0.45
42:i:128:LYS:HE3	42:i:128:LYS:HB3	1.81	0.45
51:r:54:LEU:O	51:r:58:ILE:HG12	2.16	0.45
53:t:27:MET:O	53:t:31:ILE:HG13	2.16	0.45
4:3:60:CYS:O	4:3:62:PRO:HD3	2.17	0.45
7:6:42:PRO:CB	7:6:48:GLN:CG	2.87	0.45
8:A:483:A:H5"	28:U:46:LYS:HD3	1.99	0.45
8:A:511:U:O4	8:A:512:G:N1	2.49	0.45
8:A:514:A:H2'	8:A:515:A:C8	2.51	0.45
8:A:645:C:H2'	8:A:647:G:N7	2.31	0.45
8:A:659:G:N2	12:E:30:GLN:OE1	2.42	0.45
8:A:667:U:H2'	8:A:668:A:O4'	2.17	0.45
8:A:820:A:H4'	8:A:836:G:N2	2.25	0.45
8:A:1315:C:H2'	8:A:1316:U:C6	2.51	0.45
8:A:1349:C:C2	8:A:1350:C:C5	3.04	0.45
8:A:1509:A:H2'	8:A:1510:G:C8	2.52	0.45
8:A:1754:A:C8	23:P:93:LYS:HE3	2.51	0.45
8:A:1799:G:N7	10:C:177:SER:OG	2.35	0.45
8:A:1930:G:N2	8:A:1969:A:O5'	2.40	0.45
12:E:191:ASP:OD1	12:E:192:ALA:N	2.49	0.45
25:R:6:GLN:HA	25:R:11:GLN:HA	1.96	0.45
30:W:23:GLY:N	30:W:65:PHE:HE2	2.15	0.45
33:Z:8:GLN:NE2	33:Z:10:ARG:O	2.46	0.45
34:a:110:C:H3'	34:a:111:G:H8	1.81	0.45
34:a:620:C:H4'	37:d:134:TYR:CE1	2.51	0.45
34:a:663:A:O3'	51:r:52:ARG:NH2	2.50	0.45
34:a:920:U:OP2	34:a:920:U:H6	1.99	0.45
34:a:1061:G:O2'	43:j:58:ASN:ND2	2.48	0.45
34:a:1225:A:H2'	34:a:1225:A:N3	2.32	0.45
34:a:1267:C:H2'	34:a:1268:G:N3	2.32	0.45
34:a:1308:U:H5"	46:m:96:VAL:HB	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1512:U:H2'	34:a:1513:A:C8	2.52	0.45
47:n:51:LEU:HG	47:n:52:PRO:HD2	1.97	0.45
58:y:61:HIS:HB2	58:y:98:LEU:HD11	1.99	0.45
8:A:40:U:H2'	8:A:41:C:C6	2.52	0.45
8:A:291:G:C6	8:A:350:G:C5	3.04	0.45
8:A:613:A:H5"	8:A:614:A:C8	2.52	0.45
8:A:639:U:C2	8:A:640:C:C5	3.04	0.45
8:A:742:A:H2'	8:A:743:A:H8	1.81	0.45
8:A:851:C:H2'	8:A:852:U:H6	1.80	0.45
8:A:890:C:H4'	8:A:891:G:OP1	2.16	0.45
8:A:1741:C:H2'	8:A:1742:U:O4'	2.15	0.45
8:A:1775:U:O4	8:A:1789:A:H2	1.99	0.45
8:A:2773:C:H2'	8:A:2774:C:H6	1.80	0.45
9:B:75:G:OP1	29:V:12:GLN:NE2	2.50	0.45
28:U:40:LEU:HD22	28:U:59:GLU:HG2	1.97	0.45
32:Y:49:ASP:O	32:Y:53:VAL:HG23	2.16	0.45
34:a:321:A:O2'	34:a:322:C:H5'	2.17	0.45
34:a:378:G:H2'	34:a:379:C:C6	2.50	0.45
34:a:407:U:H2'	34:a:408:A:C8	2.52	0.45
34:a:1213:A:C8	34:a:1215:G:C5	3.05	0.45
38:e:80:LEU:HD12	38:e:97:PRO:HD3	1.97	0.45
42:i:42:THR:HG22	42:i:42:THR:O	2.17	0.45
49:p:21:VAL:O	49:p:32:PHE:HB2	2.17	0.45
51:r:32:ILE:HD13	51:r:67:LEU:HD22	1.98	0.45
56:w:19:G:OP1	56:w:20:U:N3	2.49	0.45
1:0:42:ILE:HG22	1:0:48:TYR:HB2	1.98	0.45
7:6:42:PRO:C	7:6:44:PHE:N	2.73	0.45
7:6:51:VAL:HG23	7:6:52:ALA:H	1.82	0.45
8:A:589:U:H2'	8:A:590:A:C8	2.52	0.45
8:A:1289:C:H2'	8:A:1290:C:H6	1.81	0.45
8:A:1682:G:OP2	8:A:1699:G:N2	2.50	0.45
8:A:2305:U:H2'	8:A:2306:C:C6	2.51	0.45
8:A:2677:G:H2'	8:A:2678:C:C6	2.51	0.45
10:C:81:GLU:OE1	10:C:102:TYR:OH	2.22	0.45
11:D:33:ARG:CD	11:D:73:VAL:HB	2.44	0.45
13:F:12:VAL:HG12	13:F:27:VAL:HG11	1.96	0.45
13:F:116:LEU:O	13:F:177:ARG:HB2	2.17	0.45
14:G:16:VAL:HG11	14:G:44:HIS:CD2	2.52	0.45
26:S:48:LYS:O	26:S:52:GLU:HG3	2.17	0.45
34:a:412:A:H3'	34:a:412:A:N3	2.31	0.45
34:a:414:A:C6	34:a:415:A:C5	3.05	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:615:G:H2'	34:a:616:G:H8	1.82	0.45
34:a:642:A:H2'	34:a:643:C:C6	2.51	0.45
34:a:662:U:H2'	34:a:663:A:H8	1.82	0.45
34:a:1330:U:C5	34:a:1331:G:H1'	2.51	0.45
35:b:25:LYS:HD3	35:b:25:LYS:HA	1.81	0.45
35:b:57:ASN:OD1	35:b:58:LYS:N	2.50	0.45
37:d:170:LEU:HD12	37:d:180:THR:O	2.16	0.45
46:m:40:GLU:H	46:m:40:GLU:CD	2.23	0.45
47:n:46:LEU:O	47:n:50:THR:HG23	2.16	0.45
48:o:7:THR:O	48:o:11:VAL:HG13	2.16	0.45
49:p:4:ILE:HG12	49:p:21:VAL:HG22	1.98	0.45
56:w:18:G:H5'	56:w:58:A:H2	1.82	0.45
58:y:11:PRO:C	58:y:13:GLY:H	2.24	0.45
7:6:12:ILE:HB	7:6:24:ILE:HG13	1.98	0.45
8:A:75:G:N1	8:A:111:A:C2	2.82	0.45
8:A:303:G:C6	8:A:315:G:C6	3.05	0.45
8:A:305:C:H2'	8:A:306:U:C6	2.52	0.45
8:A:806:C:OP2	19:L:41:ARG:NH1	2.37	0.45
8:A:1198:U:H2'	8:A:1199:U:H6	1.82	0.45
8:A:1287:A:N6	21:N:106:ASP:HB3	2.31	0.45
8:A:1440:U:H2'	8:A:1441:G:C8	2.51	0.45
8:A:2282:G:H4'	8:A:2389:G:O2'	2.16	0.45
8:A:2299:U:OP1	13:F:71:LYS:NZ	2.49	0.45
18:K:99:ILE:HD13	18:K:115:ILE:HG23	1.98	0.45
24:Q:39:ILE:O	24:Q:43:GLN:HG3	2.17	0.45
24:Q:49:ARG:O	24:Q:53:LYS:NZ	2.50	0.45
29:V:60:VAL:HG11	29:V:71:LYS:HB3	1.97	0.45
34:a:197:A:H4'	34:a:198:G:H5'	1.97	0.45
34:a:1300:G:N2	34:a:1303:C:N3	2.64	0.45
34:a:1343:G:H5"	42:i:123:ARG:HB2	1.98	0.45
42:i:61:ASP:O	42:i:62:LEU:HD23	2.16	0.45
45:l:80:LEU:HB3	45:l:97:VAL:CG2	2.46	0.45
46:m:95:PRO:HA	46:m:108:ARG:HG3	1.99	0.45
48:o:28:VAL:HG11	48:o:66:LEU:HD21	1.97	0.45
58:y:35:THR:O	58:y:83:ASN:ND2	2.42	0.45
3:2:12:ARG:HE	3:2:44:VAL:HG21	1.81	0.45
7:6:41:HIS:CD2	7:6:42:PRO:HD3	2.52	0.45
8:A:322:A:OP2	12:E:163:ASN:HB2	2.16	0.45
8:A:813:U:O2'	8:A:1225:G:H1'	2.17	0.45
8:A:843:G:H2'	8:A:844:A:C8	2.51	0.45
8:A:877:A:C5	8:A:899:A:C6	3.05	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1045:C:OP1	8:A:1046:A:H3'	2.17	0.45
8:A:1057:A:O5'	8:A:1087:G:N1	2.50	0.45
8:A:1387:A:C6	8:A:1401:G:N1	2.84	0.45
8:A:1572:A:H2'	8:A:1573:G:H8	1.80	0.45
8:A:1588:G:H2'	8:A:1589:U:C6	2.52	0.45
8:A:1790:C:O2'	10:C:207:ALA:HB2	2.17	0.45
8:A:1923:U:H2'	8:A:1924:C:C6	2.52	0.45
8:A:2002:G:O6	8:A:2003:A:N6	2.49	0.45
9:B:13:G:N2	9:B:69:G:O2'	2.49	0.45
9:B:30:C:H2'	9:B:31:C:H5'	1.97	0.45
11:D:131:ASP:O	11:D:136:ASN:ND2	2.49	0.45
13:F:60:SER:HB2	13:F:90:LEU:HD11	1.99	0.45
14:G:72:ASN:O	14:G:76:ILE:HG12	2.16	0.45
18:K:87:LEU:HB3	18:K:92:GLU:O	2.17	0.45
28:U:85:ARG:HG3	28:U:92:VAL:HG23	1.99	0.45
34:a:570:G:H2'	34:a:571:U:C6	2.51	0.45
34:a:597:G:C8	34:a:598:U:C5	3.05	0.45
34:a:642:A:H2'	34:a:643:C:H6	1.82	0.45
34:a:746:A:C6	34:a:747:A:N6	2.84	0.45
34:a:1079:G:H2'	34:a:1080:A:C8	2.52	0.45
34:a:1326:U:H2'	34:a:1327:C:C6	2.52	0.45
34:a:1486:G:H2'	34:a:1487:G:O4'	2.17	0.45
41:h:5:PRO:HB2	41:h:32:LYS:HE3	1.98	0.45
47:n:49:GLN:HE21	52:s:12:LEU:HB3	1.81	0.45
56:w:52:G:H2'	56:w:53:G:C8	2.52	0.45
7:6:36:VAL:CG1	7:6:44:PHE:HZ	2.15	0.45
7:6:61:ASN:HA	7:6:64:PHE:HB2	1.98	0.45
8:A:24:G:H2'	8:A:25:U:C6	2.52	0.45
8:A:1079:C:H41	8:A:1086:A:P	2.40	0.45
8:A:1206:G:H2'	8:A:1207:C:C6	2.52	0.45
8:A:1509:A:H2'	8:A:1510:G:O4'	2.17	0.45
8:A:1565:C:O2'	8:A:1566:A:H5"	2.17	0.45
8:A:1651:G:H4'	21:N:39:PRO:HG2	1.98	0.45
8:A:2280:G:N3	8:A:2388:A:H2	2.15	0.45
8:A:2768:U:H2'	8:A:2769:U:O4'	2.16	0.45
8:A:2790:U:O2'	8:A:2791:G:O5'	2.30	0.45
9:B:39:A:H2'	9:B:40:U:C5	2.51	0.45
9:B:57:A:C4	13:F:25:MET:HB3	2.52	0.45
11:D:156:PHE:CD1	17:J:81:ILE:HD13	2.51	0.45
19:L:20:GLY:HA2	19:L:28:GLY:HA2	1.98	0.45
23:P:13:LYS:O	23:P:14:GLN:NE2	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:106:C:H2'	34:a:107:G:O4'	2.17	0.45
34:a:130:A:O2'	34:a:263:A:O2'	2.35	0.45
34:a:323:U:OP1	53:t:24:ARG:NH2	2.50	0.45
34:a:628:G:H2'	34:a:629:A:O4'	2.17	0.45
34:a:880:C:OP1	45:l:4:ASN:ND2	2.50	0.45
34:a:1189:U:H5"	36:c:4:VAL:HB	1.98	0.45
34:a:1241:G:N3	34:a:1241:G:H2'	2.31	0.45
34:a:1275:A:N1	34:a:1282:C:O2'	2.50	0.45
35:b:17:HIS:O	35:b:37:VAL:HG22	2.17	0.45
35:b:182:VAL:HG12	35:b:195:VAL:HA	1.98	0.45
36:c:86:LEU:O	36:c:90:VAL:HG13	2.17	0.45
40:g:70:PRO:O	40:g:95:ARG:NH1	2.50	0.45
41:h:88:LYS:HG3	41:h:119:GLY:HA2	1.99	0.45
49:p:5:ARG:NH2	49:p:23:ASP:O	2.50	0.45
56:w:39:PSU:H2'	56:w:40:C:C6	2.52	0.45
7:6:16:CYS:HA	7:6:34:LEU:HD12	1.98	0.45
8:A:64:A:H5"	27:T:76:ARG:O	2.17	0.45
8:A:500:G:N2	8:A:503:A:H5'	2.26	0.45
8:A:578:G:O2'	8:A:580:U:OP2	2.27	0.45
8:A:622:G:H2'	8:A:623:C:C6	2.51	0.45
8:A:1467:U:H5	8:A:1546:G:H2'	1.82	0.45
8:A:1636:U:H2'	8:A:1637:A:C8	2.52	0.45
8:A:2014:A:H4'	26:S:92:ARG:HH12	1.81	0.45
8:A:2114:A:H5"	8:A:2119:A:C2	2.52	0.45
8:A:2818:U:H2'	8:A:2819:G:H8	1.82	0.45
10:C:161:VAL:HG22	10:C:162:GLN:H	1.81	0.45
13:F:7:TYR:HA	13:F:11:VAL:CG2	2.47	0.45
20:M:27:SER:N	20:M:104:GLU:OE2	2.33	0.45
29:V:31:TYR:HB3	29:V:37:PRO:HB3	1.98	0.45
32:Y:11:VAL:HG23	32:Y:12:GLU:HG3	1.99	0.45
34:a:195:A:C4	34:a:196:A:C2	3.04	0.45
34:a:239:U:H5'	34:a:240:G:OP2	2.17	0.45
34:a:369:G:C6	34:a:393:A:C6	3.05	0.45
34:a:450:G:OP2	34:a:451:A:O2'	2.33	0.45
34:a:561:U:O2'	34:a:562:U:OP2	2.28	0.45
34:a:581:G:N1	34:a:759:A:OP2	2.39	0.45
34:a:1087:G:C6	34:a:1088:G:O6	2.70	0.45
34:a:1188:A:H2'	34:a:1189:U:O4'	2.16	0.45
34:a:1377:A:C6	40:g:6:ILE:HG21	2.52	0.45
49:p:61:VAL:CG1	49:p:67:ILE:HD11	2.47	0.45
56:w:26:A:C2	56:w:27:G:C5	3.04	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:y:2:ILE:O	58:y:10:ILE:N	2.25	0.45
4:3:30:HIS:ND1	4:3:31:ILE:HG12	2.32	0.45
8:A:173:A:H2'	8:A:174:U:C6	2.52	0.45
8:A:532:A:N7	8:A:2021:C:O2'	2.37	0.45
8:A:566:U:H5"	19:L:29:LYS:HE3	1.99	0.45
8:A:1409:U:H2'	8:A:1410:G:C8	2.52	0.45
8:A:2118:U:H5	8:A:2148:G:H4'	1.82	0.45
8:A:2126:A:C5	8:A:2163:A:H4'	2.53	0.45
8:A:2392:A:OP2	8:A:2424:C:N4	2.50	0.45
8:A:2493:U:H5"	58:y:33:THR:HG23	1.99	0.45
8:A:2740:A:C6	8:A:2741:A:C6	3.06	0.45
8:A:2751:G:C4	14:G:2:ARG:HD2	2.52	0.45
18:K:41:ILE:HD11	18:K:86:LEU:HD22	1.99	0.45
34:a:73:C:H2'	34:a:74:A:C8	2.52	0.45
34:a:161:A:H2'	34:a:162:A:H5"	1.98	0.45
34:a:263:A:P	53:t:73:ARG:HH21	2.40	0.45
34:a:363:A:OP1	45:l:29:LYS:HD3	2.16	0.45
34:a:442:G:H2'	34:a:443:C:H5"	1.98	0.45
34:a:596:A:C6	34:a:645:G:C2	3.05	0.45
34:a:693:G:P	44:k:126:ARG:HH12	2.39	0.45
37:d:186:GLU:HB2	37:d:189:ASP:OD2	2.17	0.45
39:f:72:ASP:O	39:f:76:THR:HG23	2.16	0.45
44:k:46:ALA:HB1	44:k:61:ALA:HB1	1.99	0.45
56:w:14:A:C6	56:w:22:G:C4	3.05	0.45
2:1:4:ILE:HG22	2:1:27:ARG:CZ	2.47	0.44
7:6:56:ARG:HB2	52:s:63:ASP:O	2.18	0.44
8:A:146:A:H2'	8:A:147:C:C6	2.52	0.44
8:A:283:G:H2'	8:A:284:U:O4'	2.17	0.44
8:A:290:U:H2'	8:A:291:G:O4'	2.16	0.44
8:A:638:G:C5	8:A:651:G:N2	2.85	0.44
8:A:731:C:H2'	8:A:732:C:H6	1.82	0.44
8:A:749:A:H4'	8:A:1271:G:N3	2.32	0.44
8:A:991:C:H5'	8:A:1186:G:H5'	1.99	0.44
8:A:1629:U:C4	8:A:1630:A:N7	2.85	0.44
8:A:1651:G:C4	8:A:1652:A:C8	3.05	0.44
8:A:2024:G:H2'	8:A:2025:C:C6	2.52	0.44
8:A:2121:G:N1	8:A:2178:C:O2	2.50	0.44
8:A:2126:A:N7	8:A:2163:A:H4'	2.32	0.44
8:A:2146:C:O2'	8:A:2147:A:O4'	2.31	0.44
8:A:2566:A:N1	18:K:28:SER:OG	2.44	0.44
8:A:2585:U:H5'	8:A:2586:U:OP1	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:B:48:U:H2'	9:B:49:C:C6	2.53	0.44
10:C:106:PRO:HG2	10:C:109:LEU:HB2	1.99	0.44
17:J:15:TRP:HB3	17:J:137:PRO:HB3	1.99	0.44
34:a:74:A:H2'	34:a:75:G:H8	1.81	0.44
34:a:406:G:C6	34:a:495:A:C8	3.05	0.44
34:a:616:G:C8	34:a:616:G:O5'	2.70	0.44
34:a:1089:G:O6	34:a:1097:C:N4	2.50	0.44
34:a:1304:G:C5	34:a:1305:G:N1	2.85	0.44
34:a:1386:G:H2'	34:a:1387:G:C8	2.52	0.44
35:b:65:LYS:HB3	35:b:153:MET:HE2	1.99	0.44
38:e:17:VAL:HG13	58:y:134:LYS:HE3	1.99	0.44
38:e:44:ARG:HE	38:e:72:ASN:HD21	1.64	0.44
47:n:7:ALA:HA	47:n:10:VAL:HG12	2.00	0.44
53:t:23:ARG:HA	53:t:23:ARG:HD3	1.81	0.44
1:0:9:ARG:H	1:0:9:ARG:HG3	1.50	0.44
8:A:17:G:H2'	8:A:18:U:C6	2.53	0.44
8:A:304:U:O4	8:A:313:G:O6	2.35	0.44
8:A:374:A:C5	8:A:375:G:C8	3.05	0.44
8:A:528:A:C2	8:A:2042:A:H2'	2.52	0.44
8:A:566:U:H4'	8:A:809:G:OP2	2.18	0.44
8:A:596:U:H2'	8:A:597:G:C8	2.52	0.44
8:A:638:G:C5	8:A:651:G:C2	3.05	0.44
8:A:1255:U:C6	12:E:68:ALA:HA	2.52	0.44
8:A:1322:A:N1	8:A:1333:G:O2'	2.41	0.44
8:A:1751:U:H2'	8:A:1752:C:C6	2.53	0.44
8:A:1824:G:O3'	10:C:246:PRO:HD3	2.16	0.44
8:A:1825:U:H4'	10:C:231:HIS:HE1	1.83	0.44
8:A:1864:U:H5"	8:A:2410:G:O2'	2.17	0.44
9:B:36:C:N4	9:B:49:C:O2	2.50	0.44
12:E:21:ARG:N	12:E:110:SER:OG	2.50	0.44
12:E:141:MET:HE2	12:E:141:MET:HB3	1.88	0.44
15:H:136:SER:OG	15:H:137:GLU:N	2.50	0.44
26:S:66:ILE:H	26:S:66:ILE:HD12	1.83	0.44
34:a:76:G:C6	34:a:77:A:C5	3.05	0.44
34:a:135:C:N3	49:p:1:MET:HB2	2.33	0.44
34:a:151:A:C5	34:a:170:U:C2	3.02	0.44
34:a:213:G:OP1	34:a:213:G:C8	2.70	0.44
34:a:370:C:H2'	34:a:371:A:C8	2.53	0.44
34:a:537:G:OP1	45:l:109:ARG:NH2	2.51	0.44
34:a:647:C:H2'	34:a:648:A:C8	2.52	0.44
34:a:746:A:H2'	34:a:747:A:C8	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:921:U:H5'	34:a:1081:A:H3'	1.97	0.44
34:a:1004:A:C4'	34:a:1033:G:H1	2.30	0.44
34:a:1181:G:H1'	34:a:1182:G:C8	2.52	0.44
34:a:1250:A:N7	34:a:1287:A:C8	2.85	0.44
35:b:207:ARG:O	35:b:211:LEU:HG	2.17	0.44
37:d:69:ARG:O	37:d:70:GLN:HG3	2.18	0.44
38:e:23:THR:HG23	38:e:28:ARG:HD3	1.98	0.44
43:j:17:LEU:HD12	43:j:20:GLN:HE21	1.82	0.44
47:n:76:LYS:HG3	47:n:77:PHE:CE1	2.51	0.44
4:3:25:HIS:CE1	4:3:47:ALA:HB2	2.52	0.44
8:A:152:A:H2'	8:A:153:U:C6	2.52	0.44
8:A:219:A:N3	8:A:234:U:O2'	2.37	0.44
8:A:361:G:H8	8:A:361:G:OP2	2.01	0.44
8:A:1058:U:C2	8:A:1059:G:N7	2.85	0.44
8:A:1059:G:H3'	8:A:1060:U:C6	2.53	0.44
8:A:1716:U:O2	8:A:1744:A:N7	2.50	0.44
8:A:1946:U:H2'	8:A:1947:C:H6	1.78	0.44
8:A:2229:U:H2'	8:A:2230:G:H8	1.82	0.44
12:E:5:LEU:HB3	12:E:7:ASP:OD1	2.17	0.44
12:E:29:HIS:HA	12:E:32:VAL:HG22	1.98	0.44
12:E:32:VAL:HG21	19:L:6:LEU:HD13	1.98	0.44
13:F:120:SER:HB2	13:F:127:TYR:CE1	2.53	0.44
33:Z:45:GLY:HA2	33:Z:48:ASN:ND2	2.32	0.44
34:a:259:G:H2'	34:a:260:G:C8	2.48	0.44
34:a:346:G:C2	34:a:347:G:C8	3.05	0.44
34:a:497:G:H8	34:a:497:G:O5'	2.00	0.44
34:a:515:G:C4	34:a:516:PSU:C6	3.06	0.44
34:a:668:G:H21	48:o:45:HIS:CE1	2.35	0.44
34:a:994:A:N3	34:a:1216:A:H4'	2.32	0.44
34:a:1415:G:C6	34:a:1486:G:C6	3.04	0.44
34:a:1530:G:H2'	34:a:1531:A:C8	2.52	0.44
38:e:110:MET:HE3	38:e:126:ALA:HB2	1.98	0.44
8:A:75:G:N3	8:A:75:G:H2'	2.32	0.44
8:A:478:A:H4'	28:U:32:LYS:NZ	2.33	0.44
8:A:683:U:H2'	8:A:684:G:O4'	2.17	0.44
8:A:1042:G:H2'	8:A:1043:C:H6	1.82	0.44
8:A:1228:G:H2'	8:A:1229:C:C6	2.53	0.44
8:A:1441:G:H2'	8:A:1442:U:H6	1.82	0.44
8:A:1890:A:H2'	8:A:1891:G:O4'	2.18	0.44
8:A:2218:G:C6	8:A:2219:U:C4	3.05	0.44
8:A:2229:U:H2'	8:A:2230:G:C8	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2838:G:H2'	8:A:2839:G:H8	1.83	0.44
14:G:151:ARG:HD3	14:G:151:ARG:HA	1.88	0.44
28:U:6:ARG:NH2	28:U:24:VAL:O	2.50	0.44
32:Y:6:LEU:HD12	32:Y:6:LEU:HA	1.82	0.44
34:a:751:U:OP1	48:o:16:ARG:NH2	2.48	0.44
37:d:167:PRO:HB2	37:d:170:LEU:HD23	2.00	0.44
38:e:61:LYS:O	38:e:64:GLU:HG2	2.17	0.44
44:k:124:LYS:HG3	44:k:125:LYS:N	2.32	0.44
56:w:16:U:H3	56:w:59:U:H3	1.66	0.44
58:y:77:TYR:HE2	58:y:86:ALA:HB2	1.83	0.44
2:1:10:LEU:HD23	2:1:50:GLU:HA	2.00	0.44
2:1:18:HIS:HE1	2:1:20:TYR:CE1	2.35	0.44
8:A:395:U:H2'	8:A:396:G:N7	2.32	0.44
8:A:528:A:N1	8:A:2042:A:H2'	2.33	0.44
8:A:671:C:H2'	8:A:672:C:C6	2.52	0.44
8:A:715:A:C6	8:A:716:A:C6	3.06	0.44
8:A:855:G:C6	8:A:923:G:C6	3.05	0.44
8:A:1380:G:H1'	8:A:1569:A:N6	2.33	0.44
8:A:1445:G:H2'	8:A:1446:C:C6	2.52	0.44
8:A:1656:C:H2'	8:A:1657:U:C6	2.52	0.44
8:A:1725:U:H2'	8:A:1726:C:H6	1.80	0.44
8:A:2126:A:C5	8:A:2163:A:H5'	2.53	0.44
8:A:2715:C:C4	8:A:2716:C:C5	3.06	0.44
24:Q:102:LYS:O	24:Q:106:THR:HG23	2.17	0.44
25:R:37:GLU:O	25:R:39:LEU:HD12	2.17	0.44
34:a:18:C:H2'	34:a:19:A:O4'	2.17	0.44
34:a:54:C:H2'	34:a:352:C:H41	1.83	0.44
34:a:375:U:OP2	49:p:70:ARG:HD3	2.18	0.44
34:a:451:A:H5"	49:p:70:ARG:HH22	1.82	0.44
34:a:668:G:H21	48:o:45:HIS:HE1	1.65	0.44
34:a:842:U:OP2	34:a:846:G:N1	2.51	0.44
34:a:925:G:O2'	34:a:927:G:OP1	2.31	0.44
34:a:934:C:C2	34:a:938:A:N6	2.83	0.44
34:a:1019:A:C2	34:a:1020:G:H1'	2.52	0.44
34:a:1200:C:O2'	34:a:1201:A:OP2	2.30	0.44
34:a:1324:A:H2'	34:a:1325:C:O4'	2.17	0.44
34:a:1343:G:H2'	34:a:1344:C:C6	2.52	0.44
34:a:1450:U:H2'	34:a:1452:C:O2	2.17	0.44
35:b:22:TRP:CZ3	35:b:27:LYS:HD3	2.51	0.44
45:l:54:VAL:HG11	45:l:79:ILE:HD11	1.98	0.44
46:m:12:LYS:HE2	46:m:12:LYS:HB2	1.67	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:r:64:LEU:O	51:r:65:SER:OG	2.34	0.44
58:y:14:GLU:OE1	58:y:47:SER:N	2.38	0.44
58:y:77:TYR:CE2	58:y:86:ALA:HB2	2.51	0.44
7:6:14:ALA:HB2	7:6:22:MET:O	2.17	0.44
8:A:69:C:H4'	8:A:75:G:N7	2.33	0.44
8:A:280:U:O4	8:A:361:G:N2	2.51	0.44
8:A:833:A:H2'	8:A:834:G:C8	2.53	0.44
8:A:841:G:H2'	8:A:842:U:C6	2.52	0.44
8:A:878:A:C8	8:A:879:G:C8	3.06	0.44
8:A:884:U:H3'	8:A:885:C:H5'	1.99	0.44
8:A:1366:A:OP1	31:X:1:SER:OG	2.30	0.44
8:A:1700:A:H3'	8:A:1701:A:H8	1.82	0.44
8:A:2298:A:H2'	8:A:2299:U:O4'	2.17	0.44
8:A:2485:G:O3'	20:M:125:PRO:HB3	2.18	0.44
8:A:2832:U:H4'	8:A:2833:U:O5'	2.18	0.44
9:B:9:G:C6	9:B:111:U:O2	2.71	0.44
9:B:52:A:H1'	9:B:53:A:N7	2.32	0.44
10:C:144:GLU:HB2	10:C:187:CYS:HB3	1.99	0.44
13:F:48:LEU:O	13:F:52:ALA:N	2.43	0.44
14:G:94:ARG:HG3	14:G:105:SER:HB2	1.99	0.44
34:a:146:G:N1	34:a:176:C:C2	2.85	0.44
34:a:414:A:C5	34:a:431:A:C2	3.06	0.44
34:a:614:C:OP2	37:d:80:ARG:NH2	2.36	0.44
34:a:652:U:O4	34:a:752:G:O2'	2.27	0.44
34:a:751:U:H2'	34:a:752:G:O4'	2.17	0.44
34:a:763:G:H2'	34:a:764:C:H6	1.81	0.44
34:a:938:A:C6	34:a:939:G:C6	3.05	0.44
34:a:950:U:H2'	34:a:951:G:C8	2.53	0.44
34:a:952:U:C2	34:a:953:G:C8	3.05	0.44
34:a:962:C:H1'	34:a:1201:A:C6	2.52	0.44
34:a:985:C:C2	34:a:1221:G:C2	3.06	0.44
34:a:1287:A:C6	34:a:1288:A:C6	3.06	0.44
35:b:80:LYS:HB2	35:b:92:ASN:HD22	1.82	0.44
37:d:13:ARG:NH1	37:d:36:ALA:HB1	2.32	0.44
37:d:187:ARG:HA	37:d:187:ARG:HD2	1.68	0.44
39:f:90:MET:HE1	51:r:60:ARG:HD2	2.00	0.44
56:w:39:PSU:H2'	56:w:40:C:H6	1.81	0.44
1:0:5:ASN:ND2	8:A:2020:A:H62	2.15	0.44
8:A:166:U:H2'	8:A:167:A:C8	2.52	0.44
8:A:874:G:C6	8:A:904:G:C6	3.05	0.44
8:A:887:U:O2'	8:A:888:C:OP1	2.30	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:936:A:H2'	8:A:937:C:C6	2.52	0.44
8:A:1465:G:H2'	8:A:1466:U:O4'	2.18	0.44
8:A:1487:U:H2'	8:A:1488:C:C6	2.53	0.44
8:A:1586:A:H3'	8:A:1587:G:H8	1.83	0.44
8:A:1744:A:H3'	8:A:1745:A:C8	2.49	0.44
8:A:2309:A:H2'	8:A:2310:C:C6	2.53	0.44
8:A:2516:A:O2'	8:A:2517:C:H5'	2.18	0.44
8:A:2591:C:C2	8:A:2592:G:N7	2.85	0.44
11:D:156:PHE:CE1	17:J:81:ILE:HD13	2.53	0.44
15:H:135:HIS:CD2	15:H:137:GLU:H	2.36	0.44
19:L:77:ILE:HD11	19:L:108:ALA:HB1	2.00	0.44
23:P:91:VAL:HG21	23:P:96:LEU:HD11	2.00	0.44
24:Q:49:ARG:HG2	24:Q:52:ARG:NH2	2.32	0.44
34:a:57:G:H2'	34:a:58:C:C6	2.52	0.44
34:a:146:G:C2	34:a:147:G:N1	2.86	0.44
34:a:429:U:H4'	34:a:430:A:C5'	2.41	0.44
34:a:541:G:H2'	34:a:542:G:H8	1.82	0.44
34:a:938:A:O2'	34:a:1376:U:O2'	2.13	0.44
34:a:1080:A:H4'	38:e:20:VAL:HB	2.00	0.44
34:a:1118:U:H1'	34:a:1179:A:C4	2.53	0.44
34:a:1176:A:H3'	34:a:1177:G:H8	1.83	0.44
34:a:1176:A:H3'	34:a:1177:G:C8	2.53	0.44
36:c:9:ILE:HD12	36:c:9:ILE:HA	1.87	0.44
37:d:181:PHE:CZ	37:d:184:LYS:HD2	2.52	0.44
38:e:165:GLY:HA2	41:h:113:ARG:NH2	2.29	0.44
40:g:25:PHE:CE2	40:g:100:MET:HA	2.52	0.44
42:i:128:LYS:HE2	56:w:32:PSU:H5'	1.99	0.44
43:j:63:ASP:OD1	43:j:64:GLN:N	2.51	0.44
44:k:80:ASN:CB	44:k:105:ARG:HB3	2.48	0.44
48:o:38:LEU:O	48:o:41:HIS:N	2.49	0.44
49:p:43:ALA:HB3	49:p:48:GLU:O	2.18	0.44
56:w:8:4SU:H5"	56:w:49:C:H5'	1.99	0.44
8:A:379:G:N1	8:A:396:G:C6	2.85	0.44
8:A:885:C:O3'	8:A:886:A:H4'	2.18	0.44
8:A:954:G:H2'	8:A:955:PSU:O4'	2.18	0.44
8:A:1509:A:H2'	8:A:1510:G:H8	1.83	0.44
8:A:1847:G:H21	8:A:1848:A:H62	1.64	0.44
8:A:2298:A:OP1	13:F:70:ARG:HD2	2.18	0.44
8:A:2301:C:H2'	8:A:2302:U:C6	2.53	0.44
8:A:2303:G:H3'	8:A:2304:G:H8	1.82	0.44
14:G:15:ASP:OD1	14:G:16:VAL:N	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:M:42:THR:HA	20:M:93:VAL:HG12	2.00	0.44
23:P:35:SER:OG	23:P:36:LYS:N	2.51	0.44
27:T:65:GLY:HA3	27:T:77:ARG:O	2.18	0.44
34:a:322:C:O2'	34:a:323:U:H5'	2.17	0.44
34:a:369:G:OP2	34:a:388:G:N1	2.50	0.44
34:a:626:G:H2'	34:a:627:G:H8	1.82	0.44
34:a:865:A:H2'	34:a:866:C:C6	2.52	0.44
34:a:949:A:C6	34:a:1233:G:N1	2.86	0.44
34:a:1111:A:H2'	34:a:1112:C:C6	2.52	0.44
34:a:1316:G:N3	34:a:1318:A:C8	2.86	0.44
34:a:1330:U:H3'	34:a:1331:G:H4'	2.00	0.44
34:a:1347:G:O3'	42:i:110:VAL:HA	2.18	0.44
34:a:1532:U:H2'	34:a:1533:C:O4'	2.18	0.44
35:b:69:VAL:O	35:b:163:ILE:HG12	2.18	0.44
35:b:160:LEU:HD22	35:b:175:ALA:HB2	2.00	0.44
37:d:10:LEU:HD22	37:d:62:ARG:NH1	2.32	0.44
37:d:68:GLU:OE2	37:d:72:ARG:HD2	2.18	0.44
43:j:36:VAL:HG13	43:j:76:ILE:HA	2.00	0.44
8:A:382:A:C2	8:A:393:C:C2	3.06	0.44
8:A:570:G:H2'	8:A:2030:6MZ:N7	2.32	0.44
8:A:863:A:H2'	8:A:864:G:H8	1.82	0.44
8:A:1224:U:H4'	25:R:88:GLY:O	2.17	0.44
8:A:1604:C:H2'	8:A:1605:C:H6	1.83	0.44
8:A:1914:C:OP2	8:A:1915:3TD:H10	2.18	0.44
8:A:2244:U:H2'	8:A:2245:U:O4'	2.17	0.44
8:A:2287:A:O2'	8:A:2288:A:O5'	2.28	0.44
11:D:13:ARG:HG2	23:P:55:HIS:CE1	2.53	0.44
13:F:43:ILE:HA	13:F:82:TYR:CE1	2.53	0.44
29:V:35:GLU:OE1	29:V:35:GLU:N	2.41	0.44
34:a:371:A:H2'	34:a:372:C:O4'	2.18	0.44
34:a:429:U:O2	34:a:431:A:C8	2.70	0.44
34:a:593:U:H2'	34:a:594:U:H6	1.83	0.44
34:a:708:C:C2	34:a:709:U:C5	3.06	0.44
34:a:950:U:OP2	46:m:100:ARG:HD2	2.18	0.44
34:a:1087:G:C4	34:a:1099:G:N2	2.85	0.44
34:a:1148:U:H2'	34:a:1149:C:O4'	2.18	0.44
34:a:1303:C:H2'	34:a:1304:G:C8	2.53	0.44
34:a:1464:U:H2'	34:a:1465:A:C8	2.51	0.44
36:c:89:VAL:HA	36:c:92:ASP:OD2	2.18	0.44
36:c:107:LYS:HB3	36:c:110:LEU:HB2	2.00	0.44
47:n:87:ALA:HB1	47:n:92:GLU:HB2	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:o:57:ARG:O	48:o:61:GLN:HG2	2.18	0.44
50:q:19:SER:HA	50:q:47:ASP:H	1.83	0.44
51:r:38:ILE:HG12	51:r:58:ILE:HG21	2.00	0.44
52:s:47:THR:HA	52:s:60:PHE:HA	2.00	0.44
8:A:23:G:N2	26:S:77:ASP:OD1	2.29	0.43
8:A:269:C:C2	8:A:270:A:C8	3.06	0.43
8:A:353:C:C2	8:A:354:A:C8	3.06	0.43
8:A:545:U:H3'	8:A:546:U:C6	2.53	0.43
8:A:610:C:H2'	8:A:611:C:H6	1.82	0.43
8:A:1870:C:O5'	8:A:1870:C:H6	2.00	0.43
8:A:1874:C:H2'	8:A:1875:G:O4'	2.17	0.43
8:A:2283:C:O5'	8:A:2389:G:O2'	2.36	0.43
9:B:78:A:H2'	9:B:79:G:O4'	2.18	0.43
10:C:166:ARG:HB2	10:C:171:VAL:HG12	1.99	0.43
13:F:2:LYS:HE3	13:F:2:LYS:HB3	1.78	0.43
13:F:7:TYR:HA	13:F:11:VAL:HG23	2.00	0.43
14:G:165:ASP:OD1	14:G:166:GLU:N	2.51	0.43
15:H:4:ILE:HD13	15:H:18:GLN:HG3	2.00	0.43
18:K:64:ARG:O	18:K:82:ASN:HA	2.17	0.43
19:L:57:LEU:CD1	19:L:60:ARG:HH21	2.31	0.43
27:T:13:ALA:O	27:T:33:LYS:N	2.33	0.43
31:X:63:ILE:O	31:X:67:LEU:HG	2.18	0.43
34:a:122:G:O6	34:a:239:U:O2	2.35	0.43
34:a:402:G:H2'	34:a:403:C:C6	2.53	0.43
34:a:961:U:OP2	34:a:1223:C:H1'	2.18	0.43
34:a:1342:C:O2'	42:i:125:GLN:HA	2.17	0.43
34:a:1428:A:H2'	34:a:1429:A:O4'	2.18	0.43
36:c:114:LEU:HD23	36:c:114:LEU:HA	1.81	0.43
37:d:138:PRO:HB3	37:d:181:PHE:HD1	1.83	0.43
39:f:12:PRO:HD2	39:f:54:LEU:HD11	2.00	0.43
40:g:114:SER:O	40:g:118:ARG:NE	2.50	0.43
40:g:125:ASP:HB3	40:g:131:GLY:HA3	2.00	0.43
42:i:74:GLN:O	42:i:78:ILE:HG12	2.18	0.43
53:t:38:ILE:HD13	53:t:81:GLN:HB2	1.99	0.43
56:w:29:G:H2'	56:w:30:G:O4'	2.18	0.43
56:w:36:A:H61	56:w:37:MIA:C15	2.28	0.43
8:A:590:A:H2'	8:A:591:U:C6	2.53	0.43
8:A:654:A:H3'	8:A:654:A:N3	2.32	0.43
8:A:855:G:C6	8:A:856:G:N7	2.85	0.43
8:A:1326:U:N3	8:A:1648:U:O2'	2.49	0.43
8:A:1400:U:H2'	8:A:1401:G:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1847:G:HO2'	8:A:1848:A:H8	1.62	0.43
8:A:1870:C:H2'	8:A:1871:A:C8	2.52	0.43
8:A:2392:A:C2	19:L:55:MET:HE3	2.53	0.43
10:C:40:GLY:HA2	10:C:53:ILE:HG22	2.00	0.43
10:C:182:LYS:HB2	10:C:267:VAL:HG23	1.98	0.43
12:E:118:LEU:HD11	12:E:188:MET:HB2	2.00	0.43
13:F:35:LEU:O	13:F:87:LYS:HA	2.18	0.43
15:H:82:SER:HB2	15:H:90:LEU:HD11	2.01	0.43
19:L:80:SER:C	19:L:82:LEU:H	2.25	0.43
34:a:204:G:C2'	34:a:205:A:H4'	2.48	0.43
34:a:216:U:H3'	34:a:216:U:C6	2.53	0.43
34:a:441:A:H2'	34:a:442:G:O4'	2.18	0.43
34:a:474:G:H2'	34:a:475:C:H6	1.84	0.43
34:a:615:G:H2'	34:a:616:G:C8	2.53	0.43
34:a:846:G:H2'	34:a:847:G:H8	1.83	0.43
34:a:859:G:H2'	34:a:860:A:C8	2.53	0.43
34:a:865:A:H1'	34:a:918:A:O2'	2.18	0.43
34:a:1144:G:N3	34:a:1146:A:N6	2.61	0.43
34:a:1223:C:O5'	34:a:1224:U:H5"	2.18	0.43
34:a:1531:A:C5	34:a:1532:U:C4	3.06	0.43
35:b:41:ASN:OD1	35:b:44:LYS:HG3	2.18	0.43
36:c:173:PRO:O	36:c:181:ILE:HD11	2.16	0.43
37:d:57:LYS:NZ	37:d:58:GLN:OE1	2.51	0.43
49:p:26:ASN:OD1	49:p:31:ARG:HB3	2.18	0.43
53:t:5:SER:O	53:t:7:LYS:HG3	2.17	0.43
8:A:71:A:OP1	8:A:112:U:O2'	2.28	0.43
8:A:75:G:C6	8:A:111:A:N1	2.87	0.43
8:A:190:A:H5"	8:A:204:A:N1	2.32	0.43
8:A:363:G:H2'	8:A:364:C:C6	2.52	0.43
8:A:515:A:H1'	8:A:581:C:H1'	2.01	0.43
8:A:967:U:H2'	8:A:968:C:H6	1.80	0.43
8:A:1085:A:N7	8:A:1086:A:N6	2.66	0.43
8:A:1147:A:C6	8:A:1148:U:C4	3.06	0.43
8:A:1246:A:H4'	12:E:40:ARG:HH22	1.82	0.43
8:A:2316:G:H2'	8:A:2317:A:C8	2.53	0.43
15:H:134:VAL:H	15:H:138:VAL:HG21	1.83	0.43
20:M:69:PRO:HA	20:M:94:ALA:HB2	2.00	0.43
23:P:30:TRP:CD2	23:P:39:LEU:HD13	2.52	0.43
25:R:4:VAL:HA	25:R:12:HIS:O	2.18	0.43
29:V:15:GLY:O	29:V:19:ARG:HG3	2.19	0.43
32:Y:22:LEU:O	32:Y:25:GLN:HB2	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:169:C:H2'	34:a:170:U:C4'	2.48	0.43
34:a:263:A:H2'	34:a:264:C:C5	2.53	0.43
34:a:283:U:C4	34:a:284:C:C4	3.07	0.43
34:a:455:G:C6	34:a:456:A:C6	3.06	0.43
34:a:1222:G:H5"	52:s:77:ARG:HD3	2.00	0.43
34:a:1291:U:H2'	34:a:1292:G:C8	2.53	0.43
34:a:1343:G:H4'	42:i:123:ARG:HB2	2.01	0.43
34:a:1374:A:H4'	40:g:27:ASN:OD1	2.18	0.43
34:a:1526:G:H2'	34:a:1527:U:C6	2.53	0.43
37:d:94:GLU:HA	37:d:99:ASN:HD21	1.82	0.43
38:e:73:VAL:HG11	38:e:144:GLU:HA	1.99	0.43
41:h:6:ILE:O	41:h:10:LEU:HG	2.19	0.43
42:i:123:ARG:HE	42:i:123:ARG:HB3	1.60	0.43
51:r:71:ASP:N	51:r:71:ASP:OD1	2.48	0.43
53:t:20:ASN:HB3	53:t:24:ARG:HH12	1.83	0.43
5:4:8:LYS:HB2	5:4:8:LYS:HE2	1.87	0.43
8:A:93:G:H2'	8:A:94:A:C8	2.53	0.43
8:A:481:G:H2'	8:A:507:A:N1	2.33	0.43
8:A:549:G:H2'	8:A:550:C:C6	2.54	0.43
8:A:714:U:H1'	8:A:717:C:H5	1.82	0.43
8:A:750:A:OP1	8:A:1615:C:N4	2.49	0.43
8:A:784:G:H5'	8:A:785:G:OP1	2.17	0.43
8:A:1380:G:H1'	8:A:1569:A:H61	1.84	0.43
8:A:1417:C:H2'	8:A:1418:G:O4'	2.19	0.43
8:A:1435:G:H2'	8:A:1436:G:C8	2.53	0.43
8:A:2038:G:H2'	8:A:2039:U:O4'	2.18	0.43
8:A:2300:C:H2'	8:A:2301:C:C6	2.52	0.43
8:A:2469:A:H2'	8:A:2470:G:O4'	2.18	0.43
8:A:2751:G:H4'	14:G:3:VAL:HG23	2.00	0.43
9:B:66:A:O5'	9:B:108:A:N6	2.52	0.43
13:F:169:LEU:HD22	13:F:174:PHE:CD1	2.53	0.43
17:J:60:ASP:OD1	17:J:60:ASP:N	2.44	0.43
26:S:18:ARG:HB3	26:S:76:VAL:HB	2.00	0.43
27:T:8:LEU:HA	27:T:50:LEU:HD11	1.98	0.43
31:X:2:ARG:O	31:X:11:PRO:HD3	2.19	0.43
34:a:73:C:H2'	34:a:74:A:O4'	2.17	0.43
34:a:352:C:H4'	34:a:354:G:OP1	2.18	0.43
34:a:378:G:N1	34:a:386:C:N3	2.67	0.43
34:a:411:A:H62	34:a:429:U:H5"	1.82	0.43
34:a:530:G:C2	58:y:119:LEU:HD13	2.53	0.43
34:a:560:A:H5'	34:a:566:G:N2	2.32	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:938:A:H2'	34:a:939:G:C8	2.54	0.43
34:a:1223:C:OP2	34:a:1224:U:H2'	2.18	0.43
34:a:1346:A:C8	34:a:1375:A:N6	2.87	0.43
36:c:52:SER:OG	36:c:111:ASP:OD2	2.36	0.43
36:c:198:LYS:HE2	36:c:198:LYS:HB3	1.86	0.43
39:f:17:GLN:HB3	39:f:21:MET:CE	2.48	0.43
40:g:12:LEU:HG	40:g:13:PRO:HD2	2.01	0.43
40:g:38:ALA:O	40:g:42:VAL:HG12	2.19	0.43
42:i:32:ARG:HE	42:i:36:GLN:HG2	1.82	0.43
50:q:67:SER:HG	50:q:68:LYS:H	1.65	0.43
56:w:10:G:N3	56:w:10:G:H2'	2.34	0.43
56:w:28:G:H2'	56:w:29:G:H8	1.83	0.43
8:A:126:A:O2'	8:A:127:A:O5'	2.32	0.43
8:A:781:A:P	10:C:216:ARG:HH21	2.41	0.43
8:A:822:G:H2'	8:A:823:C:H6	1.83	0.43
8:A:954:G:H4'	20:M:13:HIS:CE1	2.53	0.43
8:A:974:G:H1'	8:A:975:A:C8	2.53	0.43
8:A:1432:G:H2'	8:A:1433:A:C8	2.54	0.43
8:A:1672:A:C2	8:A:2582:G:H5'	2.54	0.43
8:A:1827:U:H2'	8:A:1828:G:O4'	2.18	0.43
8:A:2138:G:HO2'	8:A:2139:U:P	2.42	0.43
8:A:2343:U:O2'	8:A:2373:G:O2'	2.24	0.43
9:B:91:C:H2'	9:B:92:C:H6	1.83	0.43
21:N:77:ALA:O	21:N:81:ASN:ND2	2.51	0.43
25:R:38:VAL:HG22	25:R:59:ILE:HG13	2.01	0.43
27:T:8:LEU:HD22	32:Y:23:ARG:HA	2.00	0.43
30:W:25:GLU:O	30:W:63:VAL:HG23	2.19	0.43
33:Z:7:THR:HA	33:Z:33:HIS:O	2.18	0.43
34:a:130:A:C8	50:q:64:ARG:HG3	2.54	0.43
34:a:187:G:H22	34:a:189:A:H3'	1.83	0.43
34:a:765:G:N2	34:a:813:U:OP2	2.32	0.43
34:a:1347:G:H2'	34:a:1373:G:N1	2.33	0.43
37:d:67:LEU:O	37:d:71:PHE:HE2	2.02	0.43
41:h:45:ILE:HG22	41:h:46:GLU:O	2.19	0.43
53:t:14:GLU:O	53:t:18:LYS:HG3	2.18	0.43
54:u:54:ARG:HA	54:u:54:ARG:HD2	1.63	0.43
8:A:95:A:H4'	32:Y:38:GLN:O	2.19	0.43
8:A:286:U:C2	8:A:287:G:C8	3.07	0.43
8:A:601:C:H2'	8:A:602:A:O4'	2.18	0.43
8:A:714:U:O2'	8:A:716:A:N7	2.40	0.43
8:A:768:G:N2	8:A:1379:U:O2'	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1287:A:H62	21:N:106:ASP:HB3	1.84	0.43
8:A:1496:A:O2'	8:A:1577:C:O3'	2.36	0.43
8:A:1538:G:H2'	8:A:1539:U:H6	1.80	0.43
8:A:1586:A:H2'	8:A:1587:G:O4'	2.19	0.43
23:P:85:VAL:O	23:P:85:VAL:HG13	2.19	0.43
23:P:90:ALA:HB2	23:P:112:ARG:HA	2.01	0.43
27:T:3:ARG:O	27:T:7:LEU:HG	2.19	0.43
28:U:53:GLN:N	28:U:54:PRO:HD2	2.33	0.43
33:Z:50:VAL:O	33:Z:54:VAL:HG22	2.18	0.43
34:a:82:G:C6	34:a:83:C:H1'	2.54	0.43
34:a:376:G:C2	34:a:389:A:C2	3.06	0.43
34:a:390:U:H2'	34:a:391:G:H8	1.82	0.43
34:a:406:G:C4	34:a:495:A:C6	3.07	0.43
34:a:1080:A:H3'	34:a:1081:A:O4'	2.18	0.43
34:a:1359:C:H3'	47:n:75:ARG:NH2	2.28	0.43
36:c:62:SER:HB3	36:c:99:GLN:HE21	1.84	0.43
45:l:56:LEU:HD21	45:l:81:ILE:HD12	2.00	0.43
56:w:10:G:C2	56:w:11:C:C4	3.07	0.43
7:6:43:PHE:CD1	7:6:48:GLN:CD	2.97	0.43
8:A:75:G:O6	8:A:111:A:N1	2.51	0.43
8:A:277:G:N1	8:A:359:G:O6	2.51	0.43
8:A:582:A:H2'	8:A:583:G:H8	1.82	0.43
8:A:828:U:H2'	8:A:829:A:C8	2.53	0.43
8:A:883:G:C6	8:A:884:U:C4	3.07	0.43
8:A:1502:A:OP1	8:A:1502:A:H4'	2.15	0.43
8:A:1950:G:N2	8:A:1954:G:C4	2.86	0.43
8:A:2230:G:H5"	31:X:29:LEU:HD12	2.00	0.43
8:A:2259:U:H2'	8:A:2260:C:C6	2.52	0.43
8:A:2488:G:H2'	8:A:2489:U:H6	1.84	0.43
8:A:2840:C:H5"	21:N:53:THR:OG1	2.18	0.43
10:C:78:GLU:OE2	10:C:100:ARG:NH1	2.51	0.43
14:G:88:LEU:HD23	14:G:161:VAL:HG22	1.99	0.43
15:H:6:LEU:HB2	15:H:35:LYS:C	2.43	0.43
16:I:89:SER:C	16:I:91:LYS:H	2.26	0.43
19:L:37:GLY:O	19:L:40:SER:OG	2.33	0.43
22:O:2:ASP:OD2	22:O:4:LYS:N	2.52	0.43
34:a:206:C:N4	34:a:465:A:N1	2.63	0.43
34:a:424:G:H2'	34:a:425:G:H8	1.83	0.43
34:a:592:G:H2'	34:a:593:U:C6	2.53	0.43
34:a:671:G:H2'	34:a:672:U:C6	2.54	0.43
34:a:687:A:N3	34:a:688:G:H1'	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:825:A:H2'	34:a:826:C:H6	1.82	0.43
34:a:1160:G:N2	34:a:1176:A:C2	2.87	0.43
34:a:1167:A:N7	34:a:1169:A:N6	2.67	0.43
34:a:1304:G:C2	34:a:1334:G:C6	3.07	0.43
34:a:1306:A:H2'	34:a:1306:A:N3	2.33	0.43
34:a:1455:G:H2'	34:a:1456:A:C8	2.53	0.43
35:b:13:VAL:HG12	35:b:16:GLY:O	2.19	0.43
35:b:52:ALA:O	35:b:56:LEU:HD13	2.19	0.43
37:d:120:LYS:HE3	37:d:120:LYS:HB3	1.86	0.43
37:d:191:SER:HB3	37:d:194:ILE:HD11	2.01	0.43
37:d:197:HIS:CG	37:d:198:LEU:N	2.86	0.43
40:g:50:ALA:HB1	40:g:56:SER:HA	1.99	0.43
40:g:77:ARG:HE	40:g:86:VAL:HG21	1.84	0.43
42:i:22:PRO:HA	42:i:60:LEU:HA	2.00	0.43
43:j:10:LEU:HD12	43:j:96:VAL:HB	2.00	0.43
8:A:153:U:H2'	8:A:154:U:H6	1.83	0.43
8:A:478:A:N1	8:A:500:G:H4'	2.33	0.43
8:A:816:C:H2'	8:A:817:C:C6	2.54	0.43
8:A:966:G:C6	8:A:967:U:C4	3.07	0.43
8:A:1450:G:C6	8:A:1451:C:N4	2.86	0.43
8:A:1487:U:H2'	8:A:1488:C:H6	1.84	0.43
8:A:1499:C:C4	8:A:1500:G:N7	2.87	0.43
8:A:1626:A:OP2	8:A:1626:A:H8	2.01	0.43
8:A:1667:G:O2'	8:A:1991:U:O4	2.33	0.43
8:A:1850:G:C6	8:A:1851:U:C4	3.06	0.43
8:A:2573:C:H41	58:y:34:SER:HG	1.65	0.43
8:A:2687:U:H2'	8:A:2688:G:O4'	2.18	0.43
8:A:2795:C:H2'	8:A:2796:U:O4'	2.18	0.43
17:J:91:GLU:O	17:J:95:ARG:HD3	2.19	0.43
22:O:79:ALA:HA	22:O:115:LEU:HD13	2.01	0.43
24:Q:109:VAL:O	24:Q:113:LYS:HG3	2.19	0.43
25:R:16:GLU:HG3	25:R:100:GLY:HA2	2.00	0.43
25:R:69:GLY:O	25:R:90:ARG:HG2	2.19	0.43
28:U:73:ASN:HA	28:U:95:PHE:CE2	2.53	0.43
31:X:31:ASN:OD1	31:X:33:HIS:NE2	2.52	0.43
34:a:206:C:H42	34:a:465:A:N6	2.16	0.43
34:a:402:G:H2'	34:a:403:C:H6	1.83	0.43
34:a:561:U:O2'	34:a:562:U:P	2.77	0.43
34:a:846:G:C6	34:a:847:G:C6	3.07	0.43
34:a:1005:A:C4	34:a:1006:G:H1'	2.54	0.43
34:a:1036:A:H2'	34:a:1037:C:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:g:71:THR:H	40:g:141:HIS:CE1	2.37	0.43
40:g:105:GLU:OE1	40:g:136:LYS:NZ	2.42	0.43
44:k:30:ILE:HA	44:k:45:THR:HG23	2.00	0.43
50:q:26:ARG:HG3	50:q:39:ARG:HB2	1.99	0.43
3:2:22:MET:HE3	3:2:22:MET:HB3	1.91	0.43
8:A:298:G:C2	8:A:339:U:C5	3.07	0.43
8:A:514:A:H2'	8:A:515:A:H8	1.84	0.43
8:A:1130:U:C2	8:A:2025:C:H5"	2.53	0.43
8:A:1206:G:H2'	8:A:1207:C:H6	1.84	0.43
8:A:1229:C:H2'	8:A:1230:A:C8	2.54	0.43
8:A:1473:G:C6	8:A:1519:G:C6	3.07	0.43
8:A:1921:G:N1	8:A:1922:G:C5	2.86	0.43
8:A:2097:A:H2'	8:A:2098:U:H6	1.83	0.43
8:A:2409:G:H2'	8:A:2410:G:O4'	2.17	0.43
8:A:2774:C:H2'	8:A:2775:G:O4'	2.19	0.43
9:B:111:U:H2'	9:B:112:G:C8	2.54	0.43
13:F:36:ASN:OD1	13:F:37:MET:N	2.52	0.43
15:H:7:ASP:OD1	15:H:8:LYS:N	2.51	0.43
34:a:66:A:O4'	34:a:173:U:N3	2.52	0.43
34:a:197:A:H4'	34:a:198:G:OP1	2.19	0.43
34:a:207:C:H2'	34:a:208:U:O4'	2.19	0.43
34:a:421:U:H3'	34:a:422:C:H5"	2.01	0.43
34:a:737:C:H2'	34:a:738:C:C6	2.45	0.43
34:a:965:U:H1'	34:a:969:A:C2	2.54	0.43
34:a:1347:G:O2'	34:a:1348:U:P	2.77	0.43
36:c:28:PHE:O	36:c:32:LEU:HG	2.18	0.43
38:e:95:MET:HA	38:e:123:LEU:O	2.19	0.43
42:i:54:VAL:HG22	42:i:55:ASP:H	1.84	0.43
45:l:41:PRO:HB3	45:l:88:ASP:CG	2.44	0.43
45:l:54:VAL:HG21	45:l:81:ILE:HD11	2.00	0.43
49:p:59:HIS:O	49:p:63:GLN:HG3	2.19	0.43
49:p:73:ALA:HA	49:p:76:LYS:HG2	2.00	0.43
51:r:48:ALA:O	51:r:52:ARG:HG3	2.18	0.43
7:6:43:PHE:CE1	7:6:48:GLN:CD	2.96	0.43
8:A:321:U:H1'	12:E:162:ARG:NH1	2.34	0.43
8:A:666:A:H2'	8:A:667:U:C6	2.54	0.43
8:A:675:A:N3	8:A:2443:C:O2'	2.47	0.43
8:A:788:A:OP1	8:A:791:C:N4	2.36	0.43
8:A:899:A:O2'	8:A:900:A:H8	2.02	0.43
8:A:2127:G:H22	8:A:2162:G:HO2'	1.63	0.43
8:A:2262:U:C2	8:A:2263:C:C5	3.07	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2530:A:N6	14:G:155:PRO:HG3	2.34	0.43
19:L:23:ILE:HG12	25:R:82:HIS:NE2	2.34	0.43
19:L:142:ILE:HG22	19:L:144:GLU:HG2	2.01	0.43
21:N:29:VAL:HG11	21:N:75:ILE:HG23	1.99	0.43
22:O:2:ASP:OD2	22:O:3:LYS:N	2.52	0.43
26:S:20:VAL:HG21	26:S:43:ALA:HB3	2.01	0.43
34:a:517:G:O2'	34:a:530:G:H4'	2.19	0.43
34:a:743:A:H2'	34:a:744:C:C6	2.54	0.43
34:a:747:A:H2'	34:a:748:G:H8	1.84	0.43
34:a:818:G:H2'	34:a:820:U:C5	2.53	0.43
34:a:883:C:O2'	34:a:884:U:H5'	2.18	0.43
50:q:18:LYS:HE2	50:q:46:HIS:HE1	1.84	0.43
52:s:62:THR:HG22	52:s:64:GLU:H	1.83	0.43
2:1:26:LYS:H	2:1:27:ARG:NH1	2.17	0.42
8:A:19:A:H2'	8:A:20:C:C6	2.54	0.42
8:A:300:A:O5'	28:U:81:ARG:NH1	2.52	0.42
8:A:328:U:O2'	28:U:68:ASN:OD1	2.36	0.42
8:A:359:G:O2'	8:A:360:U:H5'	2.18	0.42
8:A:638:G:C6	8:A:651:G:N1	2.87	0.42
8:A:718:A:H2'	8:A:719:C:O4'	2.19	0.42
8:A:980:A:N7	8:A:1136:G:H5'	2.33	0.42
8:A:1109:C:H3'	8:A:1110:G:C8	2.54	0.42
8:A:1110:G:HO2'	8:A:1111:A:P	2.38	0.42
8:A:1443:U:H2'	8:A:1444:G:H8	1.84	0.42
8:A:1936:A:OP2	8:A:1962:5MC:N4	2.36	0.42
8:A:2790:U:HO2'	8:A:2791:G:P	2.41	0.42
10:C:29:PHE:O	10:C:33:LEU:HD13	2.19	0.42
13:F:68:LYS:HA	13:F:82:TYR:O	2.19	0.42
18:K:2:ILE:HG23	18:K:8:LEU:HD21	2.00	0.42
23:P:30:TRP:NE1	23:P:81:ASP:OD2	2.51	0.42
31:X:42:GLU:HG3	31:X:42:GLU:O	2.19	0.42
34:a:267:C:P	50:q:68:LYS:HD3	2.58	0.42
34:a:393:A:C2	34:a:394:G:C8	3.07	0.42
34:a:533:A:O2'	34:a:535:A:OP2	2.24	0.42
34:a:980:C:H5"	34:a:981:U:C5	2.54	0.42
34:a:1305:G:H4'	34:a:1306:A:C8	2.54	0.42
34:a:1447:A:H3'	34:a:1448:C:C6	2.54	0.42
35:b:86:CYS:HB3	35:b:88:GLN:OE1	2.18	0.42
35:b:128:LEU:HD21	35:b:133:ALA:HB2	2.01	0.42
37:d:129:VAL:HG12	37:d:131:ILE:H	1.83	0.42
40:g:49:LEU:HD22	40:g:123:LEU:HD22	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:k:52:ARG:HD2	44:k:52:ARG:HA	1.87	0.42
46:m:22:TYR:CE2	46:m:69:ARG:HG2	2.54	0.42
49:p:53:ASP:CG	49:p:56:ARG:H	2.27	0.42
56:w:14:A:C6	56:w:15:G:C2	3.07	0.42
1:0:7:PRO:HD2	8:A:1263:U:O2'	2.20	0.42
5:4:4:ARG:HG3	5:4:7:VAL:HG12	2.00	0.42
7:6:1:MET:HE3	7:6:6:HIS:CD2	2.54	0.42
8:A:350:G:H2'	8:A:351:C:H6	1.82	0.42
8:A:351:C:C4	8:A:352:A:C8	3.07	0.42
8:A:875:G:C2	8:A:903:C:C2	3.07	0.42
8:A:2250:G:N2	20:M:83:GLY:HA3	2.34	0.42
8:A:2389:G:H5"	8:A:2390:U:O4'	2.18	0.42
8:A:2722:G:O2'	21:N:3:HIS:O	2.37	0.42
10:C:29:PHE:CZ	10:C:31:PRO:HD2	2.54	0.42
13:F:174:PHE:HD2	13:F:176:PHE:CD2	2.37	0.42
20:M:40:ARG:HB3	20:M:93:VAL:HB	2.01	0.42
27:T:44:LYS:O	27:T:48:GLN:HG2	2.19	0.42
34:a:265:G:H4'	50:q:66:LEU:C	2.44	0.42
34:a:308:C:C2	34:a:309:A:C8	3.07	0.42
34:a:406:G:C6	34:a:495:A:N7	2.87	0.42
34:a:449:G:H2'	34:a:450:G:C8	2.54	0.42
34:a:682:G:C2	34:a:683:G:C8	3.07	0.42
34:a:723:U:O2'	34:a:855:U:H4'	2.19	0.42
34:a:1233:G:H2'	34:a:1234:C:C6	2.54	0.42
34:a:1241:G:C2	34:a:1242:G:N7	2.87	0.42
34:a:1267:C:N4	34:a:1327:C:O2'	2.51	0.42
34:a:1497:G:N3	34:a:1497:G:H2'	2.34	0.42
37:d:71:PHE:O	37:d:71:PHE:CD1	2.72	0.42
37:d:176:LYS:HE2	37:d:178:GLU:HB2	2.01	0.42
39:f:78:PHE:CD1	39:f:84:VAL:HG11	2.54	0.42
40:g:85:GLN:HB2	40:g:147:ASN:ND2	2.34	0.42
46:m:80:MET:O	46:m:83:GLY:N	2.51	0.42
48:o:70:LYS:HB2	48:o:77:TYR:CD1	2.54	0.42
50:q:45:VAL:HG21	50:q:60:ILE:HG21	2.01	0.42
58:y:74:ALA:HA	58:y:90:ARG:HH22	1.84	0.42
8:A:24:G:C6	8:A:25:U:C4	3.08	0.42
8:A:102:U:C4	32:Y:2:LYS:HG3	2.54	0.42
8:A:722:A:H2'	8:A:723:C:C6	2.54	0.42
8:A:1055:G:N2	8:A:1085:A:H1'	2.34	0.42
8:A:1110:G:H4'	8:A:1111:A:OP1	2.18	0.42
8:A:1537:G:H3'	8:A:1537:G:N3	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1831:G:H2'	8:A:1832:C:H6	1.84	0.42
8:A:2114:A:H2'	8:A:2115:G:H5"	2.02	0.42
8:A:2158:A:O2'	8:A:2159:G:H1'	2.19	0.42
8:A:2334:U:HO2'	22:O:13:ARG:NH1	2.17	0.42
8:A:2682:A:N3	11:D:23:PRO:HB3	2.34	0.42
13:F:169:LEU:HD23	13:F:169:LEU:HA	1.86	0.42
14:G:156:TYR:O	14:G:170:THR:OG1	2.37	0.42
15:H:64:ALA:C	15:H:66:ASN:H	2.28	0.42
15:H:132:PHE:CE1	15:H:142:VAL:HB	2.54	0.42
22:O:62:LEU:HD13	22:O:70:ALA:HA	2.00	0.42
28:U:21:ARG:HD2	28:U:72:PHE:CD2	2.54	0.42
28:U:73:ASN:HB2	28:U:80:ASP:HB2	2.01	0.42
29:V:6:ALA:HB1	29:V:40:ILE:HG23	2.01	0.42
34:a:16:A:H2	34:a:1080:A:N3	2.17	0.42
34:a:61:G:N7	53:t:4:LYS:NZ	2.67	0.42
34:a:71:A:C5	34:a:72:A:C8	3.07	0.42
34:a:568:G:O2'	34:a:574:A:N1	2.36	0.42
34:a:644:U:C4	34:a:645:G:N7	2.87	0.42
34:a:676:A:H2'	34:a:677:U:H6	1.83	0.42
34:a:695:A:H2'	34:a:696:A:C8	2.54	0.42
34:a:999:C:O2'	34:a:1000:A:H5'	2.19	0.42
34:a:1250:A:OP1	42:i:67:LYS:HD2	2.19	0.42
34:a:1267:C:N4	34:a:1327:C:HO2'	2.17	0.42
34:a:1510:C:H2'	34:a:1511:G:H8	1.83	0.42
37:d:45:PRO:HA	37:d:46:ARG:NH1	2.35	0.42
40:g:114:SER:N	40:g:118:ARG:HH21	2.18	0.42
47:n:9:GLU:OE2	47:n:62:ASN:N	2.53	0.42
56:w:36:A:N1	56:w:37:MIA:H152	2.34	0.42
58:y:115:LYS:HZ3	58:y:119:LEU:HD11	1.84	0.42
3:2:34:ARG:CZ	3:2:39:ARG:HD2	2.49	0.42
3:2:39:ARG:NH1	8:A:469:G:O6	2.53	0.42
8:A:471:A:H5"	12:E:79:ARG:HH22	1.85	0.42
8:A:1151:A:H4'	24:Q:80:ASN:ND2	2.34	0.42
8:A:1535:A:N6	8:A:1538:G:O2'	2.52	0.42
8:A:2059:A:H2	55:v:14:PRO:HB3	1.85	0.42
8:A:2295:C:O2'	8:A:2296:U:H5'	2.19	0.42
8:A:2469:A:C6	8:A:2482:A:C8	3.08	0.42
8:A:2680:U:O2'	8:A:2681:C:H5'	2.20	0.42
8:A:2743:U:H2'	8:A:2744:G:O4'	2.18	0.42
8:A:2814:A:C5	8:A:2815:C:C5	3.07	0.42
11:D:28:GLU:HA	11:D:186:LEU:HD23	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:D:157:LYS:HE3	11:D:157:LYS:HB2	1.74	0.42
12:E:37:ALA:HB1	12:E:92:HIS:O	2.19	0.42
12:E:176:ASP:OD1	12:E:176:ASP:N	2.52	0.42
15:H:46:PHE:O	15:H:50:ARG:HG2	2.19	0.42
24:Q:25:GLY:HA2	24:Q:29:ARG:HH11	1.83	0.42
25:R:54:VAL:HG12	25:R:57:GLY:H	1.83	0.42
34:a:272:C:H2'	34:a:273:U:C6	2.54	0.42
34:a:273:U:H2'	34:a:274:A:O4'	2.19	0.42
34:a:374:A:C5	34:a:375:U:C6	3.08	0.42
34:a:605:U:C2	34:a:606:G:C8	3.07	0.42
34:a:745:G:H2'	34:a:746:A:H8	1.84	0.42
34:a:1142:G:N7	34:a:1143:G:C4	2.87	0.42
34:a:1178:G:OP1	42:i:94:ARG:HD3	2.18	0.42
34:a:1186:G:HO2'	42:i:114:LYS:HZ1	1.59	0.42
34:a:1266:G:C2	34:a:1268:G:H8	2.37	0.42
34:a:1347:G:HO2'	34:a:1373:G:H22	1.67	0.42
34:a:1534:A:H2'	34:a:1534:A:N3	2.34	0.42
40:g:49:LEU:HD13	40:g:123:LEU:HB3	2.00	0.42
42:i:106:ASP:OD1	42:i:108:ARG:HG2	2.20	0.42
44:k:51:PHE:O	44:k:56:LYS:N	2.52	0.42
48:o:84:LEU:HB3	48:o:86:LEU:HD13	2.00	0.42
53:t:56:ILE:O	53:t:60:GLN:HG2	2.18	0.42
56:w:25:C:H2'	56:w:26:A:O4'	2.19	0.42
8:A:874:G:N1	8:A:875:G:C5	2.87	0.42
8:A:1056:G:HO2'	8:A:1087:G:H21	1.68	0.42
8:A:1197:G:C4	8:A:1198:U:C5	3.07	0.42
8:A:1488:C:C2	8:A:1502:A:N6	2.88	0.42
8:A:1564:C:H2'	8:A:1565:C:C6	2.54	0.42
8:A:2052:A:O4'	11:D:147:GLY:HA3	2.20	0.42
8:A:2102:G:H3'	8:A:2103:C:C6	2.55	0.42
8:A:2136:G:H2'	8:A:2137:U:C6	2.54	0.42
8:A:2315:G:C6	8:A:2316:G:C5	3.08	0.42
28:U:31:GLY:O	28:U:66:VAL:HG23	2.19	0.42
29:V:83:LYS:O	29:V:85:LYS:N	2.52	0.42
34:a:214:C:H5'	34:a:214:C:O2	2.20	0.42
34:a:331:G:OP1	34:a:332:G:H8	2.02	0.42
34:a:509:A:H4'	34:a:510:A:OP1	2.19	0.42
34:a:813:U:O5'	34:a:816:A:N6	2.51	0.42
34:a:860:A:H2'	34:a:861:G:O4'	2.19	0.42
34:a:919:A:H2'	34:a:920:U:C6	2.55	0.42
34:a:994:A:N1	34:a:1215:G:O2'	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1351:U:H2'	34:a:1352:C:C6	2.54	0.42
34:a:1381:U:H2'	34:a:1382:C:O4'	2.19	0.42
34:a:1425:U:H2'	34:a:1426:G:H8	1.85	0.42
34:a:1456:A:H2'	34:a:1457:G:O4'	2.20	0.42
37:d:18:LEU:HB2	37:d:20:LEU:HD11	2.01	0.42
38:e:24:VAL:HG23	38:e:26:GLY:H	1.85	0.42
41:h:4:ASP:CG	41:h:80:PRO:HD3	2.43	0.42
49:p:80:LYS:HA	49:p:80:LYS:HD2	1.80	0.42
52:s:21:ALA:HB1	52:s:46:LEU:HD21	2.00	0.42
8:A:151:C:H2'	8:A:152:A:C8	2.53	0.42
8:A:633:A:H5"	19:L:70:LYS:HD3	2.01	0.42
8:A:856:G:H2'	8:A:857:G:C8	2.54	0.42
8:A:1022:G:C6	8:A:1140:C:C4	3.08	0.42
8:A:1047:G:C2	8:A:1111:A:C8	3.07	0.42
8:A:1409:U:H2'	8:A:1410:G:H8	1.83	0.42
8:A:1481:U:O2	8:A:1510:G:N2	2.43	0.42
8:A:1592:C:H2'	8:A:1593:A:H8	1.84	0.42
8:A:1794:A:O2'	8:A:1900:A:O2'	2.32	0.42
8:A:1904:G:H2'	8:A:1905:C:O4'	2.20	0.42
8:A:1936:A:H3'	8:A:1937:A:H5'	2.01	0.42
8:A:2307:G:C2	8:A:2311:A:N7	2.88	0.42
8:A:2439:A:H4'	8:A:2440:C:H5"	2.02	0.42
8:A:2514:U:H5'	17:J:81:ILE:HG21	2.00	0.42
8:A:2796:U:H5"	8:A:2797:U:OP1	2.19	0.42
8:A:2803:G:H2'	8:A:2804:U:C6	2.55	0.42
9:B:9:G:O6	9:B:111:U:C2	2.73	0.42
9:B:52:A:OP2	9:B:52:A:H8	2.02	0.42
11:D:148:GLN:OE1	11:D:148:GLN:N	2.53	0.42
19:L:80:SER:N	19:L:114:GLY:O	2.52	0.42
29:V:50:MET:HA	29:V:53:LYS:NZ	2.35	0.42
34:a:36:C:H2'	34:a:37:U:O4'	2.19	0.42
34:a:438:U:N3	34:a:494:G:C6	2.87	0.42
34:a:511:C:C2	34:a:512:U:C5	3.08	0.42
34:a:1309:G:C5	34:a:1329:A:N1	2.87	0.42
35:b:10:LYS:H	35:b:14:HIS:CE1	2.38	0.42
36:c:132:ALA:O	36:c:135:ARG:HG2	2.20	0.42
37:d:16:THR:OG1	37:d:17:ASP:N	2.53	0.42
37:d:45:PRO:HB2	37:d:47:LEU:CD2	2.50	0.42
37:d:167:PRO:HB2	37:d:170:LEU:CD2	2.49	0.42
43:j:88:MET:HE3	43:j:88:MET:HB3	1.97	0.42
45:l:38:THR:HG22	45:l:50:LYS:HG3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:l:78:VAL:HG12	45:l:101:LEU:HD23	2.02	0.42
6:5:59:LEU:N	8:A:1107:G:OP1	2.52	0.42
8:A:236:C:H2'	8:A:237:C:H6	1.85	0.42
8:A:957:C:H5'	20:M:75:GLU:HG2	2.02	0.42
8:A:1064:C:H4'	16:I:89:SER:O	2.20	0.42
8:A:1219:U:H2'	8:A:1220:G:C8	2.55	0.42
8:A:1391:U:O2'	8:A:1393:A:N7	2.49	0.42
8:A:1503:A:H8	8:A:1503:A:H2'	1.71	0.42
8:A:1932:A:H2'	8:A:1933:G:O4'	2.19	0.42
8:A:2013:A:O2'	26:S:94:ASP:OD2	2.31	0.42
8:A:2157:G:N2	8:A:2158:A:H61	2.11	0.42
8:A:2784:U:H2'	8:A:2785:C:H6	1.84	0.42
11:D:59:ARG:HA	11:D:59:ARG:HD3	1.78	0.42
24:Q:65:ASN:O	24:Q:69:ARG:HG3	2.19	0.42
31:X:69:GLU:O	31:X:73:ARG:HG3	2.20	0.42
34:a:2:A:C6	34:a:3:A:C2	3.08	0.42
34:a:15:G:H4'	38:e:28:ARG:NH1	2.35	0.42
34:a:35:G:N2	45:l:114:SER:HG	2.14	0.42
34:a:35:G:H21	45:l:114:SER:CB	2.31	0.42
34:a:44:A:O2'	34:a:45:G:H5'	2.19	0.42
34:a:100:G:H3'	34:a:101:A:C8	2.52	0.42
34:a:123:U:H2'	34:a:124:C:C6	2.55	0.42
34:a:237:G:H4'	50:q:26:ARG:NH1	2.35	0.42
34:a:440:C:C2	34:a:441:A:C8	3.07	0.42
34:a:452:A:H2'	34:a:453:G:O4'	2.19	0.42
34:a:689:C:HO2'	34:a:690:G:P	2.43	0.42
34:a:738:C:OP1	39:f:91:ARG:NH1	2.40	0.42
34:a:1349:A:H5'	42:i:122:ARG:HB2	2.02	0.42
34:a:1402:4OC:HM23	34:a:1402:4OC:H1'	1.90	0.42
34:a:1476:A:H2'	34:a:1477:U:C6	2.54	0.42
35:b:144:GLU:HA	35:b:148:GLY:HA3	2.01	0.42
40:g:39:GLU:OE1	42:i:40:ARG:NH1	2.42	0.42
41:h:28:SER:OG	41:h:29:SER:N	2.52	0.42
42:i:29:ILE:HG23	42:i:37:TYR:HB3	2.00	0.42
43:j:30:LYS:HE2	43:j:36:VAL:HB	2.02	0.42
43:j:53:ILE:HG23	47:n:85:ARG:HD2	2.01	0.42
51:r:72:ARG:HG3	54:u:4:LYS:HZ1	1.84	0.42
58:y:94:MET:HE2	58:y:94:MET:HB3	1.80	0.42
8:A:394:C:H2'	8:A:395:U:O4'	2.20	0.42
8:A:495:G:N3	26:S:61:ASN:ND2	2.67	0.42
8:A:710:U:C2	8:A:711:G:C8	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:816:C:H2'	8:A:817:C:H6	1.84	0.42
8:A:952:G:C6	8:A:966:G:C6	3.08	0.42
8:A:1079:C:N4	8:A:1087:G:H5'	2.35	0.42
8:A:1097:U:C2	16:I:6:ALA:HA	2.55	0.42
8:A:1477:A:N6	8:A:1514:G:O2'	2.51	0.42
8:A:1682:G:H2'	8:A:1683:U:C6	2.54	0.42
8:A:1690:A:H2'	8:A:1691:C:O4'	2.19	0.42
8:A:1754:A:H2'	8:A:1755:A:C8	2.55	0.42
8:A:2126:A:H4'	8:A:2173:A:C2	2.55	0.42
8:A:2416:C:C2	8:A:2417:C:C5	3.08	0.42
9:B:18:G:H1'	9:B:67:G:N2	2.35	0.42
9:B:42:C:C6	13:F:65:LEU:HB2	2.55	0.42
12:E:109:LEU:HD23	12:E:109:LEU:HA	1.84	0.42
12:E:191:ASP:O	12:E:195:GLN:HG3	2.19	0.42
13:F:48:LEU:HA	13:F:51:ASN:HB2	2.01	0.42
22:O:92:PHE:HB2	22:O:117:PHE:CD2	2.55	0.42
27:T:29:THR:OG1	27:T:86:THR:HG22	2.19	0.42
29:V:40:ILE:HA	29:V:40:ILE:HD13	1.77	0.42
30:W:7:ARG:O	30:W:10:ARG:NH2	2.53	0.42
34:a:149:A:C6	34:a:150:U:C4	3.08	0.42
34:a:782:A:H4'	34:a:1514:G:O2'	2.19	0.42
34:a:921:U:O2'	34:a:922:G:O5'	2.28	0.42
34:a:940:C:H2'	34:a:941:G:O4'	2.20	0.42
34:a:992:U:O4	34:a:1044:A:N7	2.53	0.42
34:a:1073:U:H2'	34:a:1074:G:O4'	2.19	0.42
34:a:1227:A:OP1	52:s:79:TYR:OH	2.31	0.42
34:a:1415:G:C4	34:a:1486:G:C2	3.07	0.42
36:c:152:VAL:HG12	36:c:197:VAL:HG23	2.01	0.42
36:c:153:SER:HA	36:c:156:LEU:HD11	2.01	0.42
37:d:71:PHE:CA	37:d:74:TYR:HB2	2.44	0.42
38:e:44:ARG:HE	38:e:72:ASN:ND2	2.18	0.42
38:e:110:MET:CE	38:e:126:ALA:HB2	2.49	0.42
40:g:41:ILE:HD12	40:g:115:MET:HG2	2.02	0.42
52:s:16:LYS:O	52:s:20:LYS:HG2	2.20	0.42
52:s:47:THR:HB	52:s:60:PHE:HD1	1.85	0.42
7:6:42:PRO:HB3	7:6:48:GLN:HB3	2.02	0.42
8:A:3:U:H2'	8:A:4:U:C6	2.55	0.42
8:A:273:G:H2'	8:A:274:C:C6	2.55	0.42
8:A:286:U:C2	8:A:287:G:N7	2.87	0.42
8:A:303:G:C4	8:A:304:U:C5	3.08	0.42
8:A:370:G:C6	8:A:424:G:C8	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:398:C:H5”	8:A:2090:A:O4’	2.20	0.42
8:A:443:A:OP1	12:E:41:GLN:N	2.47	0.42
8:A:1588:G:H2’	8:A:1589:U:H6	1.83	0.42
8:A:2086:U:H2’	8:A:2087:G:C8	2.55	0.42
8:A:2121:G:C8	8:A:2122:U:C5	3.08	0.42
8:A:2339:C:H2’	8:A:2340:A:C8	2.55	0.42
8:A:2863:C:H2’	8:A:2864:G:H8	1.85	0.42
11:D:5:VAL:HG11	11:D:80:TRP:CZ3	2.55	0.42
13:F:42:ALA:HA	13:F:45:ASP:OD1	2.19	0.42
13:F:170:ALA:C	13:F:173:ASP:H	2.27	0.42
15:H:66:ASN:ND2	15:H:135:HIS:HB3	2.35	0.42
20:M:41:LEU:HD11	20:M:102:LEU:HD13	2.01	0.42
27:T:31:VAL:HG22	27:T:84:TYR:CD2	2.55	0.42
30:W:27:VAL:HB	30:W:31:SER:OG	2.20	0.42
34:a:73:C:H6	34:a:73:C:O5’	2.03	0.42
34:a:89:U:H3’	34:a:90:C:C6	2.55	0.42
34:a:213:G:N3	34:a:213:G:O2’	2.53	0.42
34:a:767:A:C4	34:a:768:A:C8	3.08	0.42
34:a:946:A:O2’	34:a:1333:A:N3	2.51	0.42
34:a:977:A:HO2’	34:a:981:U:H3	1.68	0.42
34:a:1101:A:H61	35:b:101:THR:HG21	1.85	0.42
34:a:1200:C:H1’	34:a:1204:A:N6	2.34	0.42
37:d:68:GLU:HA	37:d:71:PHE:CZ	2.52	0.42
38:e:110:MET:HA	38:e:113:VAL:HG12	2.02	0.42
39:f:93:LYS:O	39:f:94:HIS:ND1	2.53	0.42
45:l:29:LYS:HA	45:l:29:LYS:HD3	1.91	0.42
56:w:37:MIA:H153	57:x:16:U:H3	1.85	0.42
6:5:55:VAL:HA	8:A:1084:A:C5	2.55	0.42
7:6:5:ILE:HG13	13:F:63:LYS:HD3	2.02	0.42
8:A:567:U:H2’	8:A:568:U:O4’	2.20	0.42
8:A:627:A:P	19:L:78:ARG:HH11	2.43	0.42
8:A:885:C:H1’	8:A:886:A:O4’	2.19	0.42
8:A:996:A:H4’	24:Q:90:ASP:OD2	2.19	0.42
8:A:1047:G:N1	8:A:1110:G:H2’	2.35	0.42
8:A:1078:U:O2	8:A:1088:A:H8	2.02	0.42
8:A:1614:A:H2	26:S:93:ALA:HB2	1.84	0.42
8:A:1656:C:H2’	8:A:1657:U:H6	1.84	0.42
8:A:2252:G:H2’	8:A:2253:G:O4’	2.20	0.42
8:A:2297:A:C5	8:A:2320:U:C6	3.08	0.42
8:A:2536:G:H2’	8:A:2537:U:C6	2.55	0.42
8:A:2647:U:H2’	8:A:2648:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2880:C:O2'	21:N:90:ARG:HD2	2.20	0.42
10:C:75:ALA:HB1	10:C:93:VAL:HG12	2.02	0.42
10:C:251:THR:OG1	10:C:252:LYS:N	2.53	0.42
10:C:264:LYS:HB2	10:C:264:LYS:HE2	1.89	0.42
13:F:71:LYS:HE3	13:F:71:LYS:HB2	1.81	0.42
34:a:283:U:H2'	34:a:284:C:C6	2.55	0.42
34:a:333:U:OP1	53:t:2:ASN:HB2	2.19	0.42
34:a:416:G:O6	34:a:427:U:O2	2.38	0.42
34:a:1002:G:C4	34:a:1003:G:C8	3.08	0.42
34:a:1167:A:C8	34:a:1169:A:N6	2.88	0.42
36:c:134:LYS:HA	36:c:134:LYS:HD3	1.81	0.42
37:d:5:GLY:O	37:d:7:LYS:NZ	2.30	0.42
37:d:138:PRO:HB3	37:d:181:PHE:CD1	2.55	0.42
38:e:108:GLY:C	38:e:110:MET:H	2.28	0.42
40:g:45:ALA:O	40:g:48:THR:OG1	2.32	0.42
45:l:9:LYS:HE2	45:l:9:LYS:HB3	1.89	0.42
47:n:3:GLN:HA	47:n:6:LYS:HE3	2.02	0.42
47:n:42:TRP:CH2	47:n:46:LEU:HD21	2.54	0.42
50:q:39:ARG:HA	50:q:39:ARG:HD2	1.89	0.42
53:t:59:ARG:O	53:t:63:LYS:HG2	2.20	0.42
56:w:5:G:N1	56:w:68:C:N3	2.50	0.42
4:3:38:LYS:O	4:3:42:HIS:HD2	2.03	0.41
7:6:56:ARG:HD2	7:6:56:ARG:HA	1.88	0.41
7:6:64:PHE:HB3	7:6:66:ILE:HG23	2.02	0.41
8:A:301:G:C6	8:A:317:G:C6	3.08	0.41
8:A:547:A:HO2'	8:A:548:G:P	2.42	0.41
8:A:814:C:H2'	8:A:815:C:C6	2.55	0.41
8:A:863:A:H2'	8:A:864:G:C8	2.54	0.41
8:A:1715:G:O2'	8:A:1716:U:H6	2.03	0.41
8:A:1912:A:OP2	8:A:1918:A:N6	2.27	0.41
8:A:2188:U:O5'	8:A:2188:U:H6	2.03	0.41
8:A:2813:A:H2'	8:A:2814:A:H8	1.85	0.41
12:E:108:ILE:O	12:E:112:LEU:HG	2.20	0.41
13:F:148:VAL:HG12	13:F:148:VAL:O	2.19	0.41
34:a:33:A:H2'	34:a:34:C:H6	1.83	0.41
34:a:64:G:C2'	34:a:99:C:H41	2.32	0.41
34:a:459:A:N6	34:a:474:G:O6	2.51	0.41
34:a:474:G:C2	34:a:475:C:C2	3.08	0.41
34:a:1347:G:H3'	42:i:109:GLN:O	2.20	0.41
39:f:38:ARG:HH12	39:f:99:ALA:H	1.67	0.41
39:f:67:PRO:HB2	39:f:69:GLU:OE1	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:h:42:GLU:HG2	41:h:100:ILE:HG21	2.01	0.41
42:i:64:ILE:CG2	42:i:78:ILE:HD12	2.50	0.41
45:l:89:LEU:HD13	45:l:89:LEU:HA	1.91	0.41
56:w:26:A:C6	56:w:44:G:O6	2.71	0.41
56:w:73:A:N3	56:w:73:A:H2'	2.33	0.41
3:2:12:ARG:NE	3:2:44:VAL:HG21	2.35	0.41
8:A:184:C:H2'	8:A:185:G:C8	2.53	0.41
8:A:563:A:OP2	25:R:79:ARG:NH2	2.33	0.41
8:A:764:A:H5"	10:C:208:GLY:HA3	2.01	0.41
8:A:864:G:H2'	8:A:865:C:C6	2.55	0.41
8:A:954:G:N1	8:A:964:C:C2	2.88	0.41
8:A:1047:G:O2'	8:A:1048:A:OP2	2.38	0.41
8:A:1057:A:H5"	8:A:1060:U:O2	2.20	0.41
8:A:1084:A:O2'	8:A:1085:A:O4'	2.38	0.41
8:A:1936:A:H2	8:A:1943:U:N3	2.05	0.41
8:A:2060:A:C2'	12:E:63:LYS:HZ1	2.33	0.41
8:A:2456:C:C4	8:A:2457:PSU:C2	3.09	0.41
8:A:2521:C:C2	8:A:2545:G:N2	2.88	0.41
8:A:2726:A:O2'	8:A:2727:A:H8	2.02	0.41
10:C:227:VAL:HG13	10:C:228:ASP:OD1	2.21	0.41
14:G:104:LEU:HD11	14:G:147:LEU:HD22	2.01	0.41
34:a:258:G:C4	34:a:259:G:C8	3.07	0.41
34:a:619:U:O2'	37:d:129:VAL:HA	2.20	0.41
34:a:659:U:H2'	34:a:660:C:C6	2.55	0.41
34:a:683:G:N2	44:k:39:ASN:HA	2.35	0.41
34:a:1097:C:H2'	34:a:1098:C:C6	2.55	0.41
34:a:1230:C:O2'	34:a:1231:G:H5'	2.20	0.41
34:a:1320:C:H42	52:s:35:ARG:HB2	1.84	0.41
34:a:1360:A:C4	34:a:1361:G:C8	3.08	0.41
34:a:1459:G:H2'	34:a:1460:C:C6	2.55	0.41
34:a:1510:C:H2'	34:a:1511:G:C8	2.55	0.41
38:e:61:LYS:O	38:e:65:LYS:HG2	2.20	0.41
38:e:99:SER:HB3	38:e:102:THR:HG23	2.02	0.41
42:i:112:ARG:HH11	42:i:114:LYS:HE3	1.84	0.41
47:n:64:CYS:HA	47:n:73:PHE:CE1	2.55	0.41
48:o:62:ARG:HD2	48:o:86:LEU:HD21	2.01	0.41
49:p:53:ASP:O	49:p:57:ILE:HG12	2.20	0.41
58:y:91:LEU:O	58:y:95:ILE:HG12	2.19	0.41
8:A:52:A:H2'	8:A:53:A:C8	2.54	0.41
8:A:322:A:H1'	8:A:339:U:O2	2.20	0.41
8:A:820:A:C2	8:A:943:A:H4'	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:882:G:C6	8:A:883:G:C6	3.08	0.41
8:A:1022:G:N7	8:A:1140:C:N4	2.69	0.41
8:A:1075:C:H2'	8:A:1076:C:H6	1.84	0.41
8:A:1425:G:N2	8:A:1574:C:C4	2.88	0.41
8:A:1429:G:C2	8:A:1430:G:C5	3.08	0.41
8:A:1910:G:N2	8:A:1921:G:C4	2.88	0.41
8:A:2315:G:C2	8:A:2316:G:C4	3.09	0.41
8:A:2357:G:N1	8:A:2360:G:OP2	2.46	0.41
8:A:2773:C:H2'	8:A:2774:C:C6	2.55	0.41
9:B:54:G:H2'	9:B:55:U:H6	1.86	0.41
11:D:34:VAL:HG22	11:D:50:VAL:HG12	2.02	0.41
13:F:89:THR:HG21	13:F:91:ARG:HH11	1.84	0.41
29:V:34:LYS:HE2	29:V:34:LYS:HB2	1.80	0.41
31:X:39:VAL:O	31:X:43:LYS:N	2.53	0.41
34:a:269:C:C2	34:a:270:A:N7	2.89	0.41
34:a:369:G:C6	34:a:393:A:N1	2.88	0.41
34:a:456:A:H2	34:a:476:U:N3	2.17	0.41
34:a:661:G:O2'	34:a:662:U:H5'	2.19	0.41
34:a:1014:A:C6	34:a:1015:G:C6	3.08	0.41
34:a:1315:U:C2	34:a:1319:A:N6	2.88	0.41
34:a:1504:G:P	34:a:1507:A:H4'	2.61	0.41
41:h:5:PRO:HB2	41:h:32:LYS:CE	2.51	0.41
41:h:38:VAL:HG11	41:h:102:VAL:HG13	2.01	0.41
42:i:30:ASN:O	42:i:32:ARG:HG3	2.20	0.41
43:j:22:THR:HG21	43:j:39:PRO:HB3	2.02	0.41
46:m:3:ILE:HD12	46:m:55:LEU:HB3	2.03	0.41
46:m:67:ASP:HA	46:m:70:ARG:NH2	2.36	0.41
47:n:16:ALA:HA	47:n:55:SER:OG	2.19	0.41
53:t:50:PHE:O	53:t:53:MET:HG3	2.20	0.41
56:w:54:5MU:H5'	56:w:55:PSU:OP2	2.18	0.41
4:3:32:LEU:HD22	8:A:2419:U:OP2	2.21	0.41
8:A:132:G:H2'	8:A:133:U:C6	2.55	0.41
8:A:229:C:H2'	8:A:230:G:O4'	2.20	0.41
8:A:619:G:P	8:A:620:G:H22	2.43	0.41
8:A:812:C:H5"	8:A:1250:G:O2'	2.21	0.41
8:A:825:A:H2'	8:A:826:U:O4'	2.21	0.41
8:A:849:A:C4	8:A:850:U:C5	3.09	0.41
8:A:1052:C:O5'	8:A:1052:C:C6	2.74	0.41
8:A:1057:A:H3'	8:A:1060:U:O2	2.19	0.41
8:A:2024:G:C5	8:A:2040:G:C2	3.08	0.41
8:A:2079:U:H2'	8:A:2080:A:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2167:U:C2'	8:A:2170:A:H61	2.32	0.41
8:A:2247:A:H2'	8:A:2248:C:C6	2.54	0.41
8:A:2416:C:H2'	8:A:2417:C:H6	1.86	0.41
8:A:2494:G:O2'	20:M:79:ALA:HA	2.19	0.41
8:A:2526:G:C6	8:A:2527:C:C4	3.08	0.41
8:A:2743:U:O2'	14:G:152:ARG:NH1	2.53	0.41
10:C:106:PRO:HD2	10:C:109:LEU:HD22	2.02	0.41
10:C:215:VAL:HG23	10:C:215:VAL:O	2.20	0.41
12:E:24:ASN:HB3	12:E:27:LEU:HB3	2.02	0.41
15:H:42:LYS:HA	15:H:45:GLU:HG2	2.02	0.41
15:H:51:ARG:NH2	15:H:55:GLU:HG3	2.36	0.41
17:J:15:TRP:HA	17:J:53:TYR:O	2.20	0.41
19:L:10:GLU:OE1	19:L:10:GLU:N	2.46	0.41
28:U:98:ASN:OD1	28:U:100:GLU:HB3	2.20	0.41
34:a:321:A:C2'	34:a:322:C:H5'	2.51	0.41
34:a:464:U:N3	34:a:466:A:C5	2.88	0.41
34:a:617:G:H21	49:p:14:ARG:NH1	2.04	0.41
34:a:921:U:OP1	34:a:1081:A:C4	2.73	0.41
34:a:951:G:O6	46:m:103:THR:HG21	2.21	0.41
34:a:1010:U:C2	34:a:1011:C:C5	3.09	0.41
34:a:1087:G:C6	34:a:1088:G:C6	3.08	0.41
34:a:1119:C:OP1	42:i:84:ARG:NH1	2.53	0.41
34:a:1197:A:OP2	34:a:1197:A:H8	2.03	0.41
34:a:1221:G:N1	34:a:1222:G:N2	2.68	0.41
34:a:1240:U:OP1	40:g:115:MET:HB2	2.21	0.41
34:a:1465:A:H2'	34:a:1466:C:H6	1.85	0.41
35:b:20:ARG:C	35:b:22:TRP:N	2.78	0.41
42:i:43:ALA:O	42:i:47:VAL:HG23	2.20	0.41
7:6:15:SER:O	7:6:33:ASN:HA	2.19	0.41
8:A:335:C:H2'	8:A:336:C:H6	1.86	0.41
8:A:400:G:O6	31:X:53:LYS:NZ	2.54	0.41
8:A:458:G:N2	8:A:470:A:OP2	2.25	0.41
8:A:632:A:H2'	8:A:633:A:C8	2.55	0.41
8:A:774:G:O2'	8:A:775:G:P	2.78	0.41
8:A:922:C:H1'	30:W:22:PHE:CD2	2.56	0.41
8:A:1080:A:H2'	8:A:1081:U:H5"	2.01	0.41
8:A:1255:U:C5	12:E:68:ALA:HA	2.56	0.41
8:A:1957:C:H2'	8:A:1958:C:H6	1.85	0.41
8:A:2165:C:H2'	8:A:2166:U:C5	2.55	0.41
8:A:2168:G:C8	56:w:56:C:C2	3.09	0.41
8:A:2513:A:H2'	8:A:2514:U:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2572:A:OP1	8:A:2574:G:H4'	2.21	0.41
8:A:2798:U:H5"	8:A:2799:A:OP1	2.20	0.41
11:D:36:GLN:NE2	11:D:67:HIS:HE1	2.19	0.41
12:E:153:LEU:HD21	12:E:158:PHE:CD1	2.55	0.41
17:J:35:ARG:HA	17:J:40:HIS:ND1	2.35	0.41
30:W:15:LYS:HD3	30:W:15:LYS:HA	1.79	0.41
34:a:451:A:N7	34:a:481:G:C6	2.89	0.41
34:a:539:A:OP2	45:l:111:GLN:NE2	2.52	0.41
34:a:627:G:P	49:p:35:ARG:HH22	2.43	0.41
34:a:690:G:O2'	34:a:691:G:H5'	2.20	0.41
34:a:793:U:O4	34:a:1517:G:H8	2.04	0.41
34:a:818:G:H2'	34:a:820:U:H5	1.86	0.41
34:a:921:U:P	34:a:1082:A:O4'	2.78	0.41
34:a:1305:G:C4'	34:a:1306:A:H8	2.34	0.41
34:a:1347:G:H4'	34:a:1348:U:O5'	2.20	0.41
34:a:1496:C:C2	34:a:1497:G:C8	3.08	0.41
35:b:111:LYS:HB3	35:b:111:LYS:HE2	1.78	0.41
37:d:47:LEU:HD13	37:d:47:LEU:HA	1.93	0.41
38:e:87:VAL:HG22	38:e:92:ARG:HG3	2.02	0.41
41:h:17:GLN:NE2	41:h:69:ALA:HB1	2.35	0.41
44:k:28:ASN:HD21	44:k:47:GLY:HA3	1.85	0.41
49:p:6:LEU:HB3	49:p:17:TYR:HB3	2.02	0.41
50:q:8:GLN:HE22	50:q:78:VAL:HG21	1.85	0.41
7:6:12:ILE:N	7:6:24:ILE:O	2.31	0.41
8:A:70:G:H5"	8:A:112:U:O2	2.20	0.41
8:A:277:G:N2	8:A:359:G:N7	2.65	0.41
8:A:382:A:H2'	8:A:383:C:O4'	2.21	0.41
8:A:443:A:C8	12:E:40:ARG:HG3	2.55	0.41
8:A:458:G:HO2'	8:A:459:U:P	2.42	0.41
8:A:1326:U:O2'	8:A:2010:G:O2'	2.36	0.41
8:A:1391:U:N3	8:A:1394:U:OP2	2.46	0.41
8:A:1453:A:C8	21:N:73:ASN:HB3	2.56	0.41
8:A:1521:G:OP2	8:A:1522:A:O2'	2.23	0.41
8:A:1812:U:C2	8:A:1813:G:C8	3.09	0.41
8:A:2032:G:N2	11:D:151:THR:OG1	2.53	0.41
8:A:2682:A:N6	8:A:2728:U:H1'	2.36	0.41
8:A:2702:G:H2'	8:A:2703:C:H6	1.86	0.41
8:A:2803:G:O2'	8:A:2804:U:H5'	2.21	0.41
9:B:8:C:OP1	22:O:15:ARG:NH2	2.53	0.41
12:E:48:THR:C	12:E:50:ALA:H	2.27	0.41
12:E:176:ASP:O	12:E:179:SER:OG	2.38	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:G:66:THR:O	14:G:70:LEU:HG	2.21	0.41
14:G:85:LYS:HD2	14:G:131:VAL:HG13	2.02	0.41
18:K:16:ALA:O	18:K:17:ARG:HD3	2.20	0.41
34:a:6:G:N7	38:e:102:THR:HG21	2.36	0.41
34:a:30:U:N3	34:a:553:A:N6	2.66	0.41
34:a:193:C:H2'	34:a:194:C:C6	2.55	0.41
34:a:361:G:H2'	34:a:362:G:O4'	2.21	0.41
34:a:405:U:H1'	34:a:498:A:H2'	2.01	0.41
34:a:888:G:C8	34:a:889:A:H2'	2.56	0.41
34:a:1270:G:C2	34:a:1271:A:C5	3.08	0.41
34:a:1521:C:H2'	34:a:1522:U:C6	2.56	0.41
36:c:137:VAL:HG21	36:c:169:GLU:OE2	2.20	0.41
36:c:178:ARG:HG3	36:c:206:ILE:H	1.86	0.41
37:d:146:GLU:O	37:d:147:LYS:HB3	2.21	0.41
40:g:110:ARG:HD3	40:g:122:GLU:HG2	2.03	0.41
40:g:125:ASP:HA	40:g:128:GLU:HG2	2.03	0.41
53:t:20:ASN:HB3	53:t:24:ARG:NH1	2.36	0.41
56:w:30:G:C2	56:w:31:A:C8	3.09	0.41
56:w:64:A:H2'	56:w:65:G:O4'	2.20	0.41
2:1:7:LYS:HA	2:1:23:THR:HA	2.02	0.41
5:4:1:MET:N	8:A:2526:G:N3	2.68	0.41
8:A:116:C:H2'	8:A:117:G:O4'	2.19	0.41
8:A:217:A:H2'	8:A:218:A:H8	1.86	0.41
8:A:258:G:O2'	19:L:103:ILE:HD12	2.21	0.41
8:A:301:G:C4	8:A:302:C:C5	3.08	0.41
8:A:764:A:H5"	10:C:208:GLY:HA2	2.01	0.41
8:A:902:C:H2'	8:A:903:C:H6	1.85	0.41
8:A:1205:A:O2'	8:A:1206:G:OP1	2.32	0.41
8:A:1515:A:H5'	8:A:1516:G:OP2	2.20	0.41
8:A:1590:A:H2'	8:A:1591:A:H8	1.86	0.41
8:A:2100:G:C6	8:A:2101:A:N7	2.89	0.41
8:A:2156:G:OP1	8:A:2157:G:C6	2.74	0.41
8:A:2305:U:C4	13:F:151:LEU:HA	2.56	0.41
8:A:2558:C:O3'	58:y:65:SER:OG	2.37	0.41
8:A:2577:A:H2'	8:A:2614:A:N6	2.35	0.41
8:A:2784:U:H2'	8:A:2785:C:C6	2.56	0.41
10:C:110:LYS:HE2	10:C:110:LYS:HB2	1.72	0.41
11:D:121:THR:HB	11:D:127:PHE:CD2	2.56	0.41
13:F:49:LEU:HD11	13:F:66:ILE:HG22	2.02	0.41
19:L:108:ALA:HB3	19:L:125:LEU:HG	2.01	0.41
22:O:34:HIS:CE1	22:O:54:VAL:HA	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:R:38:VAL:HG11	25:R:41:ILE:HD11	2.03	0.41
27:T:2:ILE:HG12	27:T:7:LEU:HD21	2.03	0.41
29:V:33:GLY:C	29:V:34:LYS:HD3	2.45	0.41
29:V:48:MET:SD	29:V:86:LEU:HG	2.61	0.41
32:Y:48:ARG:HA	32:Y:48:ARG:HD3	1.96	0.41
34:a:431:A:C4	34:a:432:A:C8	3.08	0.41
34:a:474:G:C6	34:a:475:C:C4	3.08	0.41
34:a:1077:G:N2	34:a:1080:A:OP2	2.33	0.41
34:a:1097:C:O2'	34:a:1169:A:N3	2.47	0.41
34:a:1288:A:C5	34:a:1289:A:C5	3.08	0.41
34:a:1447:A:O5'	34:a:1448:C:H5	2.04	0.41
37:d:61:ARG:NH2	37:d:68:GLU:HA	2.36	0.41
40:g:131:GLY:O	40:g:134:VAL:HG22	2.20	0.41
41:h:17:GLN:OE1	41:h:64:TYR:HE1	2.02	0.41
43:j:12:ALA:O	43:j:69:THR:HA	2.20	0.41
45:l:58:ASN:OD1	45:l:60:PHE:HB2	2.20	0.41
52:s:32:THR:OG1	52:s:33:TRP:N	2.53	0.41
53:t:11:ILE:HD12	53:t:11:ILE:H	1.86	0.41
56:w:22:G:H2'	56:w:23:A:H8	1.86	0.41
4:3:30:HIS:HE2	8:A:2422:C:H41	1.67	0.41
6:5:102:ALA:HA	6:5:105:LYS:CB	2.51	0.41
8:A:140:C:H4'	8:A:141:G:O5'	2.20	0.41
8:A:145:C:H2'	8:A:146:A:C8	2.56	0.41
8:A:335:C:H2'	8:A:336:C:C6	2.55	0.41
8:A:358:U:H2'	8:A:359:G:C8	2.56	0.41
8:A:368:A:H2'	8:A:369:U:O4'	2.20	0.41
8:A:401:A:H2'	8:A:402:A:C8	2.56	0.41
8:A:949:G:C4	8:A:969:G:N2	2.89	0.41
8:A:978:G:O4'	8:A:1001:A:H2	2.02	0.41
8:A:1125:G:C6	8:A:1126:A:N6	2.89	0.41
8:A:1152:C:H2'	8:A:1153:C:C6	2.56	0.41
8:A:1604:C:C2	8:A:1605:C:C5	3.09	0.41
8:A:1614:A:C6	26:S:87:PRO:HB3	2.55	0.41
8:A:1843:C:H2'	8:A:1844:C:C6	2.55	0.41
8:A:2131:U:H1'	8:A:2133:G:O4'	2.21	0.41
8:A:2217:G:C6	8:A:2218:G:N7	2.89	0.41
8:A:2251:OMG:HM23	8:A:2251:OMG:H1'	1.56	0.41
8:A:2299:U:H2'	8:A:2300:C:C6	2.55	0.41
8:A:2836:U:H2'	8:A:2837:A:C8	2.56	0.41
12:E:123:LYS:HE3	12:E:125:SER:HB2	2.03	0.41
12:E:131:THR:HG22	12:E:160:ALA:O	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:G:132:LEU:HD11	14:G:147:LEU:HD12	2.03	0.41
14:G:159:LYS:HB3	14:G:159:LYS:HE2	1.70	0.41
18:K:66:LYS:HB3	18:K:66:LYS:HE2	1.88	0.41
18:K:113:MET:HE2	18:K:113:MET:HA	2.02	0.41
23:P:75:THR:HB	23:P:76:HIS:CD2	2.55	0.41
28:U:38:ILE:HD13	28:U:38:ILE:HA	1.88	0.41
34:a:423:G:H3'	34:a:423:G:N3	2.35	0.41
34:a:617:G:H1'	49:p:14:ARG:NH2	2.36	0.41
34:a:626:G:OP1	49:p:18:GLN:NE2	2.31	0.41
34:a:669:G:H2'	34:a:670:G:C8	2.55	0.41
34:a:838:G:C6	34:a:849:G:C5	3.09	0.41
34:a:846:G:H2'	34:a:847:G:O4'	2.21	0.41
34:a:878:A:P	41:h:79:ARG:HH11	2.42	0.41
34:a:959:A:H2	34:a:1221:G:N3	2.19	0.41
34:a:1305:G:H4'	34:a:1306:A:H8	1.86	0.41
34:a:1315:U:N3	34:a:1319:A:N7	2.68	0.41
34:a:1465:A:H2'	34:a:1466:C:C6	2.56	0.41
35:b:13:VAL:HA	35:b:15:PHE:CZ	2.56	0.41
37:d:61:ARG:HH22	37:d:68:GLU:CD	2.24	0.41
43:j:5:ARG:HD3	43:j:78:GLU:H	1.85	0.41
45:l:35:ARG:HB2	45:l:53:ARG:HB3	2.02	0.41
45:l:106:VAL:HB	45:l:109:ARG:HG2	2.03	0.41
47:n:42:TRP:O	47:n:45:VAL:HG22	2.20	0.41
52:s:32:THR:HG21	52:s:70:LEU:HD23	2.01	0.41
52:s:73:PHE:O	52:s:75:PRO:HD3	2.20	0.41
56:w:4:C:C2'	56:w:5:G:H5'	2.50	0.41
3:2:24:THR:OG1	3:2:25:LYS:N	2.53	0.41
7:6:5:ILE:HD12	7:6:5:ILE:HA	1.92	0.41
8:A:20:C:H2'	8:A:21:A:H8	1.86	0.41
8:A:26:G:H2'	8:A:27:G:O4'	2.20	0.41
8:A:36:G:C6	8:A:37:C:C4	3.09	0.41
8:A:413:C:O2'	8:A:1880:U:O2'	2.30	0.41
8:A:445:C:O2	8:A:449:A:H2	2.04	0.41
8:A:483:A:H1'	28:U:56:GLY:O	2.21	0.41
8:A:499:U:H2'	8:A:500:G:O4'	2.21	0.41
8:A:534:U:H2'	8:A:535:G:H8	1.86	0.41
8:A:636:G:O5'	19:L:128:THR:HB	2.21	0.41
8:A:678:C:H2'	8:A:679:C:C6	2.55	0.41
8:A:678:C:H2'	8:A:679:C:H6	1.86	0.41
8:A:814:C:H2'	8:A:815:C:H6	1.86	0.41
8:A:882:G:C2	8:A:895:U:C2	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:918:A:H4'	9:B:97:C:O2	2.20	0.41
8:A:983:A:H62	8:A:984:A:H62	1.68	0.41
8:A:1089:A:O2'	8:A:1090:A:P	2.79	0.41
8:A:1153:C:H2'	8:A:1154:G:O4'	2.20	0.41
8:A:1190:G:H2'	8:A:1191:G:H8	1.85	0.41
8:A:1241:A:H3'	8:A:1242:U:H6	1.85	0.41
8:A:1283:G:H1'	8:A:1329:U:O2	2.21	0.41
8:A:1317:G:H2'	8:A:1318:U:C6	2.55	0.41
8:A:1535:A:C6	8:A:1537:G:C8	3.09	0.41
8:A:1582:C:HO2'	8:A:1585:C:N4	2.18	0.41
8:A:1599:U:H2'	8:A:1600:C:C6	2.56	0.41
8:A:1657:U:H2'	8:A:1658:C:C6	2.53	0.41
8:A:1827:U:OP2	10:C:220:ARG:HD2	2.21	0.41
8:A:1847:G:H1'	8:A:1848:A:C8	2.56	0.41
8:A:2328:A:H8	8:A:2328:A:O5'	2.04	0.41
8:A:2370:G:H2'	8:A:2371:G:C8	2.55	0.41
8:A:2593:U:H2'	8:A:2594:C:C6	2.56	0.41
8:A:2749:A:H5"	14:G:1:SER:HB3	2.02	0.41
8:A:2820:A:O2'	8:A:2821:A:P	2.79	0.41
8:A:2832:U:O2'	8:A:2833:U:P	2.79	0.41
9:B:32:U:C2	9:B:51:G:N2	2.89	0.41
9:B:40:U:O2'	9:B:41:G:H5'	2.21	0.41
9:B:76:G:H2'	9:B:77:U:O4'	2.21	0.41
10:C:156:SER:C	10:C:159:THR:HG1	2.28	0.41
10:C:224:MET:HB3	10:C:228:ASP:HB2	2.03	0.41
13:F:79:ARG:HA	13:F:79:ARG:HD2	1.90	0.41
13:F:95:MET:HE3	13:F:96:TRP:NE1	2.36	0.41
13:F:173:ASP:O	13:F:174:PHE:C	2.63	0.41
13:F:174:PHE:O	13:F:175:PRO:C	2.64	0.41
15:H:104:THR:OG1	15:H:109:GLU:HB3	2.20	0.41
17:J:11:VAL:HG21	17:J:50:THR:HG22	2.03	0.41
18:K:40:LYS:NZ	18:K:89:ASN:OD1	2.52	0.41
26:S:11:ARG:HD2	26:S:11:ARG:HA	1.75	0.41
31:X:40:GLU:OE1	31:X:40:GLU:N	2.53	0.41
34:a:109:A:H8	34:a:327:A:O4'	2.04	0.41
34:a:226:G:H2'	34:a:227:G:C8	2.56	0.41
34:a:378:G:H2'	34:a:379:C:H6	1.86	0.41
34:a:493:A:N3	34:a:493:A:H2'	2.36	0.41
34:a:537:G:H2'	34:a:538:G:H8	1.86	0.41
34:a:596:A:C4	34:a:597:G:C8	3.09	0.41
34:a:604:G:C6	34:a:635:A:N6	2.89	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:643:C:C2	34:a:644:U:C5	3.08	0.41
34:a:789:U:O2'	34:a:791:G:N7	2.38	0.41
34:a:839:C:H2'	34:a:840:C:O4'	2.21	0.41
34:a:902:G:H2'	34:a:903:G:H8	1.86	0.41
34:a:920:U:OP2	34:a:920:U:C6	2.74	0.41
34:a:1021:A:C6	34:a:1022:A:C5	3.09	0.41
34:a:1040:U:C2'	34:a:1041:G:H5'	2.51	0.41
34:a:1060:U:H5"	43:j:53:ILE:CG2	2.45	0.41
34:a:1133:G:H2'	34:a:1134:G:C8	2.56	0.41
34:a:1144:G:H21	34:a:1146:A:N6	2.19	0.41
34:a:1217:C:H2'	34:a:1218:C:C6	2.53	0.41
34:a:1248:A:O2'	34:a:1249:C:P	2.79	0.41
34:a:1262:C:O2	34:a:1262:C:H2'	2.21	0.41
34:a:1328:C:H5"	46:m:27:THR:CG2	2.43	0.41
34:a:1460:C:H2'	34:a:1461:G:O4'	2.21	0.41
34:a:1492:A:OP2	45:l:43:LYS:HE2	2.21	0.41
36:c:62:SER:OG	36:c:97:PRO:HG2	2.21	0.41
36:c:156:LEU:H	36:c:156:LEU:HG	1.58	0.41
39:f:71:ILE:O	39:f:75:GLU:HG2	2.20	0.41
40:g:142:ARG:O	40:g:146:ALA:CB	2.68	0.41
42:i:51:LEU:CD2	42:i:62:LEU:HD11	2.51	0.41
43:j:76:ILE:HG13	43:j:76:ILE:O	2.21	0.41
46:m:23:GLY:CA	46:m:68:LEU:HD22	2.49	0.41
46:m:64:VAL:H	46:m:67:ASP:HB3	1.86	0.41
47:n:27:LYS:HA	47:n:30:ILE:HD12	2.02	0.41
49:p:38:PHE:O	49:p:50:THR:CG2	2.40	0.41
51:r:44:THR:OG1	51:r:46:THR:OG1	2.16	0.41
51:r:72:ARG:HG3	54:u:4:LYS:NZ	2.36	0.41
53:t:4:LYS:HG2	53:t:5:SER:H	1.86	0.41
56:w:37:MIA:C15	57:x:16:U:H3	2.34	0.41
58:y:3:VAL:HG23	58:y:9:ALA:HB2	2.03	0.41
1:0:3:GLN:HB3	8:A:2615:U:H1'	2.03	0.41
2:1:43:ARG:NH2	8:A:643:A:H1'	2.36	0.41
8:A:64:A:N1	8:A:91:A:N6	2.69	0.41
8:A:102:U:O4	32:Y:2:LYS:N	2.54	0.41
8:A:578:G:OP1	8:A:1255:U:O2'	2.34	0.41
8:A:644:A:N1	8:A:2369:A:H1'	2.35	0.41
8:A:879:G:C4	8:A:880:G:C8	3.09	0.41
8:A:1417:C:H1'	8:A:1586:A:N1	2.36	0.41
8:A:1685:C:H2'	8:A:1686:C:H6	1.86	0.41
8:A:2126:A:H4'	8:A:2173:A:N1	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2140:G:N2	8:A:2141:G:O6	2.53	0.41
8:A:2386:A:O2'	30:W:37:ARG:NH1	2.54	0.41
11:D:27:ILE:HG23	11:D:201:LEU:HD12	2.03	0.41
13:F:169:LEU:HD13	13:F:174:PHE:CD2	2.56	0.41
18:K:91:SER:HB2	18:K:93:GLN:HG2	2.02	0.41
20:M:11:LYS:HD3	20:M:86:LYS:HD3	2.03	0.41
20:M:56:ALA:HB2	20:M:119:LEU:HD12	2.02	0.41
21:N:24:MET:HE2	21:N:44:LEU:HD22	2.02	0.41
21:N:86:ARG:HH21	21:N:117:ASP:HB2	1.86	0.41
24:Q:98:ALA:HB2	24:Q:105:PHE:CE2	2.56	0.41
29:V:76:ASP:OD1	29:V:77:VAL:N	2.53	0.41
32:Y:46:VAL:O	32:Y:50:VAL:HG23	2.21	0.41
34:a:203:G:HO2'	34:a:466:A:N6	2.14	0.41
34:a:298:A:C6	34:a:299:G:C2	3.09	0.41
34:a:667:G:H4'	48:o:50:HIS:ND1	2.36	0.41
34:a:719:C:N3	51:r:38:ILE:HD12	2.36	0.41
34:a:840:C:H6	34:a:840:C:OP2	2.04	0.41
34:a:981:U:H2'	34:a:982:U:C5	2.55	0.41
34:a:1441:A:H3'	34:a:1441:A:N3	2.36	0.41
39:f:12:PRO:HB3	39:f:57:ALA:HA	2.03	0.41
39:f:14:GLN:O	39:f:18:VAL:HG23	2.21	0.41
40:g:118:ARG:O	40:g:121:ASN:HB2	2.20	0.41
47:n:74:LEU:O	47:n:78:GLY:N	2.52	0.41
49:p:67:ILE:HG23	49:p:71:VAL:HG12	2.02	0.41
8:A:309:A:N3	8:A:329:G:O2'	2.43	0.40
8:A:552:U:C2	8:A:553:G:C8	3.09	0.40
8:A:864:G:O2'	8:A:865:C:H5'	2.21	0.40
8:A:1129:A:N1	8:A:2569:G:O2'	2.52	0.40
8:A:1170:C:H2'	8:A:1171:G:C8	2.57	0.40
8:A:1720:U:H2'	8:A:1721:G:O4'	2.22	0.40
8:A:1838:C:C2	8:A:1898:U:C4	3.09	0.40
8:A:1989:G:H2'	8:A:1990:C:O4'	2.21	0.40
8:A:2341:G:H2'	8:A:2342:C:C6	2.55	0.40
8:A:2391:G:H1'	8:A:2424:C:N4	2.30	0.40
8:A:2780:G:OP2	17:J:120:ARG:NE	2.55	0.40
10:C:50:THR:OG1	10:C:53:ILE:HD12	2.20	0.40
11:D:51:THR:HG21	11:D:68:PHE:CE1	2.57	0.40
14:G:104:LEU:HD21	14:G:130:ILE:HD11	2.03	0.40
24:Q:4:LYS:HB3	24:Q:4:LYS:HE2	1.74	0.40
34:a:3:A:H5"	34:a:4:U:C4'	2.51	0.40
34:a:98:A:H2'	34:a:99:C:C6	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:195:A:OP1	53:t:59:ARG:NE	2.51	0.40
34:a:253:A:OP2	50:q:68:LYS:NZ	2.52	0.40
34:a:432:A:H2'	34:a:433:G:O4'	2.21	0.40
34:a:448:A:H2'	34:a:449:G:H5'	2.02	0.40
34:a:580:C:H2'	34:a:581:G:O4'	2.20	0.40
34:a:834:U:H2'	34:a:835:U:C6	2.56	0.40
34:a:1250:A:H2'	34:a:1251:A:C8	2.56	0.40
34:a:1304:G:N2	34:a:1333:A:H62	2.15	0.40
35:b:115:ASP:O	35:b:119:GLN:HG3	2.21	0.40
35:b:125:PHE:CZ	35:b:136:ARG:HB3	2.56	0.40
37:d:114:ARG:O	37:d:118:SER:OG	2.32	0.40
40:g:48:THR:OG1	40:g:120:ALA:HB2	2.21	0.40
43:j:5:ARG:HB3	43:j:77:VAL:HA	2.03	0.40
43:j:22:THR:HG23	43:j:74:VAL:HG22	2.03	0.40
47:n:47:LYS:HE3	47:n:47:LYS:HB3	1.81	0.40
48:o:44:GLU:HG3	48:o:45:HIS:CD2	2.57	0.40
49:p:23:ASP:OD1	49:p:24:SER:N	2.53	0.40
53:t:30:PHE:O	53:t:34:VAL:HG23	2.21	0.40
56:w:19:G:C4	56:w:57:G:N2	2.90	0.40
1:0:48:TYR:CD2	21:N:98:LEU:HD22	2.56	0.40
2:1:24:LYS:HE3	2:1:24:LYS:HB2	1.87	0.40
4:3:54:LEU:HD12	4:3:54:LEU:HA	1.91	0.40
7:6:41:HIS:CE1	13:F:108:PRO:HB2	2.55	0.40
8:A:302:C:C2	8:A:303:G:C8	3.10	0.40
8:A:374:A:N6	8:A:400:G:O2'	2.52	0.40
8:A:1084:A:H5'	8:A:1084:A:C8	2.54	0.40
8:A:1168:G:C6	8:A:1182:G:C6	3.10	0.40
8:A:1436:G:N3	8:A:1515:A:H2	2.19	0.40
8:A:1905:C:O2'	8:A:1929:G:H1'	2.22	0.40
8:A:1975:G:H2'	8:A:1976:U:C6	2.57	0.40
8:A:2262:U:H2'	8:A:2263:C:C6	2.55	0.40
8:A:2271:G:OP1	30:W:14:ALA:HB1	2.22	0.40
8:A:2467:C:H2'	8:A:2468:A:O4'	2.21	0.40
8:A:2589:A:H2'	8:A:2590:A:H8	1.86	0.40
8:A:2625:G:H2'	8:A:2626:C:O4'	2.22	0.40
10:C:16:VAL:H	10:C:203:VAL:HG22	1.85	0.40
22:O:60:GLU:C	22:O:62:LEU:H	2.29	0.40
25:R:40:MET:HG3	25:R:49:ILE:HA	2.04	0.40
29:V:26:PHE:HZ	29:V:47:VAL:HG11	1.86	0.40
34:a:227:G:H2'	34:a:228:A:C8	2.55	0.40
34:a:374:A:N6	34:a:391:G:O4'	2.53	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:541:G:H2'	34:a:542:G:C8	2.56	0.40
34:a:545:C:H2'	34:a:546:A:O4'	2.20	0.40
34:a:655:A:C6	34:a:656:G:C5	3.09	0.40
34:a:707:U:OP1	44:k:86:LYS:NZ	2.53	0.40
34:a:846:G:H8	34:a:846:G:O5'	2.04	0.40
34:a:953:G:H2'	34:a:954:G:H8	1.85	0.40
34:a:966:2MG:HO2'	34:a:967:5MC:P	2.43	0.40
34:a:1123:U:H2'	34:a:1124:G:O4'	2.22	0.40
34:a:1297:G:N2	40:g:113:LYS:HG2	2.36	0.40
34:a:1347:G:O2'	34:a:1373:G:N2	2.54	0.40
36:c:19:SER:HB3	36:c:21:TRP:NE1	2.36	0.40
37:d:20:LEU:H	37:d:20:LEU:HD12	1.86	0.40
38:e:149:PRO:HA	38:e:152:VAL:HG22	2.04	0.40
39:f:11:HIS:ND1	39:f:12:PRO:HD2	2.37	0.40
41:h:37:ASN:O	41:h:41:GLU:HG3	2.21	0.40
41:h:104:SER:HB2	41:h:125:ILE:HD11	2.03	0.40
43:j:49:PHE:HD2	47:n:74:LEU:HD21	1.87	0.40
43:j:53:ILE:HG12	43:j:63:ASP:HB2	2.03	0.40
44:k:55:ARG:HA	44:k:55:ARG:HD2	1.92	0.40
44:k:67:GLU:OE2	44:k:98:ALA:HB1	2.22	0.40
5:4:3:VAL:HG12	5:4:3:VAL:O	2.22	0.40
7:6:62:LYS:HD2	7:6:62:LYS:HA	1.92	0.40
8:A:64:A:H2'	8:A:65:U:H6	1.84	0.40
8:A:357:C:H2'	8:A:358:U:C6	2.55	0.40
8:A:372:G:P	31:X:61:LYS:HE3	2.62	0.40
8:A:391:A:H1'	8:A:411:G:O4'	2.21	0.40
8:A:517:C:O2'	26:S:78:GLU:OE2	2.39	0.40
8:A:552:U:H2'	8:A:553:G:H8	1.86	0.40
8:A:974:G:O2'	8:A:989:G:N2	2.52	0.40
8:A:996:A:H1'	25:R:9:GLY:O	2.21	0.40
8:A:1056:G:H21	8:A:1104:C:N4	2.19	0.40
8:A:1116:G:H2'	8:A:1117:C:H5'	2.02	0.40
8:A:1902:C:H4'	10:C:241:LYS:O	2.21	0.40
8:A:1914:C:C6	58:y:106:ARG:HG3	2.56	0.40
8:A:1928:A:H2'	8:A:1929:G:O4'	2.20	0.40
8:A:1953:A:H2	8:A:2549:G:N3	2.20	0.40
8:A:2315:G:N1	8:A:2316:G:C5	2.90	0.40
8:A:2507:C:H2'	8:A:2508:G:O4'	2.22	0.40
8:A:2552:OMU:HM23	8:A:2552:OMU:H1'	1.73	0.40
8:A:2670:A:H2'	8:A:2671:G:O4'	2.22	0.40
8:A:2698:U:H2'	8:A:2699:C:H6	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:G:136:ASP:OD1	14:G:139:VAL:N	2.34	0.40
19:L:127:VAL:HG21	19:L:142:ILE:HD13	2.03	0.40
20:M:19:GLY:O	20:M:38:ARG:NH2	2.42	0.40
21:N:49:GLU:HB2	21:N:50:PRO:HD3	2.03	0.40
23:P:75:THR:HB	23:P:76:HIS:HD2	1.87	0.40
25:R:3:ALA:HB1	25:R:38:VAL:HG13	2.03	0.40
28:U:6:ARG:NH2	28:U:6:ARG:O	2.46	0.40
34:a:123:U:H5"	34:a:311:C:O2'	2.21	0.40
34:a:146:G:C4	34:a:177:G:C8	3.09	0.40
34:a:210:C:H4'	34:a:212:G:OP2	2.22	0.40
34:a:300:A:H2'	34:a:301:G:O4'	2.21	0.40
34:a:385:C:H2'	34:a:386:C:H6	1.85	0.40
34:a:575:G:O2'	34:a:821:G:OP2	2.37	0.40
34:a:605:U:N3	34:a:606:G:N7	2.68	0.40
34:a:718:A:H5'	44:k:118:ASN:HB2	2.03	0.40
34:a:1320:C:N4	52:s:35:ARG:HB2	2.37	0.40
34:a:1339:A:H1'	56:w:41:C:H1'	2.02	0.40
38:e:61:LYS:HA	38:e:64:GLU:OE2	2.22	0.40
40:g:113:LYS:HD3	40:g:114:SER:OG	2.21	0.40
43:j:79:PRO:HG2	43:j:81:GLU:OE2	2.21	0.40
45:l:48:LEU:HD23	45:l:48:LEU:HA	1.81	0.40
47:n:82:ILE:H	47:n:82:ILE:HG13	1.67	0.40
53:t:7:LYS:O	53:t:7:LYS:CG	2.65	0.40
54:u:20:ARG:HA	54:u:23:GLU:HG2	2.02	0.40
2:1:29:LYS:HA	2:1:29:LYS:HD3	1.82	0.40
8:A:249:C:O5'	8:A:2394:C:O2'	2.40	0.40
8:A:279:A:O5'	8:A:279:A:H8	2.04	0.40
8:A:356:G:H2'	8:A:357:C:O4'	2.21	0.40
8:A:649:G:H2'	8:A:650:C:H6	1.84	0.40
8:A:1048:A:C5	8:A:1049:C:C5	3.10	0.40
8:A:1189:A:N6	8:A:1190:G:C2	2.89	0.40
8:A:1190:G:H2'	8:A:1191:G:C8	2.56	0.40
8:A:1519:G:H2'	8:A:1520:U:O4'	2.21	0.40
8:A:1558:C:O4'	8:A:1560:G:C8	2.74	0.40
8:A:1637:A:H5'	8:A:1760:C:O2'	2.20	0.40
8:A:1789:A:O3'	10:C:217:PRO:HB3	2.21	0.40
8:A:2273:A:H2'	8:A:2274:A:C8	2.57	0.40
8:A:2661:G:H2'	8:A:2662:A:O4'	2.21	0.40
8:A:2666:C:N4	14:G:108:PHE:O	2.54	0.40
12:E:16:GLU:O	12:E:20:GLY:N	2.53	0.40
12:E:100:MET:HE2	12:E:100:MET:HB3	1.91	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:F:48:LEU:HD11	13:F:149:ARG:HH12	1.86	0.40
14:G:144:ALA:HB1	14:G:163:TYR:HE1	1.86	0.40
17:J:99:ARG:HD2	17:J:99:ARG:HA	1.82	0.40
19:L:18:ARG:HH21	19:L:21:ARG:HD2	1.87	0.40
28:U:95:PHE:CE1	28:U:102:ILE:HG12	2.57	0.40
34:a:34:C:H2'	34:a:35:G:C8	2.57	0.40
34:a:49:U:O2'	34:a:50:A:H2'	2.22	0.40
34:a:377:G:H2'	34:a:378:G:C8	2.56	0.40
34:a:415:A:C4	34:a:416:G:C8	3.09	0.40
34:a:441:A:H3'	34:a:442:G:C8	2.56	0.40
34:a:451:A:C5	34:a:481:G:C2	3.09	0.40
34:a:454:G:H1	34:a:478:A:H2	1.67	0.40
34:a:743:A:H2'	34:a:744:C:H6	1.85	0.40
34:a:1082:A:C6	34:a:1083:U:C5	3.09	0.40
34:a:1139:G:N2	34:a:1143:G:C6	2.90	0.40
34:a:1140:C:H2'	34:a:1141:C:C6	2.56	0.40
35:b:11:ALA:HB3	35:b:211:LEU:HD21	2.01	0.40
36:c:147:GLY:HA3	36:c:171:ARG:O	2.22	0.40
39:f:9:MET:HE1	39:f:51:ILE:HD12	2.04	0.40
43:j:30:LYS:NZ	43:j:36:VAL:H	2.20	0.40
50:q:13:SER:HB2	50:q:15:LYS:NZ	2.36	0.40
50:q:20:ILE:HG13	50:q:45:VAL:HB	2.03	0.40
51:r:46:THR:O	51:r:47:ARG:C	2.65	0.40
52:s:11:ASP:HB3	52:s:13:HIS:CD2	2.57	0.40
58:y:40:ARG:HH22	58:y:69:VAL:HG11	1.84	0.40
8:A:292:U:H2'	8:A:293:U:C6	2.56	0.40
8:A:629:G:N3	8:A:639:U:O2'	2.53	0.40
8:A:635:C:O2'	8:A:639:U:OP1	2.31	0.40
8:A:984:A:H2'	8:A:984:A:N3	2.37	0.40
8:A:1047:G:H1'	8:A:1110:G:N2	2.37	0.40
8:A:1720:U:C2	8:A:1740:G:O6	2.74	0.40
8:A:1843:C:H2'	8:A:1844:C:H6	1.86	0.40
8:A:2135:A:H8	8:A:2158:A:H4'	1.85	0.40
8:A:2165:C:H5	8:A:2167:U:H6	1.69	0.40
8:A:2488:G:C4	8:A:2489:U:C5	3.10	0.40
8:A:2646:C:H6	8:A:2646:C:O5'	2.04	0.40
8:A:2747:G:O6	8:A:2755:C:H5"	2.20	0.40
8:A:2793:C:H2'	8:A:2794:C:O4'	2.21	0.40
8:A:2820:A:C6	21:N:4:ARG:NH1	2.89	0.40
9:B:49:C:OP1	22:O:102:ARG:HG3	2.22	0.40
11:D:10:GLY:H	11:D:197:THR:HG23	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:D:101:PHE:HD1	11:D:104:VAL:HG21	1.87	0.40
13:F:53:ALA:HB1	13:F:64:PRO:CG	2.51	0.40
13:F:59:ILE:HG22	13:F:98:PHE:HE2	1.85	0.40
15:H:45:GLU:HG3	15:H:46:PHE:CD1	2.57	0.40
19:L:30:THR:O	19:L:32:GLY:N	2.55	0.40
19:L:92:LEU:C	19:L:94:THR:H	2.30	0.40
20:M:50:ARG:O	20:M:54:THR:HG22	2.21	0.40
23:P:28:LYS:HE3	23:P:39:LEU:HD23	2.04	0.40
34:a:71:A:C6	34:a:72:A:C8	3.10	0.40
34:a:146:G:N2	34:a:147:G:C2	2.90	0.40
34:a:255:G:C2	34:a:272:C:C2	3.09	0.40
34:a:546:A:P	37:d:68:GLU:H	2.44	0.40
34:a:921:U:C6	34:a:1082:A:P	3.07	0.40
34:a:976:G:H5"	34:a:1358:U:O2'	2.22	0.40
34:a:1008:U:C4	34:a:1009:U:C5	3.08	0.40
34:a:1074:G:N2	34:a:1102:A:C4	2.90	0.40
34:a:1169:A:H8	34:a:1169:A:OP2	2.05	0.40
34:a:1240:U:P	40:g:115:MET:HB2	2.62	0.40
36:c:87:ARG:HD2	36:c:98:ALA:O	2.22	0.40
37:d:68:GLU:OE2	37:d:72:ARG:CD	2.70	0.40
38:e:82:HIS:CE1	41:h:95:MET:HE2	2.57	0.40
39:f:10:VAL:HG13	39:f:83:ALA:HB1	2.04	0.40
39:f:39:LEU:HD12	39:f:39:LEU:HA	1.86	0.40
43:j:45:ARG:HB3	43:j:69:THR:HG23	2.02	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	0	54/57 (95%)	47 (87%)	7 (13%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
2	1	48/55 (87%)	45 (94%)	3 (6%)	0	100 100
3	2	44/46 (96%)	38 (86%)	6 (14%)	0	100 100
4	3	62/65 (95%)	54 (87%)	6 (10%)	2 (3%)	3 21
5	4	36/38 (95%)	27 (75%)	9 (25%)	0	100 100
6	5	129/165 (78%)	94 (73%)	35 (27%)	0	100 100
7	6	64/70 (91%)	47 (73%)	14 (22%)	3 (5%)	2 14
10	C	269/273 (98%)	230 (86%)	38 (14%)	1 (0%)	30 62
11	D	207/209 (99%)	187 (90%)	20 (10%)	0	100 100
12	E	199/201 (99%)	177 (89%)	22 (11%)	0	100 100
13	F	175/179 (98%)	157 (90%)	18 (10%)	0	100 100
14	G	174/177 (98%)	156 (90%)	18 (10%)	0	100 100
15	H	147/149 (99%)	116 (79%)	29 (20%)	2 (1%)	9 39
16	I	139/142 (98%)	103 (74%)	36 (26%)	0	100 100
17	J	140/142 (99%)	129 (92%)	11 (8%)	0	100 100
18	K	120/123 (98%)	98 (82%)	22 (18%)	0	100 100
19	L	141/144 (98%)	123 (87%)	17 (12%)	1 (1%)	18 52
20	M	134/136 (98%)	124 (92%)	10 (8%)	0	100 100
21	N	118/127 (93%)	109 (92%)	9 (8%)	0	100 100
22	O	114/117 (97%)	99 (87%)	15 (13%)	0	100 100
23	P	112/115 (97%)	97 (87%)	15 (13%)	0	100 100
24	Q	115/118 (98%)	113 (98%)	2 (2%)	0	100 100
25	R	101/103 (98%)	82 (81%)	19 (19%)	0	100 100
26	S	108/110 (98%)	91 (84%)	17 (16%)	0	100 100
27	T	91/100 (91%)	75 (82%)	16 (18%)	0	100 100
28	U	100/104 (96%)	86 (86%)	12 (12%)	2 (2%)	6 31
29	V	92/94 (98%)	87 (95%)	5 (5%)	0	100 100
30	W	73/85 (86%)	67 (92%)	6 (8%)	0	100 100
31	X	75/78 (96%)	72 (96%)	3 (4%)	0	100 100
32	Y	61/63 (97%)	53 (87%)	5 (8%)	3 (5%)	1 13
33	Z	56/59 (95%)	52 (93%)	4 (7%)	0	100 100
35	b	216/240 (90%)	176 (82%)	39 (18%)	1 (0%)	24 59

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
36	c	204/233 (88%)	185 (91%)	19 (9%)	0	100 100
37	d	203/206 (98%)	162 (80%)	37 (18%)	4 (2%)	6 31
38	e	155/167 (93%)	141 (91%)	14 (9%)	0	100 100
39	f	98/135 (73%)	86 (88%)	12 (12%)	0	100 100
40	g	149/179 (83%)	132 (89%)	17 (11%)	0	100 100
41	h	127/130 (98%)	115 (91%)	12 (9%)	0	100 100
42	i	125/130 (96%)	103 (82%)	22 (18%)	0	100 100
43	j	96/103 (93%)	71 (74%)	23 (24%)	2 (2%)	5 31
44	k	114/129 (88%)	103 (90%)	11 (10%)	0	100 100
45	l	121/124 (98%)	93 (77%)	28 (23%)	0	100 100
46	m	112/118 (95%)	98 (88%)	14 (12%)	0	100 100
47	n	99/102 (97%)	87 (88%)	12 (12%)	0	100 100
48	o	86/89 (97%)	81 (94%)	5 (6%)	0	100 100
49	p	80/82 (98%)	58 (72%)	21 (26%)	1 (1%)	9 40
50	q	78/84 (93%)	63 (81%)	14 (18%)	1 (1%)	9 40
51	r	63/75 (84%)	49 (78%)	14 (22%)	0	100 100
52	s	80/92 (87%)	69 (86%)	11 (14%)	0	100 100
53	t	83/87 (95%)	79 (95%)	3 (4%)	1 (1%)	10 42
54	u	63/71 (89%)	44 (70%)	18 (29%)	1 (2%)	7 36
55	v	12/14 (86%)	11 (92%)	1 (8%)	0	100 100
58	y	137/140 (98%)	125 (91%)	12 (9%)	0	100 100
All	All	5999/6374 (94%)	5166 (86%)	808 (14%)	25 (0%)	31 62

All (25) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	3	31	ILE
7	6	42	PRO
28	U	98	ASN
28	U	99	SER
37	d	37	PRO
53	t	6	ALA
4	3	32	LEU
15	H	76	GLU
32	Y	10	SER

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Mol	Chain	Res	Type
37	d	71	PHE
37	d	79	ALA
7	6	43	PHE
19	L	128	THR
35	b	20	ARG
37	d	144	ILE
10	C	240	GLY
15	H	77	THR
32	Y	9	LYS
43	j	58	ASN
49	p	46	LYS
54	u	31	VAL
7	6	64	PHE
32	Y	11	VAL
50	q	67	SER
43	j	43	PRO

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	0	47/48 (98%)	47 (100%)	0	100 100
2	1	45/49 (92%)	45 (100%)	0	100 100
3	2	38/38 (100%)	38 (100%)	0	100 100
4	3	51/52 (98%)	50 (98%)	1 (2%)	48 72
5	4	34/34 (100%)	34 (100%)	0	100 100
7	6	59/62 (95%)	56 (95%)	3 (5%)	21 54
10	C	216/218 (99%)	216 (100%)	0	100 100
11	D	164/164 (100%)	164 (100%)	0	100 100
12	E	165/165 (100%)	165 (100%)	0	100 100
13	F	148/150 (99%)	148 (100%)	0	100 100
14	G	137/138 (99%)	137 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
15	H	114/114 (100%)	112 (98%)	2 (2%)	51 74
17	J	116/116 (100%)	116 (100%)	0	100 100
18	K	103/104 (99%)	103 (100%)	0	100 100
19	L	102/103 (99%)	101 (99%)	1 (1%)	68 80
20	M	109/109 (100%)	108 (99%)	1 (1%)	70 81
21	N	100/103 (97%)	100 (100%)	0	100 100
22	O	86/87 (99%)	86 (100%)	0	100 100
23	P	99/100 (99%)	99 (100%)	0	100 100
24	Q	89/90 (99%)	89 (100%)	0	100 100
25	R	84/84 (100%)	84 (100%)	0	100 100
26	S	93/93 (100%)	93 (100%)	0	100 100
27	T	80/84 (95%)	80 (100%)	0	100 100
28	U	83/85 (98%)	83 (100%)	0	100 100
29	V	78/78 (100%)	78 (100%)	0	100 100
30	W	57/63 (90%)	57 (100%)	0	100 100
31	X	67/68 (98%)	67 (100%)	0	100 100
32	Y	55/55 (100%)	55 (100%)	0	100 100
33	Z	48/49 (98%)	48 (100%)	0	100 100
35	b	180/198 (91%)	180 (100%)	0	100 100
36	c	170/190 (90%)	170 (100%)	0	100 100
37	d	172/173 (99%)	169 (98%)	3 (2%)	53 75
38	e	114/126 (90%)	114 (100%)	0	100 100
39	f	87/116 (75%)	87 (100%)	0	100 100
40	g	124/147 (84%)	123 (99%)	1 (1%)	73 82
41	h	104/105 (99%)	103 (99%)	1 (1%)	68 80
42	i	105/107 (98%)	105 (100%)	0	100 100
43	j	86/90 (96%)	85 (99%)	1 (1%)	63 79
44	k	89/99 (90%)	89 (100%)	0	100 100
45	l	103/104 (99%)	102 (99%)	1 (1%)	68 80
46	m	92/96 (96%)	92 (100%)	0	100 100
47	n	79/84 (94%)	79 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
48	o	76/77 (99%)	76 (100%)	0	100 100
49	p	65/65 (100%)	62 (95%)	3 (5%)	24 58
50	q	74/78 (95%)	72 (97%)	2 (3%)	39 68
51	r	56/65 (86%)	56 (100%)	0	100 100
52	s	72/79 (91%)	72 (100%)	0	100 100
53	t	65/66 (98%)	64 (98%)	1 (2%)	57 76
54	u	46/61 (75%)	45 (98%)	1 (2%)	45 71
55	v	14/14 (100%)	13 (93%)	1 (7%)	13 44
58	y	112/115 (97%)	112 (100%)	0	100 100
All	All	4752/4958 (96%)	4729 (100%)	23 (0%)	78 85

All (23) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	3	31	ILE
7	6	36	VAL
7	6	44	PHE
7	6	45	THR
15	H	76	GLU
15	H	90	LEU
19	L	27	LEU
20	M	31	PHE
37	d	37	PRO
37	d	67	LEU
37	d	72	ARG
40	g	28	ILE
41	h	13	ILE
43	j	57	VAL
45	l	102	ASP
49	p	46	LYS
49	p	47	GLU
49	p	48	GLU
50	q	68	LYS
50	q	70	LYS
53	t	7	LYS
54	u	32	ARG
55	v	8	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (82)

such sidechains are listed below:

Mol	Chain	Res	Type
1	0	5	ASN
1	0	41	HIS
2	1	44	GLN
4	3	27	ASN
4	3	42	HIS
7	6	20	ASN
7	6	48	GLN
7	6	65	ASN
10	C	52	HIS
10	C	85	ASN
10	C	152	GLN
10	C	259	ASN
11	D	32	ASN
12	E	41	GLN
12	E	46	GLN
12	E	90	GLN
13	F	4	HIS
14	G	44	HIS
14	G	63	GLN
15	H	11	ASN
17	J	58	ASN
18	K	29	HIS
19	L	99	ASN
19	L	104	GLN
21	N	16	HIS
22	O	43	ASN
22	O	98	GLN
23	P	14	GLN
23	P	65	ASN
24	Q	36	GLN
24	Q	43	GLN
25	R	18	GLN
25	R	89	HIS
25	R	91	GLN
26	S	9	HIS
27	T	70	HIS
28	U	98	ASN
32	Y	38	GLN
32	Y	58	ASN
33	Z	19	HIS
35	b	18	GLN
35	b	145	ASN

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Mol	Chain	Res	Type
36	c	7	ASN
36	c	40	GLN
36	c	68	HIS
36	c	99	GLN
36	c	184	ASN
37	d	53	GLN
38	e	60	GLN
38	e	82	HIS
38	e	96	GLN
38	e	131	ASN
39	f	68	GLN
40	g	8	GLN
40	g	129	ASN
40	g	147	ASN
42	i	125	GLN
43	j	15	HIS
43	j	20	GLN
43	j	58	ASN
44	k	21	HIS
44	k	23	HIS
44	k	118	ASN
45	l	72	ASN
47	n	3	GLN
47	n	34	ASN
47	n	43	ASN
48	o	41	HIS
48	o	45	HIS
48	o	61	GLN
49	p	26	ASN
49	p	63	GLN
51	r	51	GLN
52	s	42	ASN
52	s	55	GLN
52	s	68	HIS
53	t	19	HIS
53	t	51	ASN
53	t	69	ASN
58	y	23	GLN
58	y	28	GLN
58	y	80	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
34	a	1539/1542 (99%)	508 (33%)	0
56	w	75/76 (98%)	31 (41%)	0
57	x	3/15 (20%)	3 (100%)	0
8	A	2902/2903 (99%)	689 (23%)	53 (1%)
9	B	119/120 (99%)	28 (23%)	4 (3%)
All	All	4638/4656 (99%)	1259 (27%)	57 (1%)

All (1259) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
8	A	7	G
8	A	10	A
8	A	12	U
8	A	14	A
8	A	18	U
8	A	34	U
8	A	35	G
8	A	36	G
8	A	39	G
8	A	46	G
8	A	50	U
8	A	51	G
8	A	61	C
8	A	62	U
8	A	63	A
8	A	71	A
8	A	74	A
8	A	75	G
8	A	80	G
8	A	84	A
8	A	96	C
8	A	102	U
8	A	110	G
8	A	118	A
8	A	119	A
8	A	120	U
8	A	126	A
8	A	131	A
8	A	138	U
8	A	139	U
8	A	141	G
8	A	142	A
8	A	162	U

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Mol	Chain	Res	Type
8	A	163	C
8	A	181	A
8	A	196	A
8	A	199	A
8	A	204	A
8	A	215	G
8	A	216	A
8	A	220	G
8	A	221	A
8	A	222	A
8	A	229	C
8	A	230	G
8	A	233	A
8	A	242	G
8	A	243	U
8	A	248	G
8	A	249	C
8	A	250	G
8	A	255	A
8	A	261	G
8	A	265	A
8	A	266	G
8	A	267	C
8	A	268	C
8	A	273	G
8	A	274	C
8	A	276	U
8	A	277	G
8	A	278	A
8	A	279	A
8	A	281	C
8	A	282	A
8	A	283	G
8	A	285	G
8	A	287	G
8	A	290	U
8	A	308	G
8	A	309	A
8	A	311	A
8	A	312	G
8	A	315	G
8	A	317	G

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Mol	Chain	Res	Type
8	A	330	A
8	A	331	C
8	A	334	C
8	A	339	U
8	A	345	A
8	A	352	A
8	A	358	U
8	A	359	G
8	A	360	U
8	A	361	G
8	A	362	A
8	A	365	U
8	A	371	A
8	A	372	G
8	A	385	C
8	A	386	G
8	A	388	G
8	A	395	U
8	A	396	G
8	A	401	A
8	A	403	U
8	A	404	A
8	A	405	U
8	A	406	G
8	A	411	G
8	A	412	A
8	A	424	G
8	A	440	C
8	A	442	G
8	A	455	C
8	A	457	A
8	A	458	G
8	A	459	U
8	A	467	G
8	A	470	A
8	A	475	C
8	A	477	A
8	A	480	A
8	A	481	G
8	A	490	C
8	A	491	G
8	A	496	G

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Mol	Chain	Res	Type
8	A	504	A
8	A	505	A
8	A	508	A
8	A	509	C
8	A	513	A
8	A	527	C
8	A	532	A
8	A	543	G
8	A	544	C
8	A	545	U
8	A	547	A
8	A	548	G
8	A	549	G
8	A	556	A
8	A	560	C
8	A	562	U
8	A	563	A
8	A	573	U
8	A	575	A
8	A	588	U
8	A	593	U
8	A	603	A
8	A	614	A
8	A	615	U
8	A	621	A
8	A	627	A
8	A	628	G
8	A	637	A
8	A	643	A
8	A	645	C
8	A	646	U
8	A	647	G
8	A	653	U
8	A	655	A
8	A	668	A
8	A	669	G
8	A	677	A
8	A	686	U
8	A	705	A
8	A	717	C
8	A	726	G
8	A	730	A

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Mol	Chain	Res	Type
8	A	738	G
8	A	747	5MC
8	A	753	A
8	A	757	G
8	A	763	G
8	A	764	A
8	A	765	C
8	A	774	G
8	A	775	G
8	A	776	G
8	A	782	A
8	A	784	G
8	A	785	G
8	A	789	A
8	A	792	A
8	A	805	G
8	A	806	C
8	A	812	C
8	A	819	A
8	A	827	U
8	A	828	U
8	A	831	G
8	A	845	A
8	A	846	U
8	A	847	U
8	A	857	G
8	A	869	G
8	A	882	G
8	A	885	C
8	A	886	A
8	A	887	U
8	A	888	C
8	A	889	C
8	A	890	C
8	A	891	G
8	A	896	A
8	A	897	C
8	A	910	A
8	A	927	A
8	A	931	U
8	A	941	A
8	A	945	A

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Mol	Chain	Res	Type
8	A	946	C
8	A	953	G
8	A	960	A
8	A	961	C
8	A	973	A
8	A	974	G
8	A	983	A
8	A	989	G
8	A	995	C
8	A	996	A
8	A	999	U
8	A	1005	C
8	A	1012	U
8	A	1013	C
8	A	1016	G
8	A	1017	G
8	A	1021	A
8	A	1022	G
8	A	1025	G
8	A	1026	G
8	A	1031	G
8	A	1033	U
8	A	1034	G
8	A	1040	A
8	A	1041	G
8	A	1044	C
8	A	1045	C
8	A	1046	A
8	A	1047	G
8	A	1048	A
8	A	1050	A
8	A	1053	C
8	A	1054	A
8	A	1055	G
8	A	1057	A
8	A	1058	U
8	A	1059	G
8	A	1060	U
8	A	1061	U
8	A	1062	G
8	A	1063	G
8	A	1064	C

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Mol	Chain	Res	Type
8	A	1065	U
8	A	1066	U
8	A	1069	A
8	A	1070	A
8	A	1071	G
8	A	1072	C
8	A	1073	A
8	A	1074	G
8	A	1075	C
8	A	1079	C
8	A	1080	A
8	A	1081	U
8	A	1082	U
8	A	1083	U
8	A	1084	A
8	A	1085	A
8	A	1088	A
8	A	1089	A
8	A	1090	A
8	A	1092	C
8	A	1093	G
8	A	1094	U
8	A	1095	A
8	A	1096	A
8	A	1097	U
8	A	1098	A
8	A	1099	G
8	A	1101	U
8	A	1102	C
8	A	1103	A
8	A	1104	C
8	A	1105	U
8	A	1106	G
8	A	1109	C
8	A	1111	A
8	A	1112	G
8	A	1115	G
8	A	1116	G
8	A	1126	A
8	A	1130	U
8	A	1131	G
8	A	1132	U

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Mol	Chain	Res	Type
8	A	1133	A
8	A	1135	C
8	A	1139	G
8	A	1142	A
8	A	1143	A
8	A	1155	A
8	A	1171	G
8	A	1174	U
8	A	1175	A
8	A	1176	U
8	A	1177	G
8	A	1178	C
8	A	1180	U
8	A	1186	G
8	A	1195	G
8	A	1206	G
8	A	1218	G
8	A	1227	G
8	A	1236	G
8	A	1250	G
8	A	1253	A
8	A	1255	U
8	A	1256	G
8	A	1257	C
8	A	1265	A
8	A	1271	G
8	A	1272	A
8	A	1273	U
8	A	1275	A
8	A	1300	G
8	A	1301	A
8	A	1302	A
8	A	1352	U
8	A	1353	A
8	A	1359	A
8	A	1365	A
8	A	1366	A
8	A	1368	G
8	A	1383	A
8	A	1386	C
8	A	1392	A
8	A	1395	A

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Mol	Chain	Res	Type
8	A	1408	G
8	A	1409	U
8	A	1411	U
8	A	1413	A
8	A	1414	C
8	A	1416	G
8	A	1419	A
8	A	1420	A
8	A	1421	G
8	A	1427	A
8	A	1428	C
8	A	1437	C
8	A	1452	G
8	A	1453	A
8	A	1454	C
8	A	1458	U
8	A	1459	G
8	A	1460	U
8	A	1461	C
8	A	1468	U
8	A	1482	G
8	A	1483	G
8	A	1486	U
8	A	1490	A
8	A	1494	A
8	A	1498	C
8	A	1502	A
8	A	1503	A
8	A	1504	A
8	A	1505	A
8	A	1507	C
8	A	1508	A
8	A	1509	A
8	A	1512	C
8	A	1515	A
8	A	1524	G
8	A	1529	G
8	A	1534	U
8	A	1536	C
8	A	1538	G
8	A	1543	G
8	A	1554	U

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Mol	Chain	Res	Type
8	A	1558	C
8	A	1560	G
8	A	1566	A
8	A	1569	A
8	A	1578	U
8	A	1584	U
8	A	1585	C
8	A	1607	C
8	A	1608	A
8	A	1609	A
8	A	1610	A
8	A	1611	C
8	A	1612	C
8	A	1613	G
8	A	1616	A
8	A	1626	A
8	A	1627	G
8	A	1634	A
8	A	1635	A
8	A	1647	U
8	A	1648	U
8	A	1649	G
8	A	1654	A
8	A	1661	G
8	A	1665	A
8	A	1674	G
8	A	1675	C
8	A	1680	U
8	A	1693	U
8	A	1695	G
8	A	1714	U
8	A	1715	G
8	A	1729	U
8	A	1730	C
8	A	1732	C
8	A	1738	G
8	A	1740	G
8	A	1742	U
8	A	1744	A
8	A	1764	C
8	A	1773	A
8	A	1781	U

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Mol	Chain	Res	Type
8	A	1782	U
8	A	1791	A
8	A	1800	C
8	A	1801	A
8	A	1802	A
8	A	1808	A
8	A	1811	G
8	A	1816	C
8	A	1819	A
8	A	1829	A
8	A	1847	G
8	A	1848	A
8	A	1857	G
8	A	1866	A
8	A	1868	C
8	A	1871	A
8	A	1876	A
8	A	1877	A
8	A	1884	G
8	A	1901	A
8	A	1903	G
8	A	1906	G
8	A	1908	C
8	A	1910	G
8	A	1913	A
8	A	1914	C
8	A	1915	3TD
8	A	1916	A
8	A	1919	A
8	A	1929	G
8	A	1930	G
8	A	1937	A
8	A	1938	A
8	A	1941	C
8	A	1954	G
8	A	1955	U
8	A	1965	C
8	A	1967	C
8	A	1970	A
8	A	1971	U
8	A	1972	G
8	A	1982	U

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Mol	Chain	Res	Type
8	A	1991	U
8	A	1993	U
8	A	1997	C
8	A	2004	G
8	A	2022	U
8	A	2023	C
8	A	2031	A
8	A	2032	G
8	A	2033	A
8	A	2035	G
8	A	2043	C
8	A	2055	C
8	A	2056	G
8	A	2060	A
8	A	2061	G
8	A	2062	A
8	A	2069	G7M
8	A	2080	A
8	A	2082	A
8	A	2093	G
8	A	2096	C
8	A	2102	G
8	A	2105	U
8	A	2106	U
8	A	2108	A
8	A	2109	U
8	A	2110	G
8	A	2111	U
8	A	2112	G
8	A	2113	U
8	A	2114	A
8	A	2115	G
8	A	2116	G
8	A	2117	A
8	A	2118	U
8	A	2119	A
8	A	2120	G
8	A	2121	G
8	A	2122	U
8	A	2123	G
8	A	2124	G
8	A	2125	G

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Mol	Chain	Res	Type
8	A	2126	A
8	A	2127	G
8	A	2129	C
8	A	2131	U
8	A	2132	U
8	A	2133	G
8	A	2134	A
8	A	2135	A
8	A	2137	U
8	A	2138	G
8	A	2139	U
8	A	2140	G
8	A	2141	G
8	A	2142	A
8	A	2143	C
8	A	2144	G
8	A	2145	C
8	A	2146	C
8	A	2148	G
8	A	2149	U
8	A	2150	C
8	A	2151	U
8	A	2154	A
8	A	2155	U
8	A	2156	G
8	A	2157	G
8	A	2158	A
8	A	2159	G
8	A	2162	G
8	A	2163	A
8	A	2166	U
8	A	2167	U
8	A	2169	A
8	A	2170	A
8	A	2172	U
8	A	2173	A
8	A	2174	C
8	A	2175	C
8	A	2176	A
8	A	2179	C
8	A	2180	U
8	A	2181	U

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Mol	Chain	Res	Type
8	A	2185	U
8	A	2189	U
8	A	2190	G
8	A	2193	G
8	A	2198	A
8	A	2203	U
8	A	2204	G
8	A	2210	U
8	A	2211	A
8	A	2225	A
8	A	2228	G
8	A	2234	G
8	A	2238	G
8	A	2239	G
8	A	2243	U
8	A	2273	A
8	A	2279	G
8	A	2283	C
8	A	2287	A
8	A	2288	A
8	A	2305	U
8	A	2307	G
8	A	2309	A
8	A	2311	A
8	A	2319	G
8	A	2320	U
8	A	2325	G
8	A	2333	A
8	A	2334	U
8	A	2335	A
8	A	2336	A
8	A	2345	G
8	A	2347	C
8	A	2350	C
8	A	2357	G
8	A	2361	G
8	A	2383	G
8	A	2384	U
8	A	2385	C
8	A	2391	G
8	A	2392	A
8	A	2396	G

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Mol	Chain	Res	Type
8	A	2402	U
8	A	2406	A
8	A	2407	A
8	A	2408	U
8	A	2420	C
8	A	2422	C
8	A	2423	U
8	A	2425	A
8	A	2429	G
8	A	2430	A
8	A	2431	U
8	A	2435	A
8	A	2440	C
8	A	2441	U
8	A	2445	2MG
8	A	2446	G
8	A	2448	A
8	A	2473	U
8	A	2474	U
8	A	2475	C
8	A	2476	A
8	A	2492	U
8	A	2494	G
8	A	2498	OMC
8	A	2502	G
8	A	2503	2MA
8	A	2504	PSU
8	A	2505	G
8	A	2506	U
8	A	2513	A
8	A	2514	U
8	A	2515	C
8	A	2518	A
8	A	2520	C
8	A	2529	G
8	A	2535	G
8	A	2547	A
8	A	2552	OMU
8	A	2554	U
8	A	2566	A
8	A	2567	G
8	A	2572	A

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Mol	Chain	Res	Type
8	A	2573	C
8	A	2574	G
8	A	2585	U
8	A	2586	U
8	A	2597	G
8	A	2602	A
8	A	2609	U
8	A	2610	C
8	A	2613	U
8	A	2615	U
8	A	2629	U
8	A	2630	G
8	A	2648	G
8	A	2655	G
8	A	2660	A
8	A	2661	G
8	A	2663	G
8	A	2671	G
8	A	2682	A
8	A	2685	G
8	A	2689	U
8	A	2690	U
8	A	2702	G
8	A	2714	G
8	A	2716	C
8	A	2725	A
8	A	2726	A
8	A	2727	A
8	A	2729	G
8	A	2732	G
8	A	2733	A
8	A	2744	G
8	A	2748	A
8	A	2765	A
8	A	2776	A
8	A	2777	G
8	A	2778	A
8	A	2779	U
8	A	2790	U
8	A	2791	G
8	A	2794	C
8	A	2795	C

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Mol	Chain	Res	Type
8	A	2797	U
8	A	2799	A
8	A	2800	A
8	A	2804	U
8	A	2808	G
8	A	2817	U
8	A	2818	U
8	A	2820	A
8	A	2821	A
8	A	2833	U
8	A	2834	G
8	A	2848	G
8	A	2849	U
8	A	2851	A
8	A	2861	U
8	A	2866	U
8	A	2867	G
8	A	2873	A
8	A	2879	A
8	A	2884	U
8	A	2885	G
8	A	2891	U
8	A	2893	A
8	A	2894	G
8	A	2899	A
8	A	2903	U
9	B	9	G
9	B	12	C
9	B	13	G
9	B	15	A
9	B	24	G
9	B	26	C
9	B	28	C
9	B	35	C
9	B	36	C
9	B	37	C
9	B	40	U
9	B	41	G
9	B	45	A
9	B	51	G
9	B	52	A
9	B	53	A

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Mol	Chain	Res	Type
9	B	57	A
9	B	67	G
9	B	68	C
9	B	73	A
9	B	74	U
9	B	75	G
9	B	86	G
9	B	89	U
9	B	90	C
9	B	105	G
9	B	108	A
9	B	109	A
34	a	4	U
34	a	6	G
34	a	7	A
34	a	9	G
34	a	22	G
34	a	31	G
34	a	32	A
34	a	36	C
34	a	39	G
34	a	41	G
34	a	44	A
34	a	45	G
34	a	46	G
34	a	47	C
34	a	48	C
34	a	51	A
34	a	60	A
34	a	69	G
34	a	70	U
34	a	71	A
34	a	72	A
34	a	73	C
34	a	75	G
34	a	77	A
34	a	78	A
34	a	79	G
34	a	80	A
34	a	81	A
34	a	83	C
34	a	84	U

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Mol	Chain	Res	Type
34	a	85	U
34	a	86	G
34	a	87	C
34	a	88	U
34	a	89	U
34	a	90	C
34	a	92	U
34	a	95	C
34	a	96	U
34	a	97	G
34	a	101	A
34	a	114	U
34	a	122	G
34	a	130	A
34	a	132	C
34	a	144	G
34	a	146	G
34	a	148	G
34	a	150	U
34	a	154	U
34	a	156	C
34	a	157	U
34	a	158	G
34	a	159	G
34	a	160	A
34	a	161	A
34	a	162	A
34	a	163	C
34	a	164	G
34	a	167	A
34	a	169	C
34	a	170	U
34	a	171	A
34	a	173	U
34	a	174	A
34	a	175	C
34	a	176	C
34	a	178	C
34	a	179	A
34	a	180	U
34	a	182	A
34	a	187	G

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Mol	Chain	Res	Type
34	a	188	C
34	a	189	A
34	a	196	A
34	a	197	A
34	a	198	G
34	a	199	A
34	a	200	G
34	a	201	G
34	a	202	G
34	a	203	G
34	a	204	G
34	a	205	A
34	a	206	C
34	a	207	C
34	a	208	U
34	a	209	U
34	a	210	C
34	a	211	G
34	a	212	G
34	a	214	C
34	a	215	C
34	a	216	U
34	a	219	U
34	a	221	C
34	a	223	A
34	a	224	U
34	a	226	G
34	a	227	G
34	a	240	G
34	a	245	U
34	a	247	G
34	a	251	G
34	a	253	A
34	a	262	A
34	a	266	G
34	a	267	C
34	a	268	U
34	a	275	G
34	a	276	G
34	a	279	A
34	a	281	G
34	a	289	G

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Mol	Chain	Res	Type
34	a	294	U
34	a	298	A
34	a	299	G
34	a	306	A
34	a	316	C
34	a	321	A
34	a	322	C
34	a	323	U
34	a	328	C
34	a	330	C
34	a	344	A
34	a	345	C
34	a	346	G
34	a	347	G
34	a	348	G
34	a	349	A
34	a	351	G
34	a	352	C
34	a	363	A
34	a	367	U
34	a	368	U
34	a	372	C
34	a	374	A
34	a	375	U
34	a	376	G
34	a	383	A
34	a	384	G
34	a	388	G
34	a	389	A
34	a	390	U
34	a	391	G
34	a	393	A
34	a	397	A
34	a	398	U
34	a	399	G
34	a	404	G
34	a	405	U
34	a	406	G
34	a	409	U
34	a	411	A
34	a	414	A
34	a	415	A

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Mol	Chain	Res	Type
34	a	419	C
34	a	421	U
34	a	422	C
34	a	423	G
34	a	426	U
34	a	428	G
34	a	429	U
34	a	430	A
34	a	433	G
34	a	436	C
34	a	437	U
34	a	440	C
34	a	443	C
34	a	444	G
34	a	447	G
34	a	448	A
34	a	449	G
34	a	453	G
34	a	454	G
34	a	456	A
34	a	459	A
34	a	462	G
34	a	463	U
34	a	464	U
34	a	467	U
34	a	468	A
34	a	469	C
34	a	470	C
34	a	471	U
34	a	472	U
34	a	477	C
34	a	479	U
34	a	480	U
34	a	481	G
34	a	482	A
34	a	484	G
34	a	485	U
34	a	487	A
34	a	490	C
34	a	491	G
34	a	492	C
34	a	494	G

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Mol	Chain	Res	Type
34	a	495	A
34	a	496	A
34	a	497	G
34	a	499	A
34	a	505	G
34	a	509	A
34	a	510	A
34	a	512	U
34	a	515	G
34	a	516	PSU
34	a	518	C
34	a	521	G
34	a	530	G
34	a	531	U
34	a	532	A
34	a	533	A
34	a	536	C
34	a	545	C
34	a	547	A
34	a	550	G
34	a	553	A
34	a	559	A
34	a	560	A
34	a	562	U
34	a	563	A
34	a	564	C
34	a	570	G
34	a	572	A
34	a	573	A
34	a	574	A
34	a	575	G
34	a	576	C
34	a	577	G
34	a	579	A
34	a	583	A
34	a	607	A
34	a	614	C
34	a	616	G
34	a	617	G
34	a	619	U
34	a	620	C
34	a	625	U

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Mol	Chain	Res	Type
34	a	626	G
34	a	631	C
34	a	633	G
34	a	638	U
34	a	653	U
34	a	661	G
34	a	662	U
34	a	665	A
34	a	686	U
34	a	687	A
34	a	688	G
34	a	690	G
34	a	691	G
34	a	693	G
34	a	694	A
34	a	700	G
34	a	702	A
34	a	703	G
34	a	704	A
34	a	712	A
34	a	721	G
34	a	723	U
34	a	731	G
34	a	734	G
34	a	739	C
34	a	755	G
34	a	777	A
34	a	781	A
34	a	784	A
34	a	793	U
34	a	794	A
34	a	813	U
34	a	815	A
34	a	817	C
34	a	818	G
34	a	819	A
34	a	820	U
34	a	821	G
34	a	833	G
34	a	837	U
34	a	840	C
34	a	841	C

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Mol	Chain	Res	Type
34	a	842	U
34	a	843	U
34	a	845	A
34	a	846	G
34	a	849	G
34	a	851	G
34	a	864	A
34	a	865	A
34	a	872	A
34	a	873	A
34	a	876	C
34	a	889	A
34	a	890	G
34	a	891	U
34	a	902	G
34	a	914	A
34	a	918	A
34	a	920	U
34	a	921	U
34	a	926	G
34	a	927	G
34	a	934	C
34	a	936	C
34	a	939	G
34	a	942	G
34	a	945	G
34	a	946	A
34	a	956	U
34	a	960	U
34	a	965	U
34	a	966	2MG
34	a	967	5MC
34	a	969	A
34	a	971	G
34	a	975	A
34	a	976	G
34	a	977	A
34	a	979	C
34	a	980	C
34	a	982	U
34	a	984	C
34	a	989	U

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Mol	Chain	Res	Type
34	a	992	U
34	a	993	G
34	a	994	A
34	a	995	C
34	a	996	A
34	a	997	U
34	a	1000	A
34	a	1002	G
34	a	1004	A
34	a	1005	A
34	a	1006	G
34	a	1007	U
34	a	1009	U
34	a	1018	G
34	a	1020	G
34	a	1022	A
34	a	1023	U
34	a	1025	U
34	a	1026	G
34	a	1027	C
34	a	1028	C
34	a	1029	U
34	a	1030	U
34	a	1031	C
34	a	1032	G
34	a	1033	G
34	a	1034	G
34	a	1037	C
34	a	1038	C
34	a	1041	G
34	a	1045	C
34	a	1046	A
34	a	1048	G
34	a	1049	U
34	a	1050	G
34	a	1056	U
34	a	1064	G
34	a	1065	U
34	a	1066	C
34	a	1070	U
34	a	1075	U
34	a	1080	A

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Mol	Chain	Res	Type
34	a	1081	A
34	a	1082	A
34	a	1083	U
34	a	1084	G
34	a	1085	U
34	a	1086	U
34	a	1094	G
34	a	1095	U
34	a	1100	C
34	a	1101	A
34	a	1102	A
34	a	1105	A
34	a	1108	G
34	a	1124	G
34	a	1125	U
34	a	1130	A
34	a	1131	G
34	a	1133	G
34	a	1134	G
34	a	1136	C
34	a	1137	C
34	a	1139	G
34	a	1140	C
34	a	1142	G
34	a	1145	A
34	a	1146	A
34	a	1148	U
34	a	1152	A
34	a	1154	G
34	a	1159	U
34	a	1160	G
34	a	1167	A
34	a	1168	U
34	a	1169	A
34	a	1173	U
34	a	1176	A
34	a	1183	U
34	a	1184	G
34	a	1192	C
34	a	1193	G
34	a	1196	A
34	a	1197	A

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Mol	Chain	Res	Type
34	a	1201	A
34	a	1207	2MG
34	a	1208	C
34	a	1210	C
34	a	1212	U
34	a	1213	A
34	a	1217	C
34	a	1219	A
34	a	1225	A
34	a	1228	C
34	a	1229	A
34	a	1230	C
34	a	1236	A
34	a	1240	U
34	a	1246	A
34	a	1249	C
34	a	1250	A
34	a	1257	A
34	a	1258	G
34	a	1260	G
34	a	1262	C
34	a	1263	C
34	a	1267	C
34	a	1268	G
34	a	1273	C
34	a	1274	A
34	a	1275	A
34	a	1280	A
34	a	1282	C
34	a	1285	A
34	a	1287	A
34	a	1289	A
34	a	1291	U
34	a	1299	A
34	a	1300	G
34	a	1301	U
34	a	1302	C
34	a	1303	C
34	a	1306	A
34	a	1307	U
34	a	1317	C
34	a	1318	A

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Mol	Chain	Res	Type
34	a	1319	A
34	a	1320	C
34	a	1322	C
34	a	1331	G
34	a	1332	A
34	a	1333	A
34	a	1335	U
34	a	1336	C
34	a	1338	G
34	a	1340	A
34	a	1346	A
34	a	1347	G
34	a	1348	U
34	a	1349	A
34	a	1353	G
34	a	1361	G
34	a	1362	A
34	a	1365	G
34	a	1374	A
34	a	1378	C
34	a	1381	U
34	a	1394	A
34	a	1395	C
34	a	1398	A
34	a	1404	C
34	a	1419	G
34	a	1429	A
34	a	1438	G
34	a	1446	A
34	a	1449	C
34	a	1450	U
34	a	1451	U
34	a	1452	C
34	a	1453	G
34	a	1454	G
34	a	1456	A
34	a	1460	C
34	a	1471	U
34	a	1472	U
34	a	1479	C
34	a	1487	G
34	a	1493	A

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Mol	Chain	Res	Type
34	a	1494	G
34	a	1498	UR3
34	a	1499	A
34	a	1503	A
34	a	1504	G
34	a	1506	U
34	a	1517	G
34	a	1520	C
34	a	1529	G
34	a	1530	G
34	a	1531	A
34	a	1534	A
34	a	1537	U
34	a	1538	C
34	a	1539	C
34	a	1540	U
56	w	5	G
56	w	8	4SU
56	w	9	A
56	w	10	G
56	w	11	C
56	w	12	U
56	w	13	C
56	w	15	G
56	w	16	U
56	w	17	C
56	w	19	G
56	w	20	U
56	w	21	A
56	w	28	G
56	w	34	G
56	w	36	A
56	w	38	A
56	w	42	C
56	w	43	C
56	w	46	G7M
56	w	47	U
56	w	53	G
56	w	55	PSU
56	w	56	C
56	w	61	C
56	w	64	A

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Mol	Chain	Res	Type
56	w	65	G
56	w	67	C
56	w	74	C
56	w	75	C
56	w	76	A
57	x	17	U
57	x	18	C
57	x	19	A

All (57) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
8	A	50	U
8	A	141	G
8	A	160	A
8	A	170	U
8	A	228	C
8	A	242	G
8	A	277	G
8	A	310	A
8	A	458	G
8	A	490	C
8	A	547	A
8	A	555	G
8	A	627	A
8	A	704	G
8	A	733	G
8	A	752	A
8	A	774	G
8	A	784	G
8	A	890	C
8	A	1020	A
8	A	1062	G
8	A	1081	U
8	A	1084	A
8	A	1110	G
8	A	1173	U
8	A	1182	G
8	A	1200	C
8	A	1300	G
8	A	1451	C
8	A	1458	U

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Mol	Chain	Res	Type
8	A	1493	C
8	A	1847	G
8	A	1912	A
8	A	2104	C
8	A	2120	G
8	A	2128	G
8	A	2138	G
8	A	2156	G
8	A	2192	U
8	A	2287	A
8	A	2319	G
8	A	2324	U
8	A	2391	G
8	A	2405	G
8	A	2406	A
8	A	2445	2MG
8	A	2629	U
8	A	2725	A
8	A	2728	U
8	A	2790	U
8	A	2820	A
8	A	2832	U
8	A	2884	U
9	B	44	G
9	B	52	A
9	B	66	A
9	B	67	G

5.4 Non-standard residues in protein, DNA, RNA chains (i)

41 non-standard protein/DNA/RNA residues are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
8	PSU	A	2604	8	18,21,22	1.10	2 (11%)	22,30,33	1.95	5 (22%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
8	6MZ	A	1618	8	22,25,26	3.05	5 (22%)	30,36,39	4.17	11 (36%)
34	2MG	a	1516	34	23,26,27	2.96	8 (34%)	32,38,41	2.34	12 (37%)
8	PSU	A	1911	8	18,21,22	1.07	2 (11%)	22,30,33	1.87	4 (18%)
8	6MZ	A	2030	8	22,25,26	2.93	6 (27%)	30,36,39	4.57	14 (46%)
8	OMG	A	2251	8	23,26,27	2.39	9 (39%)	33,38,41	1.81	7 (21%)
8	PSU	A	2504	8	18,21,22	1.05	3 (16%)	22,30,33	1.71	4 (18%)
8	PSU	A	2580	8	18,21,22	1.18	3 (16%)	22,30,33	2.07	6 (27%)
8	OMU	A	2552	8	19,22,23	2.80	8 (42%)	26,31,34	1.82	5 (19%)
8	PSU	A	746	8	18,21,22	1.07	2 (11%)	22,30,33	1.84	4 (18%)
34	4OC	a	1402	34	20,23,24	2.90	8 (40%)	26,32,35	0.94	2 (7%)
34	2MG	a	966	56,34	23,26,27	3.03	7 (30%)	32,38,41	2.13	10 (31%)
34	PSU	a	516	34	18,21,22	0.88	1 (5%)	22,30,33	1.67	5 (22%)
8	G7M	A	2069	8	23,26,27	3.34	10 (43%)	35,39,42	1.62	7 (20%)
56	G7M	w	46	56	23,26,27	2.60	8 (34%)	35,39,42	2.33	10 (28%)
56	5MU	w	54	56	19,22,23	4.85	7 (36%)	28,32,35	3.61	9 (32%)
34	MA6	a	1518	34	23,26,27	1.54	6 (26%)	34,38,41	2.69	11 (32%)
56	MIA	w	37	56,34	28,31,32	2.61	6 (21%)	40,44,47	3.78	14 (35%)
34	2MG	a	1207	34	23,26,27	2.98	8 (34%)	32,38,41	2.20	11 (34%)
8	PSU	A	2457	8	18,21,22	1.06	3 (16%)	22,30,33	2.14	6 (27%)
8	5MC	A	747	8	18,22,23	3.52	7 (38%)	26,32,35	1.16	2 (7%)
8	OMC	A	2498	8,59	19,22,23	2.74	7 (36%)	26,31,34	0.77	0
8	PSU	A	955	8	18,21,22	1.14	2 (11%)	22,30,33	1.88	4 (18%)
34	G7M	a	527	34	23,26,27	3.48	10 (43%)	35,39,42	1.66	6 (17%)
34	5MC	a	967	34	18,22,23	3.72	7 (38%)	26,32,35	1.09	1 (3%)
8	2MA	A	2503	8,59	22,25,26	3.63	9 (40%)	33,37,40	2.16	7 (21%)
8	2MG	A	1835	8	23,26,27	2.85	7 (30%)	32,38,41	2.35	10 (31%)
8	PSU	A	2605	8	18,21,22	1.12	2 (11%)	22,30,33	1.80	4 (18%)
34	MA6	a	1519	34	23,26,27	1.48	6 (26%)	34,38,41	2.72	11 (32%)
56	4SU	w	8	56	18,21,22	3.75	8 (44%)	26,30,33	2.16	5 (19%)
56	PSU	w	39	56	18,21,22	1.01	1 (5%)	22,30,33	1.73	3 (13%)
34	UR3	a	1498	59,34	19,22,23	2.74	7 (36%)	26,32,35	1.50	4 (15%)
8	5MU	A	1939	8	19,22,23	4.60	7 (36%)	28,32,35	3.88	10 (35%)
34	5MC	a	1407	34	18,22,23	3.54	7 (38%)	26,32,35	1.15	2 (7%)
8	1MG	A	745	8	22,26,27	2.57	6 (27%)	33,39,42	2.08	9 (27%)
8	5MC	A	1962	8	18,22,23	3.58	7 (38%)	26,32,35	1.17	2 (7%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
8	PSU	A	1917	8	18,21,22	1.11	3 (16%)	22,30,33	1.93	5 (22%)
56	PSU	w	32	56	18,21,22	1.04	1 (5%)	22,30,33	1.73	4 (18%)
8	2MG	A	2445	8	23,26,27	1.88	6 (26%)	32,38,41	2.84	12 (37%)
56	PSU	w	55	56	18,21,22	1.08	1 (5%)	22,30,33	1.80	4 (18%)
8	3TD	A	1915	8	18,22,23	4.25	5 (27%)	22,32,35	1.49	2 (9%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
8	PSU	A	2604	8	-	0/7/25/26	0/2/2/2
8	6MZ	A	1618	8	-	2/9/27/28	0/3/3/3
34	2MG	a	1516	34	-	0/9/27/28	0/3/3/3
8	PSU	A	1911	8	-	1/7/25/26	0/2/2/2
8	6MZ	A	2030	8	-	3/9/27/28	0/3/3/3
8	OMG	A	2251	8	-	1/9/27/28	0/3/3/3
8	PSU	A	2504	8	-	2/7/25/26	0/2/2/2
8	PSU	A	2580	8	-	0/7/25/26	0/2/2/2
8	OMU	A	2552	8	-	5/9/27/28	0/2/2/2
8	PSU	A	746	8	-	4/7/25/26	0/2/2/2
34	4OC	a	1402	34	-	0/9/29/30	0/2/2/2
34	2MG	a	966	56,34	-	2/9/27/28	0/3/3/3
34	PSU	a	516	34	-	2/7/25/26	0/2/2/2
8	G7M	A	2069	8	-	1/7/25/26	0/3/3/3
56	G7M	w	46	56	-	3/7/25/26	0/3/3/3
56	5MU	w	54	56	-	0/7/25/26	0/2/2/2
34	MA6	a	1518	34	-	3/11/29/30	0/3/3/3
56	MIA	w	37	56,34	-	8/15/33/34	0/3/3/3
34	2MG	a	1207	34	-	3/9/27/28	0/3/3/3
8	PSU	A	2457	8	-	0/7/25/26	0/2/2/2
8	5MC	A	747	8	-	3/7/25/26	0/2/2/2
8	OMC	A	2498	8,59	-	2/9/27/28	0/2/2/2
8	PSU	A	955	8	-	3/7/25/26	0/2/2/2
34	G7M	a	527	34	-	1/7/25/26	0/3/3/3
34	5MC	a	967	34	-	4/7/25/26	0/2/2/2
8	2MA	A	2503	8,59	-	2/7/25/26	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
8	2MG	A	1835	8	-	2/9/27/28	0/3/3/3
8	PSU	A	2605	8	-	2/7/25/26	0/2/2/2
34	MA6	a	1519	34	-	0/11/29/30	0/3/3/3
56	4SU	w	8	56	-	0/7/25/26	0/2/2/2
56	PSU	w	39	56	-	3/7/25/26	0/2/2/2
34	UR3	a	1498	59,34	-	6/7/25/26	0/2/2/2
8	5MU	A	1939	8	-	0/7/25/26	0/2/2/2
34	5MC	a	1407	34	-	0/7/25/26	0/2/2/2
8	1MG	A	745	8	-	0/7/25/26	0/3/3/3
8	5MC	A	1962	8	-	0/7/25/26	0/2/2/2
8	PSU	A	1917	8	-	0/7/25/26	0/2/2/2
56	PSU	w	32	56	-	5/7/25/26	0/2/2/2
8	2MG	A	2445	8	-	2/9/27/28	0/3/3/3
56	PSU	w	55	56	-	1/7/25/26	0/2/2/2
8	3TD	A	1915	8	-	3/7/25/26	0/2/2/2

All (228) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
8	A	1915	3TD	C6-C5	12.78	1.50	1.35
8	A	1618	6MZ	C6-N6	12.41	1.47	1.34
8	A	2030	6MZ	C6-N6	11.54	1.46	1.34
8	A	2503	2MA	C4-N3	11.22	1.48	1.34
56	w	54	5MU	C2-N1	11.06	1.56	1.38
56	w	54	5MU	C6-N1	10.58	1.56	1.38
8	A	1939	5MU	C6-N1	10.09	1.55	1.38
56	w	54	5MU	C4-C5	10.00	1.61	1.44
34	a	527	G7M	C8-N7	9.95	1.50	1.33
8	A	2069	G7M	C8-N7	9.64	1.50	1.33
8	A	1939	5MU	C2-N1	9.48	1.53	1.38
34	a	967	5MC	C6-C5	9.47	1.50	1.34
8	A	1915	3TD	C2-N1	9.39	1.49	1.37
8	A	1939	5MU	C4-C5	9.15	1.60	1.44
34	a	1407	5MC	C6-C5	8.89	1.49	1.34
8	A	1962	5MC	C6-C5	8.83	1.49	1.34
56	w	8	4SU	C4-N3	8.78	1.47	1.37
8	A	747	5MC	C6-C5	8.74	1.49	1.34
8	A	1939	5MU	C4-N3	-8.56	1.22	1.38
56	w	54	5MU	C4-N3	-7.88	1.24	1.38
56	w	37	MIA	C2-S10	7.73	1.82	1.75
34	a	1207	2MG	C2-N3	7.69	1.46	1.31

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
56	w	8	4SU	C2-N1	7.68	1.50	1.38
34	a	1516	2MG	C2-N3	7.58	1.46	1.31
34	a	966	2MG	C2-N3	7.34	1.46	1.31
34	a	1498	UR3	C2-N1	7.20	1.48	1.38
56	w	37	MIA	C13-C14	7.06	1.52	1.32
8	A	1835	2MG	C2-N3	7.03	1.45	1.31
34	a	966	2MG	C2-N2	6.99	1.49	1.33
8	A	745	1MG	C2-N2	6.86	1.46	1.34
8	A	1962	5MC	C4-N3	6.78	1.45	1.34
34	a	967	5MC	C4-N3	6.76	1.45	1.34
56	w	37	MIA	C6-N6	6.62	1.44	1.34
34	a	1407	5MC	C4-N3	6.59	1.45	1.34
34	a	1402	4OC	C4-N3	6.59	1.44	1.32
8	A	747	5MC	C4-N3	6.58	1.45	1.34
8	A	2503	2MA	C2-N3	6.48	1.45	1.34
34	a	1516	2MG	C4-N3	6.45	1.49	1.34
34	a	1207	2MG	C2-N2	6.44	1.47	1.33
34	a	1207	2MG	C4-N3	6.42	1.49	1.34
56	w	46	G7M	C4-N3	6.35	1.49	1.34
34	a	966	2MG	C4-N3	6.35	1.49	1.34
8	A	2251	OMG	C4-N3	6.21	1.49	1.34
8	A	2552	OMU	C2-N3	6.20	1.49	1.38
34	a	1516	2MG	C2-N2	6.19	1.47	1.33
8	A	1835	2MG	C4-N3	6.19	1.49	1.34
34	a	1498	UR3	C6-C5	6.17	1.49	1.35
34	a	967	5MC	C2-N3	6.14	1.48	1.36
8	A	2552	OMU	C2-N1	6.11	1.48	1.38
8	A	1962	5MC	C2-N3	6.10	1.48	1.36
8	A	2498	OMC	C6-C5	6.02	1.49	1.35
56	w	8	4SU	C6-C5	5.97	1.48	1.35
8	A	747	5MC	C2-N3	5.94	1.48	1.36
8	A	745	1MG	C4-N3	5.93	1.48	1.34
8	A	1835	2MG	C2-N2	5.92	1.46	1.33
56	w	8	4SU	C2-N3	5.89	1.48	1.38
34	a	1402	4OC	C6-C5	5.89	1.48	1.35
56	w	54	5MU	C6-C5	5.84	1.44	1.34
34	a	1407	5MC	C2-N3	5.82	1.48	1.36
34	a	527	G7M	C2-N3	5.81	1.47	1.33
8	A	1915	3TD	C6-N1	5.81	1.45	1.36
8	A	2498	OMC	C2-N3	5.76	1.48	1.36
8	A	1939	5MU	C6-C5	5.61	1.43	1.34
56	w	46	G7M	C2-N3	5.58	1.46	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
8	A	2503	2MA	C2-N1	5.50	1.43	1.34
8	A	2552	OMU	C6-C5	5.47	1.47	1.35
34	a	1402	4OC	C2-N3	5.43	1.47	1.36
34	a	527	G7M	C4-N3	5.42	1.47	1.34
8	A	2069	G7M	C2-N3	5.32	1.46	1.33
8	A	2503	2MA	C6-N1	5.30	1.42	1.35
8	A	745	1MG	C2-N3	5.26	1.43	1.34
8	A	2498	OMC	C4-N3	5.24	1.45	1.34
34	a	527	G7M	C8-N9	5.22	1.50	1.35
34	a	966	2MG	C2-N1	5.18	1.45	1.36
8	A	2251	OMG	C2-N3	5.16	1.45	1.33
8	A	2069	G7M	C8-N9	5.13	1.50	1.35
8	A	2069	G7M	C4-N3	5.08	1.46	1.34
56	w	8	4SU	C4-S4	-5.06	1.58	1.68
34	a	967	5MC	C4-N4	4.79	1.46	1.34
34	a	1407	5MC	C4-N4	4.78	1.46	1.34
8	A	747	5MC	C4-N4	4.77	1.46	1.34
34	a	527	G7M	C2-N2	4.75	1.45	1.34
34	a	1498	UR3	C2-N3	4.73	1.48	1.39
8	A	1962	5MC	C4-N4	4.72	1.46	1.34
8	A	2445	2MG	C6-N1	-4.67	1.30	1.38
8	A	1915	3TD	C2-N3	4.64	1.48	1.38
8	A	2069	G7M	C2-N2	4.59	1.45	1.34
34	a	967	5MC	C6-N1	4.49	1.45	1.38
56	w	46	G7M	C5-N7	-4.47	1.34	1.39
34	a	1207	2MG	C2-N1	4.45	1.43	1.36
8	A	2251	OMG	C2-N2	4.40	1.44	1.34
56	w	46	G7M	C2-N2	4.39	1.44	1.34
34	a	1516	2MG	C2-N1	4.37	1.43	1.36
34	a	967	5MC	C2-N1	4.32	1.49	1.40
34	a	527	G7M	C5-N7	4.18	1.44	1.39
34	a	1407	5MC	C6-N1	4.15	1.45	1.38
8	A	2503	2MA	C5-C6	4.14	1.52	1.41
8	A	1962	5MC	C6-N1	4.13	1.45	1.38
8	A	747	5MC	C6-N1	3.99	1.44	1.38
8	A	1835	2MG	C2-N1	3.92	1.43	1.36
34	a	1402	4OC	C4-N4	3.89	1.43	1.35
8	A	1962	5MC	C2-N1	3.88	1.48	1.40
8	A	2069	G7M	C5-N7	3.83	1.43	1.39
56	w	46	G7M	C5-C6	3.82	1.54	1.43
8	A	1835	2MG	C5-N7	-3.81	1.31	1.39
8	A	747	5MC	C2-N1	3.77	1.48	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
34	a	1407	5MC	C2-N1	3.75	1.48	1.40
8	A	2503	2MA	C6-N6	-3.72	1.24	1.34
8	A	1835	2MG	O6-C6	-3.71	1.16	1.23
8	A	2030	6MZ	C5-C4	-3.71	1.32	1.39
56	w	55	PSU	C6-C5	3.66	1.39	1.35
34	a	1402	4OC	C5-C4	3.63	1.48	1.40
8	A	2498	OMC	C4-N4	3.59	1.42	1.33
34	a	527	G7M	C2-N1	3.57	1.46	1.37
8	A	2251	OMG	C5-N7	-3.54	1.32	1.39
8	A	2552	OMU	C4-N3	3.52	1.44	1.38
8	A	1618	6MZ	C8-N9	-3.50	1.31	1.37
34	a	1402	4OC	C2-N1	3.48	1.47	1.40
34	a	1516	2MG	O6-C6	-3.47	1.17	1.23
8	A	2069	G7M	C2-N1	3.46	1.46	1.37
34	a	1516	2MG	C5-N7	-3.46	1.32	1.39
8	A	1962	5MC	O2-C2	-3.46	1.17	1.23
8	A	745	1MG	C5-N7	-3.45	1.32	1.39
34	a	1207	2MG	C5-N7	-3.44	1.32	1.39
8	A	747	5MC	O2-C2	-3.43	1.17	1.23
8	A	2445	2MG	C2-N1	-3.39	1.31	1.36
34	a	966	2MG	O6-C6	-3.38	1.17	1.23
56	w	32	PSU	C6-C5	3.36	1.39	1.35
34	a	1407	5MC	O2-C2	-3.34	1.17	1.23
8	A	2445	2MG	C5-N7	-3.34	1.32	1.39
34	a	966	2MG	C5-N7	-3.33	1.32	1.39
8	A	2503	2MA	C5-N7	-3.27	1.32	1.39
8	A	2030	6MZ	C8-N9	-3.25	1.31	1.37
56	w	8	4SU	C5-C4	3.25	1.46	1.42
34	a	1207	2MG	O6-C6	-3.25	1.17	1.23
34	a	967	5MC	O2-C2	-3.23	1.17	1.23
34	a	527	G7M	C6-N1	3.22	1.44	1.38
34	a	1518	MA6	C5-N7	-3.21	1.33	1.39
34	a	1518	MA6	C6-N6	3.17	1.46	1.36
8	A	1618	6MZ	C5-C4	-3.17	1.33	1.39
8	A	2498	OMC	O2-C2	-3.15	1.17	1.23
8	A	1939	5MU	O2-C2	-3.15	1.17	1.23
8	A	1917	PSU	C6-C5	3.11	1.38	1.35
34	a	1402	4OC	O2-C2	-3.11	1.17	1.23
8	A	2498	OMC	C2-N1	3.10	1.46	1.40
8	A	2498	OMC	C6-N1	3.08	1.45	1.38
8	A	1939	5MU	O4-C4	-3.05	1.17	1.23
8	A	2030	6MZ	C4-N9	-3.04	1.30	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
34	a	527	G7M	C5-C6	3.02	1.51	1.43
8	A	2069	G7M	C6-N1	3.02	1.44	1.38
8	A	2552	OMU	O4-C4	-3.01	1.18	1.24
34	a	1519	MA6	C6-N6	3.00	1.45	1.36
34	a	1519	MA6	C8-N9	-2.99	1.32	1.37
34	a	1519	MA6	C5-C4	-2.99	1.33	1.39
34	a	1519	MA6	C5-N7	-2.97	1.33	1.39
8	A	2605	PSU	C6-C5	2.96	1.38	1.35
56	w	39	PSU	C6-C5	2.96	1.38	1.35
34	a	1518	MA6	C8-N9	-2.95	1.32	1.37
56	w	37	MIA	C5-C4	-2.94	1.33	1.39
8	A	1911	PSU	C6-C5	2.94	1.38	1.35
8	A	2445	2MG	C4-N9	-2.93	1.30	1.38
8	A	2069	G7M	C5-C6	2.92	1.51	1.43
8	A	2445	2MG	C8-N9	-2.92	1.31	1.37
8	A	2552	OMU	O2-C2	-2.90	1.17	1.23
56	w	46	G7M	C2-N1	2.88	1.44	1.37
34	a	1498	UR3	C6-N1	2.88	1.44	1.38
34	a	1402	4OC	C6-N1	2.86	1.44	1.38
8	A	2580	PSU	C6-C5	2.84	1.38	1.35
34	a	1518	MA6	C5-C4	-2.83	1.33	1.39
8	A	2251	OMG	O6-C6	-2.80	1.18	1.23
8	A	955	PSU	C6-C5	2.79	1.38	1.35
8	A	1915	3TD	C4-N3	2.78	1.46	1.40
56	w	37	MIA	C5-N7	-2.75	1.33	1.39
8	A	2503	2MA	C4-N9	-2.72	1.31	1.37
56	w	54	5MU	O4-C4	-2.70	1.18	1.23
56	w	46	G7M	C6-N1	2.70	1.43	1.38
8	A	2069	G7M	O6-C6	-2.66	1.18	1.23
8	A	1618	6MZ	C4-N9	-2.64	1.31	1.37
34	a	527	G7M	O6-C6	-2.62	1.18	1.23
8	A	1618	6MZ	C6-N1	-2.58	1.30	1.35
8	A	746	PSU	C6-C5	2.56	1.38	1.35
8	A	2030	6MZ	C6-N1	-2.56	1.31	1.35
56	w	46	G7M	O6-C6	-2.54	1.18	1.23
8	A	2504	PSU	C6-C5	2.54	1.38	1.35
8	A	2445	2MG	C2'-C1'	-2.53	1.45	1.53
8	A	2604	PSU	C4-C5	-2.51	1.37	1.44
56	w	54	5MU	O2-C2	-2.50	1.18	1.23
34	a	1498	UR3	O2-C2	-2.47	1.18	1.22
8	A	2604	PSU	C6-C5	2.43	1.38	1.35
34	a	1516	2MG	C5-C6	2.42	1.53	1.44

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
8	A	2552	OMU	C6-N1	2.41	1.43	1.38
56	w	8	4SU	O2-C2	-2.39	1.18	1.23
8	A	2457	PSU	O4'-C1'	-2.38	1.40	1.43
34	a	1498	UR3	O4-C4	-2.38	1.18	1.23
34	a	1207	2MG	C5-C6	2.37	1.53	1.44
8	A	2580	PSU	O4'-C1'	-2.37	1.40	1.43
8	A	745	1MG	C4-N9	-2.36	1.31	1.38
8	A	2251	OMG	C2-N1	2.35	1.43	1.37
8	A	2580	PSU	C4-C5	-2.34	1.37	1.44
8	A	955	PSU	C4-C5	-2.29	1.37	1.44
8	A	745	1MG	C5-C6	2.28	1.51	1.45
34	a	516	PSU	C6-C5	2.26	1.38	1.35
8	A	2605	PSU	C4-C5	-2.24	1.37	1.44
8	A	2251	OMG	C5-C6	2.23	1.52	1.44
34	a	966	2MG	C5-C6	2.17	1.52	1.44
34	a	1519	MA6	C5-C6	-2.16	1.35	1.41
8	A	2030	6MZ	C5-C6	-2.16	1.36	1.41
8	A	2251	OMG	C4-N9	-2.16	1.32	1.38
8	A	1917	PSU	C4-C5	-2.12	1.38	1.44
8	A	2504	PSU	C4-C5	-2.12	1.38	1.44
34	a	1516	2MG	C6-N1	2.10	1.42	1.38
56	w	37	MIA	C8-N9	-2.10	1.33	1.37
34	a	1207	2MG	C6-N1	2.08	1.42	1.38
8	A	746	PSU	C4-C5	-2.07	1.38	1.44
34	a	1519	MA6	C8-N7	2.07	1.35	1.31
8	A	1911	PSU	C4-C5	-2.07	1.38	1.44
34	a	1498	UR3	C5-C4	2.07	1.49	1.43
8	A	2504	PSU	O4'-C1'	-2.06	1.41	1.43
8	A	2552	OMU	C5-C4	2.06	1.48	1.43
34	a	1518	MA6	C8-N7	2.05	1.35	1.31
34	a	1518	MA6	C5-C6	-2.05	1.36	1.41
8	A	2457	PSU	C4-C5	-2.03	1.38	1.44
8	A	2457	PSU	C6-C5	2.03	1.37	1.35
8	A	2251	OMG	C6-N1	2.02	1.42	1.38
8	A	1835	2MG	C8-N9	-2.02	1.33	1.37
8	A	2503	2MA	C8-N9	-2.02	1.33	1.37
8	A	1917	PSU	O4'-C1'	-2.01	1.41	1.43
56	w	8	4SU	C6-N1	2.00	1.42	1.38

All (264) bond angle outliers are listed below:

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
56	w	37	MIA	C11-S10-C2	17.08	115.02	102.27
8	A	2030	6MZ	C4-N9-C8	14.01	120.91	105.73
8	A	1618	6MZ	C4-N9-C8	12.93	119.74	105.73
8	A	1939	5MU	C5-C4-N3	12.70	126.15	115.31
56	w	54	5MU	C5-C4-N3	12.05	125.60	115.31
8	A	1939	5MU	C5-C6-N1	-11.25	111.76	123.34
8	A	2030	6MZ	N9-C8-N7	-11.21	98.59	113.91
8	A	1618	6MZ	N9-C8-N7	-10.23	99.92	113.91
56	w	54	5MU	C5-C6-N1	-9.97	113.09	123.34
34	a	1518	MA6	N1-C6-N6	-9.84	106.32	117.08
56	w	37	MIA	C12-C13-C14	-9.23	109.17	127.14
34	a	1519	MA6	N1-C6-N6	-9.13	107.10	117.08
8	A	2030	6MZ	C5-C6-N1	8.69	127.45	118.20
8	A	2445	2MG	C2-N3-C4	8.55	122.64	112.04
8	A	1618	6MZ	C5-C6-N1	8.29	127.03	118.20
56	w	8	4SU	C4-N3-C2	-7.30	120.25	127.34
8	A	2030	6MZ	C9-N6-C6	-6.98	116.86	122.87
8	A	1835	2MG	C2-N3-C4	6.93	120.64	112.04
8	A	2445	2MG	C5-C4-N3	-6.92	117.23	128.46
8	A	1618	6MZ	N3-C4-N9	6.76	138.22	127.08
34	a	1516	2MG	C2-N3-C4	6.73	120.38	112.04
56	w	37	MIA	C5-C4-N3	-6.31	120.10	127.19
34	a	1207	2MG	C2-N3-C4	6.30	119.86	112.04
8	A	2030	6MZ	N3-C4-N9	6.30	137.46	127.08
34	a	966	2MG	C2-N3-C4	6.02	119.50	112.04
56	w	46	G7M	CN7-N7-C5	6.00	134.23	126.77
8	A	2503	2MA	C5-C4-N3	-5.78	120.69	127.19
8	A	1835	2MG	C5-C4-N3	-5.77	119.10	128.46
34	a	1516	2MG	C5-C4-N3	-5.64	119.30	128.46
8	A	2503	2MA	N9-C8-N7	-5.61	106.23	113.91
8	A	1939	5MU	C4-N3-C2	-5.54	120.17	127.35
34	a	1519	MA6	N1-C2-N3	-5.51	119.98	128.60
8	A	2552	OMU	C4-N3-C2	-5.49	119.33	126.58
8	A	2580	PSU	N1-C2-N3	5.47	121.33	115.13
8	A	745	1MG	C1'-N9-C4	-5.41	110.44	126.50
56	w	8	4SU	C5-C4-N3	5.38	119.67	114.69
8	A	1939	5MU	O4-C4-C5	-5.37	118.67	124.90
34	a	1518	MA6	N1-C2-N3	-5.36	120.21	128.60
8	A	2030	6MZ	N1-C2-N3	-5.33	120.26	128.60
8	A	2457	PSU	N1-C2-N3	5.32	121.16	115.13
34	a	1207	2MG	C5-C4-N3	-5.31	119.84	128.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	A	2457	PSU	C4-N3-C2	-5.24	118.79	126.34
8	A	746	PSU	C4-N3-C2	-5.11	118.97	126.34
8	A	2251	OMG	C5-C4-N3	-5.08	120.22	128.46
34	a	1518	MA6	C5-C6-N6	5.07	134.13	125.30
8	A	2030	6MZ	C5-C4-N9	-5.03	99.93	105.78
8	A	1939	5MU	N3-C2-N1	5.03	121.56	114.89
8	A	1917	PSU	C4-N3-C2	-5.01	119.12	126.34
8	A	2604	PSU	C4-N3-C2	-4.99	119.14	126.34
8	A	1835	2MG	C2-N1-C6	-4.95	118.78	124.48
8	A	955	PSU	C4-N3-C2	-4.95	119.21	126.34
8	A	1911	PSU	C4-N3-C2	-4.94	119.22	126.34
34	a	1516	2MG	C2-N1-C6	-4.91	118.83	124.48
8	A	1917	PSU	N1-C2-N3	4.90	120.68	115.13
34	a	1519	MA6	C5-C4-N3	-4.89	120.37	126.75
56	w	46	G7M	C1'-N9-C4	-4.86	112.06	126.50
8	A	745	1MG	C5-C4-N3	-4.86	120.58	128.46
8	A	955	PSU	N1-C2-N3	4.82	120.59	115.13
8	A	1618	6MZ	N1-C2-N3	-4.79	121.12	128.60
8	A	2605	PSU	C4-N3-C2	-4.74	119.50	126.34
56	w	46	G7M	CN7-N7-C8	-4.74	117.52	124.84
56	w	54	5MU	C4-N3-C2	-4.72	121.25	127.35
8	A	2604	PSU	N1-C2-N3	4.71	120.46	115.13
56	w	55	PSU	N1-C2-N3	4.69	120.45	115.13
8	A	1911	PSU	N1-C2-N3	4.69	120.44	115.13
8	A	745	1MG	C1'-N9-C8	4.68	140.02	126.70
8	A	2030	6MZ	C5-N7-C8	4.67	110.14	103.51
8	A	2580	PSU	C4-N3-C2	-4.66	119.62	126.34
8	A	1915	3TD	N1-C2-N3	4.66	119.81	116.14
56	w	54	5MU	O4-C4-C5	-4.65	119.51	124.90
8	A	2552	OMU	N3-C2-N1	4.64	121.05	114.89
34	a	1519	MA6	N9-C8-N7	-4.63	107.58	113.91
8	A	1618	6MZ	C1'-N9-C8	-4.61	116.72	127.14
34	a	966	2MG	C5-C4-N3	-4.61	120.99	128.46
8	A	1618	6MZ	C5-C4-N9	-4.59	100.44	105.78
56	w	39	PSU	N1-C2-N3	4.59	120.33	115.13
56	w	32	PSU	C4-N3-C2	-4.53	119.81	126.34
56	w	39	PSU	C4-N3-C2	-4.51	119.84	126.34
8	A	2504	PSU	C4-N3-C2	-4.51	119.84	126.34
8	A	1618	6MZ	C5-N7-C8	4.50	109.90	103.51
56	w	37	MIA	C16-C14-C13	-4.49	109.68	122.65
56	w	32	PSU	N1-C2-N3	4.46	120.19	115.13
8	A	746	PSU	N1-C2-N3	4.40	120.11	115.13

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	A	2605	PSU	N1-C2-N3	4.37	120.08	115.13
56	w	54	5MU	N3-C2-N1	4.36	120.68	114.89
56	w	55	PSU	C4-N3-C2	-4.34	120.08	126.34
8	A	2503	2MA	C4-N9-C8	4.34	110.43	105.73
34	a	527	G7M	C2-N3-C4	4.33	120.01	112.30
8	A	2445	2MG	N9-C4-N3	4.32	134.62	125.94
56	w	46	G7M	C2-N3-C4	4.32	120.00	112.30
56	w	37	MIA	C15-C14-C13	-4.27	110.31	122.65
34	a	1518	MA6	C5-C4-N3	-4.25	121.21	126.75
34	a	1207	2MG	C2-N1-C6	-4.25	119.59	124.48
56	w	54	5MU	C5M-C5-C6	-4.21	117.22	122.85
34	a	1519	MA6	C5-C6-N6	4.20	132.62	125.30
34	a	1498	UR3	C4-N3-C2	-4.18	120.63	124.56
8	A	2445	2MG	C6-C5-N7	4.17	138.00	130.25
8	A	2503	2MA	N3-C4-N9	4.17	132.77	126.99
8	A	1618	6MZ	C5-C4-N3	-4.16	121.33	126.75
56	w	54	5MU	C5M-C5-C4	4.13	123.32	118.77
8	A	2251	OMG	C2-N3-C4	4.12	119.63	112.30
56	w	37	MIA	N9-C8-N7	-4.06	108.36	113.91
8	A	2069	G7M	C2-N3-C4	4.04	119.50	112.30
34	a	1518	MA6	N9-C8-N7	-3.99	108.45	113.91
8	A	2504	PSU	N1-C2-N3	3.98	119.64	115.13
8	A	1962	5MC	C5-C6-N1	-3.98	119.25	123.34
56	w	8	4SU	C5-C4-S4	-3.95	119.37	124.47
56	w	46	G7M	C5-C6-N1	3.94	120.01	111.79
34	a	527	G7M	C5-C6-N1	3.93	119.99	111.79
56	w	37	MIA	N3-C2-N1	-3.87	119.86	126.95
34	a	527	G7M	C5-C4-N3	-3.85	120.76	128.15
34	a	1407	5MC	C5-C6-N1	-3.84	119.38	123.34
56	w	46	G7M	C5-C4-N3	-3.82	120.82	128.15
8	A	747	5MC	C5-C6-N1	-3.81	119.42	123.34
8	A	2069	G7M	C5-C6-N1	3.80	119.72	111.79
8	A	1939	5MU	O2-C2-N1	-3.76	117.79	122.79
34	a	516	PSU	C4-N3-C2	-3.75	120.93	126.34
34	a	516	PSU	N1-C2-N3	3.73	119.36	115.13
8	A	1835	2MG	N9-C4-N3	3.72	133.41	125.94
56	w	37	MIA	C4-C5-C6	3.71	119.68	116.81
56	w	46	G7M	O6-C6-C5	-3.71	119.70	128.06
8	A	2445	2MG	C2-N1-C6	-3.70	120.22	124.48
56	w	46	G7M	C1'-N9-C8	3.70	139.23	126.74
34	a	1518	MA6	C2-N1-C6	3.70	120.48	111.75
34	a	967	5MC	C5-C6-N1	-3.62	119.61	123.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	A	2030	6MZ	C1'-N9-C8	-3.62	118.96	127.14
56	w	37	MIA	N3-C4-N9	3.62	132.01	126.99
8	A	2580	PSU	C6-N1-C2	-3.59	119.01	122.68
8	A	2445	2MG	C4-C5-N7	-3.59	105.04	110.72
34	a	966	2MG	C1'-N9-C4	-3.59	115.84	126.50
34	a	966	2MG	C2-N1-C6	-3.54	120.41	124.48
34	a	1516	2MG	N9-C4-N3	3.53	133.02	125.94
34	a	527	G7M	O6-C6-C5	-3.48	120.20	128.06
8	A	2457	PSU	O2-C2-N1	-3.47	118.97	122.79
8	A	745	1MG	N9-C8-N7	-3.46	106.87	113.39
8	A	1618	6MZ	C2-N3-C4	3.46	119.93	111.75
8	A	1939	5MU	C5M-C5-C6	-3.46	118.22	122.85
34	a	1519	MA6	C2-N1-C6	3.46	119.92	111.75
34	a	1207	2MG	N9-C4-N3	3.45	132.87	125.94
8	A	2503	2MA	C5-N7-C8	3.45	108.41	103.51
34	a	1519	MA6	C4-C5-C6	3.44	119.73	115.88
34	a	1498	UR3	C1'-N1-C2	3.44	122.80	116.99
8	A	1915	3TD	C4-N3-C2	-3.41	120.91	124.61
8	A	2069	G7M	C5-C4-N3	-3.40	121.63	128.15
34	a	1519	MA6	C2-N3-C4	3.37	119.72	111.75
8	A	2030	6MZ	C2-N3-C4	3.36	119.68	111.75
8	A	2069	G7M	O6-C6-C5	-3.32	120.58	128.06
8	A	2251	OMG	C2-N1-C6	-3.30	119.09	125.10
8	A	745	1MG	C2-N3-C4	3.28	119.35	111.98
56	w	8	4SU	N3-C2-N1	3.26	119.22	114.89
8	A	2251	OMG	N9-C4-N3	3.23	132.43	125.94
34	a	1518	MA6	C4-C5-C6	3.23	119.49	115.88
8	A	2030	6MZ	C5-C4-N3	-3.21	122.56	126.75
8	A	2503	2MA	N3-C2-N1	-3.18	119.87	125.72
34	a	1498	UR3	C6-N1-C2	-3.17	118.94	121.79
34	a	516	PSU	C6-N1-C2	-3.17	119.44	122.68
8	A	2457	PSU	C6-C5-C4	3.16	120.41	118.20
8	A	2504	PSU	O2-C2-N1	-3.13	119.34	122.79
34	a	1519	MA6	N3-C4-N9	3.13	132.23	127.08
8	A	2445	2MG	O2'-C2'-C1'	-3.10	99.65	110.02
34	a	1518	MA6	C2-N3-C4	3.09	119.06	111.75
34	a	966	2MG	C1'-N9-C8	3.08	135.47	126.70
8	A	745	1MG	N9-C4-N3	3.06	132.09	125.94
8	A	2030	6MZ	C4-C5-C6	-3.05	114.44	116.81
8	A	2552	OMU	C5-C4-N3	3.04	119.39	114.84
34	a	516	PSU	O2-C2-N1	-3.00	119.48	122.79
34	a	1519	MA6	C5-N7-C8	2.99	107.75	103.51

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	A	1835	2MG	C5-C6-N1	2.97	120.73	113.19
56	w	55	PSU	O2-C2-N1	-2.97	119.53	122.79
8	A	2445	2MG	C2'-C1'-N9	-2.96	104.82	113.22
8	A	747	5MC	CM5-C5-C6	-2.96	118.90	122.85
8	A	2251	OMG	N9-C8-N7	-2.95	107.83	113.39
34	a	1516	2MG	N9-C8-N7	-2.95	107.84	113.39
8	A	2604	PSU	O2-C2-N1	-2.94	119.55	122.79
56	w	46	G7M	C2-N1-C6	-2.93	119.76	125.10
34	a	1207	2MG	N9-C8-N7	-2.92	107.89	113.39
56	w	37	MIA	C2-N3-C4	2.91	120.00	112.35
34	a	966	2MG	N9-C4-N3	2.90	131.76	125.94
34	a	966	2MG	N1-C2-N3	-2.90	119.48	123.95
8	A	1939	5MU	C5M-C5-C4	2.89	121.95	118.77
34	a	1516	2MG	C5-C6-N1	2.89	120.53	113.19
34	a	966	2MG	N9-C8-N7	-2.88	107.97	113.39
8	A	1835	2MG	N9-C8-N7	-2.87	107.99	113.39
34	a	1407	5MC	CM5-C5-C6	-2.86	119.03	122.85
56	w	37	MIA	C5-N7-C8	2.85	107.56	103.51
8	A	2030	6MZ	C4-N9-C1'	-2.85	119.81	126.59
34	a	1519	MA6	C4-N9-C8	2.83	108.80	105.73
34	a	527	G7M	C2-N1-C6	-2.83	119.94	125.10
8	A	2251	OMG	C5-C6-N1	2.81	120.32	113.19
34	a	1498	UR3	O2-C2-N3	-2.79	117.40	121.34
8	A	1835	2MG	O6-C6-C5	-2.77	119.25	126.60
34	a	1207	2MG	C1'-N9-C4	-2.77	118.28	126.50
8	A	2552	OMU	O4-C4-C5	-2.77	120.29	125.16
8	A	2069	G7M	C2-N1-C6	-2.77	120.06	125.10
56	w	46	G7M	N9-C4-N3	2.76	131.48	125.94
8	A	2580	PSU	C6-C5-C4	2.74	120.12	118.20
8	A	1911	PSU	O2-C2-N1	-2.74	119.77	122.79
8	A	1618	6MZ	C9-N6-C6	-2.73	120.52	122.87
56	w	54	5MU	O4-C4-N3	-2.73	114.89	120.12
8	A	2251	OMG	O6-C6-C5	-2.69	119.47	126.60
8	A	1917	PSU	O2-C2-N1	-2.67	119.86	122.79
8	A	2605	PSU	O2-C2-N1	-2.66	119.86	122.79
8	A	955	PSU	C6-N1-C2	-2.66	119.97	122.68
8	A	2445	2MG	C5-C6-N1	2.65	119.92	113.19
8	A	2030	6MZ	C6-C5-N7	2.65	135.25	132.39
34	a	1207	2MG	C5-C6-N1	2.63	119.88	113.19
34	a	1516	2MG	C1'-N9-C4	-2.62	118.73	126.50
34	a	1516	2MG	O6-C6-C5	-2.61	119.68	126.60
8	A	1939	5MU	O4-C4-N3	-2.58	115.17	120.12

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	A	746	PSU	C6-C5-C4	2.56	119.99	118.20
8	A	2580	PSU	O2-C2-N1	-2.55	119.98	122.79
8	A	1835	2MG	CM2-N2-C2	-2.55	118.24	123.86
56	w	32	PSU	O2-C2-N1	-2.55	119.99	122.79
8	A	746	PSU	O2-C2-N1	-2.54	119.99	122.79
34	a	966	2MG	O6-C6-C5	-2.53	119.90	126.60
8	A	2069	G7M	N9-C8-N7	-2.52	105.97	112.21
34	a	966	2MG	C5-C6-N1	2.52	119.59	113.19
34	a	527	G7M	N9-C8-N7	-2.52	105.98	112.21
8	A	2445	2MG	CM2-N2-C2	-2.51	118.32	123.86
8	A	2457	PSU	C6-N1-C2	-2.50	120.13	122.68
34	a	1518	MA6	C5-N7-C8	2.49	107.04	103.51
8	A	745	1MG	C5-C6-N1	2.45	119.65	114.91
56	w	55	PSU	C6-N1-C2	-2.45	120.17	122.68
56	w	37	MIA	S10-C2-N1	2.45	124.48	116.01
8	A	1835	2MG	N1-C2-N3	-2.44	120.18	123.95
8	A	745	1MG	CM1-N1-C6	2.44	121.43	117.69
8	A	2552	OMU	O2-C2-N1	-2.44	119.54	122.79
34	a	1207	2MG	N1-C2-N3	-2.42	120.20	123.95
34	a	1207	2MG	O6-C6-C5	-2.41	120.22	126.60
56	w	39	PSU	C6-N1-C2	-2.40	120.23	122.68
34	a	1516	2MG	CM2-N2-C2	-2.38	118.60	123.86
8	A	955	PSU	O2-C2-N1	-2.38	120.17	122.79
8	A	2457	PSU	O4'-C1'-C2'	2.37	108.48	105.14
8	A	2605	PSU	C6-N1-C2	-2.35	120.28	122.68
8	A	2604	PSU	C6-C5-C4	2.35	119.84	118.20
8	A	2503	2MA	CM2-C2-N1	2.32	120.77	117.15
8	A	2445	2MG	C8-N7-C5	2.31	108.42	104.24
8	A	2604	PSU	C6-N1-C2	-2.31	120.32	122.68
8	A	1917	PSU	C6-N1-C2	-2.31	120.33	122.68
34	a	1516	2MG	N1-C2-N3	-2.30	120.39	123.95
8	A	1911	PSU	C6-N1-C2	-2.29	120.34	122.68
34	a	1207	2MG	C1'-N9-C8	2.27	133.15	126.70
8	A	2580	PSU	O4'-C1'-C2'	2.24	108.31	105.14
34	a	1402	4OC	C6-C5-C4	2.24	119.70	116.96
56	w	37	MIA	N6-C6-N1	-2.23	115.65	118.50
34	a	1518	MA6	N3-C4-N9	2.23	130.76	127.08
56	w	8	4SU	C1'-N1-C2	2.22	121.59	117.57
34	a	1516	2MG	C1'-N9-C8	2.20	132.95	126.70
56	w	37	MIA	C12-N6-C6	-2.18	119.32	122.55
56	w	54	5MU	O2-C2-N1	-2.16	119.92	122.79
34	a	1516	2MG	C8-N7-C5	2.15	108.14	104.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	A	745	1MG	C8-N7-C5	2.14	108.12	104.24
8	A	1939	5MU	C6-C5-C4	2.14	119.82	118.03
8	A	1835	2MG	C1'-N9-C4	-2.14	120.16	126.50
8	A	1917	PSU	C6-C5-C4	2.10	119.67	118.20
34	a	1518	MA6	C4-N9-C8	2.10	108.00	105.73
8	A	2504	PSU	C6-N1-C2	-2.07	120.56	122.68
56	w	32	PSU	C6-N1-C2	-2.06	120.57	122.68
34	a	1207	2MG	C8-N7-C5	2.06	107.96	104.24
34	a	516	PSU	O4'-C1'-C2'	2.04	108.02	105.14
34	a	1402	4OC	CM4-N4-C4	-2.04	118.47	122.45
8	A	2445	2MG	O4'-C1'-N9	2.03	113.01	108.36
8	A	2069	G7M	C5-C4-N9	2.01	110.29	105.89
8	A	1962	5MC	CM5-C5-C6	-2.01	120.17	122.85

There are no chirality outliers.

All (79) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
8	A	746	PSU	C2'-C1'-C5-C4
8	A	746	PSU	C2'-C1'-C5-C6
8	A	746	PSU	O4'-C1'-C5-C6
8	A	955	PSU	C2'-C1'-C5-C4
8	A	1618	6MZ	C5-C6-N6-C9
8	A	1618	6MZ	N1-C6-N6-C9
8	A	1915	3TD	O4'-C1'-C5-C4
8	A	1915	3TD	O4'-C1'-C5-C6
8	A	2251	OMG	C1'-C2'-O2'-CM2
8	A	2445	2MG	C3'-C4'-C5'-O5'
8	A	2552	OMU	C1'-C2'-O2'-CM2
34	a	516	PSU	C2'-C1'-C5-C4
34	a	516	PSU	C2'-C1'-C5-C6
34	a	966	2MG	C3'-C4'-C5'-O5'
34	a	967	5MC	O4'-C4'-C5'-O5'
34	a	1498	UR3	O4'-C4'-C5'-O5'
34	a	1498	UR3	O4'-C1'-N1-C6
34	a	1498	UR3	O4'-C1'-N1-C2
34	a	1518	MA6	C5-C6-N6-C10
56	w	32	PSU	C2'-C1'-C5-C4
56	w	32	PSU	O4'-C1'-C5-C4
56	w	32	PSU	O4'-C1'-C5-C6
56	w	37	MIA	C5-C6-N6-C12
56	w	37	MIA	N1-C6-N6-C12

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Mol	Chain	Res	Type	Atoms
56	w	37	MIA	N1-C2-S10-C11
56	w	37	MIA	N3-C2-S10-C11
56	w	37	MIA	C12-C13-C14-C15
56	w	37	MIA	C12-C13-C14-C16
56	w	39	PSU	C2'-C1'-C5-C4
56	w	39	PSU	O4'-C1'-C5-C4
56	w	39	PSU	O4'-C1'-C5-C6
56	w	46	G7M	O4'-C4'-C5'-O5'
56	w	46	G7M	C3'-C4'-C5'-O5'
8	A	2552	OMU	O4'-C1'-N1-C2
8	A	2030	6MZ	O4'-C4'-C5'-O5'
8	A	2503	2MA	O4'-C4'-C5'-O5'
34	a	967	5MC	C3'-C4'-C5'-O5'
34	a	1498	UR3	C3'-C4'-C5'-O5'
56	w	37	MIA	O4'-C4'-C5'-O5'
34	a	966	2MG	O4'-C4'-C5'-O5'
34	a	1207	2MG	O4'-C4'-C5'-O5'
34	a	1207	2MG	C3'-C4'-C5'-O5'
8	A	2445	2MG	O4'-C4'-C5'-O5'
56	w	32	PSU	C3'-C4'-C5'-O5'
56	w	37	MIA	C3'-C4'-C5'-O5'
8	A	1835	2MG	O4'-C4'-C5'-O5'
8	A	2504	PSU	O4'-C4'-C5'-O5'
8	A	2552	OMU	O4'-C4'-C5'-O5'
8	A	2552	OMU	O4'-C1'-N1-C6
8	A	1835	2MG	C3'-C4'-C5'-O5'
8	A	2503	2MA	C3'-C4'-C5'-O5'
8	A	2504	PSU	C3'-C4'-C5'-O5'
8	A	2552	OMU	C3'-C4'-C5'-O5'
34	a	1518	MA6	C5-C6-N6-C9
34	a	967	5MC	C4'-C5'-O5'-P
8	A	747	5MC	C3'-C4'-C5'-O5'
56	w	32	PSU	O4'-C4'-C5'-O5'
8	A	2030	6MZ	C3'-C4'-C5'-O5'
8	A	1915	3TD	C3'-C4'-C5'-O5'
8	A	747	5MC	C4'-C5'-O5'-P
34	a	1498	UR3	C2'-C1'-N1-C6
8	A	2498	OMC	C4'-C5'-O5'-P
34	a	1207	2MG	C4'-C5'-O5'-P
8	A	746	PSU	O4'-C1'-C5-C4
8	A	955	PSU	O4'-C1'-C5-C4
8	A	1911	PSU	O4'-C1'-C5-C4

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Mol	Chain	Res	Type	Atoms
8	A	2605	PSU	O4'-C1'-C5-C4
8	A	2030	6MZ	C2'-C1'-N9-C8
8	A	2498	OMC	O4'-C4'-C5'-O5'
34	a	1518	MA6	N1-C6-N6-C10
34	a	527	G7M	C4'-C5'-O5'-P
8	A	747	5MC	O4'-C4'-C5'-O5'
8	A	955	PSU	O4'-C1'-C5-C6
8	A	2605	PSU	O4'-C1'-C5-C6
56	w	55	PSU	O4'-C4'-C5'-O5'
8	A	2069	G7M	O4'-C4'-C5'-O5'
34	a	1498	UR3	C2'-C1'-N1-C2
56	w	46	G7M	C4'-C5'-O5'-P
34	a	967	5MC	O4'-C1'-N1-C6

There are no ring outliers.

29 monomers are involved in 67 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
34	a	1516	2MG	2	0
8	A	2030	6MZ	4	0
8	A	2251	OMG	1	0
8	A	2504	PSU	2	0
8	A	2552	OMU	2	0
8	A	746	PSU	1	0
34	a	1402	4OC	1	0
34	a	966	2MG	2	0
34	a	516	PSU	4	0
56	w	54	5MU	2	0
34	a	1518	MA6	3	0
56	w	37	MIA	9	0
34	a	1207	2MG	2	0
8	A	2457	PSU	2	0
8	A	747	5MC	1	0
8	A	955	PSU	2	0
34	a	527	G7M	2	0
34	a	967	5MC	5	0
34	a	1519	MA6	1	0
56	w	8	4SU	2	0
56	w	39	PSU	2	0
34	a	1498	UR3	2	0
8	A	1939	5MU	1	0
34	a	1407	5MC	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
8	A	1962	5MC	1	0
56	w	32	PSU	1	0
8	A	2445	2MG	1	0
56	w	55	PSU	5	0
8	A	1915	3TD	9	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 257 ligands modelled in this entry, 257 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

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.

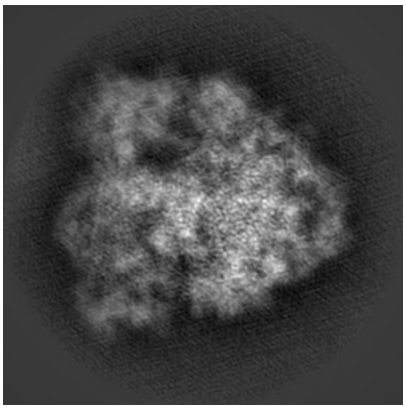
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-10907. These allow visual inspection of the internal detail of the map and identification of artifacts.

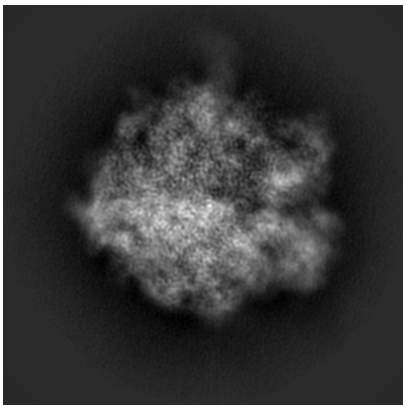
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

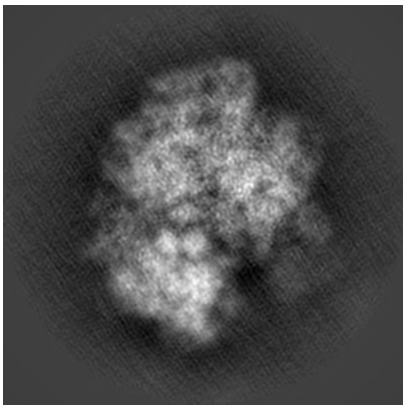
6.1.1 Primary map



X

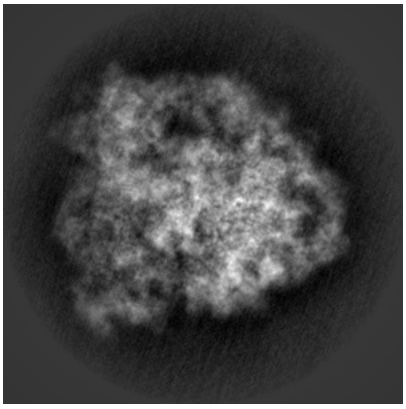


Y

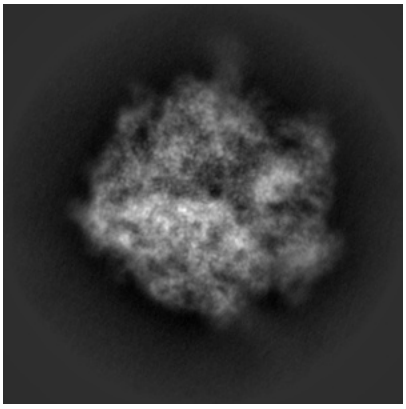


Z

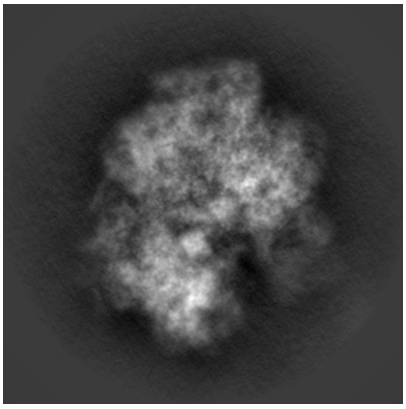
6.1.2 Raw map



X



Y

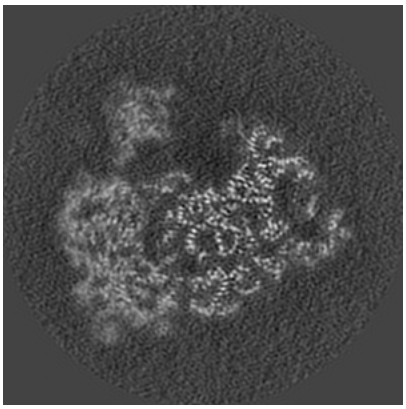


Z

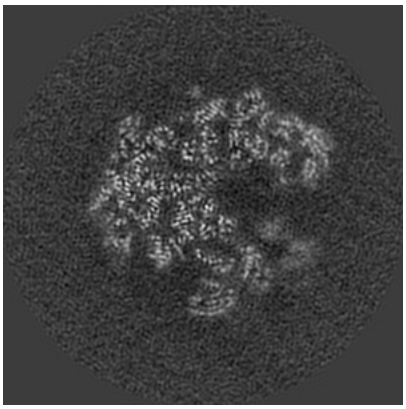
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

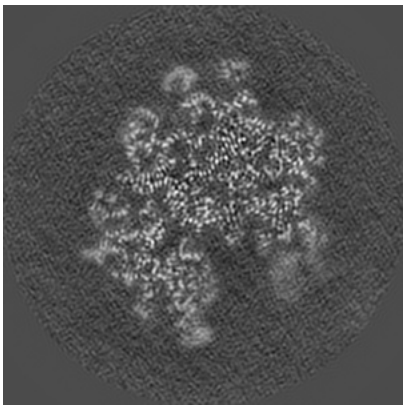
6.2.1 Primary map



X Index: 144

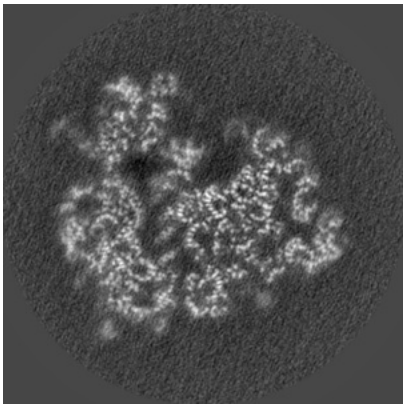


Y Index: 144

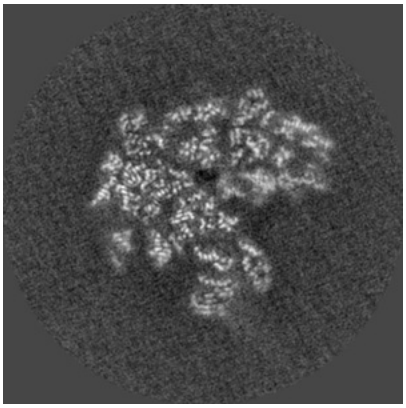


Z Index: 144

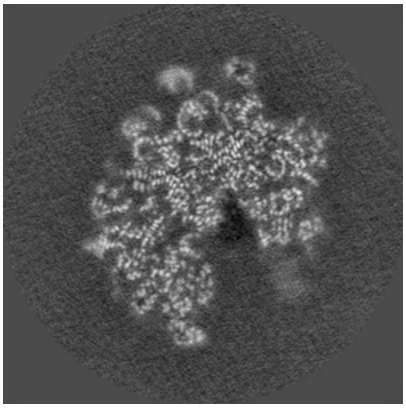
6.2.2 Raw map



X Index: 144



Y Index: 144

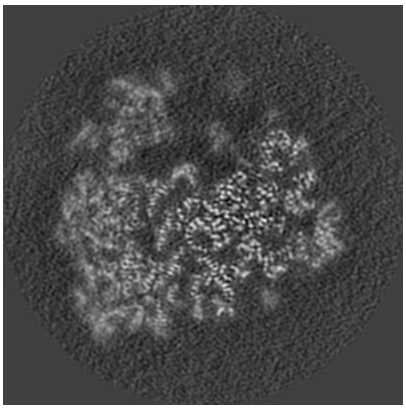


Z Index: 144

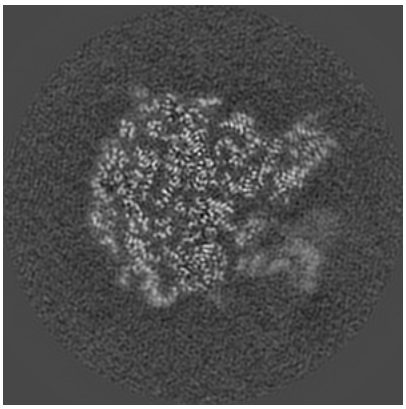
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

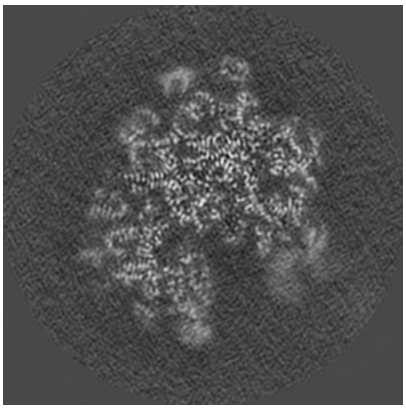
6.3.1 Primary map



X Index: 138

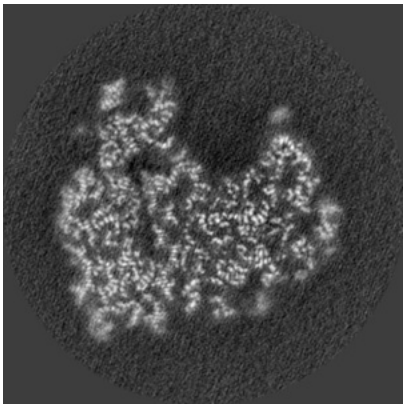


Y Index: 165

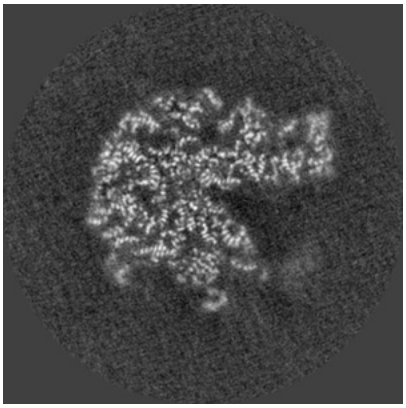


Z Index: 146

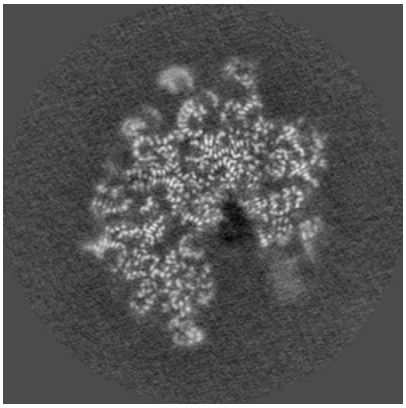
6.3.2 Raw map



X Index: 136



Y Index: 157

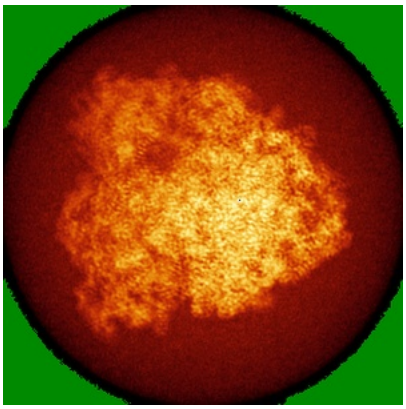


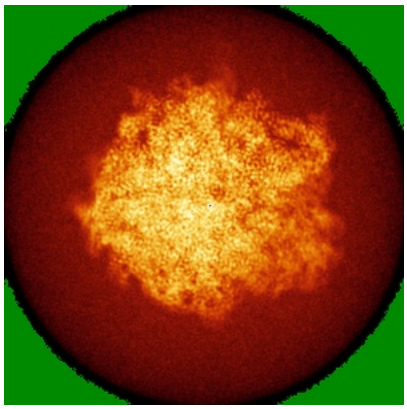
Z Index: 145

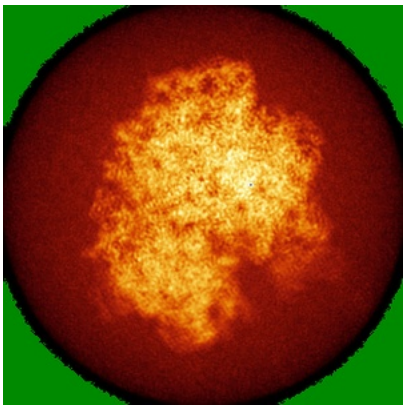
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

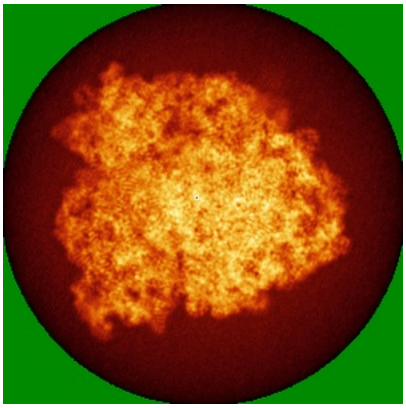
6.4.1 Primary map

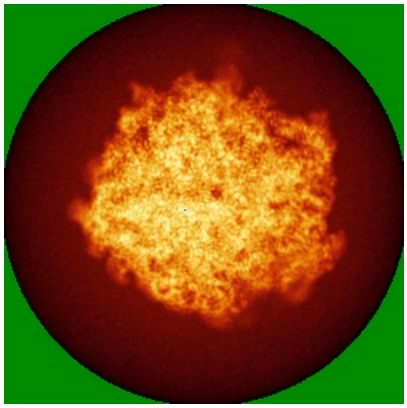

X

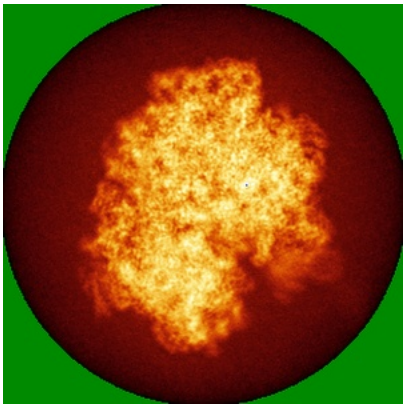

Y


Z

6.4.2 Raw map


X

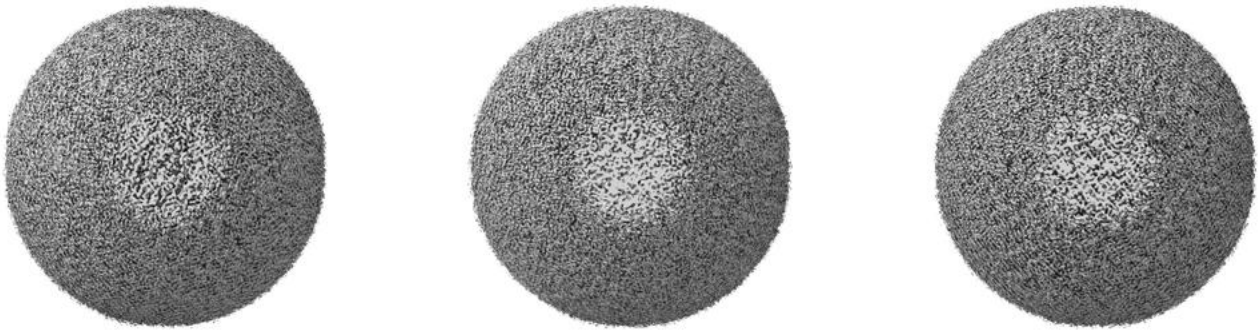

Y


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



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.03. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

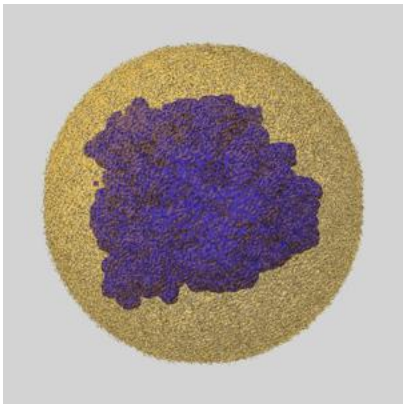
6.6 Mask visualisation (i)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

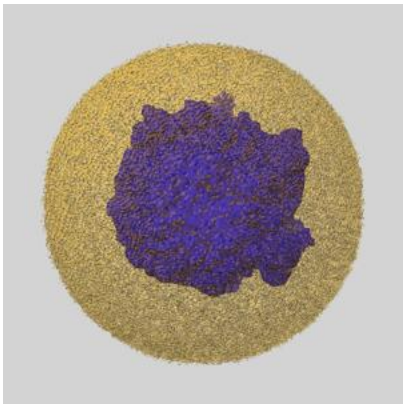
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

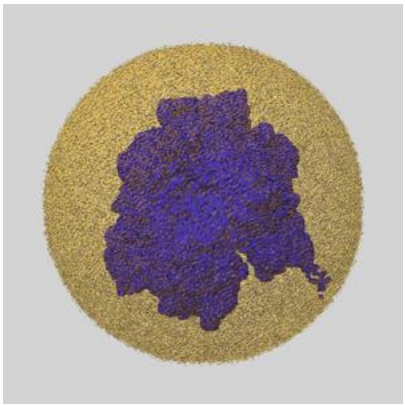
6.6.1 emd_10907_msk_1.map (i)



X



Y

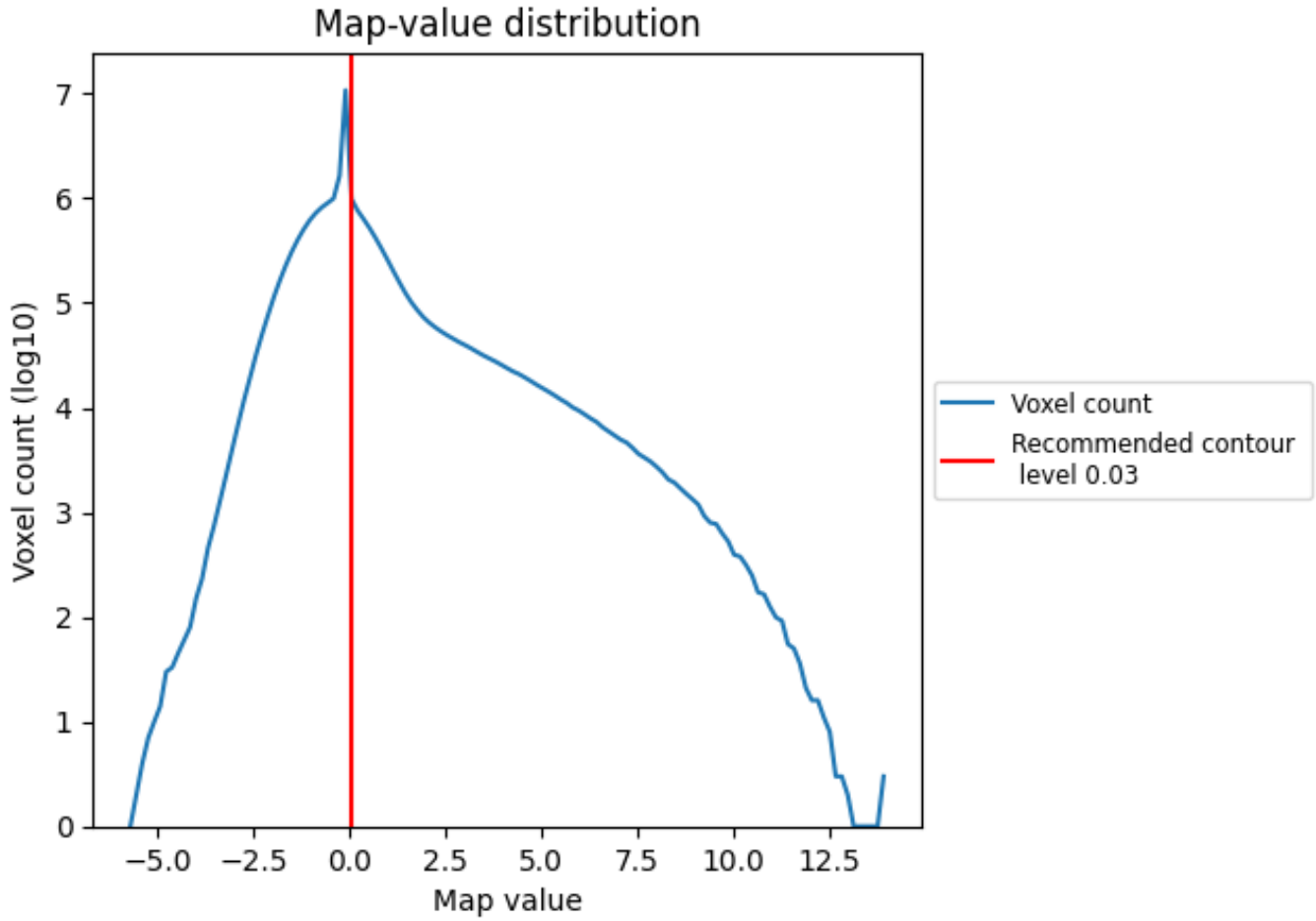


Z

7 Map analysis

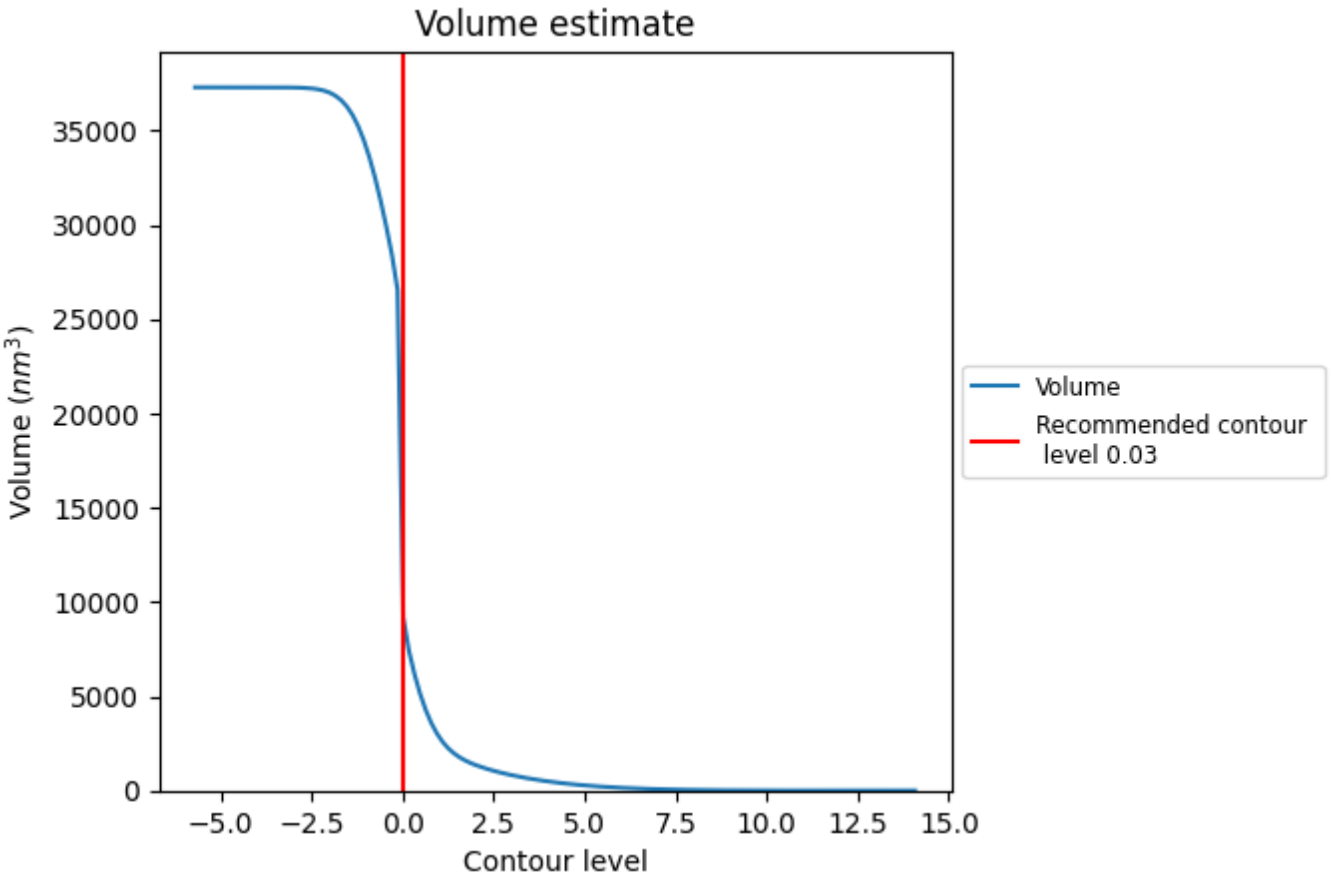
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

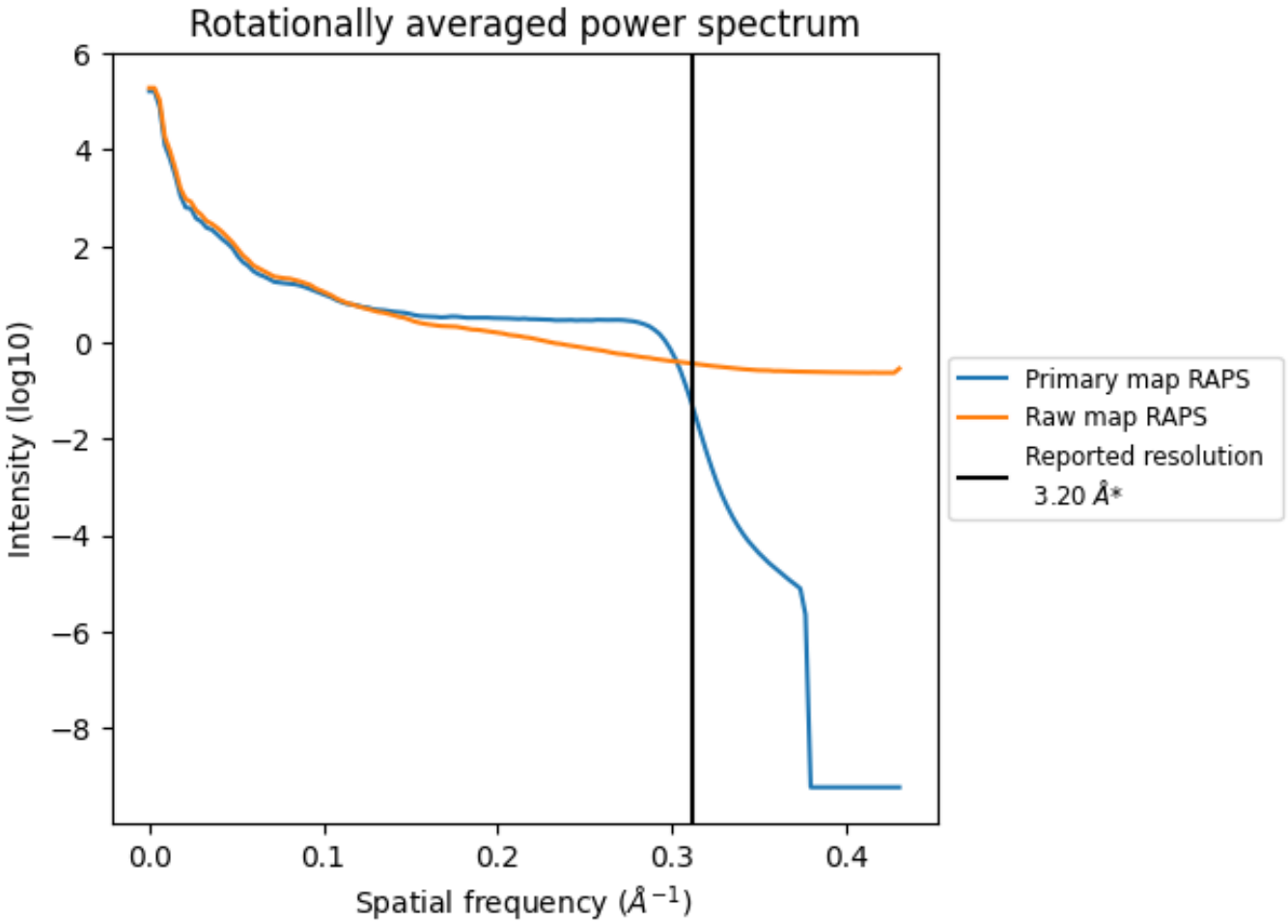
7.2 Volume estimate



The volume at the recommended contour level is 9022 nm^3; this corresponds to an approximate mass of 8149 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 (i)

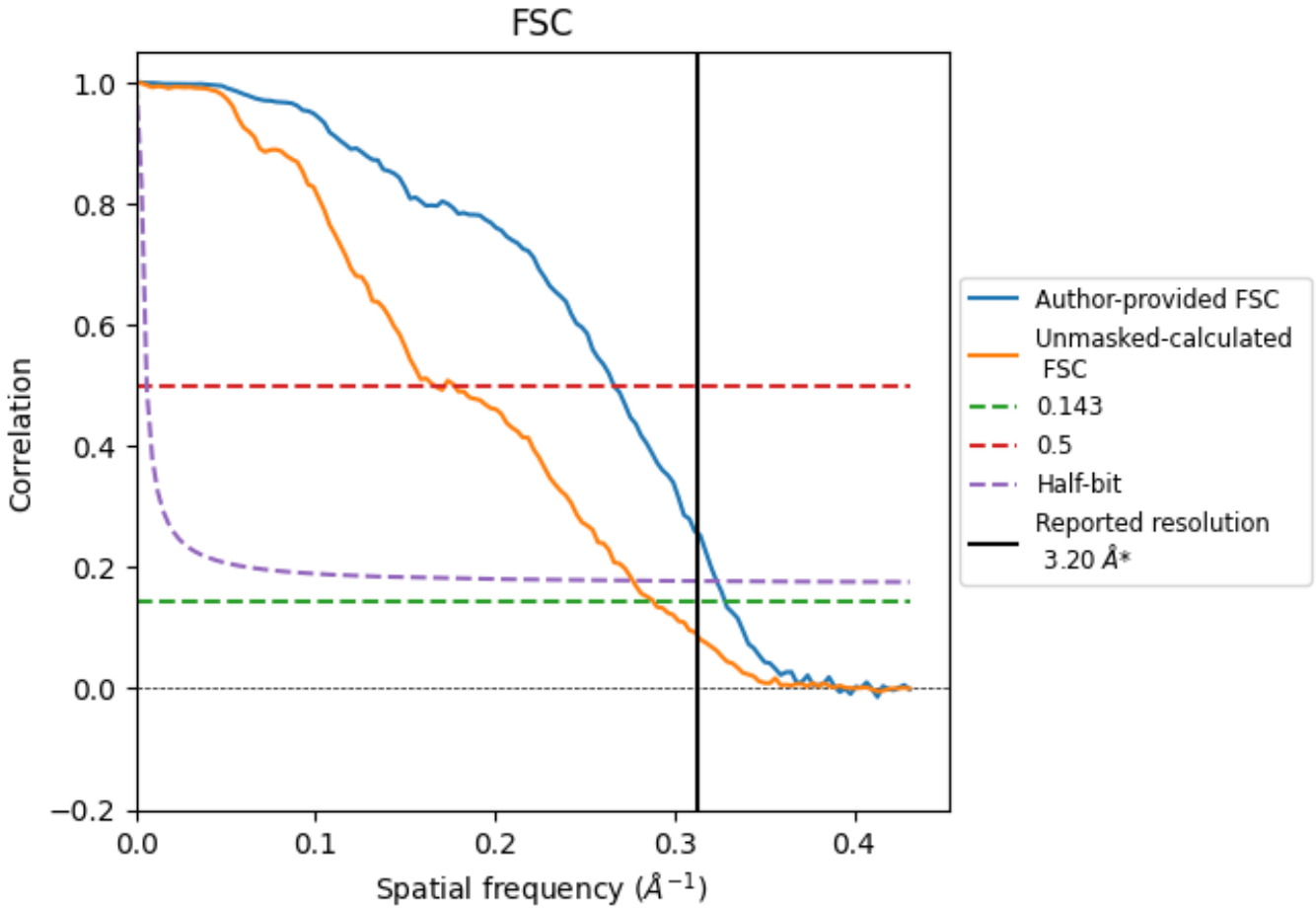


*Reported resolution corresponds to spatial frequency of 0.312 Å^{-1}

8 Fourier-Shell correlation

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.312 Å^{-1}

8.2 Resolution estimates (i)

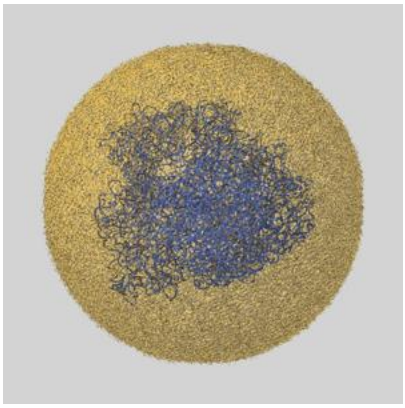
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.20	-	-
Author-provided FSC curve	3.05	3.76	3.09
Unmasked-calculated*	3.47	6.02	3.61

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

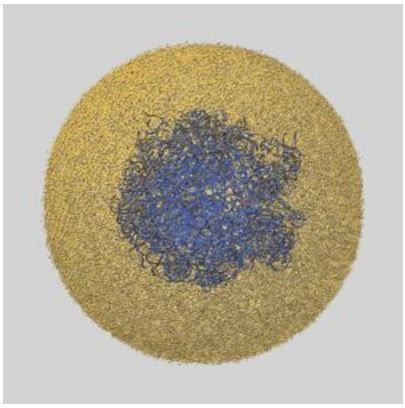
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-10907 and PDB model 6YST. Per-residue inclusion information can be found in section 3 on page 16.

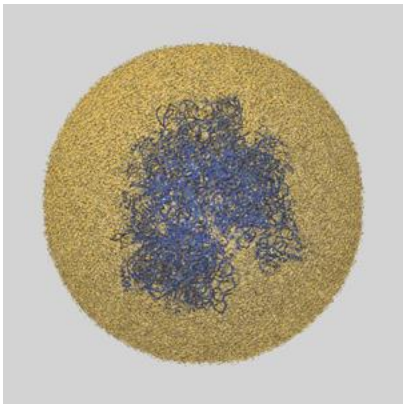
9.1 Map-model overlay



X



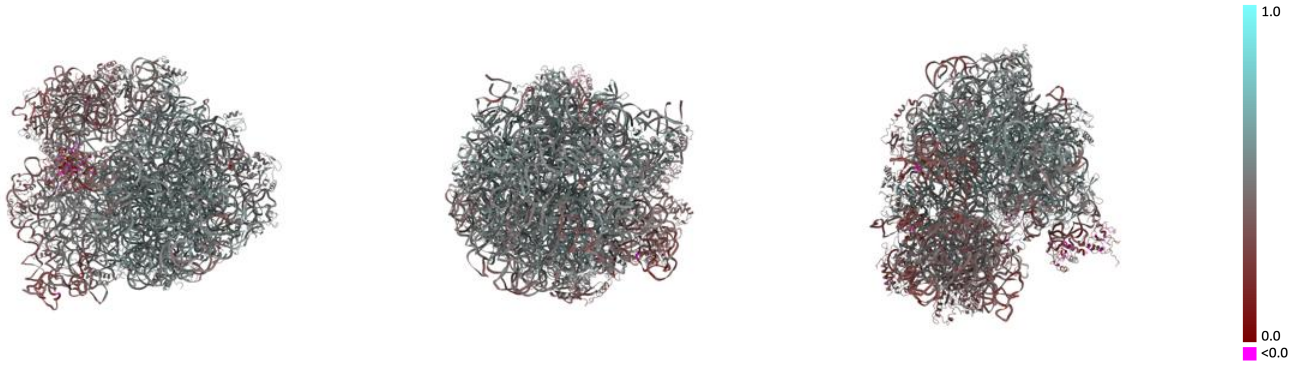
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.03 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.

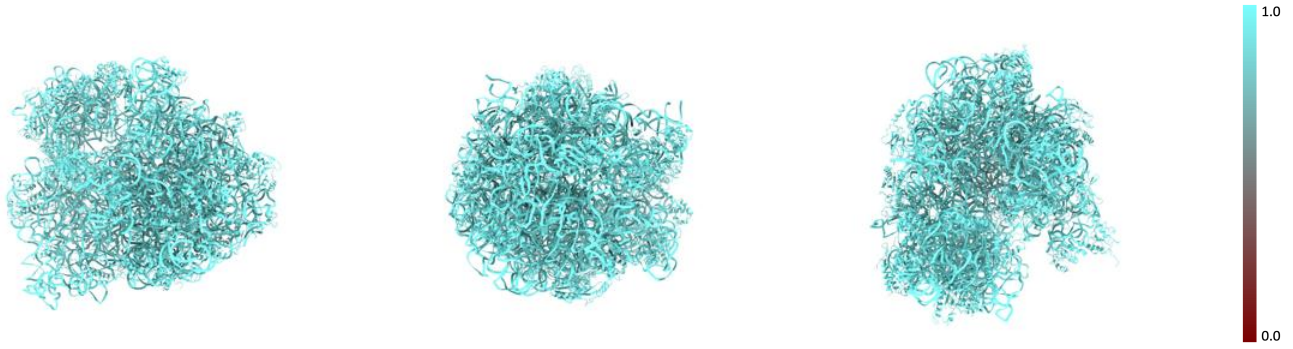
9.2 Q-score mapped to coordinate model (i)



X Y Z

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.

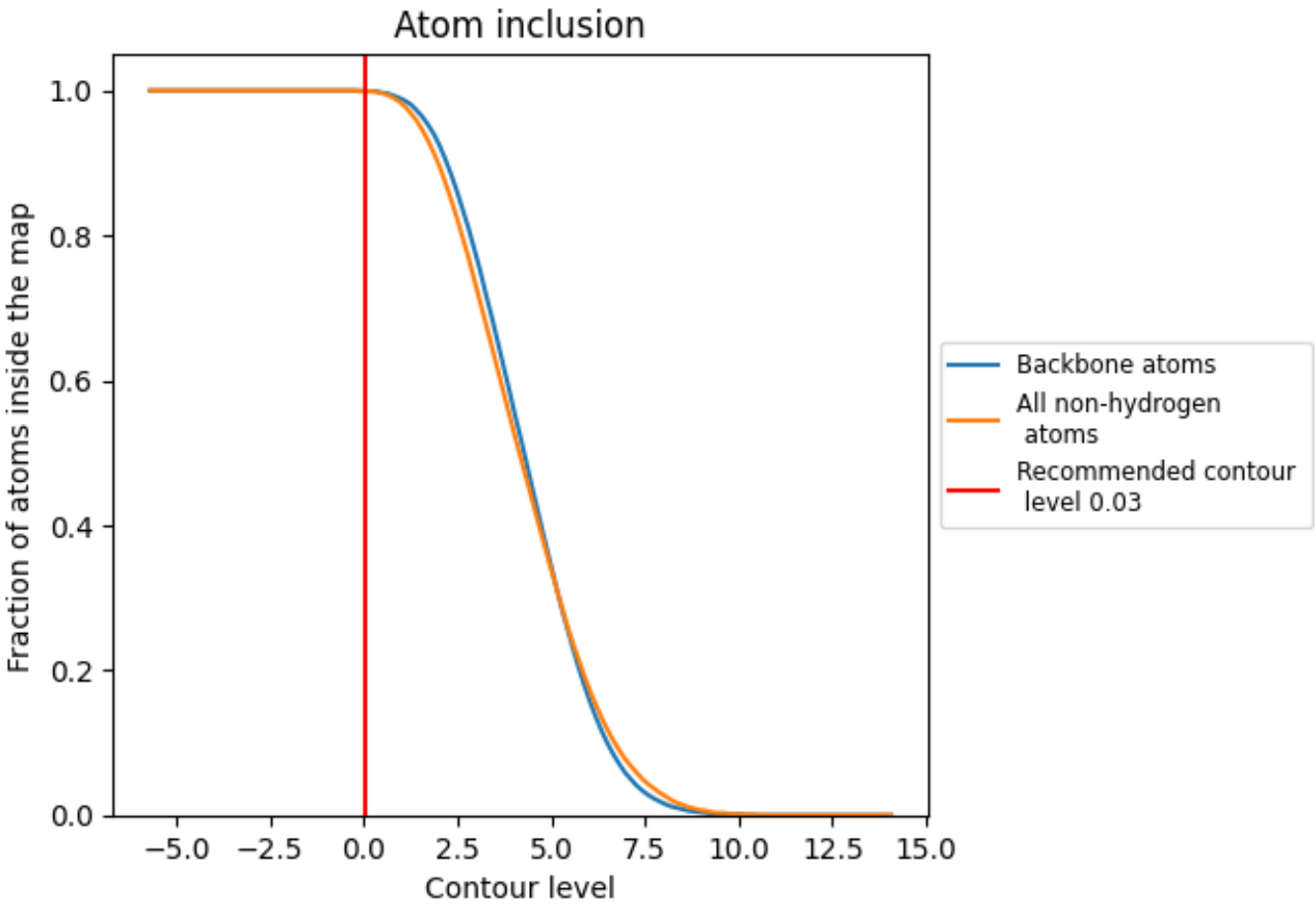
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

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 (0.03).

9.4 Atom inclusion (i)



At the recommended contour level, 100% of all backbone atoms, 100% 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 (0.03) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9990	0.4710
0	1.0000	0.5460
1	0.9980	0.5240
2	0.9920	0.5500
3	0.9980	0.5580
4	1.0000	0.5380
5	0.9990	0.2450
6	0.9980	0.3760
A	1.0000	0.4980
B	1.0000	0.4810
C	0.9990	0.5550
D	0.9990	0.5400
E	1.0000	0.5020
F	1.0000	0.4230
G	1.0000	0.4820
H	0.9930	0.3990
I	0.9700	0.2290
J	1.0000	0.5400
K	0.9980	0.5350
L	1.0000	0.5280
M	0.9990	0.5420
N	0.9990	0.5420
O	1.0000	0.5020
P	1.0000	0.5300
Q	0.9990	0.5360
R	1.0000	0.5190
S	0.9950	0.5390
T	0.9990	0.5110
U	1.0000	0.4900
V	1.0000	0.5150
W	0.9980	0.5480
X	1.0000	0.5250
Y	1.0000	0.4480
Z	1.0000	0.5390
a	1.0000	0.4290



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Chain	Atom inclusion	Q-score
b	0.9930	0.3760
c	0.9990	0.4270
d	0.9990	0.3810
e	0.9990	0.4730
f	1.0000	0.4460
g	0.9970	0.3300
h	1.0000	0.4940
i	1.0000	0.3800
j	0.9990	0.3760
k	0.9990	0.4910
l	0.9990	0.4710
m	1.0000	0.3700
n	1.0000	0.4140
o	0.9990	0.4950
p	1.0000	0.4230
q	1.0000	0.4770
r	0.9980	0.4800
s	1.0000	0.3990
t	1.0000	0.4170
u	1.0000	0.4470
v	1.0000	0.5450
w	0.9930	0.3510
x	1.0000	0.4270
y	0.9980	0.4990