Full wwPDB EM Validation Report ⓘ

Sep 16, 2026 – 01:59 pm BST

PDB ID	:	9SKD / pdb_00009skd
EMDB ID	:	EMD-53630
Title	:	Model of M. pneumoniae 50S membrane complex
Authors	:	Dobbs, J.M.; Mahamid, J.
Deposited on	:	2025-09-02
Resolution	:	7.70 Å(reported)

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:

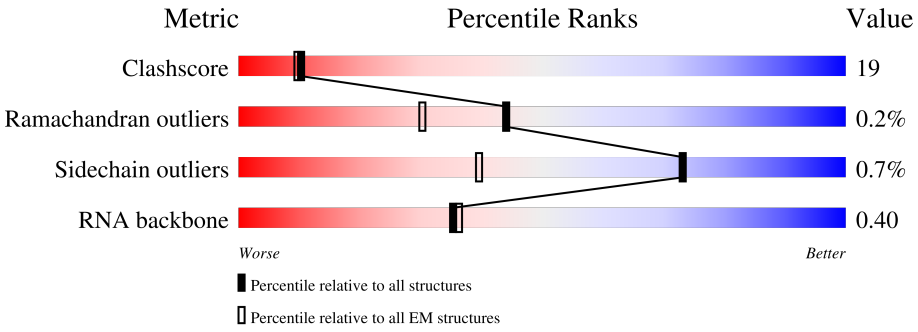
EMDB validation analysis	:	0.0.1.dev133
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.50

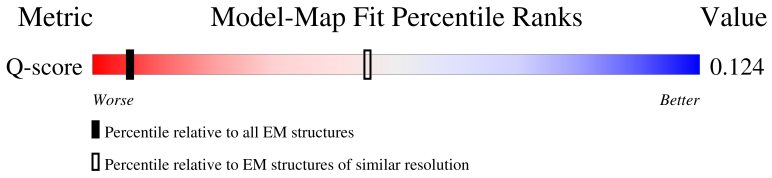
1 Overall quality at a glance

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

The reported resolution of this entry is 7.70 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	384 (7.20 - 8.20)

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	47	9% 49% 51%
2	1	59	12% 53% 47%
3	2	37	14% 46% 54%

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Mol	Chain	Length	Quality of chain
4	3	2878	21% 59% 20%
5	4	105	28% 49% 24%
6	8	51	29% 49% 22%
7	9	944	53% 83% 12% 5%
8	A	161	24% 80% 20%
9	B	29	24% 72% 28%
9	C	29	41% 83% 17%
9	D	29	48% 83% 17%
9	E	29	86% 90% 10%
10	a	285	8% 60% 40%
11	b	229	7% 67% 33%
12	c	210	11% 66% 34%
13	d	175	69% 31%
14	e	176	7% 67% 33%
15	f	145	27% 69% 30%
16	h	128	9% 93% 7%
17	i	144	6% 60% 40%
18	j	122	7% 64% 36%
19	k	148	62% 38%
20	l	136	8% 49% 50%
21	m	119	6% 66% 34%
22	n	116	62% 34%
23	o	115	9% 59% 41%
24	p	114	55% 45%
25	q	99	5% 64% 36%

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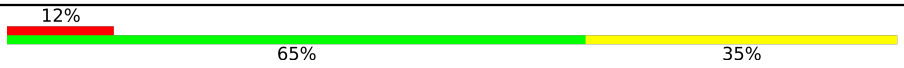
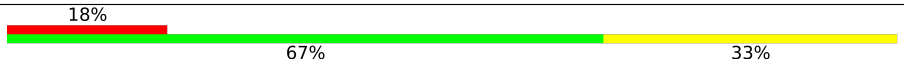
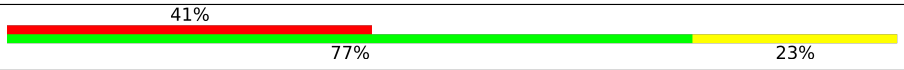
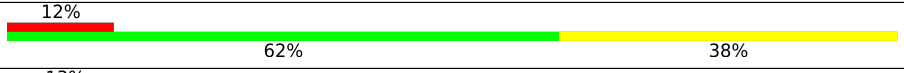
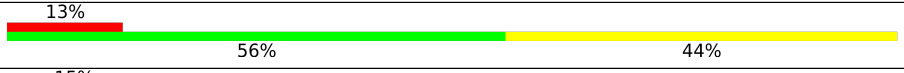
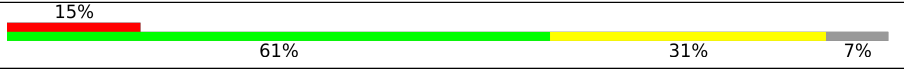
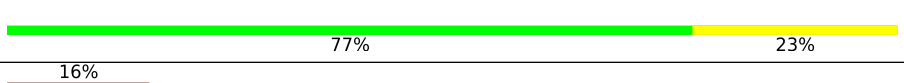
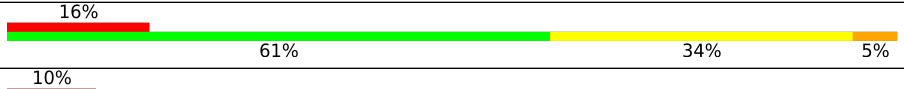
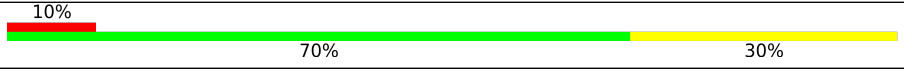
Mol	Chain	Length	Quality of chain
26	r	139	
27	s	92	
28	t	111	
29	u	86	
30	v	63	
31	w	108	
32	x	44	
33	y	56	
34	z	50	

2 Entry composition

There are 34 unique types of molecules in this entry. The entry contains 100646 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 Large ribosomal subunit protein bL34.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	0	47	380	236	81	61	2	0	0

- Molecule 2 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	1	59	477	300	99	77	1	0	0

- Molecule 3 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	2	37	304	189	65	46	4	0	0

- Molecule 4 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	3	2878	61664	27558	11236	19995	2875	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
5	4	105	2239	1003	409	724	103	0	0

- Molecule 6 is a RNA chain called tRNA-Phe.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
6	8	51	1083	484	190	359	50	0	0

- Molecule 7 is a protein called SecDF.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	9	899	Total	C	N	O	S	0	0
			7063	4595	1165	1293	10		

- Molecule 8 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	A	161	Total	C	N	O	S	0	0
			1239	796	213	225	5		

- Molecule 9 is a protein called Large ribosomal subunit protein bL12.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	B	29	Total	C	N	O	S	0	0
			232	146	34	50	2		
9	C	29	Total	C	N	O	S	0	0
			232	146	34	50	2		
9	D	29	Total	C	N	O	S	0	0
			232	146	34	50	2		
9	E	29	Total	C	N	O	S	0	0
			232	146	34	50	2		

- Molecule 10 is a protein called Large ribosomal subunit protein uL2.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	a	285	Total	C	N	O	S	0	0
			2225	1385	437	397	6		

- Molecule 11 is a protein called Large ribosomal subunit protein uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	b	229	Total	C	N	O	S	0	0
			1762	1119	318	318	7		

- Molecule 12 is a protein called Large ribosomal subunit protein uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	c	210	Total	C	N	O	S	0	0
			1644	1047	297	297	3		

- Molecule 13 is a protein called Large ribosomal subunit protein uL5.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	d	175	Total	C	N	O	S	0	0
			1388	893	245	246	4		

- Molecule 14 is a protein called Large ribosomal subunit protein uL6.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	e	176	Total	C	N	O	0	0
			1396	899	247	250		

- Molecule 15 is a protein called Large ribosomal subunit protein bL9.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	f	145	Total	C	N	O	S	0	0
			1160	746	204	207	3		

- Molecule 16 is a protein called Large ribosomal subunit protein uL11.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	h	128	Total	C	N	O	S	0	0
			959	616	160	177	6		

- Molecule 17 is a protein called Large ribosomal subunit protein uL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	i	144	Total	C	N	O	S	0	0
			1164	737	213	209	5		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
18	j	122	Total	C	N	O	S	0	0
			944	595	178	167	4		

- Molecule 19 is a protein called Large ribosomal subunit protein uL15.

Mol	Chain	Residues	Atoms				AltConf	Trace
19	k	148	Total	C	N	O	0	0
			1153	731	226	196		

- Molecule 20 is a protein called Large ribosomal subunit protein uL16.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	l	136	Total	C	N	O	S	0	0
			1079	694	196	182	7		

- Molecule 21 is a protein called Large ribosomal subunit protein bL17.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	m	119	Total	C	N	O	S	0	0
			958	609	175	171	3		

- Molecule 22 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	n	112	Total	C	N	O	S	0	0
			889	557	175	155	2		

- Molecule 23 is a protein called Large ribosomal subunit protein bL19.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	o	115	Total	C	N	O	S	0	0
			938	592	180	165	1		

- Molecule 24 is a protein called Large ribosomal subunit protein bL20.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	p	114	Total	C	N	O	S	0	0
			947	603	188	154	2		

- Molecule 25 is a protein called Large ribosomal subunit protein bL21.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	q	99	Total	C	N	O	S	0	0
			811	525	148	134	4		

- Molecule 26 is a protein called Large ribosomal subunit protein uL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	r	139	Total	C	N	O	S	0	0
			1068	663	207	191	7		

- Molecule 27 is a protein called Large ribosomal subunit protein uL23.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	s	92	Total	C	N	O	S	0	0
			720	475	122	122	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
28	t	111	Total	C	N	O	S	0	0
			872	550	166	153	3		

- Molecule 29 is a protein called Large ribosomal subunit protein bL27.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	u	86	Total	C	N	O	S	0	0
			657	409	130	117	1		

- Molecule 30 is a protein called Large ribosomal subunit protein bL28.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	v	63	Total	C	N	O	S	0	0
			513	317	108	87	1		

- Molecule 31 is a protein called Large ribosomal subunit protein uL29.

Mol	Chain	Residues	Atoms				AltConf	Trace
31	w	100	Total	C	N	O	0	0
			818	517	153	148		

- Molecule 32 is a protein called Large ribosomal subunit protein bL31.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	x	44	Total	C	N	O	S	0	0
			344	221	55	64	4		

- Molecule 33 is a protein called Large ribosomal subunit protein bL32.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	y	56	Total	C	N	O	S	0	0
			452	274	98	75	5		

- Molecule 34 is a protein called Large ribosomal subunit protein bL33A.

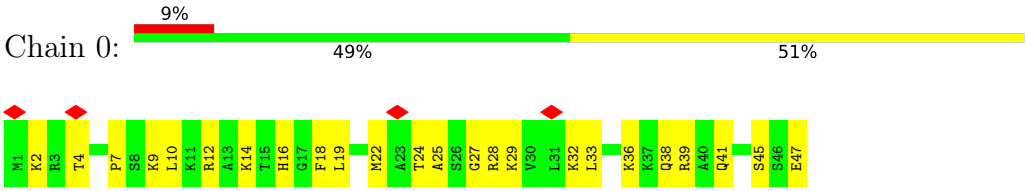
Mol	Chain	Residues	Atoms					AltConf	Trace
34	z	50	Total	C	N	O	S	0	0
			408	255	81	68	4		

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.

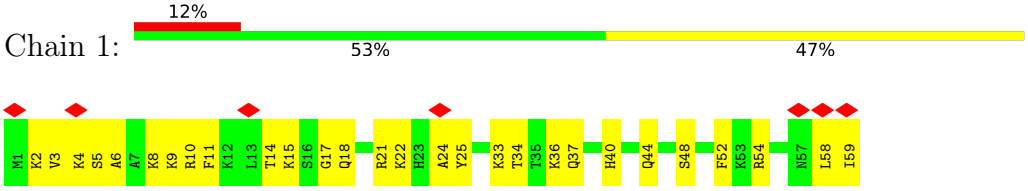
• Molecule 1: Large ribosomal subunit protein bL34

Chain 0:



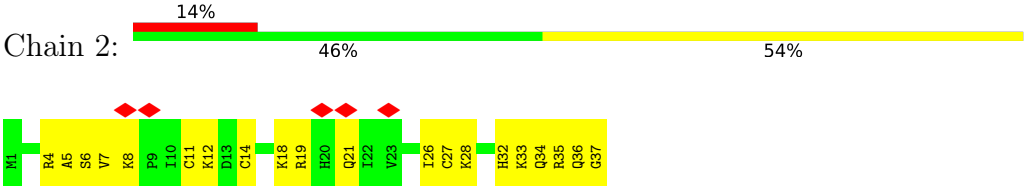
• Molecule 2: 50S ribosomal protein L35

Chain 1:



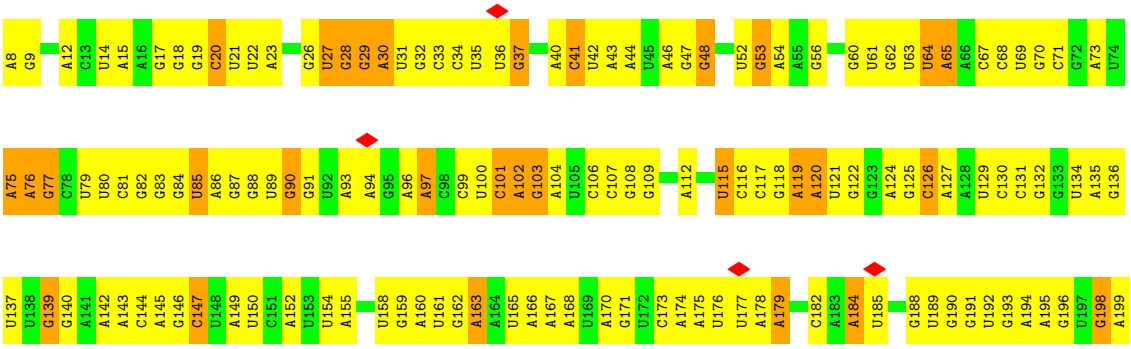
• Molecule 3: 50S ribosomal protein L36

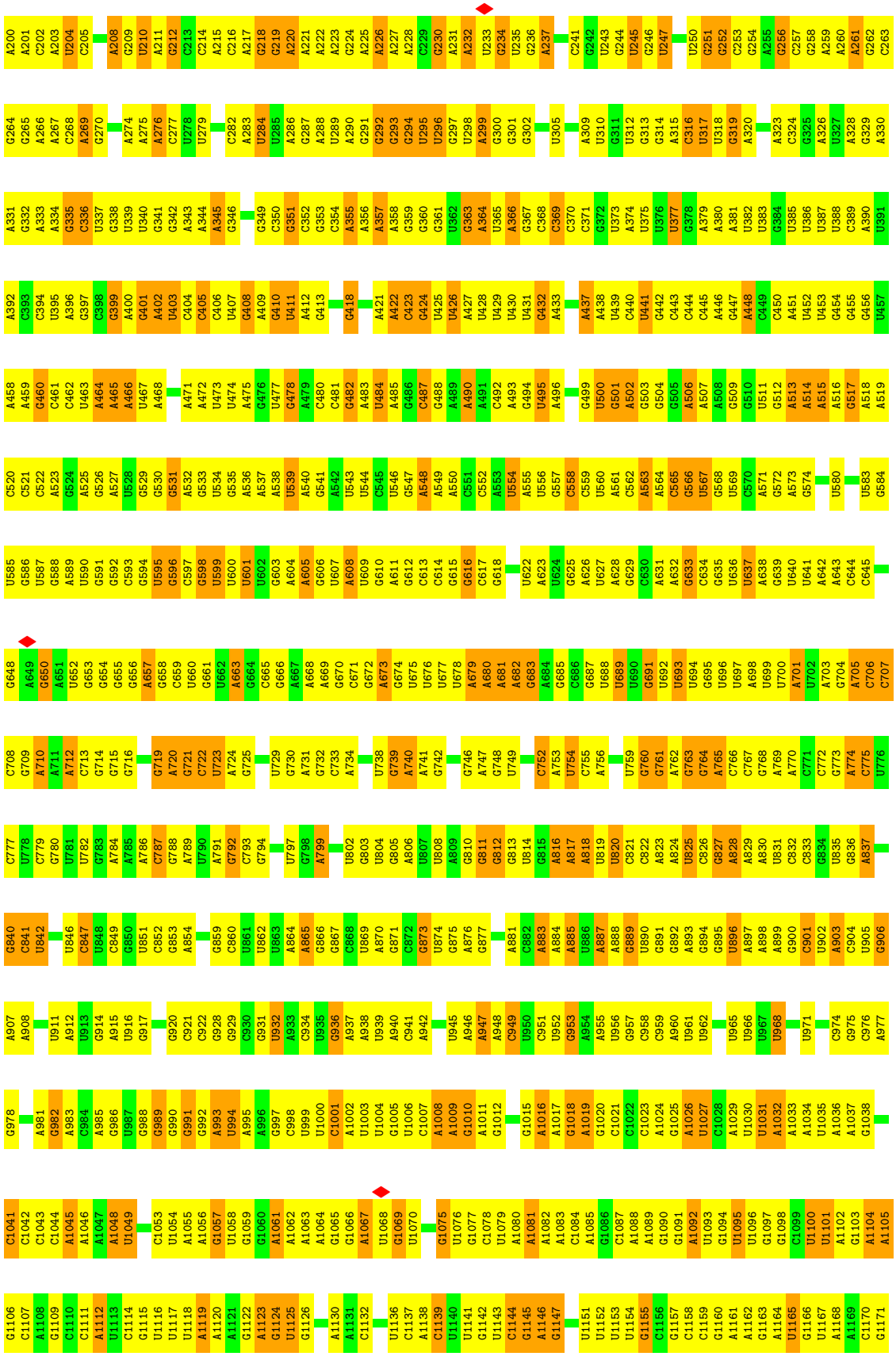
Chain 2:

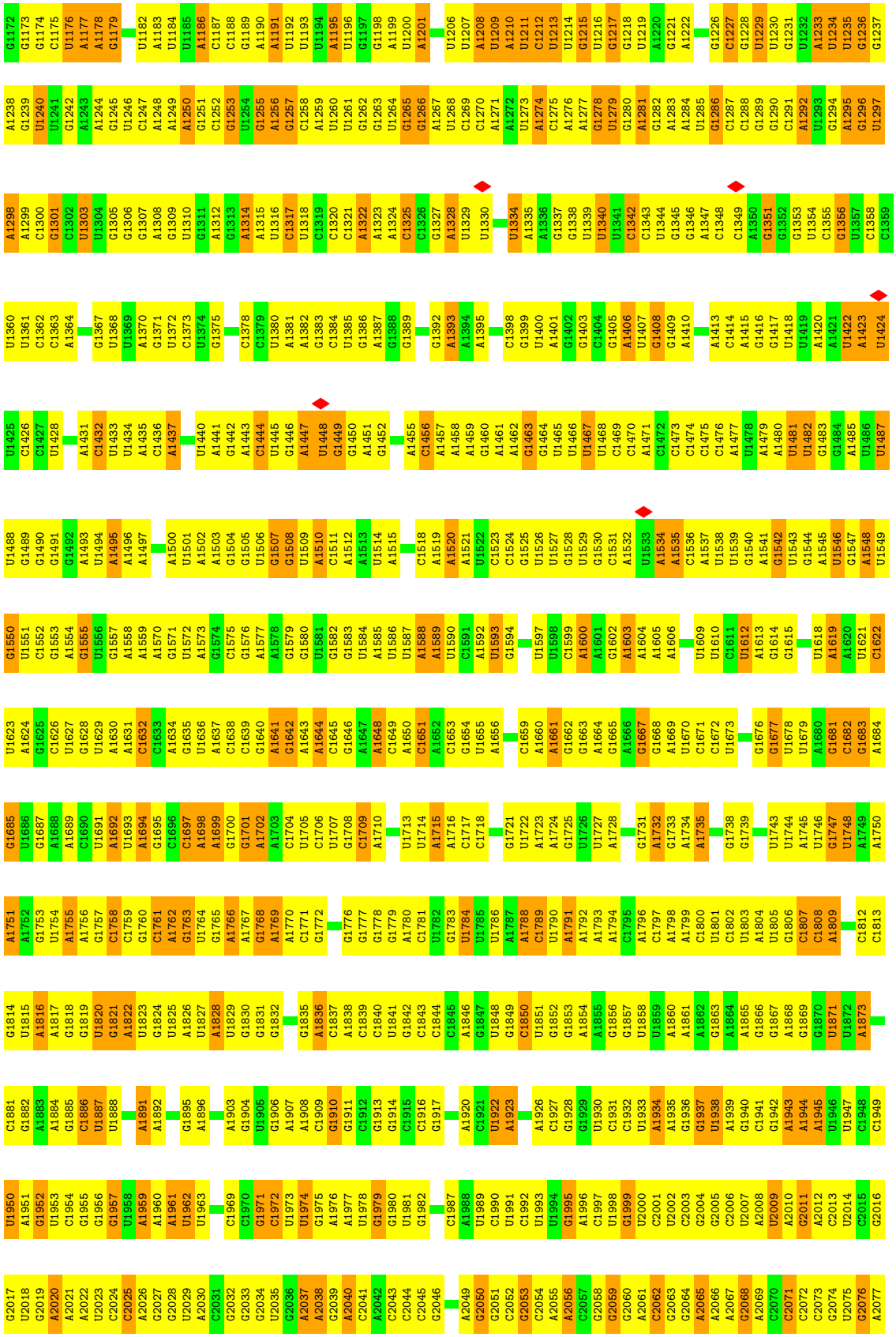


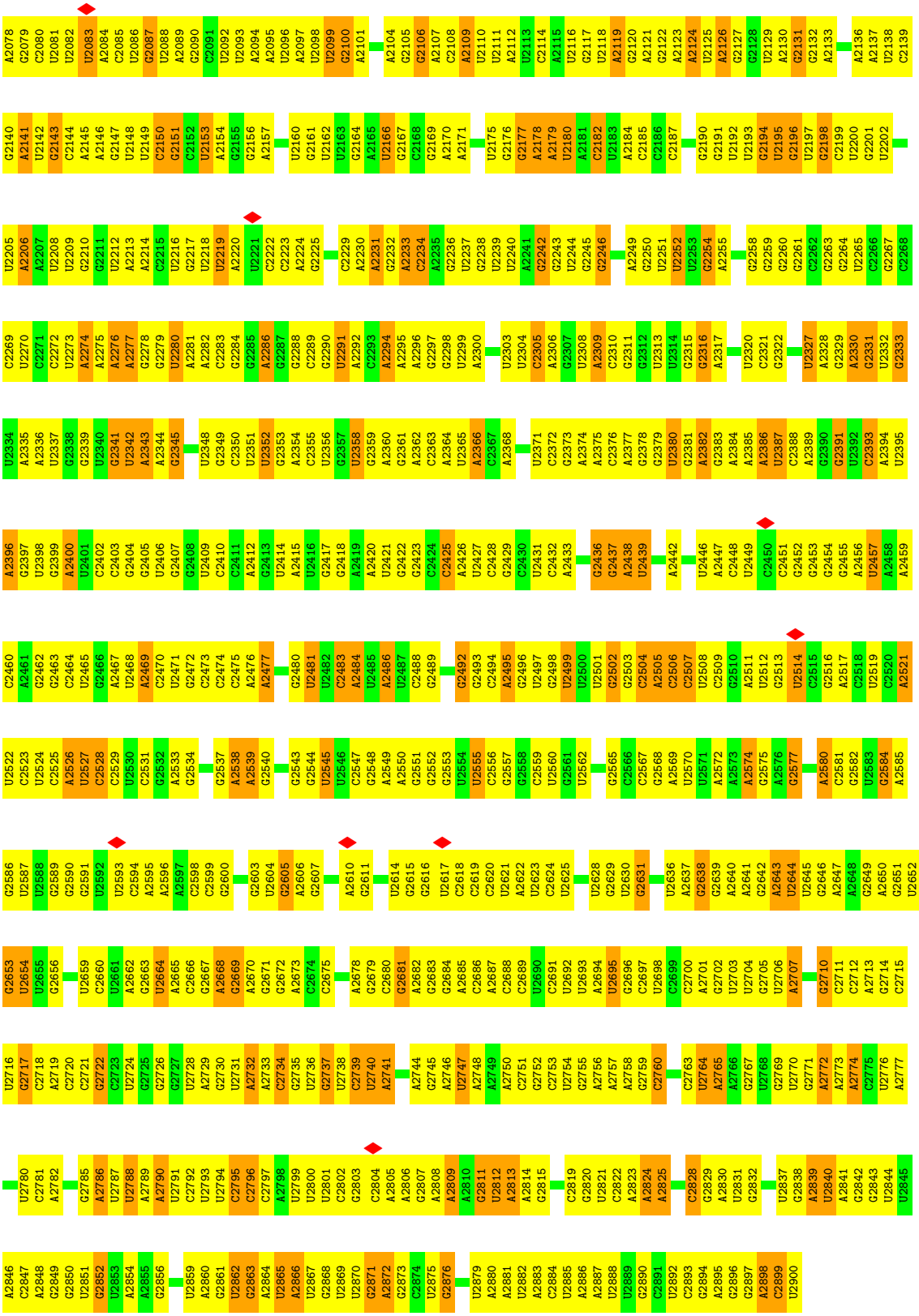
• Molecule 4: 23S ribosomal RNA

Chain 3:



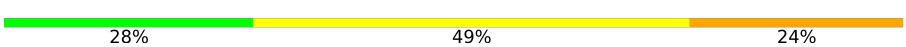


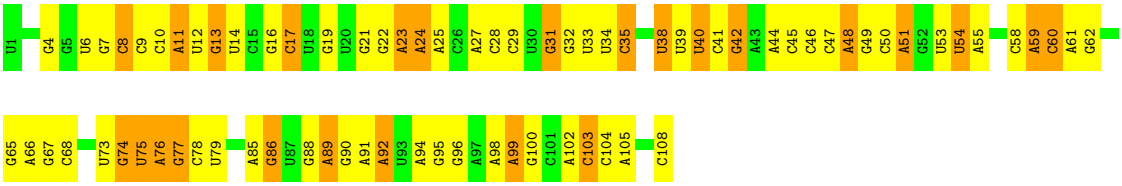




• Molecule 5: 5S ribosomal RNA

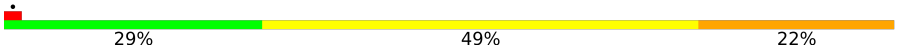
Chain 4:

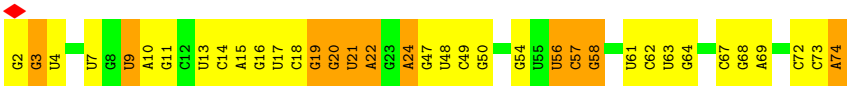




• Molecule 6: tRNA-Phe

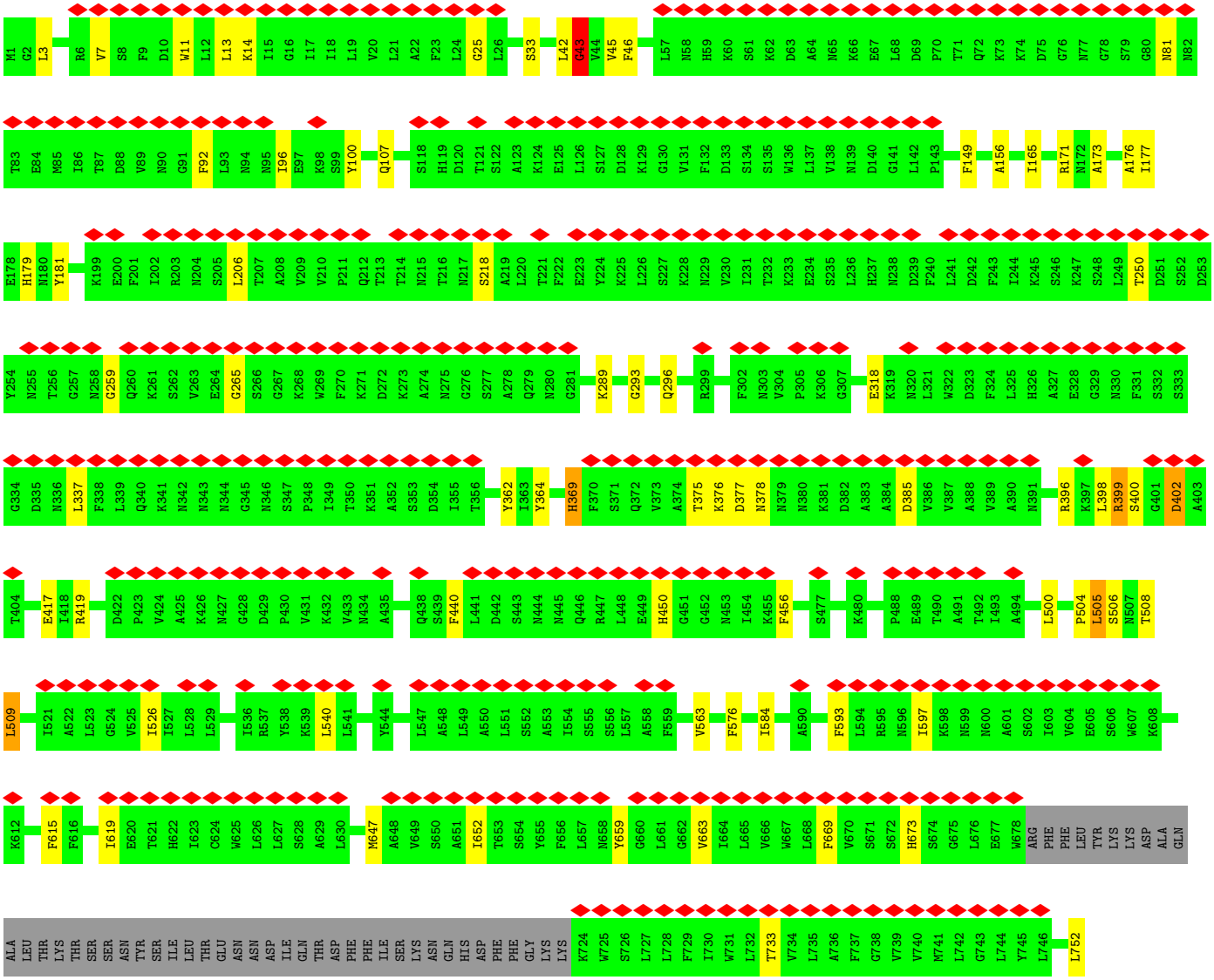
Chain 8:

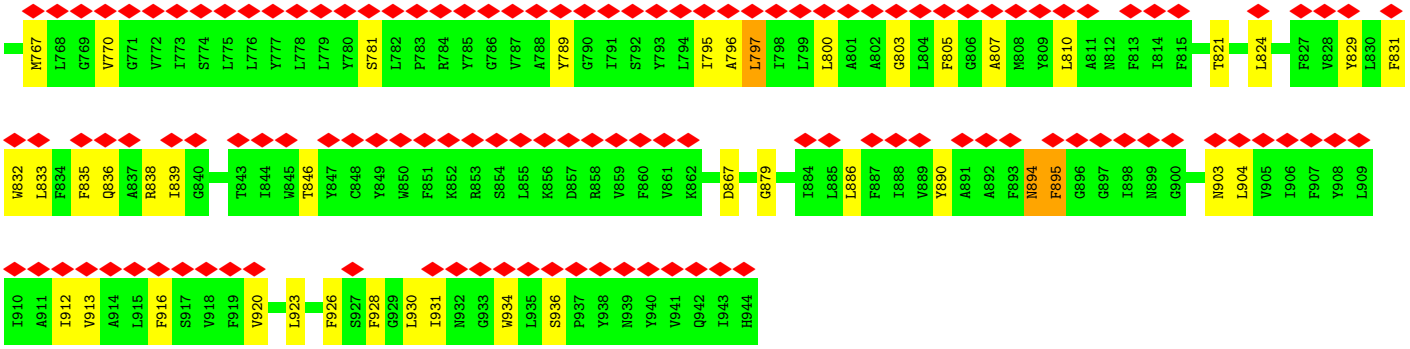




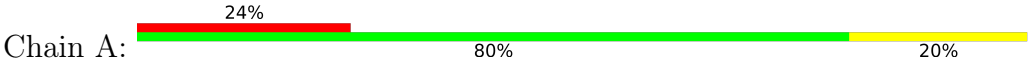
• Molecule 7: SecDF

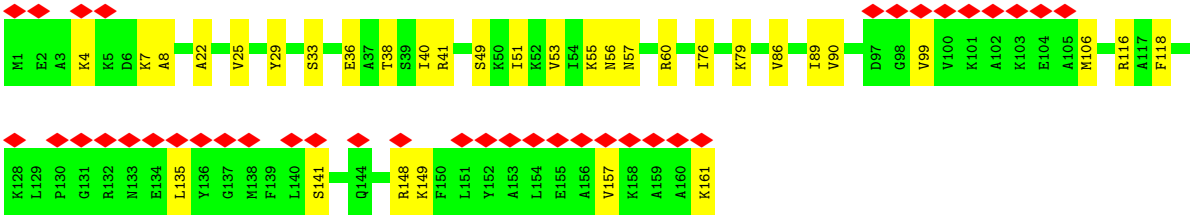
Chain 9:



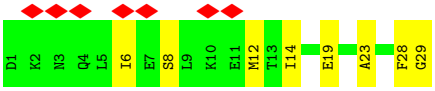


• Molecule 8: 50S ribosomal protein L10

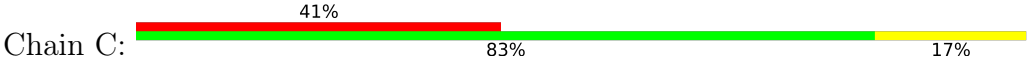


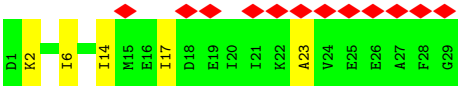


• Molecule 9: Large ribosomal subunit protein bL12

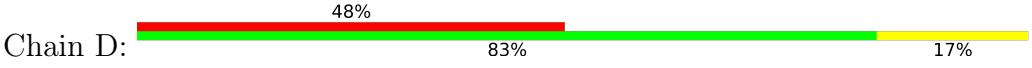


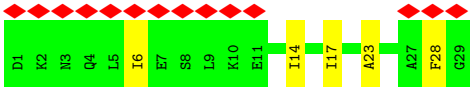
• Molecule 9: Large ribosomal subunit protein bL12



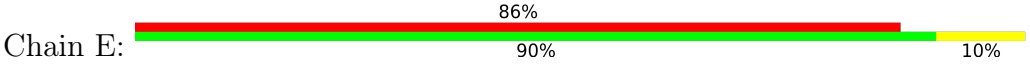


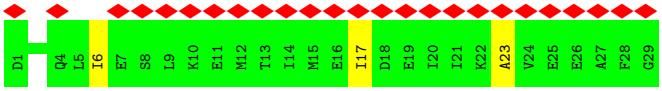
• Molecule 9: Large ribosomal subunit protein bL12



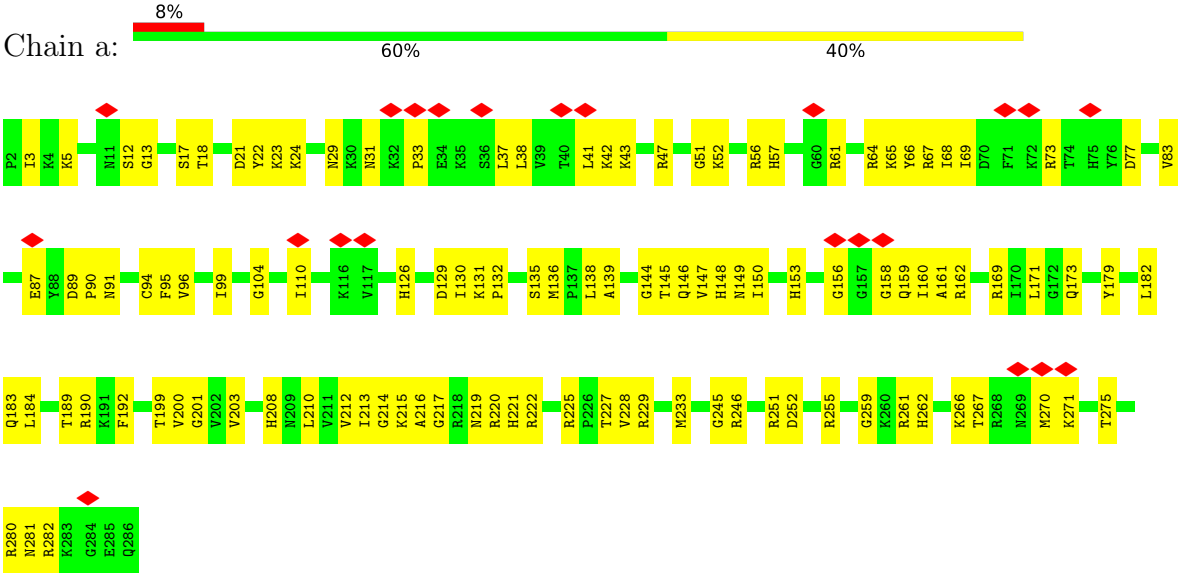


• Molecule 9: Large ribosomal subunit protein bL12

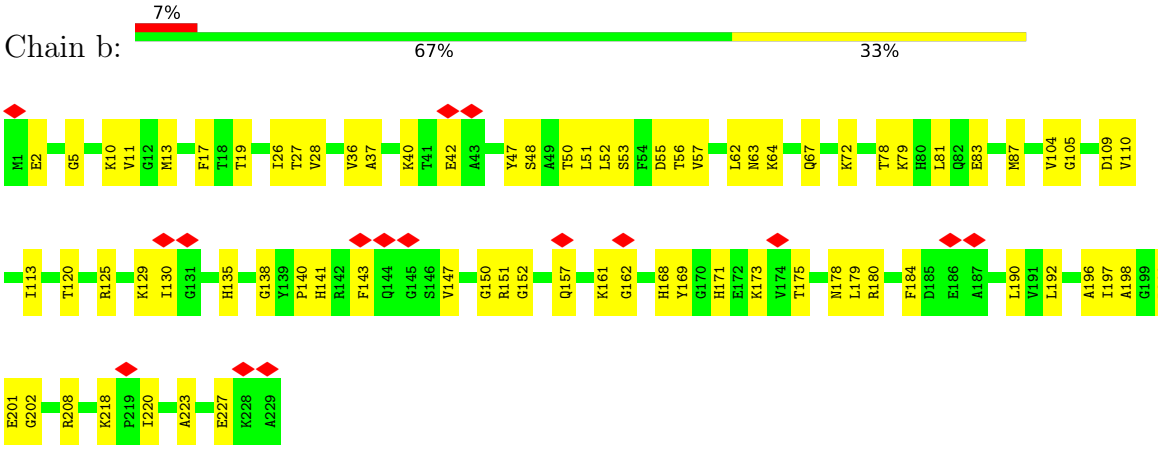




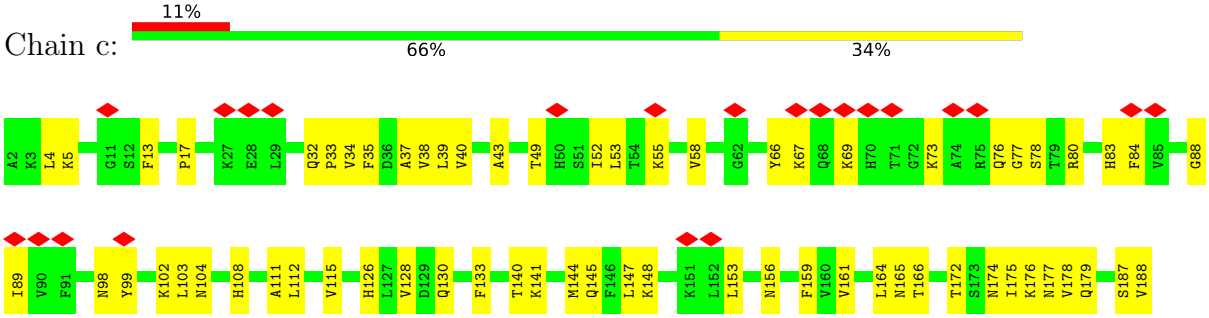
• Molecule 10: Large ribosomal subunit protein uL2

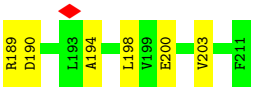


• Molecule 11: Large ribosomal subunit protein uL3



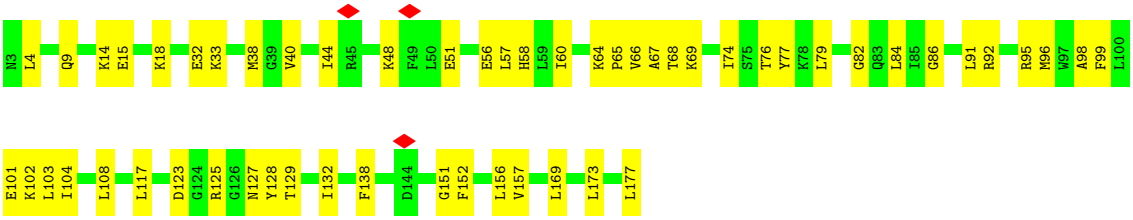
• Molecule 12: Large ribosomal subunit protein uL4





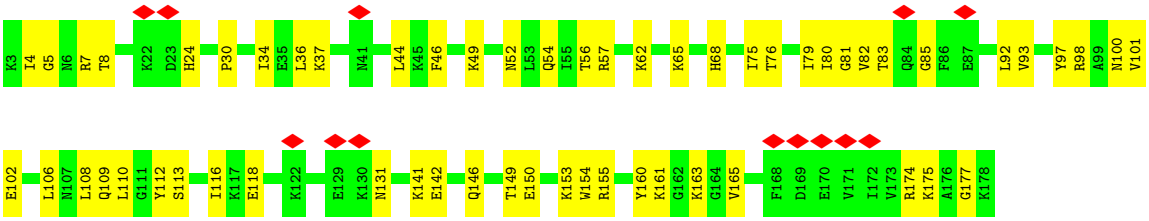
• Molecule 13: Large ribosomal subunit protein uL5

Chain d:



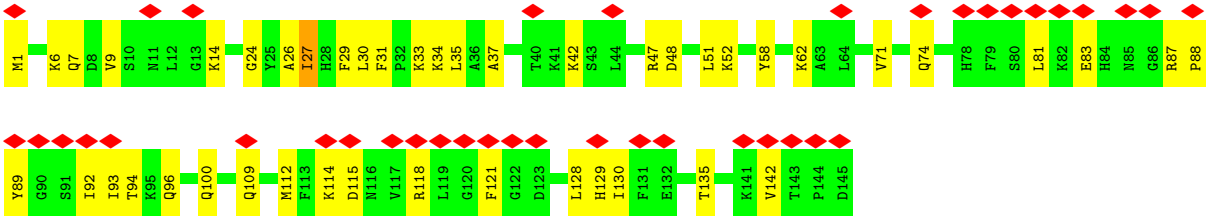
• Molecule 14: Large ribosomal subunit protein uL6

Chain e:



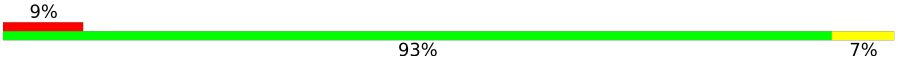
• Molecule 15: Large ribosomal subunit protein bL9

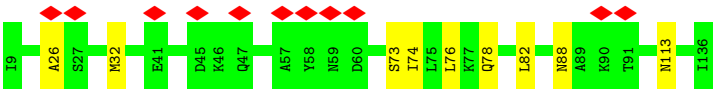
Chain f:



• Molecule 16: Large ribosomal subunit protein uL11

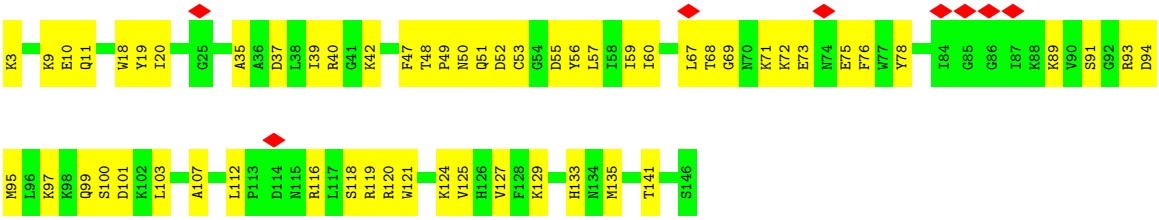
Chain h:



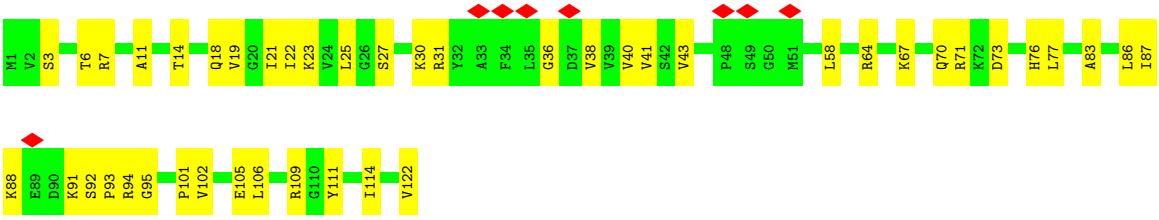


• Molecule 17: Large ribosomal subunit protein uL13

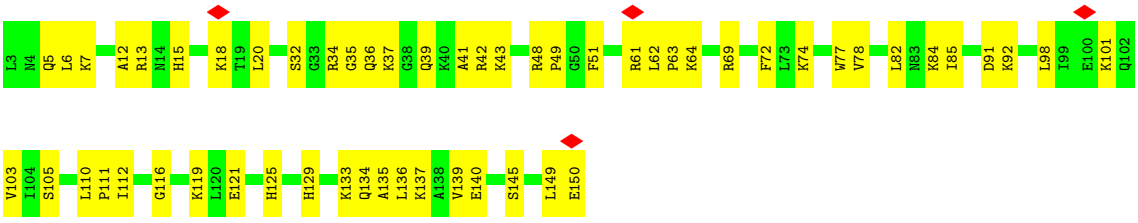
Chain i:



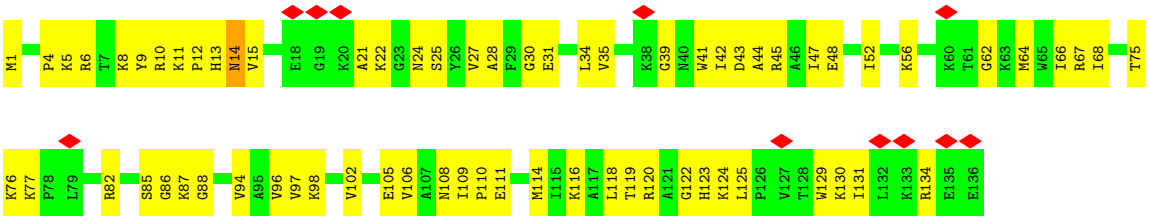
• Molecule 18: 50S ribosomal protein L14



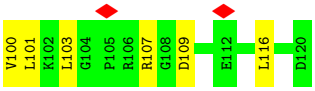
• Molecule 19: Large ribosomal subunit protein uL15



• Molecule 20: Large ribosomal subunit protein uL16



• Molecule 21: Large ribosomal subunit protein bL17

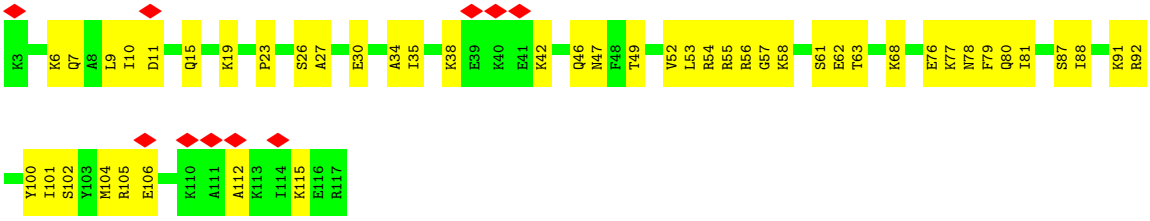


• Molecule 22: Large ribosomal subunit protein uL18

Chain n:

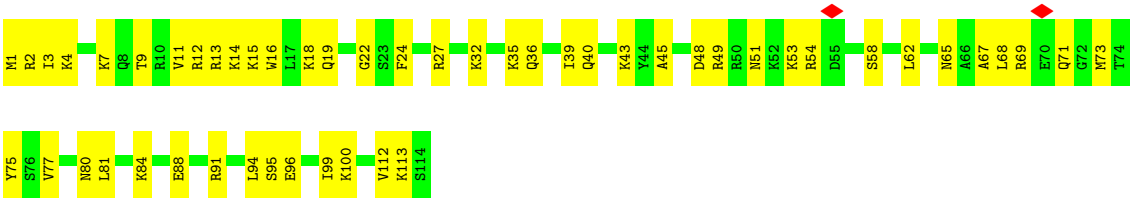
• Molecule 23: Large ribosomal subunit protein bL19

Chain o:



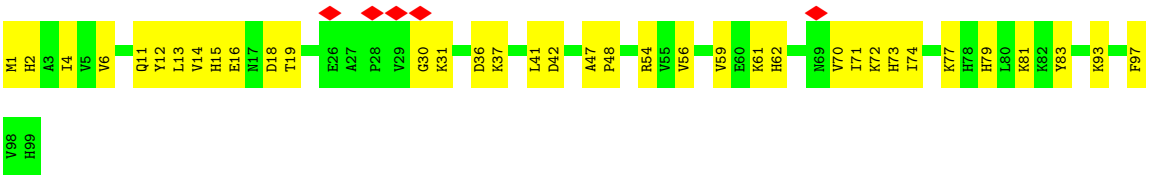
• Molecule 24: Large ribosomal subunit protein bL20

Chain p:



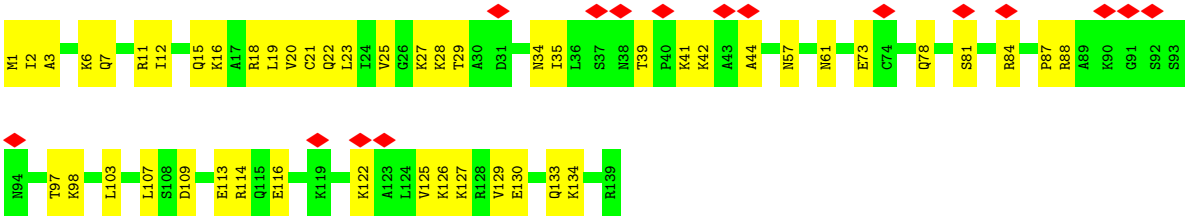
• Molecule 25: Large ribosomal subunit protein bL21

Chain q:

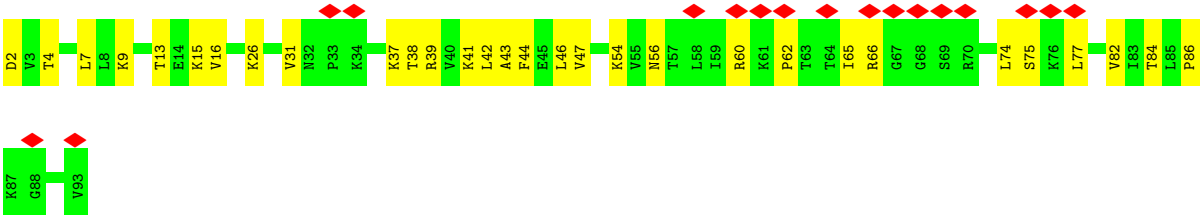


• Molecule 26: Large ribosomal subunit protein uL22

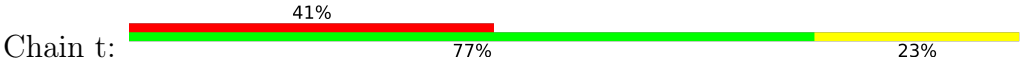
Chain r:

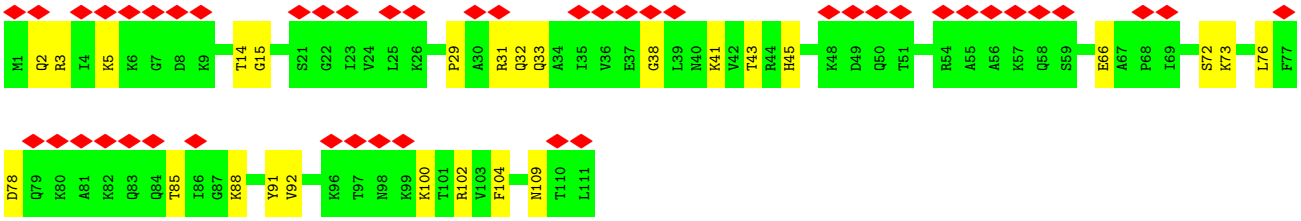


• Molecule 27: Large ribosomal subunit protein uL23

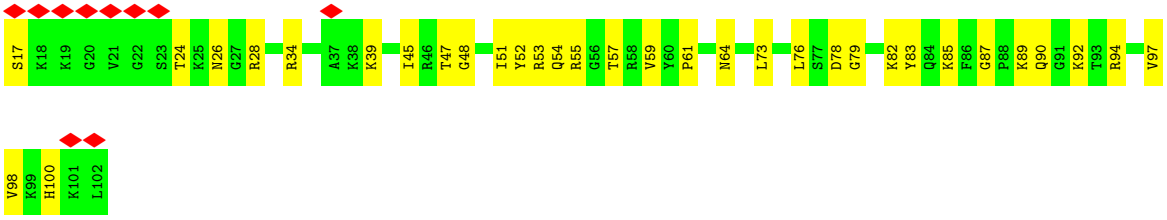


• Molecule 28: 50S ribosomal protein L24

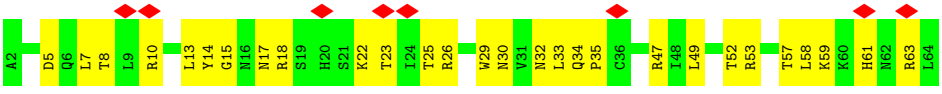




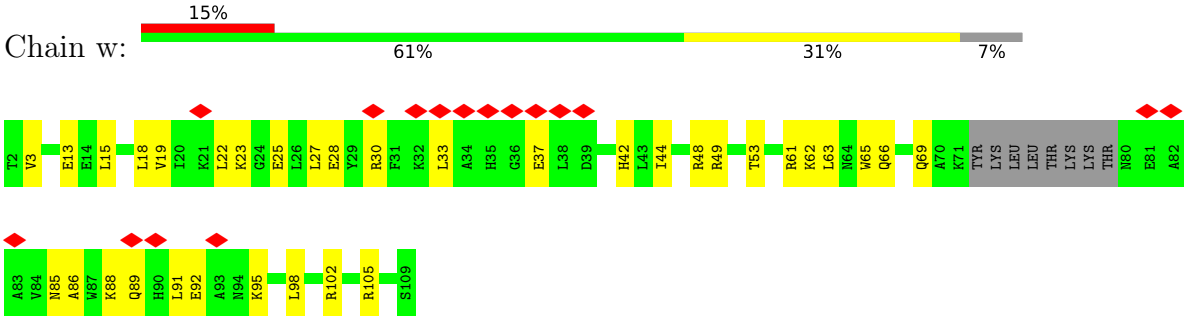
• Molecule 29: Large ribosomal subunit protein bL27



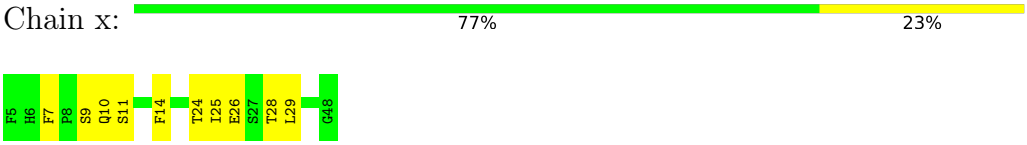
• Molecule 30: Large ribosomal subunit protein bL28



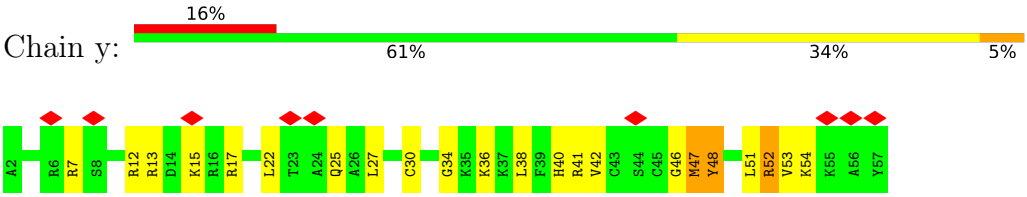
• Molecule 31: Large ribosomal subunit protein uL29



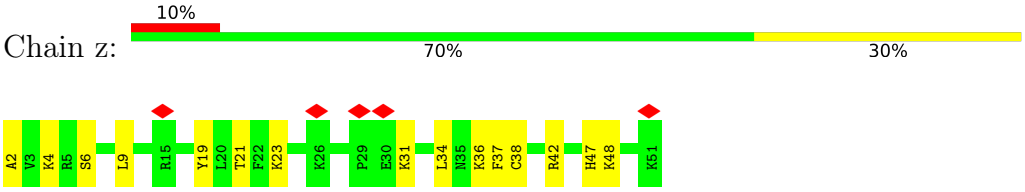
• Molecule 32: Large ribosomal subunit protein bL31



• Molecule 33: Large ribosomal subunit protein bL32



• Molecule 34: Large ribosomal subunit protein bL33A



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of subtomograms used	2877	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 ($e^-/Å^2$)	120	Depositor
Minimum defocus (nm)	2500	Depositor
Maximum defocus (nm)	5000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.015	Depositor
Minimum map value	-0.006	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.00147	Depositor
Map size (Å)	600.0, 600.0, 600.0	wwPDB
Map dimensions	300, 300, 300	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	2.0, 2.0, 2.0	Depositor

5 Model quality

5.1 Standard geometry

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	0.13	0/383	0.40	0/504
2	1	0.12	0/484	0.39	0/637
3	2	0.12	0/306	0.42	0/401
4	3	0.10	0/69073	0.25	0/107710
5	4	0.10	0/2505	0.27	0/3902
6	8	0.12	0/1208	0.31	0/1879
7	9	0.75	0/7216	1.28	12/9795 (0.1%)
8	A	0.68	0/1254	1.10	0/1677
9	B	0.64	0/232	1.16	2/307 (0.7%)
9	C	0.61	0/232	1.09	0/307
9	D	0.64	0/232	1.04	0/307
9	E	0.63	0/232	1.07	0/307
10	a	0.15	0/2267	0.41	0/3044
11	b	0.14	0/1795	0.42	0/2412
12	c	0.13	0/1671	0.38	0/2246
13	d	0.15	0/1409	0.43	0/1894
14	e	0.15	0/1420	0.39	0/1912
15	f	0.15	0/1183	0.47	1/1587 (0.1%)
16	h	0.14	0/968	0.43	1/1298 (0.1%)
17	i	0.12	0/1186	0.40	0/1592
18	j	0.13	0/953	0.39	0/1275
19	k	0.15	0/1170	0.42	0/1559
20	l	0.15	0/1104	0.42	0/1481
21	m	0.13	0/973	0.40	0/1309
22	n	0.13	0/897	0.44	0/1198
23	o	0.15	0/948	0.42	0/1262
24	p	0.16	0/961	0.41	0/1278
25	q	0.15	0/828	0.42	0/1111
26	r	0.13	0/1077	0.37	0/1441
27	s	0.13	0/732	0.41	0/988
28	t	0.14	0/879	0.39	0/1165
29	u	0.15	0/665	0.47	0/884
30	v	0.14	0/519	0.41	0/695
31	w	0.14	0/826	0.40	0/1104

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
32	x	0.12	0/353	0.37	0/474
33	y	0.32	0/457	0.68	1/601 (0.2%)
34	z	0.14	0/412	0.38	0/547
All	All	0.24	0/109010	0.45	17/162090 (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	9	0	4
20	l	0	1
All	All	0	5

There are no bond length outliers.

All (17) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	9	42	LEU	CA-C-N	8.33	137.74	121.41
7	9	42	LEU	C-N-CA	8.33	137.74	121.41
7	9	509	LEU	N-CA-C	6.26	119.09	111.82
7	9	402	ASP	CA-CB-CG	6.23	118.83	112.60
7	9	43	GLY	N-CA-C	6.20	127.87	113.18
7	9	895	PHE	CA-CB-CG	6.11	119.91	113.80
33	y	48	TYR	N-CA-C	-5.88	104.79	111.14
9	B	28	PHE	CA-C-N	5.76	132.08	121.70
9	B	28	PHE	C-N-CA	5.76	132.08	121.70
7	9	369	HIS	CB-CG-CD2	-5.74	123.73	131.20
7	9	867	ASP	CA-CB-CG	5.57	118.17	112.60
7	9	894	ASN	CA-CB-CG	-5.54	107.06	112.60
16	h	74	ILE	N-CA-C	-5.53	107.42	111.90
7	9	506	SER	N-CA-C	5.47	120.06	113.17
7	9	563	VAL	CA-CB-CG1	5.42	119.61	110.40
7	9	296	GLN	OE1-CD-NE2	-5.12	117.48	122.60
15	f	27	ILE	N-CA-C	-5.06	108.34	113.20

There are no chirality outliers.

All (5) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
7	9	362	TYR	Sidechain
7	9	399	ARG	Peptide
7	9	419	ARG	Sidechain
7	9	450	HIS	Peptide
20	l	14	ASN	Peptide

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	380	0	429	23	0
2	1	477	0	530	25	0
3	2	304	0	350	21	0
4	3	61664	0	30953	2241	0
5	4	2239	0	1137	52	0
6	8	1083	0	550	57	0
7	9	7063	0	7119	56	0
8	A	1239	0	1309	101	0
9	B	232	0	237	10	0
9	C	232	0	237	7	0
9	D	232	0	237	9	0
9	E	232	0	237	7	0
10	a	2225	0	2301	106	0
11	b	1762	0	1808	65	0
12	c	1644	0	1731	57	0
13	d	1388	0	1469	41	0
14	e	1396	0	1481	39	0
15	f	1160	0	1172	32	0
16	h	959	0	1039	7	0
17	i	1164	0	1192	45	0
18	j	944	0	1019	37	0
19	k	1153	0	1256	54	0
20	l	1079	0	1134	52	0
21	m	958	0	1011	35	0
22	n	889	0	952	29	0
23	o	938	0	1008	47	0
24	p	947	0	1028	45	0
25	q	811	0	858	30	0
26	r	1068	0	1150	45	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
27	s	720	0	803	25	0
28	t	872	0	972	19	0
29	u	657	0	695	29	0
30	v	513	0	560	24	0
31	w	818	0	870	26	0
32	x	344	0	333	7	0
33	y	452	0	472	22	0
34	z	408	0	440	14	0
All	All	100646	0	70079	3053	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 19.

All (3053) 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)
4:3:1081:A:C8	8:A:7:LYS:CD	2.00	1.42
4:3:1081:A:N7	8:A:7:LYS:HD2	1.19	1.42
4:3:1081:A:C8	8:A:7:LYS:HD2	1.58	1.37
4:3:1119:A:N1	8:A:29:TYR:CE2	1.96	1.32
4:3:2120:G:C1'	6:8:57:C:N4	1.90	1.32
4:3:1088:A:C2	8:A:79:LYS:HE3	1.63	1.31
4:3:2120:G:C5	6:8:57:C:C6	1.79	1.31
4:3:1089:A:C4	8:A:79:LYS:NZ	2.00	1.28
4:3:1081:A:C6	8:A:7:LYS:HB3	1.68	1.27
4:3:1081:A:C6	8:A:7:LYS:CB	2.17	1.26
4:3:1081:A:C4	8:A:7:LYS:HD3	1.71	1.25
4:3:1141:U:O2	8:A:79:LYS:HG2	1.35	1.24
4:3:1081:A:N7	8:A:7:LYS:CD	1.98	1.24
4:3:1119:A:C2	8:A:29:TYR:OH	1.96	1.19
4:3:1081:A:O2'	8:A:7:LYS:NZ	1.78	1.16
4:3:535:G:C2	4:3:540:A:N6	2.14	1.16
4:3:341:G:N2	4:3:364:A:H61	1.44	1.15
4:3:1081:A:C5	8:A:7:LYS:CD	2.29	1.14
4:3:1117:U:H2'	8:A:41:ARG:NH1	1.65	1.12
4:3:1119:A:C6	8:A:29:TYR:CE2	2.37	1.12
4:3:1119:A:N1	8:A:29:TYR:HE2	1.37	1.12
4:3:1807:C:H42	4:3:1824:G:N2	1.49	1.10
9:C:14:ILE:HD11	9:D:17:ILE:HG13	1.31	1.09
4:3:341:G:H21	4:3:364:A:N6	1.51	1.08
4:3:1081:A:N9	8:A:7:LYS:HD3	1.65	1.08

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1807:C:N4	4:3:1824:G:H22	1.52	1.08
4:3:2108:C:N4	4:3:2109:A:N6	2.01	1.08
4:3:1081:A:C8	8:A:7:LYS:HD3	1.84	1.07
4:3:2119:A:O4'	6:8:58:G:O6	1.74	1.05
4:3:1081:A:N6	8:A:7:LYS:HB2	1.71	1.04
4:3:1081:A:C6	8:A:7:LYS:HB2	1.88	1.04
4:3:1089:A:N3	8:A:79:LYS:NZ	1.99	1.04
4:3:2119:A:H61	6:8:58:G:C5'	1.70	1.04
4:3:1081:A:C5	8:A:7:LYS:HD3	1.92	1.03
4:3:1117:U:C2'	8:A:41:ARG:HH11	1.72	1.03
4:3:2120:G:H1'	6:8:57:C:N4	1.16	1.03
33:y:30:CYS:O	33:y:34:GLY:HA2	1.58	1.02
4:3:2534:G:H1	4:3:2545:U:H3	1.04	1.02
13:d:132:ILE:O	13:d:151:GLY:HA3	1.55	1.02
29:u:79:GLY:HA3	29:u:98:VAL:O	1.58	1.01
4:3:17:G:H1	4:3:560:U:H3	1.04	0.99
7:9:156:ALA:HB2	7:9:165:ILE:HD12	1.43	0.99
4:3:1932:C:N4	4:3:1936:G:H22	1.61	0.98
4:3:2119:A:C4	6:8:20:G:N2	2.12	0.98
4:3:1081:A:C5	8:A:7:LYS:CB	2.46	0.97
4:3:742:G:H1	4:3:759:U:H3	1.03	0.97
4:3:1089:A:H1'	8:A:79:LYS:HZ2	1.25	0.97
4:3:1101:U:O4	4:3:1105:A:N7	1.98	0.96
4:3:275:A:H62	4:3:294:G:N2	1.64	0.96
4:3:1081:A:C8	8:A:7:LYS:NZ	2.33	0.95
4:3:1027:U:H3	4:3:1198:G:H1	1.10	0.95
4:3:535:G:N2	4:3:540:A:C6	2.35	0.95
4:3:1093:U:H3	4:3:1115:G:H1	1.04	0.94
4:3:1119:A:OP1	8:A:53:VAL:HG23	1.67	0.94
4:3:2108:C:C4	4:3:2109:A:N6	2.35	0.94
4:3:629:G:H1	4:3:696:U:H3	1.02	0.94
9:D:6:ILE:HD11	9:E:23:ALA:HB1	1.49	0.94
4:3:137:U:H3	4:3:146:G:H1	1.01	0.93
4:3:2120:G:C5	6:8:57:C:N1	2.21	0.93
4:3:329:G:H1	4:3:377:U:H3	0.94	0.93
4:3:1081:A:C2'	8:A:7:LYS:NZ	2.30	0.93
4:3:1762:A:H61	4:3:2702:G:H21	1.10	0.93
4:3:2143:G:H1	4:3:2162:U:H3	0.96	0.93
4:3:250:U:H3	4:3:256:G:H1	0.93	0.93
4:3:2119:A:N7	6:8:56:U:O3'	2.02	0.92
4:3:535:G:N2	4:3:540:A:N6	2.16	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:534:U:H3	4:3:538:A:H62	1.16	0.92
4:3:2120:G:C1’	6:8:57:C:H41	1.82	0.92
4:3:1200:U:H3	4:3:1215:G:H1	1.14	0.92
4:3:2119:A:H62	6:8:56:U:H2’	1.33	0.92
4:3:2090:G:H1	4:3:2244:U:H3	1.12	0.91
4:3:1310:U:H3	4:3:1314:A:N6	1.68	0.91
4:3:1141:U:O2	8:A:79:LYS:CG	2.18	0.91
4:3:986:G:H1	4:3:1003:U:H3	0.97	0.91
4:3:1807:C:H42	4:3:1824:G:H22	0.90	0.90
4:3:1246:U:H3	4:3:1263:G:H1	1.08	0.90
4:3:730:G:H1	4:3:802:U:H3	1.14	0.89
4:3:675:U:H3	4:3:685:G:H1	1.19	0.89
4:3:275:A:H62	4:3:294:G:H21	0.99	0.89
4:3:1081:A:C5	8:A:7:LYS:HB3	2.05	0.89
4:3:1090:G:H4’	8:A:33:SER:HA	1.55	0.89
4:3:2108:C:N4	4:3:2109:A:H62	1.65	0.89
4:3:569:U:H3	4:3:592:G:H1	1.19	0.88
4:3:1119:A:N1	8:A:29:TYR:CZ	2.41	0.88
4:3:1932:C:H42	4:3:1936:G:H22	1.19	0.88
4:3:2177:G:N2	6:8:56:U:H5”	1.88	0.88
4:3:990:G:H1	4:3:999:U:H3	0.94	0.88
4:3:2119:A:C1’	6:8:58:G:O6	2.01	0.88
4:3:1762:A:H61	4:3:2702:G:N2	1.73	0.87
4:3:89:U:H5”	4:3:90:G:H5”	1.56	0.87
4:3:433:A:H5”	30:v:32:ASN:HB2	1.56	0.86
4:3:2108:C:H42	4:3:2109:A:N6	1.71	0.86
9:D:23:ALA:HB1	9:E:6:ILE:HD11	1.55	0.86
4:3:1081:A:C4’	8:A:57:ASN:HD21	1.89	0.85
4:3:2119:A:C8	6:8:58:G:O6	2.07	0.85
4:3:1081:A:C2’	8:A:7:LYS:HZ2	1.87	0.85
4:3:1081:A:C5	8:A:7:LYS:HD2	2.01	0.84
4:3:1089:A:N9	8:A:79:LYS:NZ	2.25	0.84
4:3:2455:G:H1	4:3:2459:A:H62	1.26	0.84
4:3:2156:G:H2’	4:3:2157:A:H8	1.41	0.83
4:3:2120:G:C4	6:8:57:C:N1	2.28	0.83
4:3:1117:U:H2’	8:A:41:ARG:HH11	1.29	0.83
4:3:1762:A:N6	4:3:2702:G:H21	1.77	0.83
4:3:1932:C:H42	4:3:1936:G:N2	1.74	0.83
4:3:1088:A:C2	8:A:79:LYS:CE	2.57	0.82
4:3:1053:C:O2’	4:3:1155:G:N2	2.12	0.82
5:4:58:C:H2’	5:4:59:A:H8	1.45	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1081:A:C8	8:A:7:LYS:CE	2.62	0.81
4:3:1119:A:OP1	8:A:53:VAL:CG2	2.28	0.81
4:3:2119:A:H61	6:8:58:G:H5"	1.45	0.81
4:3:1081:A:H8	8:A:7:LYS:HZ2	1.19	0.81
4:3:2551:G:H21	4:3:2654:U:H5"	1.44	0.81
4:3:555:A:H4'	26:r:114:ARG:HH12	1.45	0.81
4:3:2119:A:N6	6:8:56:U:H2'	1.95	0.81
9:B:23:ALA:HB1	9:C:6:ILE:HD11	1.63	0.81
4:3:1310:U:H3	4:3:1314:A:H62	0.83	0.80
4:3:2704:U:H2'	4:3:2705:G:C8	2.16	0.80
4:3:1940:G:H1	4:3:1974:U:H3	1.27	0.80
3:2:14:CYS:HA	3:2:26:ILE:O	1.81	0.80
4:3:225:A:H62	4:3:463:U:H3	1.29	0.80
4:3:1807:C:N3	4:3:1824:G:N1	2.28	0.80
4:3:2828:C:H3'	4:3:2829:G:H21	1.47	0.80
4:3:1089:A:H1'	8:A:79:LYS:NZ	1.97	0.79
4:3:2119:A:N6	6:8:57:C:H3'	1.97	0.79
4:3:1252:C:O2	4:3:1257:G:N2	2.15	0.79
4:3:2195:U:O4	4:3:2196:G:O6	2.00	0.79
4:3:2119:A:N6	6:8:58:G:H5"	1.98	0.79
4:3:1119:A:N6	8:A:29:TYR:CE2	2.49	0.79
13:d:4:LEU:HB2	13:d:101:GLU:HB3	1.64	0.79
4:3:2757:A:OP2	4:3:2760:C:N4	2.14	0.79
4:3:1261:U:H2'	4:3:1262:G:H8	1.48	0.78
4:3:1117:U:C2'	8:A:41:ARG:NH1	2.37	0.78
4:3:2120:G:OP1	6:8:20:G:O6	1.90	0.78
4:3:305:U:H3	4:3:399:G:H1	1.32	0.78
4:3:1119:A:O4'	8:A:53:VAL:HB	1.84	0.78
4:3:1252:C:N3	4:3:1257:G:N1	2.32	0.78
4:3:1081:A:N1	8:A:7:LYS:HB3	1.99	0.78
4:3:2120:G:C4	6:8:57:C:C2	2.72	0.77
4:3:1081:A:O3'	8:A:57:ASN:ND2	2.17	0.77
4:3:2409:U:H3	4:3:2423:G:H1	1.33	0.77
4:3:1525:G:H21	10:a:104:GLY:HA3	1.47	0.77
4:3:2539:A:H61	4:3:2670:A:H61	1.29	0.77
4:3:2119:A:N6	6:8:58:G:C5'	2.47	0.76
33:y:42:VAL:HG12	33:y:48:TYR:HB2	1.65	0.76
4:3:535:G:C2	4:3:540:A:C6	2.71	0.76
4:3:637:U:O2	4:3:661:G:N2	2.18	0.76
4:3:1119:A:C8	8:A:53:VAL:HG21	2.21	0.76
4:3:641:U:O2	4:3:657:A:N7	2.19	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:l:118:LEU:HB3	20:l:131:ILE:HD12	1.67	0.76
30:v:33:LEU:HB3	30:v:49:LEU:HD12	1.68	0.76
17:i:59:ILE:HD12	17:i:127:VAL:HG12	1.67	0.76
17:i:3:LYS:N	25:q:12:TYR:HH	1.84	0.76
4:3:1431:A:H5'	31:w:105:ARG:HH22	1.49	0.75
4:3:2119:A:H62	6:8:56:U:C2'	1.98	0.75
4:3:2108:C:H42	4:3:2109:A:H61	1.32	0.75
23:o:62:GLU:HG2	23:o:81:ILE:HD12	1.68	0.75
4:3:341:G:H21	4:3:364:A:H61	0.79	0.75
4:3:2093:U:OP1	10:a:271:LYS:NZ	2.20	0.75
4:3:2736:U:HO2'	4:3:2737:G:H8	1.34	0.75
4:3:2101:A:H1'	4:3:2206:A:H61	1.52	0.75
4:3:2570:U:O2	4:3:2574:A:N7	2.19	0.75
4:3:1011:A:H62	4:3:1025:G:H21	1.34	0.75
9:B:6:ILE:HD11	9:C:23:ALA:HB1	1.68	0.75
4:3:1142:G:OP1	8:A:55:LYS:HG3	1.86	0.75
4:3:2688:C:H1'	11:b:196:ALA:HB1	1.68	0.75
30:v:35:PRO:HB2	30:v:47:ARG:HD3	1.69	0.75
26:r:19:LEU:HB3	33:y:22:LEU:HD11	1.69	0.74
4:3:2299:U:H1'	4:3:2382:A:H1'	1.68	0.74
4:3:585:U:H2'	4:3:586:G:H8	1.51	0.74
18:j:71:ARG:HH21	18:j:77:LEU:HD22	1.52	0.74
4:3:2291:U:O2	4:3:2333:G:O6	2.06	0.74
4:3:1233:A:N6	4:3:1274:A:N1	2.33	0.74
4:3:811:G:H8	4:3:2249:A:H5"	1.51	0.74
4:3:2400:A:N6	4:3:2432:C:O2	2.19	0.74
4:3:572:G:N2	4:3:588:G:O2'	2.20	0.74
4:3:1692:A:N3	21:m:2:SER:N	2.36	0.74
4:3:253:C:O2'	19:k:64:LYS:NZ	2.19	0.74
4:3:453:U:H2'	4:3:454:G:H8	1.53	0.74
4:3:275:A:N6	4:3:294:G:H21	1.81	0.73
4:3:1137:C:H2'	4:3:1138:A:H8	1.51	0.73
4:3:2305:C:N4	4:3:2327:U:O2	2.19	0.73
15:f:96:GLN:O	15:f:100:GLN:NE2	2.21	0.73
4:3:1119:A:C2	8:A:29:TYR:CZ	2.76	0.73
4:3:2824:A:H3'	4:3:2825:A:H8	1.54	0.73
18:j:7:ARG:HD2	18:j:18:GLN:HB3	1.71	0.73
4:3:47:G:N2	4:3:184:A:H61	1.85	0.73
4:3:369:C:O2	28:t:72:SER:OG	2.07	0.73
2:1:22:LYS:HE2	19:k:63:PRO:HB2	1.71	0.73
4:3:1114:C:N4	4:3:1123:A:OP2	2.22	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2018:U:H5”	26:r:11:ARG:HH22	1.54	0.73
7:9:800:LEU:CD1	7:9:839:ILE:HD11	2.17	0.73
3:2:6:SER:OG	4:3:1065:G:O2’	2.07	0.72
4:3:29:G:O2’	4:3:30:A:N7	2.21	0.72
4:3:1691:U:H5”	11:b:140:PRO:HA	1.71	0.72
4:3:2353:G:H4’	4:3:2354:A:H3’	1.71	0.72
4:3:2137:A:H5”	4:3:2138:U:H5’	1.71	0.72
4:3:2684:G:H2’	4:3:2685:A:C8	2.24	0.72
4:3:2700:C:H1’	4:3:2851:U:H1’	1.71	0.72
4:3:2299:U:O2’	4:3:2382:A:N3	2.21	0.72
13:d:92:ARG:HA	13:d:96:MET:HE3	1.71	0.72
25:q:74:ILE:H	25:q:79:HIS:HB3	1.54	0.72
4:3:31:U:H2’	4:3:32:G:H8	1.52	0.72
4:3:1841:U:H5”	4:3:1842:G:H5’	1.72	0.72
4:3:1387:A:OP2	4:3:1399:G:N2	2.21	0.72
4:3:1558:A:H5”	4:3:1570:A:H61	1.54	0.72
30:v:34:GLN:NE2	30:v:52:THR:OG1	2.22	0.72
4:3:1321:C:H2’	4:3:1322:A:H8	1.55	0.72
23:o:57:GLY:HA2	23:o:62:GLU:HG3	1.70	0.72
5:4:7:G:O2’	22:n:49:ASN:ND2	2.20	0.72
2:1:36:LYS:O	2:1:40:HIS:ND1	2.22	0.72
4:3:1444:C:H5”	4:3:1619:A:H61	1.54	0.72
4:3:2716:U:H2’	4:3:2717:G:H8	1.53	0.72
26:r:15:GLN:HG3	33:y:17:ARG:HH12	1.54	0.71
4:3:1089:A:C1’	8:A:79:LYS:NZ	2.52	0.71
4:3:2843:G:N2	21:m:94:PRO:O	2.23	0.71
4:3:1306:G:H5’	21:m:21:GLN:HE21	1.55	0.71
4:3:2294:A:H61	34:z:21:THR:HG21	1.55	0.71
4:3:2747:U:O2	4:3:2772:A:N7	2.24	0.71
4:3:80:U:H3	4:3:109:G:H1	0.80	0.71
4:3:1310:U:O4	4:3:1314:A:N7	2.23	0.71
4:3:2119:A:N7	6:8:57:C:P	2.63	0.71
7:9:800:LEU:CD2	7:9:920:VAL:HG22	2.20	0.71
4:3:2693:U:H2’	4:3:2694:A:H8	1.56	0.71
4:3:901:C:N4	4:3:946:A:N7	2.39	0.70
4:3:1089:A:C1’	8:A:79:LYS:HZ2	2.02	0.70
4:3:2682:A:H1’	18:j:27:SER:HB2	1.72	0.70
4:3:2094:A:N6	4:3:2095:A:N6	2.39	0.70
4:3:355:A:O2’	4:3:374:A:N3	2.24	0.70
4:3:2129:U:H2’	4:3:2130:A:H8	1.55	0.70
10:a:21:ASP:OD2	10:a:24:LYS:NZ	2.25	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2108:C:N3	4:3:2109:A:N6	2.40	0.70
4:3:2696:G:OP1	4:3:2721:C:N4	2.24	0.70
4:3:2807:G:O2'	4:3:2809:A:N6	2.24	0.70
7:9:43:GLY:HA3	7:9:46:PHE:CE2	2.25	0.70
4:3:353:G:H22	4:3:357:A:H62	1.36	0.70
4:3:1748:U:O2	4:3:1750:A:N7	2.24	0.70
4:3:2122:G:H21	4:3:2179:A:H61	1.40	0.70
4:3:1067:A:N1	4:3:1157:G:O6	2.25	0.70
4:3:2274:A:N6	4:3:2281:A:OP2	2.25	0.70
4:3:595:U:H2'	4:3:605:A:H1'	1.74	0.70
4:3:1315:A:N6	4:3:1683:G:O2'	2.23	0.70
4:3:2177:G:N2	6:8:56:U:C5'	2.55	0.70
4:3:2504:C:OP2	20:l:82:ARG:NH1	2.24	0.70
10:a:179:TYR:HA	10:a:192:PHE:O	1.92	0.70
4:3:1023:C:O2'	4:3:1036:A:N3	2.25	0.70
4:3:432:G:N2	4:3:2239:U:O2'	2.25	0.70
4:3:1081:A:C1'	8:A:57:ASN:ND2	2.55	0.70
4:3:2603:G:N2	4:3:2606:A:OP2	2.23	0.69
28:t:38:GLY:HA2	28:t:41:LYS:HE2	1.74	0.69
4:3:537:A:H3'	4:3:540:A:H62	1.57	0.69
4:3:1029:A:H5"	24:p:49:ARG:HD2	1.72	0.69
4:3:2092:U:O2	4:3:2242:G:O6	2.09	0.69
4:3:2876:G:OP1	21:m:44:ARG:NH1	2.25	0.69
4:3:1301:G:H22	26:r:87:PRO:HB2	1.55	0.69
4:3:2299:U:H3	4:3:2349:G:H1	1.40	0.69
30:v:14:TYR:HB3	30:v:26:ARG:HH12	1.58	0.69
4:3:580:U:OP1	4:3:1249:A:O2'	2.09	0.69
4:3:300:G:H2'	4:3:301:G:H8	1.57	0.69
4:3:2700:C:H2'	4:3:2701:A:H8	1.57	0.69
29:u:54:GLN:HE22	29:u:59:VAL:H	1.38	0.69
4:3:294:G:O2'	4:3:295:U:O4'	2.10	0.69
4:3:1081:A:N6	8:A:7:LYS:CB	2.42	0.69
4:3:1081:A:H2'	8:A:7:LYS:HZ2	1.56	0.69
4:3:1414:C:H2'	4:3:1415:A:C8	2.27	0.69
20:l:24:ASN:HA	20:l:67:ARG:HH11	1.58	0.69
4:3:79:U:H5"	31:w:3:VAL:HG21	1.74	0.69
4:3:733:C:O2'	4:3:769:A:N6	2.26	0.69
4:3:947:A:N3	4:3:2272:C:O2'	2.26	0.69
4:3:1061:A:H2'	4:3:1062:A:H8	1.58	0.69
4:3:1088:A:N1	8:A:79:LYS:HE3	2.05	0.69
4:3:2538:A:N7	14:e:175:LYS:NZ	2.39	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:i:3:LYS:N	25:q:12:TYR:OH	2.26	0.69
23:o:49:THR:OG1	23:o:91:LYS:NZ	2.25	0.69
4:3:47:G:H5"	4:3:48:G:H5'	1.74	0.69
4:3:499:G:N2	4:3:502:A:OP2	2.25	0.69
4:3:992:G:H1	4:3:994:U:HO2'	1.41	0.69
4:3:1418:U:H3	4:3:1423:A:H62	1.38	0.69
5:4:58:C:H2'	5:4:59:A:C8	2.28	0.69
4:3:177:U:H2'	4:3:178:A:C8	2.27	0.68
4:3:1999:G:N2	4:3:2003:C:O2'	2.27	0.68
4:3:2589:G:OP2	4:3:2589:G:N2	2.19	0.68
19:k:36:GLN:HG3	19:k:37:LYS:HG2	1.76	0.68
22:n:80:LYS:HA	22:n:83:LYS:HD3	1.75	0.68
4:3:368:C:O2'	28:t:88:LYS:NZ	2.22	0.68
4:3:411:U:O2'	4:3:458:A:N1	2.26	0.68
4:3:906:G:H22	4:3:945:U:H3	1.39	0.68
4:3:1011:A:H62	4:3:1025:G:N2	1.91	0.68
18:j:87:ILE:HA	18:j:93:PRO:HA	1.74	0.68
4:3:912:A:H61	4:3:939:U:H3	1.42	0.68
4:3:1089:A:H2'	4:3:1090:G:C8	2.27	0.68
4:3:1273:U:H1'	19:k:7:LYS:HA	1.75	0.68
4:3:1555:G:H22	4:3:1576:G:H1'	1.56	0.68
5:4:12:U:OP2	5:4:68:C:O2'	2.12	0.68
25:q:73:HIS:ND1	25:q:79:HIS:O	2.25	0.68
4:3:274:A:OP2	4:3:294:G:N1	2.27	0.68
4:3:703:A:H2'	4:3:705:A:H62	1.59	0.68
4:3:1743:U:O2'	4:3:2863:G:N3	2.25	0.68
4:3:1246:U:O2	4:3:1263:G:N2	2.27	0.68
23:o:104:MET:HE1	23:o:112:ALA:HA	1.74	0.68
1:0:16:HIS:NE2	4:3:500:U:O2	2.26	0.68
4:3:220:A:N7	4:3:467:U:C2	2.62	0.68
4:3:342:G:N2	4:3:513:A:C6	2.61	0.68
4:3:643:A:H62	4:3:655:G:H21	1.39	0.68
4:3:1093:U:O2	4:3:1115:G:N2	2.23	0.68
15:f:37:ALA:HB3	15:f:42:LYS:HD2	1.74	0.68
20:l:43:ASP:OD2	20:l:45:ARG:NH1	2.26	0.68
27:s:62:PRO:HD3	27:s:77:LEU:HD12	1.76	0.68
4:3:513:A:N6	4:3:536:A:OP1	2.26	0.68
4:3:2339:G:O2'	4:3:2344:A:N6	2.27	0.68
4:3:2754:U:H5"	14:e:141:LYS:HE3	1.76	0.68
4:3:552:C:OP1	33:y:13:ARG:NH1	2.26	0.68
2:1:22:LYS:HG2	2:1:44:GLN:HE22	1.60	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2682:A:H4'	18:j:30:LYS:HD3	1.76	0.67
4:3:1081:A:H1'	8:A:57:ASN:ND2	2.10	0.67
4:3:1803:U:H2'	4:3:1804:A:C8	2.30	0.67
10:a:64:ARG:HG2	10:a:90:PRO:HB2	1.76	0.67
23:o:53:LEU:HD21	23:o:104:MET:HB2	1.76	0.67
3:2:11:CYS:SG	3:2:28:LYS:NZ	2.68	0.67
20:l:14:ASN:O	20:l:15:VAL:HG23	1.93	0.67
4:3:1027:U:O4	4:3:1198:G:O6	2.11	0.67
4:3:1814:G:H2'	4:3:1815:U:H2'	1.76	0.67
30:v:17:ASN:HB3	30:v:25:THR:HB	1.75	0.67
4:3:2330:A:H2'	4:3:2331:G:C8	2.29	0.67
25:q:6:VAL:HB	25:q:37:LYS:HG2	1.76	0.67
4:3:67:C:O2'	4:3:492:C:N3	2.28	0.67
4:3:650:G:N2	12:c:187:SER:OG	2.28	0.67
4:3:1305:G:H2'	4:3:1306:G:C8	2.28	0.67
4:3:2521:A:H2'	4:3:2522:U:C6	2.29	0.67
4:3:80:U:O4	4:3:109:G:O6	2.13	0.67
4:3:506:A:OP1	12:c:80:ARG:NH2	2.27	0.67
4:3:515:A:H4'	4:3:516:A:H5'	1.77	0.67
10:a:23:LYS:HE2	10:a:29:ASN:HB2	1.76	0.67
17:i:56:TYR:HD2	17:i:124:LYS:HB3	1.59	0.67
4:3:1786:U:OP2	4:3:1791:A:N6	2.28	0.67
4:3:1808:C:OP2	10:a:153:HIS:NE2	2.28	0.67
4:3:2175:U:O2	4:3:2179:A:N7	2.26	0.67
4:3:177:U:H2'	4:3:178:A:H8	1.60	0.66
4:3:1853:G:N2	4:3:1854:A:N1	2.42	0.66
26:r:57:ASN:OD1	26:r:61:ASN:ND2	2.28	0.66
4:3:1689:A:H4'	11:b:120:THR:HA	1.76	0.66
23:o:56:ARG:HG2	23:o:56:ARG:HH11	1.60	0.66
3:2:11:CYS:SG	3:2:12:LYS:N	2.69	0.66
4:3:1509:U:H3	4:3:1530:G:H1	1.41	0.66
4:3:432:G:OP2	30:v:10:ARG:NH1	2.29	0.66
4:3:534:U:O4	4:3:538:A:N7	2.29	0.66
4:3:1315:A:N6	21:m:109:ASP:OD2	2.26	0.66
4:3:1671:C:H5'	4:3:1767:A:H1'	1.78	0.66
22:n:75:GLN:NE2	22:n:111:GLU:OE2	2.28	0.66
4:3:2270:U:OP1	29:u:55:ARG:NH2	2.28	0.66
4:3:2568:G:H2'	4:3:2569:A:H8	1.61	0.66
4:3:2680:C:H2'	4:3:2681:G:H4'	1.76	0.66
5:4:60:C:H2'	5:4:61:A:C8	2.30	0.66
4:3:345:A:H61	4:3:363:G:H5"	1.61	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:632:A:H2'	4:3:633:G:H8	1.61	0.66
4:3:2638:G:H21	4:3:2895:A:H4'	1.61	0.66
10:a:56:ARG:NH2	10:a:227:THR:OG1	2.28	0.66
4:3:604:A:OP2	4:3:2037:A:N6	2.28	0.66
4:3:1286:G:N2	12:c:83:HIS:O	2.29	0.66
4:3:709:G:H5"	12:c:77:GLY:H	1.61	0.66
30:v:58:LEU:HB2	30:v:63:ARG:HB2	1.76	0.66
4:3:227:A:O2'	4:3:456:G:N3	2.26	0.66
4:3:562:C:O3'	17:i:119:ARG:NH1	2.28	0.66
4:3:241:C:O2	4:3:643:A:O2'	2.13	0.65
13:d:117:LEU:HB3	13:d:177:LEU:HB3	1.77	0.65
23:o:101:ILE:O	23:o:105:ARG:NH1	2.29	0.65
29:u:61:PRO:O	29:u:94:ARG:NH2	2.29	0.65
4:3:2141:A:N6	4:3:2164:G:O2'	2.29	0.65
4:3:2190:G:H2'	4:3:2191:G:C8	2.30	0.65
12:c:156:ASN:HB2	12:c:194:ALA:HA	1.76	0.65
4:3:30:A:H2'	4:3:31:U:C6	2.31	0.65
4:3:615:G:OP2	24:p:13:ARG:NH1	2.29	0.65
4:3:1803:U:H2'	4:3:1804:A:H8	1.60	0.65
4:3:2120:G:N3	6:8:57:C:C2	2.64	0.65
4:3:2758:A:O2'	4:3:2760:C:N4	2.29	0.65
4:3:1065:G:H2'	4:3:1066:G:C8	2.32	0.65
4:3:2062:C:H2'	4:3:2512:U:H4'	1.79	0.65
4:3:2321:C:H5'	13:d:68:THR:HG21	1.78	0.65
4:3:300:G:H2'	4:3:301:G:C8	2.32	0.65
5:4:12:U:H2'	5:4:13:G:H21	1.62	0.65
8:A:40:ILE:HG22	8:A:51:ILE:HD11	1.79	0.65
14:e:24:HIS:HD2	14:e:37:LYS:HA	1.61	0.65
24:p:67:ALA:O	24:p:71:GLN:NE2	2.29	0.65
3:2:4:ARG:NE	4:3:2474:C:OP1	2.20	0.65
4:3:1235:U:H1'	19:k:6:LEU:HD13	1.79	0.65
5:4:11:A:O3'	5:4:13:G:N2	2.29	0.65
11:b:17:PHE:HZ	23:o:80:GLN:HG3	1.61	0.65
4:3:2548:G:O2'	4:3:2748:A:N3	2.27	0.65
2:1:37:GLN:NE2	4:3:2371:U:OP2	2.31	0.64
4:3:341:G:O2'	4:3:1240:U:O2'	2.14	0.64
4:3:450:C:O2'	4:3:1871:U:O2	2.15	0.64
4:3:643:A:H62	4:3:655:G:N2	1.95	0.64
4:3:554:U:O2'	26:r:73:GLU:OE1	2.15	0.64
4:3:597:C:H2'	4:3:598:G:H8	1.62	0.64
4:3:774:A:N3	4:3:775:C:N4	2.45	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1414:C:H2'	4:3:1415:A:H8	1.62	0.64
14:e:97:TYR:HA	14:e:109:GLN:O	1.97	0.64
4:3:535:G:N1	4:3:538:A:OP2	2.28	0.64
4:3:1813:C:N4	4:3:1814:G:O6	2.30	0.64
13:d:98:ALA:HB1	32:x:26:GLU:HB2	1.79	0.64
4:3:2598:C:O3'	10:a:246:ARG:NH1	2.31	0.64
14:e:93:VAL:HG13	14:e:163:LYS:HA	1.80	0.64
17:i:95:MET:HG3	17:i:100:SER:HA	1.79	0.64
27:s:4:THR:HB	31:w:27:LEU:HD22	1.80	0.64
4:3:608:A:H4'	4:3:2508:U:H4'	1.80	0.64
6:8:2:G:H2'	6:8:3:G:C8	2.32	0.64
4:3:2086:U:HO2'	30:v:23:THR:HG1	1.43	0.64
4:3:2119:A:H1'	6:8:58:G:N1	1.99	0.64
4:3:2299:U:H2'	4:3:2300:A:C8	2.33	0.64
4:3:842:U:OP2	19:k:42:ARG:NH2	2.29	0.64
4:3:1470:C:H2'	4:3:1471:A:H8	1.63	0.64
4:3:1776:G:H2'	4:3:1777:G:H8	1.63	0.64
4:3:2503:G:OP1	29:u:17:SER:N	2.30	0.64
4:3:2745:G:H2'	4:3:2746:A:H8	1.62	0.64
3:2:35:ARG:HG2	3:2:36:GLN:H	1.62	0.64
4:3:562:C:O2'	17:i:120:ARG:NH1	2.31	0.64
4:3:597:C:H2'	4:3:598:G:C8	2.33	0.64
18:j:11:ALA:HB2	18:j:83:ALA:HB1	1.80	0.64
4:3:421:A:N6	4:3:423:C:H2'	2.13	0.64
4:3:784:A:H61	4:3:788:G:H21	1.45	0.64
4:3:1160:G:OP2	4:3:1161:A:O2'	2.16	0.64
27:s:2:ASP:HB3	27:s:47:VAL:HB	1.80	0.64
4:3:495:U:O2	4:3:507:A:N6	2.31	0.63
4:3:1389:G:O2'	4:3:2223:C:O2'	2.16	0.63
29:u:79:GLY:CA	29:u:98:VAL:O	2.43	0.63
33:y:38:LEU:HG	33:y:41:ARG:HB2	1.79	0.63
4:3:252:G:H5'	4:3:254:G:N1	2.14	0.63
4:3:1081:A:C4'	8:A:57:ASN:ND2	2.60	0.63
4:3:1316:U:OP2	21:m:107:ARG:NH2	2.29	0.63
4:3:1949:C:OP2	4:3:1950:U:O2'	2.15	0.63
12:c:126:HIS:HB2	12:c:198:LEU:HG	1.79	0.63
24:p:96:GLU:O	24:p:100:LYS:NZ	2.30	0.63
4:3:2169:G:H4'	4:3:2170:A:H3'	1.78	0.63
4:3:2178:A:N6	6:8:57:C:H5'	2.14	0.63
4:3:1294:G:N2	4:3:2023:U:O4	2.31	0.63
4:3:2849:G:H22	4:3:2875:U:H3	1.45	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:9:781:SER:HB2	7:9:789:TYR:CE1	2.34	0.63
4:3:522:C:H2'	4:3:523:A:H8	1.63	0.63
4:3:1010:G:N2	4:3:1026:A:C8	2.66	0.63
4:3:1426:C:OP1	27:s:54:LYS:NZ	2.29	0.63
4:3:1119:A:N6	8:A:29:TYR:CD2	2.67	0.63
4:3:2050:G:OP1	4:3:2785:G:O2'	2.12	0.63
4:3:2303:U:H3	4:3:2345:G:H1	1.46	0.63
4:3:2308:U:H2'	4:3:2309:A:H8	1.62	0.63
4:3:192:U:H3	4:3:212:G:H1	1.46	0.63
4:3:1400:U:H2'	4:3:1401:A:H8	1.64	0.63
4:3:1460:G:H2'	4:3:1461:A:C8	2.34	0.63
14:e:5:GLY:O	14:e:57:ARG:NH1	2.32	0.63
29:u:39:LYS:HB2	29:u:51:ILE:HG23	1.80	0.63
23:o:34:ALA:HB3	23:o:87:SER:HB3	1.81	0.62
4:3:410:G:H4'	4:3:411:U:O5'	1.98	0.62
4:3:713:C:H2'	4:3:714:G:H8	1.63	0.62
4:3:1794:A:OP1	10:a:246:ARG:NH2	2.32	0.62
4:3:2054:C:H2'	4:3:2055:A:C8	2.34	0.62
4:3:2195:U:C4	4:3:2196:G:O6	2.52	0.62
33:y:42:VAL:HA	33:y:48:TYR:HA	1.80	0.62
4:3:276:A:N6	4:3:293:G:O2'	2.32	0.62
4:3:900:G:H21	4:3:903:A:H61	1.47	0.62
4:3:907:A:H4'	20:l:4:PRO:HB3	1.79	0.62
4:3:1081:A:H2'	8:A:7:LYS:NZ	2.10	0.62
4:3:2849:G:H2'	4:3:2850:G:C8	2.33	0.62
4:3:1164:A:N3	4:3:2577:G:N2	2.43	0.62
4:3:519:A:OP2	4:3:520:C:N4	2.32	0.62
4:3:609:U:N3	4:3:610:G:O6	2.32	0.62
4:3:632:A:H2'	4:3:633:G:C8	2.35	0.62
4:3:1120:A:O2'	4:3:1139:C:O2	2.16	0.62
4:3:1670:U:O2'	4:3:1767:A:N3	2.29	0.62
7:9:831:PHE:CE1	7:9:913:VAL:HG11	2.34	0.62
5:4:60:C:H2'	5:4:61:A:H8	1.64	0.62
4:3:482:G:OP1	24:p:4:LYS:NZ	2.32	0.62
4:3:1240:U:O2	4:3:1267:A:N6	2.32	0.62
4:3:1355:C:N4	4:3:1681:G:O2'	2.33	0.62
4:3:1458:A:H61	4:3:1597:U:H3	1.47	0.62
4:3:2058:G:N2	4:3:2059:G:N7	2.47	0.62
32:x:10:GLN:H	32:x:29:LEU:HB2	1.64	0.62
4:3:1496:A:N6	4:3:1547:G:O2'	2.33	0.62
4:3:1748:U:C2	4:3:1750:A:N7	2.68	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1916:C:H2'	4:3:1917:G:H8	1.65	0.62
4:3:2297:G:H2'	4:3:2298:G:H8	1.64	0.62
4:3:2465:U:O2	4:3:2502:G:O6	2.18	0.62
4:3:2599:C:H2'	4:3:2600:G:H8	1.65	0.62
10:a:83:VAL:HA	10:a:99:ILE:HG22	1.81	0.62
4:3:788:G:H2'	4:3:789:A:H8	1.65	0.62
4:3:2119:A:H61	6:8:58:G:C4'	2.08	0.62
20:l:15:VAL:HG21	20:l:96:VAL:HG21	1.82	0.62
4:3:108:G:N2	4:3:380:A:N1	2.48	0.61
4:3:2796:C:O2'	4:3:2813:A:N7	2.31	0.61
10:a:259:GLY:O	10:a:261:ARG:NH1	2.33	0.61
18:j:76:HIS:HB3	23:o:78:ASN:HB3	1.81	0.61
28:t:2:GLN:O	28:t:102:ARG:NH1	2.33	0.61
4:3:341:G:N2	4:3:364:A:N6	2.26	0.61
4:3:1032:A:H2'	4:3:1033:A:C8	2.35	0.61
14:e:8:THR:HG22	14:e:54:GLN:HB3	1.82	0.61
1:0:7:PRO:HA	4:3:721:G:H21	1.65	0.61
4:3:876:A:H2'	4:3:877:G:H8	1.64	0.61
4:3:2669:G:H2'	4:3:2670:A:C8	2.35	0.61
4:3:2828:C:OP2	4:3:2829:G:N2	2.33	0.61
5:4:23:A:OP2	5:4:25:A:N6	2.33	0.61
6:8:73:C:O2'	6:8:74:A:O4'	2.16	0.61
7:9:800:LEU:HD12	7:9:839:ILE:HD11	1.80	0.61
13:d:123:ASP:O	13:d:125:ARG:NH1	2.33	0.61
4:3:2521:A:H2'	4:3:2522:U:H6	1.65	0.61
4:3:2587:U:H4'	11:b:138:GLY:HA3	1.83	0.61
27:s:60:ARG:O	27:s:77:LEU:HA	2.00	0.61
1:0:22:MET:O	1:0:28:ARG:NH1	2.32	0.61
4:3:326:A:N6	4:3:383:U:O2	2.32	0.61
4:3:746:G:H2'	4:3:747:A:H8	1.65	0.61
4:3:1119:A:OP1	8:A:53:VAL:CB	2.49	0.61
4:3:1629:U:H2'	4:3:1630:A:C8	2.36	0.61
4:3:2847:C:H2'	4:3:2848:A:H8	1.65	0.61
4:3:359:G:H2'	4:3:360:G:C8	2.36	0.61
4:3:513:A:H2'	4:3:514:A:C8	2.36	0.61
4:3:892:G:H2'	4:3:893:A:H8	1.64	0.61
4:3:915:A:OP2	4:3:936:G:N2	2.22	0.61
4:3:1067:A:H2	4:3:1157:G:H1	1.47	0.61
4:3:2045:C:H2'	4:3:2046:G:H8	1.66	0.61
10:a:171:LEU:HD11	10:a:183:GLN:HB2	1.81	0.61
19:k:82:LEU:HB3	19:k:116:GLY:HA3	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:535:G:N3	4:3:540:A:C6	2.68	0.61
4:3:900:G:N2	4:3:903:A:H61	1.99	0.61
4:3:1715:A:H4'	4:3:1733:G:H22	1.65	0.61
4:3:2054:C:H2'	4:3:2055:A:H8	1.64	0.61
4:3:2289:C:H4'	4:3:2397:G:H21	1.66	0.61
4:3:1807:C:O2	4:3:1824:G:O6	2.19	0.61
4:3:2094:A:C6	4:3:2095:A:N6	2.69	0.61
4:3:2119:A:N1	6:8:57:C:H2'	2.15	0.61
4:3:2552:G:H2'	4:3:2553:G:C8	2.36	0.61
4:3:2736:U:O2'	4:3:2737:G:H8	1.82	0.61
4:3:293:G:H2'	4:3:294:G:C5	2.36	0.61
4:3:421:A:N6	4:3:424:G:OP2	2.27	0.61
4:3:2088:U:H2'	4:3:2089:A:H8	1.65	0.61
6:8:22:A:N6	6:8:47:G:O3'	2.34	0.61
10:a:64:ARG:HH22	10:a:222:ARG:HA	1.66	0.61
10:a:148:HIS:ND1	10:a:201:GLY:O	2.33	0.61
4:3:2016:G:N2	21:m:109:ASP:OD1	2.34	0.60
4:3:2568:G:H2'	4:3:2569:A:C8	2.35	0.60
11:b:11:VAL:HG21	23:o:9:LEU:HD11	1.83	0.60
12:c:33:PRO:HB2	12:c:111:ALA:HB2	1.83	0.60
15:f:121:PHE:HA	15:f:142:VAL:HB	1.83	0.60
4:3:334:A:N3	4:3:367:G:N2	2.49	0.60
4:3:677:U:H2'	4:3:678:U:C2	2.36	0.60
4:3:739:G:H22	4:3:761:G:H1'	1.65	0.60
4:3:824:A:N6	4:3:1648:A:OP2	2.34	0.60
4:3:849:C:O2'	4:3:1255:G:N2	2.34	0.60
4:3:988:G:O6	4:3:1002:A:N6	2.34	0.60
4:3:1056:A:H2'	4:3:1057:G:H4'	1.83	0.60
4:3:1240:U:N3	4:3:1267:A:N7	2.48	0.60
4:3:1297:U:H2'	4:3:1298:A:C8	2.35	0.60
4:3:1851:U:H2'	4:3:1852:G:H8	1.66	0.60
5:4:59:A:O2'	5:4:60:C:OP1	2.19	0.60
10:a:17:SER:HB2	10:a:214:GLY:HA3	1.82	0.60
20:l:41:TRP:HB3	20:l:94:VAL:HG21	1.83	0.60
4:3:146:G:H5'	27:s:39:ARG:HH11	1.66	0.60
4:3:2789:A:H5"	4:3:2790:A:H5'	1.82	0.60
22:n:38:HIS:HE1	22:n:56:SER:HB2	1.66	0.60
4:3:908:A:OP2	20:l:5:LYS:NZ	2.34	0.60
28:t:29:PRO:O	28:t:32:GLN:NE2	2.34	0.60
1:0:39:ARG:NH2	4:3:504:G:O6	2.35	0.60
4:3:474:U:H2'	4:3:475:A:C8	2.37	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:8:7:U:H3	6:8:68:G:H1	1.49	0.60
7:9:767:MET:HE1	7:9:805:PHE:CZ	2.36	0.60
4:3:334:A:O2'	4:3:352:C:O2	2.16	0.60
4:3:453:U:H2'	4:3:454:G:C8	2.36	0.60
4:3:590:U:H2'	4:3:591:G:H8	1.67	0.60
4:3:2700:C:H2'	4:3:2701:A:C8	2.36	0.60
8:A:149:LYS:NZ	9:B:29:GLY:O	2.35	0.60
1:0:19:LEU:HB2	4:3:126:C:H5'	1.83	0.60
4:3:640:U:O2	4:3:658:G:O6	2.19	0.60
4:3:1125:U:N3	4:3:1137:C:C2	2.70	0.60
4:3:1418:U:H3	4:3:1423:A:N6	1.99	0.60
4:3:2383:G:N2	4:3:2385:A:H3'	2.15	0.60
15:f:6:LYS:HG3	15:f:7:GLN:HG2	1.84	0.60
4:3:522:C:H2'	4:3:523:A:C8	2.36	0.60
4:3:1723:A:OP2	4:3:1732:A:N6	2.34	0.60
11:b:50:THR:OG1	11:b:87:MET:O	2.16	0.60
11:b:57:VAL:HG21	11:b:62:LEU:HD13	1.83	0.60
4:3:1125:U:C4	4:3:1137:C:N3	2.69	0.60
4:3:2376:C:H2'	4:3:2377:A:H8	1.66	0.60
4:3:27:U:H3'	4:3:28:G:C8	2.37	0.60
4:3:418:G:H1	4:3:430:U:H3	1.50	0.60
25:q:6:VAL:HG22	25:q:11:GLN:HG2	1.84	0.60
4:3:595:U:H3	4:3:2040:A:H2	1.50	0.59
4:3:2177:G:N9	6:8:58:G:OP2	2.29	0.59
4:3:2400:A:N7	4:3:2432:C:N3	2.50	0.59
5:4:104:C:H2'	5:4:105:A:C8	2.37	0.59
10:a:126:HIS:NE2	15:f:88:PRO:O	2.34	0.59
4:3:69:U:H2'	4:3:70:G:C8	2.38	0.59
4:3:225:A:N7	4:3:463:U:O4	2.34	0.59
4:3:432:G:H21	4:3:2239:U:HO2'	1.50	0.59
4:3:1475:C:O2'	4:3:1577:A:N3	2.30	0.59
4:3:1866:G:N1	4:3:1891:A:N7	2.50	0.59
4:3:2668:A:O2'	4:3:2669:G:H8	1.85	0.59
6:8:22:A:N7	6:8:47:G:O2'	2.31	0.59
17:i:95:MET:HG2	17:i:103:LEU:HB2	1.83	0.59
18:j:14:THR:HG22	18:j:95:GLY:HA2	1.83	0.59
31:w:13:GLU:OE2	31:w:69:GLN:NE2	2.35	0.59
4:3:221:A:N7	4:3:467:U:O2	2.35	0.59
4:3:1111:C:H2'	4:3:1112:A:C8	2.36	0.59
11:b:51:LEU:HD21	11:b:81:LEU:HB3	1.83	0.59
17:i:37:ASP:OD1	17:i:40:ARG:NH2	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:515:A:H1'	4:3:517:G:H5"	1.84	0.59
4:3:1296:G:OP2	26:r:15:GLN:NE2	2.35	0.59
4:3:1335:A:OP2	4:3:1640:G:N2	2.35	0.59
4:3:2177:G:C4	6:8:58:G:OP2	2.55	0.59
7:9:25:GLY:C	7:9:652:ILE:HD11	2.27	0.59
7:9:25:GLY:CA	7:9:652:ILE:HD11	2.32	0.59
9:D:6:ILE:HD11	9:E:23:ALA:CB	2.27	0.59
2:1:9:LYS:NZ	4:3:253:C:O2	2.34	0.59
4:3:84:G:H21	4:3:106:C:H42	1.50	0.59
4:3:1793:A:O2'	4:3:1945:A:N6	2.35	0.59
4:3:1861:A:O2'	4:3:2240:U:O2'	2.21	0.59
4:3:2645:U:H3'	4:3:2646:G:C8	2.37	0.59
4:3:787:C:OP2	4:3:1788:A:N6	2.35	0.59
4:3:1088:A:H2	8:A:79:LYS:HE3	1.55	0.59
4:3:1543:U:H2'	4:3:1544:G:H8	1.65	0.59
4:3:1761:C:N3	4:3:2724:U:O2'	2.34	0.59
4:3:1932:C:H2'	4:3:1933:U:C6	2.38	0.59
4:3:2356:U:O2	34:z:42:ARG:NH1	2.36	0.59
10:a:179:TYR:CA	10:a:192:PHE:O	2.50	0.59
21:m:51:LEU:O	21:m:59:ASN:ND2	2.35	0.59
29:u:64:ASN:HB2	29:u:97:VAL:HB	1.84	0.59
4:3:357:A:N3	12:c:176:LYS:NZ	2.51	0.59
4:3:534:U:H3	4:3:538:A:N6	1.93	0.59
4:3:1008:A:H5"	4:3:1009:A:H5"	1.83	0.59
4:3:1062:A:H2'	4:3:1063:A:H8	1.67	0.59
4:3:1697:C:N4	4:3:1999:G:O2'	2.36	0.59
4:3:2539:A:N6	4:3:2670:A:H61	2.01	0.59
10:a:136:MET:N	10:a:136:MET:SD	2.76	0.59
20:l:42:ILE:HD12	20:l:47:ILE:HD11	1.83	0.59
4:3:369:C:H2'	4:3:370:C:C6	2.38	0.59
4:3:530:G:N2	26:r:61:ASN:OD1	2.25	0.59
4:3:867:G:H5'	19:k:39:GLN:HB3	1.85	0.59
4:3:1012:G:HO2'	4:3:1190:A:HO2'	1.49	0.59
4:3:1485:A:O2'	4:3:1487:U:OP2	2.20	0.59
4:3:1766:A:N6	4:3:2704:U:O2'	2.36	0.59
4:3:2081:U:H2'	4:3:2082:U:H6	1.68	0.59
4:3:282:C:N3	4:3:286:A:O2'	2.34	0.59
4:3:2359:G:O2'	4:3:2374:A:N6	2.36	0.59
12:c:159:PHE:HD1	12:c:198:LEU:HB2	1.68	0.59
4:3:204:U:H4'	30:v:18:ARG:HH12	1.68	0.58
4:3:892:G:H2'	4:3:893:A:C8	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1820:U:O2'	4:3:1821:G:OP1	2.20	0.58
4:3:2531:C:O2	4:3:2772:A:O2'	2.21	0.58
8:A:40:ILE:CG2	8:A:51:ILE:HD11	2.33	0.58
8:A:161:LYS:HE3	9:E:17:ILE:HD11	1.84	0.58
21:m:101:LEU:HD22	33:y:53:VAL:HG21	1.84	0.58
4:3:107:C:O2	4:3:328:A:O2'	2.22	0.58
4:3:337:U:H2'	4:3:338:G:H8	1.68	0.58
4:3:1546:U:H3'	4:3:1547:G:C8	2.38	0.58
4:3:2808:A:OP2	4:3:2811:G:N1	2.35	0.58
1:0:9:LYS:HG2	4:3:1337:G:H5"	1.84	0.58
4:3:234:G:H2'	4:3:235:U:C6	2.38	0.58
4:3:548:A:H2'	4:3:549:A:C8	2.38	0.58
4:3:564:A:H5"	4:3:2049:A:H61	1.68	0.58
4:3:618:G:H3'	4:3:1281:A:H61	1.67	0.58
4:3:641:U:H3'	4:3:655:G:H1	1.67	0.58
4:3:823:A:H5"	4:3:825:U:H5	1.68	0.58
4:3:921:C:H2'	4:3:929:G:H1	1.68	0.58
4:3:1070:U:O2	4:3:1155:G:O6	2.21	0.58
4:3:1431:A:O2'	4:3:1497:A:O2'	2.21	0.58
4:3:534:U:H2'	4:3:535:G:O4'	2.04	0.58
4:3:561:A:O2'	4:3:2050:G:N3	2.30	0.58
4:3:1020:G:OP2	4:3:1020:G:N2	2.32	0.58
4:3:1337:G:H21	4:3:1645:C:H5'	1.69	0.58
4:3:2191:G:H2'	4:3:2192:U:O4'	2.03	0.58
2:1:15:LYS:HG2	4:3:687:G:H5"	1.85	0.58
4:3:618:G:H21	4:3:1284:A:H62	1.52	0.58
4:3:1125:U:O4	4:3:1137:C:N3	2.36	0.58
4:3:1367:G:H5"	27:s:15:LYS:HE2	1.86	0.58
4:3:1500:A:N6	4:3:1544:G:O6	2.37	0.58
4:3:1848:U:H2'	4:3:1849:G:H8	1.69	0.58
4:3:2286:A:N6	29:u:28:ARG:O	2.37	0.58
4:3:2696:G:N2	4:3:2728:U:OP2	2.32	0.58
4:3:2701:A:H2'	4:3:2702:G:C8	2.38	0.58
15:f:6:LYS:HG2	15:f:35:LEU:HB2	1.84	0.58
26:r:81:SER:HA	26:r:98:LYS:O	2.04	0.58
4:3:69:U:H2'	4:3:70:G:H8	1.69	0.58
4:3:474:U:H2'	4:3:475:A:H8	1.68	0.58
4:3:829:A:H2'	4:3:830:A:C8	2.39	0.58
4:3:1176:U:O2	4:3:1177:A:N6	2.37	0.58
4:3:1511:C:H2'	4:3:1512:A:H8	1.67	0.58
4:3:1766:A:H2'	4:3:1767:A:C8	2.39	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:9:797:LEU:HD12	7:9:836:GLN:HE22	1.69	0.58
4:3:26:G:N2	26:r:78:GLN:OE1	2.36	0.58
4:3:2299:U:O2	4:3:2382:A:O2'	2.21	0.58
4:3:2475:C:H2'	4:3:2476:A:C8	2.39	0.58
4:3:2701:A:H2'	4:3:2702:G:H8	1.68	0.58
4:3:2856:G:O6	4:3:2869:U:O2	2.22	0.58
5:4:23:A:H3'	5:4:24:A:H8	1.69	0.58
17:i:101:ASP:HB2	17:i:127:VAL:HB	1.86	0.58
4:3:339:U:H2'	4:3:340:U:C6	2.38	0.58
4:3:1698:A:C6	4:3:2734:C:C2	2.91	0.58
4:3:1932:C:N4	4:3:1936:G:N2	2.36	0.58
7:9:916:PHE:O	7:9:920:VAL:HG23	2.03	0.58
10:a:145:THR:O	10:a:169:ARG:NH2	2.37	0.58
14:e:4:ILE:HG12	14:e:7:ARG:HE	1.68	0.58
15:f:29:PHE:HE2	30:v:59:LYS:HG2	1.68	0.58
17:i:47:PHE:HD1	17:i:53:CYS:HB2	1.69	0.58
4:3:334:A:H2	4:3:353:G:H21	1.50	0.58
4:3:394:C:H2'	4:3:395:U:O4'	2.04	0.58
4:3:517:G:OP2	28:t:45:HIS:N	2.20	0.58
4:3:993:A:H5'	20:l:76:LYS:HA	1.84	0.58
4:3:1400:U:H2'	4:3:1401:A:C8	2.39	0.58
4:3:1754:U:H2'	4:3:1755:A:C8	2.39	0.58
4:3:2068:G:O2'	4:3:2071:C:N4	2.37	0.58
4:3:2454:G:N2	4:3:2457:U:O2	2.30	0.58
4:3:47:G:H21	4:3:184:A:N6	2.02	0.57
4:3:1495:A:OP2	4:3:1548:A:N6	2.36	0.57
4:3:1501:U:H3	4:3:1542:G:H1	1.50	0.57
4:3:1691:U:H2'	4:3:1692:A:H8	1.69	0.57
4:3:1790:U:O2'	4:3:2615:G:N3	2.36	0.57
4:3:1831:G:H2'	4:3:1832:G:H8	1.69	0.57
4:3:2009:U:OP1	21:m:14:ARG:NH1	2.29	0.57
4:3:2045:C:H2'	4:3:2046:G:C8	2.39	0.57
10:a:73:ARG:NH1	10:a:135:SER:OG	2.37	0.57
26:r:23:LEU:O	26:r:27:LYS:NZ	2.32	0.57
4:3:87:G:H2'	4:3:88:G:C8	2.39	0.57
4:3:1054:U:O2'	4:3:1056:A:N7	2.29	0.57
4:3:2083:U:OP2	4:3:2246:G:N2	2.34	0.57
4:3:2239:U:C4	4:3:2240:U:O4	2.56	0.57
4:3:2311:G:O2'	13:d:129:THR:OG1	2.21	0.57
13:d:132:ILE:O	13:d:151:GLY:CA	2.43	0.57
23:o:47:ASN:O	23:o:68:LYS:NZ	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:627:U:H2'	4:3:628:A:H8	1.70	0.57
4:3:853:G:N1	4:3:1219:U:OP2	2.24	0.57
10:a:94:CYS:SG	10:a:95:PHE:N	2.77	0.57
20:l:15:VAL:HB	20:l:41:TRP:HE1	1.69	0.57
20:l:75:THR:HG21	20:l:87:LYS:HE2	1.85	0.57
4:3:189:U:H4'	4:3:222:A:H4'	1.85	0.57
4:3:740:A:N6	4:3:760:G:O2'	2.38	0.57
4:3:1234:U:H1'	19:k:5:GLN:HB3	1.86	0.57
4:3:1641:A:H4'	4:3:1642:G:C8	2.39	0.57
4:3:1648:A:H61	26:r:88:ARG:H	1.52	0.57
4:3:2299:U:H2'	4:3:2300:A:H8	1.69	0.57
4:3:2829:G:N2	4:3:2829:G:OP2	2.37	0.57
1:0:24:THR:HG23	1:0:27:GLY:H	1.70	0.57
4:3:450:C:O3'	4:3:1885:G:N2	2.38	0.57
4:3:1116:U:H2'	4:3:1117:U:C6	2.40	0.57
4:3:2143:G:O6	4:3:2162:U:O4	2.20	0.57
4:3:2825:A:H2	4:3:2830:A:H61	1.53	0.57
14:e:118:GLU:OE2	14:e:154:TRP:NE1	2.31	0.57
15:f:83:GLU:HA	15:f:89:TYR:HB3	1.86	0.57
30:v:13:LEU:HB3	30:v:29:TRP:HE3	1.70	0.57
4:3:1070:U:OP1	14:e:62:LYS:NZ	2.37	0.57
4:3:1979:G:H2'	4:3:1980:G:C8	2.40	0.57
4:3:2129:U:H2'	4:3:2130:A:C8	2.38	0.57
4:3:2278:G:H3'	4:3:2279:G:H8	1.69	0.57
4:3:2477:A:O2'	20:l:56:LYS:NZ	2.38	0.57
11:b:227:GLU:HG2	23:o:19:LYS:HE3	1.86	0.57
20:l:122:GLY:HA3	20:l:129:TRP:HB3	1.86	0.57
4:3:26:G:H2'	4:3:27:U:H6	1.69	0.57
4:3:43:A:H2'	4:3:44:A:H8	1.69	0.57
4:3:1639:C:O2	4:3:1642:G:N2	2.37	0.57
4:3:1645:C:H2'	4:3:1646:G:C8	2.40	0.57
4:3:2145:A:H2'	4:3:2146:A:C8	2.40	0.57
4:3:2451:C:H2'	4:3:2452:G:C8	2.40	0.57
6:8:19:G:OP2	6:8:61:U:O2'	2.21	0.57
6:8:56:U:H2'	6:8:58:G:H5"	1.86	0.57
4:3:1592:A:H4'	4:3:1593:U:H3'	1.86	0.57
4:3:2447:A:H1'	4:3:2595:A:H4'	1.87	0.57
7:9:25:GLY:HA3	7:9:652:ILE:HD11	1.87	0.57
22:n:26:ASN:O	22:n:88:ASN:ND2	2.37	0.57
22:n:32:VAL:HG12	22:n:41:VAL:HG22	1.86	0.57
30:v:32:ASN:O	30:v:34:GLN:NE2	2.36	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:29:G:N7	4:3:547:G:N2	2.53	0.57
4:3:422:A:OP1	4:3:423:C:N4	2.28	0.57
4:3:1392:G:N2	4:3:1395:A:OP2	2.28	0.57
4:3:2213:A:H2'	4:3:2214:A:H8	1.68	0.57
4:3:2284:G:H5'	29:u:24:THR:HG21	1.86	0.57
4:3:2288:G:N7	29:u:28:ARG:NH2	2.51	0.57
4:3:2381:G:H2'	4:3:2382:A:H8	1.70	0.57
11:b:53:SER:HG	11:b:78:THR:HG1	1.35	0.57
11:b:130:ILE:HD11	11:b:143:PHE:H	1.70	0.57
1:0:2:LYS:NZ	4:3:722:C:O3'	2.38	0.57
4:3:331:A:H4'	28:t:92:VAL:HA	1.86	0.57
4:3:343:A:N3	4:3:363:G:O2'	2.37	0.57
4:3:431:U:O2'	4:3:432:G:N7	2.34	0.57
4:3:1746:U:H3	4:3:1753:G:H1	1.52	0.57
4:3:2666:C:OP1	14:e:161:LYS:NZ	2.37	0.57
10:a:183:GLN:NE2	10:a:184:LEU:O	2.37	0.57
11:b:11:VAL:HG23	23:o:10:ILE:HD11	1.87	0.57
13:d:56:GLU:O	13:d:60:ILE:HD12	2.05	0.57
4:3:101:C:H5"	4:3:102:A:H2'	1.87	0.56
4:3:117:C:H2'	4:3:118:G:O4'	2.05	0.56
4:3:1520:A:H2'	4:3:1521:A:C8	2.40	0.56
4:3:1698:A:C5	4:3:2734:C:N3	2.73	0.56
4:3:1699:A:H2'	4:3:1700:G:C8	2.40	0.56
4:3:2283:C:H1'	20:l:85:SER:HA	1.87	0.56
4:3:2342:U:O2	22:n:14:ARG:NH1	2.38	0.56
9:C:17:ILE:HG13	9:D:14:ILE:HD11	1.87	0.56
10:a:77:ASP:HB2	15:f:89:TYR:HE1	1.69	0.56
27:s:26:LYS:HD3	27:s:84:THR:HG22	1.87	0.56
4:3:1182:U:H2'	4:3:1183:A:H8	1.69	0.56
4:3:2451:C:H2'	4:3:2452:G:H8	1.70	0.56
4:3:2522:U:H2'	4:3:2523:C:H6	1.69	0.56
7:9:92:PHE:CZ	7:9:96:ILE:HD11	2.40	0.56
24:p:16:TRP:HA	24:p:19:GLN:HG2	1.87	0.56
4:3:29:G:N2	4:3:548:A:OP2	2.36	0.56
4:3:569:U:O2'	24:p:48:ASP:OD2	2.19	0.56
4:3:693:U:O2'	12:c:102:LYS:NZ	2.33	0.56
4:3:957:G:H21	4:3:2277:A:H8	1.52	0.56
4:3:2005:G:O2'	4:3:2732:A:O2'	2.23	0.56
4:3:2200:U:H2'	4:3:2201:G:H8	1.70	0.56
4:3:2522:U:H2'	4:3:2523:C:C6	2.40	0.56
4:3:2764:U:H1'	4:3:2765:A:H5"	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2885:U:H2'	4:3:2886:A:C8	2.39	0.56
7:9:396:ARG:HD2	7:9:399:ARG:HH21	1.69	0.56
12:c:76:GLN:HG2	12:c:84:PHE:CZ	2.40	0.56
18:j:64:ARG:HH21	18:j:101:PRO:HD2	1.69	0.56
27:s:13:THR:H	27:s:16:VAL:HB	1.71	0.56
4:3:9:G:O6	4:3:2899:C:N4	2.38	0.56
4:3:1245:G:H5"	24:p:7:LYS:HE3	1.87	0.56
5:4:38:U:O2'	5:4:40:U:O2'	2.23	0.56
15:f:6:LYS:HB3	15:f:35:LEU:H	1.69	0.56
23:o:26:SER:HA	23:o:55:ARG:HD2	1.88	0.56
31:w:49:ARG:O	31:w:53:THR:HG23	2.05	0.56
4:3:563:A:O2'	4:3:565:C:N4	2.38	0.56
4:3:1345:G:H2'	4:3:1346:G:H8	1.71	0.56
4:3:1356:G:N2	4:3:1681:G:O6	2.39	0.56
4:3:1691:U:H2'	4:3:1692:A:C8	2.40	0.56
4:3:2002:U:OP1	11:b:129:LYS:NZ	2.38	0.56
4:3:2142:U:OP2	4:3:2144:C:N4	2.38	0.56
4:3:2598:C:OP2	10:a:245:GLY:N	2.38	0.56
16:h:26:ALA:HB2	16:h:32:MET:HB2	1.87	0.56
4:3:107:C:H2'	4:3:108:G:H8	1.71	0.56
4:3:1406:A:O2'	4:3:1408:G:OP2	2.24	0.56
4:3:1509:U:O4	4:3:1510:A:N6	2.38	0.56
4:3:2025:C:H2'	4:3:2026:A:C8	2.40	0.56
4:3:2156:G:H2'	4:3:2157:A:C8	2.31	0.56
10:a:217:GLY:O	10:a:221:HIS:ND1	2.39	0.56
13:d:58:HIS:NE2	32:x:7:PHE:O	2.38	0.56
4:3:159:G:H2'	4:3:160:A:C8	2.40	0.56
4:3:1143:U:H2'	4:3:1144:C:H5	1.71	0.56
4:3:2013:C:H2'	4:3:2014:U:C6	2.40	0.56
4:3:2077:A:H2'	4:3:2078:A:H8	1.71	0.56
4:3:2315:G:H5'	4:3:2316:G:C8	2.40	0.56
4:3:2684:G:H2'	4:3:2685:A:H8	1.66	0.56
4:3:2819:C:H2'	4:3:2820:G:H8	1.70	0.56
11:b:56:THR:HA	11:b:78:THR:HA	1.86	0.56
4:3:764:G:H8	4:3:799:A:H5"	1.70	0.56
4:3:805:G:H2'	4:3:806:A:C8	2.41	0.56
4:3:1504:G:H2'	4:3:1505:G:H8	1.70	0.56
4:3:1825:U:H2'	10:a:162:ARG:HG2	1.88	0.56
4:3:2059:G:O2'	11:b:150:GLY:O	2.22	0.56
4:3:2082:U:OP1	10:a:251:ARG:NH2	2.39	0.56
4:3:451:A:O2'	4:3:1873:A:OP2	2.24	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1045:A:H5'	24:p:58:SER:HB2	1.86	0.56
4:3:1321:C:H2'	4:3:1322:A:C8	2.39	0.56
4:3:1687:G:N1	4:3:2009:U:OP2	2.39	0.56
4:3:2151:G:O2'	4:3:2154:A:N1	2.34	0.56
4:3:2175:U:C2	4:3:2179:A:N7	2.74	0.56
4:3:2359:G:N2	4:3:2374:A:OP2	2.38	0.56
5:4:61:A:H2'	5:4:62:G:C8	2.40	0.56
24:p:51:ASN:OD1	24:p:54:ARG:NH1	2.39	0.56
4:3:193:G:H1	4:3:209:G:HO2'	1.53	0.56
4:3:454:G:H2'	4:3:455:G:H8	1.70	0.56
4:3:478:G:H21	12:c:49:THR:HB	1.70	0.56
4:3:869:U:H2'	4:3:870:A:C8	2.41	0.56
4:3:1441:A:H2'	4:3:1442:G:C8	2.40	0.56
4:3:1449:G:H2'	4:3:1450:G:H8	1.71	0.56
4:3:1954:C:H2'	4:3:1955:G:C8	2.41	0.56
4:3:2072:C:H5'	4:3:2259:G:H21	1.71	0.56
4:3:2380:U:H2'	4:3:2381:G:C8	2.41	0.56
4:3:2474:C:N4	4:3:2475:C:H41	2.04	0.56
4:3:2483:C:N4	4:3:2537:G:N2	2.54	0.56
7:9:800:LEU:HD21	7:9:920:VAL:HG22	1.86	0.56
10:a:43:LYS:HD3	10:a:61:ARG:HB3	1.86	0.56
2:1:6:ALA:O	2:1:10:ARG:NH1	2.40	0.55
4:3:219:G:H21	4:3:468:A:H61	1.54	0.55
4:3:337:U:H2'	4:3:338:G:C8	2.40	0.55
4:3:730:G:H2'	4:3:731:A:C8	2.41	0.55
4:3:881:A:N7	4:3:968:U:N3	2.53	0.55
4:3:1301:G:H2'	4:3:1651:C:H4'	1.87	0.55
4:3:1490:G:H2'	4:3:1491:G:C8	2.41	0.55
4:3:2650:A:H2'	4:3:2651:G:C8	2.41	0.55
4:3:2663:G:N2	4:3:2673:A:OP2	2.32	0.55
12:c:115:VAL:HG11	12:c:188:VAL:HG22	1.88	0.55
13:d:69:LYS:HB3	13:d:82:GLY:HA2	1.86	0.55
14:e:160:TYR:HB3	14:e:177:GLY:HA3	1.87	0.55
4:3:192:U:H1'	4:3:1393:A:N6	2.22	0.55
4:3:195:A:H2'	4:3:196:G:C8	2.41	0.55
4:3:788:G:H2'	4:3:789:A:C8	2.41	0.55
4:3:1798:A:N6	4:3:1835:G:H1'	2.20	0.55
4:3:1866:G:O6	4:3:1891:A:N6	2.38	0.55
4:3:1979:G:H2'	4:3:1980:G:H8	1.71	0.55
4:3:2099:U:N3	4:3:2234:C:OP2	2.39	0.55
11:b:105:GLY:HA2	11:b:220:ILE:HD12	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:631:A:H2'	4:3:632:A:C8	2.41	0.55
4:3:1119:A:C6	8:A:29:TYR:CZ	2.91	0.55
4:3:1511:C:H2'	4:3:1512:A:C8	2.42	0.55
4:3:1804:A:HO2'	10:a:267:THR:HG1	1.54	0.55
11:b:62:LEU:HB3	11:b:67:GLN:HB3	1.88	0.55
4:3:697:U:H2'	4:3:698:A:C8	2.42	0.55
4:3:1252:C:N4	4:3:1257:G:O6	2.35	0.55
4:3:1296:G:N2	4:3:2020:A:OP2	2.39	0.55
4:3:1473:C:O2	4:3:1580:G:N2	2.40	0.55
4:3:1588:A:H2'	4:3:1589:A:C8	2.42	0.55
4:3:2688:C:O2'	11:b:13:MET:SD	2.65	0.55
5:4:47:C:OP1	22:n:101:ARG:NE	2.40	0.55
7:9:838:ARG:NH2	7:9:879:GLY:HA3	2.21	0.55
8:A:135:LEU:CD1	9:B:14:ILE:HG23	2.36	0.55
21:m:75:VAL:HA	21:m:78:LEU:HD12	1.88	0.55
4:3:874:U:H2'	4:3:875:G:H8	1.70	0.55
4:3:947:A:H1'	4:3:2272:C:O2'	2.07	0.55
4:3:1804:A:O2'	10:a:267:THR:OG1	2.23	0.55
4:3:2572:A:C2	4:3:2656:G:H5'	2.42	0.55
4:3:2667:G:H2'	4:3:2668:A:H2'	1.88	0.55
7:9:770:VAL:HG13	7:9:832:TRP:CE2	2.41	0.55
30:v:57:THR:O	30:v:61:HIS:ND1	2.39	0.55
4:3:1334:U:H2'	4:3:1335:A:H8	1.71	0.55
4:3:1932:C:N3	4:3:1936:G:N1	2.41	0.55
4:3:2421:U:H2'	4:3:2422:G:H8	1.72	0.55
4:3:2745:G:H2'	4:3:2746:A:C8	2.41	0.55
4:3:1081:A:C5	8:A:7:LYS:HB2	2.26	0.55
4:3:1097:G:H2'	4:3:1098:G:H8	1.70	0.55
4:3:1182:U:H2'	4:3:1183:A:C8	2.41	0.55
4:3:1934:A:H2'	4:3:1935:A:C8	2.41	0.55
4:3:2088:U:H2'	4:3:2089:A:C8	2.41	0.55
4:3:2691:C:O2	18:j:70:GLN:NE2	2.40	0.55
10:a:213:ILE:HG21	10:a:219:ASN:HB2	1.89	0.55
19:k:150:GLU:OE1	19:k:150:GLU:N	2.38	0.55
26:r:12:ILE:HG21	26:r:103:LEU:HD11	1.89	0.55
1:0:7:PRO:HB2	1:0:9:LYS:NZ	2.21	0.55
4:3:488:G:H21	4:3:493:A:H1'	1.72	0.55
4:3:614:C:H2'	4:3:615:G:H8	1.72	0.55
4:3:714:G:H2'	4:3:715:G:H8	1.71	0.55
4:3:990:G:O6	4:3:999:U:O4	2.24	0.55
4:3:1063:A:OP2	4:3:1161:A:N6	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2483:C:H42	4:3:2537:G:N2	2.04	0.55
4:3:2667:G:N2	4:3:2670:A:OP2	2.39	0.55
10:a:225:ARG:HG2	10:a:225:ARG:HH11	1.71	0.55
18:j:88:LYS:HB3	18:j:94:ARG:HG2	1.88	0.55
4:3:54:A:N1	4:3:182:C:H1'	2.21	0.55
4:3:225:A:N6	4:3:463:U:H3	2.02	0.55
4:3:341:G:H2'	4:3:343:A:N7	2.22	0.55
4:3:483:A:N1	4:3:490:A:O2'	2.31	0.55
4:3:700:U:H2'	4:3:701:A:C8	2.42	0.55
4:3:1142:G:H4'	8:A:56:ASN:ND2	2.21	0.55
4:3:1320:C:H2'	4:3:1321:C:C6	2.42	0.55
4:3:1914:G:H1	4:3:1930:U:H3	1.54	0.55
4:3:1931:C:H2'	4:3:1932:C:C6	2.42	0.55
4:3:2097:A:N6	4:3:2238:G:O6	2.39	0.55
4:3:2471:U:H2'	4:3:2472:G:C8	2.42	0.55
4:3:2481:U:OP1	4:3:2483:C:N4	2.40	0.55
4:3:2892:U:H2'	4:3:2893:C:C6	2.42	0.55
8:A:90:VAL:HG21	9:B:14:ILE:HG21	1.89	0.55
4:3:464:A:H5"	4:3:465:A:N7	2.22	0.55
4:3:535:G:N2	4:3:540:A:C5	2.75	0.55
4:3:1031:U:OP2	24:p:53:LYS:HB3	2.07	0.55
4:3:1125:U:C4	4:3:1137:C:C2	2.95	0.55
4:3:1692:A:H2'	4:3:1693:U:C6	2.41	0.55
4:3:2687:A:H4'	11:b:198:ALA:HB2	1.89	0.55
9:C:14:ILE:HD11	9:D:17:ILE:CG1	2.22	0.55
34:z:9:LEU:O	34:z:19:TYR:HB2	2.07	0.55
4:3:358:A:N6	4:3:373:U:O4'	2.40	0.54
4:3:465:A:H2'	4:3:466:A:C8	2.42	0.54
4:3:604:A:N6	4:3:2508:U:OP1	2.40	0.54
4:3:1667:G:N7	4:3:1669:A:N6	2.55	0.54
4:3:1797:C:H4'	10:a:216:ALA:HB2	1.88	0.54
4:3:2693:U:H2'	4:3:2694:A:C8	2.40	0.54
5:4:12:U:H2'	5:4:13:G:N2	2.21	0.54
5:4:104:C:H2'	5:4:105:A:H8	1.72	0.54
10:a:266:LYS:HE2	10:a:270:MET:HE1	1.88	0.54
20:l:11:LYS:HD3	20:l:87:LYS:HD3	1.88	0.54
3:2:5:ALA:HB3	4:3:2474:C:H5'	1.88	0.54
4:3:567:U:N3	4:3:2027:G:O2'	2.38	0.54
4:3:1546:U:H3'	4:3:1547:G:H8	1.71	0.54
4:3:2393:C:H2'	4:3:2394:A:C8	2.42	0.54
14:e:98:ARG:HB2	14:e:131:ASN:HB3	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:26:G:O6	4:3:552:C:N4	2.41	0.54
4:3:243:U:H2'	4:3:244:G:O4'	2.07	0.54
4:3:360:G:H2'	4:3:361:G:C8	2.42	0.54
4:3:631:A:H2'	4:3:632:A:H8	1.72	0.54
4:3:799:A:H1'	10:a:220:ARG:HH11	1.71	0.54
4:3:899:A:H2'	4:3:900:G:C4	2.42	0.54
4:3:1088:A:N1	8:A:79:LYS:CE	2.68	0.54
4:3:1760:G:N2	4:3:1763:G:OP2	2.31	0.54
4:3:1837:C:H2'	4:3:1838:A:C8	2.43	0.54
4:3:1867:G:H2'	4:3:1868:A:H8	1.73	0.54
4:3:2017:G:OP1	26:r:42:LYS:N	2.33	0.54
4:3:2421:U:H2'	4:3:2422:G:C8	2.42	0.54
8:A:116:ARG:HG3	8:A:118:PHE:CE2	2.42	0.54
10:a:153:HIS:HB2	10:a:156:GLY:HA3	1.90	0.54
17:i:67:LEU:HB3	17:i:72:LYS:HG2	1.88	0.54
4:3:224:G:N2	4:3:465:A:H61	2.05	0.54
4:3:670:G:O6	19:k:74:LYS:NZ	2.33	0.54
4:3:768:G:N2	4:3:769:A:N7	2.55	0.54
4:3:1042:C:H2'	4:3:1043:C:C6	2.43	0.54
4:3:1065:G:O6	4:3:1160:G:N2	2.41	0.54
4:3:1253:G:N1	4:3:1256:A:OP2	2.29	0.54
4:3:2885:U:H2'	4:3:2886:A:H8	1.73	0.54
17:i:76:PHE:CZ	17:i:91:SER:HB2	2.42	0.54
4:3:204:U:O2	4:3:424:G:N2	2.32	0.54
4:3:775:C:H5"	4:3:1791:A:P	2.48	0.54
4:3:1136:U:H2'	4:3:1137:C:C6	2.43	0.54
4:3:1549:U:H3'	4:3:1550:G:H8	1.72	0.54
4:3:1798:A:H61	4:3:1835:G:H1'	1.73	0.54
4:3:1959:A:N3	4:3:2568:G:O2'	2.38	0.54
4:3:2078:A:H2'	4:3:2079:G:H8	1.72	0.54
4:3:2744:A:H61	4:3:2776:U:H3	1.55	0.54
24:p:99:ILE:HB	24:p:100:LYS:HZ2	1.73	0.54
1:0:10:LEU:HD22	4:3:805:G:H5"	1.88	0.54
4:3:533:G:H2'	4:3:534:U:H6	1.72	0.54
4:3:612:G:H4'	4:3:2024:C:H2'	1.89	0.54
4:3:739:G:H21	4:3:762:A:H62	1.56	0.54
4:3:812:G:H2'	4:3:813:G:H8	1.72	0.54
4:3:2436:G:H4'	4:3:2437:G:C5	2.42	0.54
4:3:2664:U:H2'	4:3:2665:A:H8	1.73	0.54
11:b:26:ILE:HD12	11:b:192:LEU:HB3	1.89	0.54
27:s:65:ILE:HG23	27:s:66:ARG:HG2	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:17:G:O6	4:3:560:U:O4	2.26	0.54
4:3:85:U:O4	4:3:103:G:O2'	2.26	0.54
4:3:892:G:H4'	29:u:83:TYR:HB2	1.88	0.54
4:3:1117:U:H2'	4:3:1118:U:O4'	2.06	0.54
4:3:1200:U:H2'	4:3:1201:A:C8	2.42	0.54
4:3:1298:A:H2'	4:3:1299:A:O4'	2.07	0.54
4:3:1476:C:H2'	4:3:1477:A:C8	2.42	0.54
4:3:1544:G:H2'	4:3:1545:A:H8	1.72	0.54
4:3:2386:A:O2'	4:3:2387:U:OP1	2.25	0.54
13:d:64:LYS:HD2	13:d:65:PRO:HD2	1.89	0.54
26:r:7:GLN:HB3	26:r:103:LEU:HB2	1.89	0.54
1:0:7:PRO:HB2	1:0:9:LYS:HZ2	1.73	0.54
1:0:41:GLN:HG3	1:0:47:GLU:HG2	1.89	0.54
4:3:47:G:H21	4:3:184:A:H61	1.54	0.54
4:3:223:A:N6	4:3:464:A:OP2	2.41	0.54
4:3:675:U:H2'	4:3:676:U:C5	2.43	0.54
4:3:772:C:H2'	4:3:773:G:C8	2.42	0.54
4:3:1213:U:H2'	4:3:1214:U:C6	2.43	0.54
4:3:1244:A:H4'	4:3:1269:C:H4'	1.89	0.54
4:3:1778:G:H2'	4:3:1779:G:C8	2.43	0.54
4:3:894:G:N3	4:3:2276:A:H2'	2.23	0.54
4:3:1200:U:H2'	4:3:1201:A:H8	1.73	0.54
4:3:1645:C:H2'	4:3:1646:G:H8	1.72	0.54
4:3:1806:G:C2	10:a:160:ILE:HG23	2.43	0.54
4:3:2791:U:H2'	4:3:2792:C:C6	2.43	0.54
4:3:2870:U:H4'	4:3:2871:G:H4'	1.89	0.54
5:4:11:A:OP1	5:4:13:G:N1	2.41	0.54
17:i:42:LYS:HE2	24:p:62:LEU:HD11	1.90	0.54
4:3:37:G:O2'	4:3:490:A:O5'	2.24	0.54
4:3:351:G:H2'	4:3:352:C:C6	2.43	0.54
4:3:720:A:H1'	4:3:724:A:N6	2.22	0.54
4:3:2504:C:OP2	4:3:2505:A:N6	2.40	0.54
4:3:2533:A:H2'	4:3:2534:G:H8	1.71	0.54
7:9:149:PHE:CE2	7:9:173:ALA:HB1	2.43	0.54
11:b:36:VAL:HG12	11:b:52:LEU:HG	1.90	0.54
27:s:62:PRO:HG3	27:s:77:LEU:HB2	1.90	0.54
4:3:97:A:O2'	31:w:42:HIS:ND1	2.41	0.53
4:3:558:C:H2'	4:3:559:C:C6	2.43	0.53
4:3:1273:U:H2'	4:3:1274:A:C8	2.43	0.53
4:3:1840:C:O2'	4:3:1976:A:N6	2.41	0.53
4:3:2428:C:O3'	34:z:4:LYS:NZ	2.40	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2879:U:O2'	23:o:6:LYS:O	2.25	0.53
6:8:9:U:O2	6:8:15:A:N7	2.41	0.53
12:c:5:LYS:HG3	12:c:13:PHE:HD1	1.73	0.53
3:2:27:CYS:SG	3:2:28:LYS:N	2.81	0.53
4:3:587:U:H2'	4:3:588:G:C8	2.44	0.53
4:3:596:G:H2'	4:3:597:C:C6	2.43	0.53
4:3:694:U:H2'	4:3:695:G:H8	1.73	0.53
4:3:713:C:H2'	4:3:714:G:C8	2.42	0.53
4:3:991:G:OP2	20:l:14:ASN:ND2	2.40	0.53
4:3:1463:G:H2'	4:3:1464:G:C8	2.43	0.53
4:3:2316:G:O6	13:d:77:TYR:OH	2.17	0.53
4:3:2446:U:O2'	4:3:2448:C:OP1	2.26	0.53
17:i:9:LYS:HG2	17:i:48:THR:HG22	1.89	0.53
22:n:12:HIS:HD2	22:n:94:GLY:HA2	1.73	0.53
4:3:461:C:H2'	4:3:462:C:C6	2.43	0.53
4:3:1084:C:H41	4:3:1145:G:H21	1.57	0.53
4:3:1097:G:C8	4:3:1123:A:C8	2.97	0.53
4:3:2146:A:H2'	4:3:2147:G:C8	2.43	0.53
5:4:85:A:H2'	5:4:86:G:H8	1.73	0.53
12:c:38:VAL:HA	12:c:189:ARG:HB2	1.90	0.53
17:i:95:MET:O	17:i:100:SER:OG	2.23	0.53
27:s:2:ASP:N	27:s:46:LEU:HB2	2.24	0.53
4:3:410:G:N2	4:3:411:U:O4	2.34	0.53
4:3:580:U:H5"	26:r:129:VAL:HG12	1.91	0.53
4:3:1543:U:H2'	4:3:1544:G:C8	2.42	0.53
4:3:2552:G:H1'	4:3:2654:U:H4'	1.91	0.53
4:3:2802:C:O5'	4:3:2807:G:N2	2.41	0.53
25:q:2:HIS:HA	25:q:15:HIS:HA	1.89	0.53
25:q:2:HIS:HB3	25:q:15:HIS:CE1	2.43	0.53
4:3:251:G:OP2	4:3:253:C:N4	2.42	0.53
4:3:1046:A:O2'	4:3:1187:C:O2	2.25	0.53
4:3:2146:A:H2'	4:3:2147:G:H8	1.73	0.53
4:3:2308:U:H2'	4:3:2309:A:C8	2.42	0.53
4:3:2382:A:H2'	4:3:2383:G:C8	2.44	0.53
4:3:2670:A:H3'	4:3:2671:G:H8	1.73	0.53
6:8:14:C:N3	6:8:24:A:N6	2.57	0.53
24:p:95:SER:O	24:p:99:ILE:HG13	2.08	0.53
27:s:2:ASP:HB2	27:s:43:ALA:HB1	1.90	0.53
31:w:30:ARG:HA	31:w:33:LEU:HD12	1.91	0.53
4:3:530:G:OP1	26:r:6:LYS:NZ	2.41	0.53
4:3:1032:A:H4'	24:p:91:ARG:HD3	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2297:G:H2'	4:3:2298:G:C8	2.43	0.53
11:b:104:VAL:HA	11:b:184:PHE:HE2	1.74	0.53
17:i:48:THR:N	17:i:53:CYS:SG	2.71	0.53
4:3:134:U:H2'	4:3:135:A:H8	1.71	0.53
4:3:338:G:H2'	4:3:339:U:C6	2.43	0.53
4:3:526:G:H2'	4:3:527:A:C8	2.44	0.53
4:3:672:G:OP1	19:k:133:LYS:N	2.41	0.53
4:3:1227:C:H2'	4:3:1228:G:H8	1.73	0.53
4:3:2093:U:H2'	4:3:2094:A:C8	2.44	0.53
4:3:2748:A:OP2	4:3:2771:G:N1	2.41	0.53
10:a:281:ASN:O	10:a:282:ARG:HG2	2.07	0.53
28:t:3:ARG:HE	28:t:76:LEU:HD11	1.73	0.53
4:3:47:G:N2	4:3:184:A:N6	2.56	0.53
4:3:500:U:O4	4:3:823:A:N6	2.42	0.53
4:3:1229:U:H2'	4:3:1230:U:C6	2.43	0.53
4:3:1462:A:O2'	4:3:1463:G:O5'	2.25	0.53
4:3:1659:C:H3'	4:3:1660:A:H8	1.74	0.53
4:3:2320:U:H2'	4:3:2321:C:C6	2.43	0.53
15:f:58:TYR:CZ	15:f:62:LYS:HE3	2.43	0.53
3:2:35:ARG:NH1	4:3:2750:A:OP1	2.41	0.53
4:3:60:G:O2'	4:3:75:A:N1	2.36	0.53
4:3:1081:A:C5	8:A:7:LYS:CG	2.91	0.53
4:3:1228:G:N2	4:3:1279:U:O2	2.35	0.53
4:3:1589:A:H2'	4:3:1590:U:C6	2.44	0.53
4:3:1700:G:H4'	18:j:6:THR:HG23	1.91	0.53
4:3:1828:A:H2'	4:3:1829:U:C6	2.44	0.53
10:a:73:ARG:NH1	10:a:199:THR:OG1	2.42	0.53
4:3:533:G:H2'	4:3:534:U:C6	2.44	0.53
4:3:1044:C:H1'	4:3:1045:A:N7	2.24	0.53
4:3:1288:C:H2'	4:3:1289:G:C8	2.44	0.53
4:3:1723:A:H61	4:3:1731:G:H2'	1.74	0.53
7:9:647:MET:HE1	7:9:833:LEU:HD13	1.91	0.53
10:a:3:ILE:HB	10:a:18:THR:HB	1.91	0.53
2:1:14:THR:OG1	2:1:18:GLN:O	2.27	0.52
4:3:163:A:N3	4:3:2216:U:O2'	2.40	0.52
4:3:697:U:H2'	4:3:698:A:H8	1.74	0.52
4:3:1383:G:H2'	4:3:1384:C:H6	1.74	0.52
4:3:1415:A:H2'	4:3:1416:G:C8	2.44	0.52
4:3:2121:A:H3'	4:3:2122:G:H8	1.74	0.52
4:3:2209:U:H2'	4:3:2210:G:C8	2.43	0.52
8:A:135:LEU:HD11	9:B:14:ILE:HG23	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:c:53:LEU:HD23	12:c:58:VAL:HA	1.91	0.52
12:c:130:GLN:HE22	12:c:165:ASN:HD22	1.57	0.52
22:n:25:ASP:HB2	22:n:27:ARG:NH2	2.24	0.52
23:o:35:ILE:HB	23:o:46:GLN:HB3	1.90	0.52
4:3:389:C:H2'	4:3:390:A:C8	2.45	0.52
4:3:682:A:C2	4:3:683:G:H1'	2.44	0.52
4:3:911:U:H3	4:3:940:A:H61	1.57	0.52
4:3:1801:U:H2'	4:3:1802:C:C6	2.45	0.52
4:3:2106:G:N2	4:3:2199:C:N3	2.57	0.52
11:b:2:GLU:HG3	11:b:87:MET:HA	1.92	0.52
23:o:102:SER:HA	23:o:105:ARG:HH11	1.74	0.52
4:3:47:G:H2'	4:3:219:G:C5	2.44	0.52
4:3:566:G:OP1	4:3:594:G:N2	2.42	0.52
4:3:590:U:H2'	4:3:591:G:C8	2.43	0.52
4:3:1001:C:H2'	4:3:1002:A:H8	1.75	0.52
4:3:1007:C:H1'	4:3:1019:A:H2	1.74	0.52
4:3:1385:U:H2'	4:3:1386:G:O4'	2.10	0.52
4:3:2341:G:H5"	4:3:2343:A:N3	2.25	0.52
4:3:2651:G:N1	4:3:2780:U:C2	2.77	0.52
14:e:76:THR:O	14:e:80:ILE:HG12	2.10	0.52
15:f:47:ARG:HH22	15:f:51:LEU:HB2	1.74	0.52
29:u:78:ASP:HB3	29:u:100:HIS:CE1	2.45	0.52
2:1:54:ARG:NH2	19:k:51:PHE:O	2.43	0.52
4:3:214:C:H2'	4:3:215:A:C8	2.45	0.52
4:3:1200:U:O4	4:3:1215:G:O6	2.28	0.52
4:3:1297:U:H2'	4:3:1298:A:H8	1.75	0.52
7:9:107:GLN:OE1	7:9:176:ALA:HB1	2.09	0.52
4:3:17:G:H2'	4:3:18:G:C8	2.44	0.52
4:3:293:G:H2'	4:3:294:G:C4	2.44	0.52
4:3:338:G:H2'	4:3:339:U:H6	1.74	0.52
4:3:389:C:H2'	4:3:390:A:H8	1.75	0.52
4:3:1536:C:H2'	4:3:1537:A:C8	2.44	0.52
4:3:1687:G:O6	21:m:14:ARG:NH2	2.42	0.52
4:3:2126:A:H2	4:3:2178:A:H2'	1.74	0.52
4:3:2176:G:N1	4:3:2179:A:OP2	2.42	0.52
4:3:2738:U:O2'	4:3:2739:C:H5'	2.09	0.52
4:3:2880:A:O3'	23:o:6:LYS:NZ	2.43	0.52
19:k:125:HIS:ND1	19:k:145:SER:OG	2.43	0.52
23:o:54:ARG:HH12	23:o:63:THR:HB	1.75	0.52
29:u:52:TYR:CE2	29:u:54:GLN:HB3	2.44	0.52
30:v:7:LEU:HD12	30:v:8:THR:HG23	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:32:G:O2'	4:3:1244:A:N3	2.33	0.52
4:3:316:C:H1'	4:3:392:A:H61	1.74	0.52
4:3:454:G:H2'	4:3:455:G:C8	2.44	0.52
4:3:535:G:N3	4:3:540:A:N1	2.57	0.52
4:3:720:A:H1'	4:3:724:A:H61	1.75	0.52
4:3:1328:A:P	4:3:1661:A:H62	2.33	0.52
4:3:1381:A:H2'	4:3:1382:A:C5	2.45	0.52
4:3:1455:A:N6	4:3:1605:A:OP2	2.40	0.52
4:3:2200:U:H2'	4:3:2201:G:C8	2.45	0.52
4:3:2224:A:H2'	4:3:2225:G:H8	1.74	0.52
4:3:2387:U:H2'	4:3:2388:C:H6	1.74	0.52
19:k:20:LEU:HD23	19:k:32:SER:HB3	1.92	0.52
26:r:18:ARG:HH22	33:y:17:ARG:NH1	2.08	0.52
4:3:70:G:N2	4:3:76:A:O4'	2.42	0.52
4:3:134:U:H2'	4:3:135:A:C8	2.44	0.52
4:3:189:U:H2'	4:3:190:G:C8	2.44	0.52
4:3:730:G:H2'	4:3:731:A:H8	1.75	0.52
4:3:1036:A:H2'	4:3:1037:A:C8	2.45	0.52
4:3:1768:G:H2'	4:3:1769:A:C4	2.44	0.52
4:3:2148:U:H2'	4:3:2149:U:H6	1.75	0.52
4:3:2197:U:H2'	4:3:2198:G:C8	2.45	0.52
5:4:31:G:O6	5:4:48:A:N6	2.42	0.52
5:4:42:G:H1'	5:4:45:C:H42	1.74	0.52
12:c:130:GLN:HA	12:c:133:PHE:HB2	1.92	0.52
4:3:18:G:H2'	4:3:19:G:C8	2.44	0.52
4:3:332:G:OP1	28:t:91:TYR:N	2.41	0.52
4:3:500:U:O2'	4:3:501:G:OP1	2.25	0.52
4:3:585:U:H2'	4:3:586:G:C8	2.40	0.52
4:3:749:U:H1'	4:3:752:C:H5	1.75	0.52
4:3:840:G:OP2	4:3:841:C:N4	2.42	0.52
4:3:1043:C:OP2	4:3:1044:C:O2'	2.26	0.52
4:3:1381:A:OP2	4:3:1405:G:N1	2.33	0.52
4:3:2117:G:O2'	4:3:2127:G:H5'	2.08	0.52
4:3:2205:U:O2	4:3:2206:A:O2'	2.25	0.52
4:3:2629:G:O2'	11:b:168:HIS:HB2	2.10	0.52
20:l:27:VAL:HB	20:l:102:VAL:HG11	1.91	0.52
4:3:77:G:O2'	31:w:49:ARG:NH2	2.43	0.52
4:3:546:U:H4'	4:3:1265:G:H4'	1.91	0.52
4:3:769:A:H3'	4:3:770:A:H8	1.75	0.52
4:3:959:C:H2'	4:3:960:A:H8	1.75	0.52
4:3:1927:C:H2'	4:3:1928:G:C8	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2388:C:H2'	4:3:2389:A:H8	1.75	0.52
4:3:2893:C:H2'	4:3:2894:G:O4'	2.10	0.52
5:4:75:U:O2	5:4:89:A:N6	2.41	0.52
6:8:63:U:H2'	6:8:64:G:H8	1.74	0.52
18:j:86:LEU:HB3	18:j:94:ARG:HD2	1.91	0.52
4:3:341:G:N1	4:3:344:A:OP2	2.35	0.52
4:3:342:G:C2	4:3:513:A:C6	2.98	0.52
4:3:1097:G:H2'	4:3:1098:G:C8	2.44	0.52
4:3:1288:C:H2'	4:3:1289:G:H8	1.75	0.52
4:3:1809:A:P	4:3:1822:A:H61	2.33	0.52
4:3:1995:G:H2'	4:3:1996:A:C8	2.45	0.52
4:3:2060:G:OP2	4:3:2585:A:N6	2.43	0.52
4:3:2238:G:H5"	30:v:30:ASN:HD22	1.75	0.52
4:3:2358:U:H2'	4:3:2359:G:O4'	2.09	0.52
4:3:2387:U:H2'	4:3:2388:C:C6	2.45	0.52
4:3:2652:U:H2'	4:3:2653:G:C4	2.44	0.52
29:u:87:GLY:HA3	29:u:92:LYS:HD3	1.91	0.52
4:3:178:A:C6	4:3:179:A:C6	2.98	0.51
4:3:293:G:H2'	4:3:294:G:C6	2.45	0.51
4:3:666:G:N2	4:3:668:A:H3'	2.25	0.51
4:3:851:U:H2'	4:3:852:C:C6	2.45	0.51
4:3:2524:U:H2'	4:3:2525:C:C6	2.45	0.51
4:3:2585:A:H5'	4:3:2620:C:N4	2.25	0.51
4:3:2713:A:H2'	4:3:2714:G:O4'	2.10	0.51
8:A:149:LYS:HZ1	9:B:29:GLY:C	2.18	0.51
12:c:103:LEU:HD11	12:c:108:HIS:HB2	1.91	0.51
15:f:129:HIS:HA	15:f:135:THR:HG23	1.91	0.51
20:l:35:VAL:HB	20:l:130:LYS:HB3	1.91	0.51
33:y:46:GLY:HA2	33:y:54:LYS:HB3	1.91	0.51
4:3:1045:A:O2'	4:3:1046:A:O4'	2.27	0.51
4:3:1119:A:OP1	8:A:53:VAL:HB	2.09	0.51
4:3:1227:C:H2'	4:3:1228:G:C8	2.44	0.51
4:3:1248:A:H2'	4:3:1249:A:C8	2.44	0.51
4:3:1501:U:O2	4:3:1542:G:N2	2.39	0.51
4:3:1828:A:OP1	10:a:208:HIS:NE2	2.37	0.51
4:3:1910:G:H2'	4:3:1911:G:C8	2.45	0.51
12:c:144:MET:HE2	12:c:175:ILE:HG12	1.92	0.51
4:3:144:C:H2'	4:3:145:A:H8	1.75	0.51
4:3:340:U:H2'	4:3:341:G:O4'	2.11	0.51
4:3:729:U:H3	4:3:803:G:H1	1.56	0.51
4:3:762:A:H3'	4:3:763:G:H8	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:764:G:C8	4:3:799:A:H5”	2.45	0.51
4:3:799:A:OP1	10:a:215:LYS:NZ	2.36	0.51
4:3:1239:G:H4’	4:3:1242:G:H4’	1.91	0.51
4:3:1628:G:H2’	4:3:1629:U:C6	2.45	0.51
4:3:2249:A:H2’	4:3:2250:G:C8	2.46	0.51
4:3:2286:A:H5’	29:u:26:ASN:CG	2.36	0.51
4:3:2651:G:N1	4:3:2780:U:N3	2.59	0.51
11:b:19:THR:HA	11:b:223:ALA:HB2	1.92	0.51
26:r:113:GLU:HA	26:r:116:GLU:HB2	1.92	0.51
31:w:88:LYS:O	31:w:92:GLU:HG2	2.09	0.51
4:3:17:G:H2’	4:3:18:G:H8	1.76	0.51
4:3:548:A:H2	4:3:615:G:H4’	1.74	0.51
4:3:707:C:H2’	4:3:708:C:C6	2.45	0.51
4:3:890:U:H2’	4:3:891:G:H8	1.76	0.51
4:3:947:A:H62	20:l:13:HIS:N	2.07	0.51
4:3:1230:U:H2’	4:3:1231:G:C8	2.45	0.51
4:3:2328:A:HO2’	4:3:2330:A:H62	1.55	0.51
4:3:2624:C:H2’	4:3:2625:U:H6	1.75	0.51
13:d:40:VAL:HG22	13:d:86:GLY:H	1.76	0.51
17:i:71:LYS:HB2	17:i:75:GLU:HB2	1.92	0.51
18:j:71:ARG:HG2	18:j:73:ASP:H	1.74	0.51
4:3:2059:G:H5”	11:b:147:VAL:HG23	1.91	0.51
4:3:2624:C:H2’	4:3:2625:U:C6	2.46	0.51
4:3:2796:C:H2’	4:3:2797:C:C6	2.46	0.51
4:3:2828:C:H3’	4:3:2829:G:N2	2.22	0.51
10:a:146:GLN:OE1	10:a:169:ARG:NH2	2.41	0.51
14:e:30:PRO:HD2	14:e:83:THR:HA	1.92	0.51
19:k:34:ARG:HG2	19:k:41:ALA:HA	1.92	0.51
4:3:178:A:C6	4:3:179:A:N6	2.79	0.51
4:3:251:G:H2’	4:3:254:G:N7	2.26	0.51
4:3:860:C:H4’	4:3:2436:G:N7	2.26	0.51
4:3:1175:C:O2’	4:3:1178:A:O2’	2.23	0.51
4:3:1208:A:H2’	4:3:1209:U:H4’	1.92	0.51
4:3:1383:G:H2’	4:3:1384:C:C6	2.45	0.51
4:3:1441:A:H2’	4:3:1442:G:H8	1.74	0.51
4:3:2332:U:H1’	4:3:2345:G:H5”	1.93	0.51
4:3:2614:U:H2’	4:3:2615:G:C8	2.46	0.51
4:3:2781:C:H2’	4:3:2782:A:C8	2.46	0.51
4:3:2879:U:H4’	23:o:7:GLN:HG2	1.92	0.51
13:d:101:GLU:HA	13:d:104:ILE:HG12	1.91	0.51
13:d:102:LYS:HG2	13:d:138:PHE:CE1	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:20:C:O2'	4:3:587:U:H5"	2.11	0.51
4:3:154:U:H2'	4:3:155:A:H8	1.76	0.51
4:3:252:G:N3	4:3:2439:U:O2'	2.39	0.51
4:3:279:U:N3	4:3:291:G:O6	2.43	0.51
4:3:330:A:H4'	28:t:100:LYS:HE3	1.93	0.51
4:3:563:A:N6	4:3:2050:G:OP2	2.33	0.51
4:3:1173:G:O2'	17:i:107:ALA:O	2.28	0.51
4:3:1289:G:H2'	4:3:1290:G:C8	2.46	0.51
4:3:1381:A:H2'	4:3:1382:A:C4	2.46	0.51
4:3:2475:C:N4	4:3:2492:G:O6	2.43	0.51
22:n:31:MET:HA	22:n:92:ASP:HB3	1.93	0.51
26:r:81:SER:HG	26:r:97:THR:HG1	1.37	0.51
4:3:34:C:H2'	4:3:35:U:C6	2.45	0.51
4:3:401:G:O2'	4:3:402:A:OP1	2.28	0.51
4:3:897:A:H2	5:4:76:A:H2	1.57	0.51
4:3:1048:A:OP1	24:p:69:ARG:NH1	2.44	0.51
4:3:1345:G:H2'	4:3:1346:G:C8	2.45	0.51
4:3:1443:A:H2'	4:3:1444:C:H3'	1.92	0.51
4:3:1626:C:OP1	31:w:102:ARG:NH1	2.36	0.51
4:3:1852:G:O6	4:3:1903:A:N6	2.43	0.51
7:9:179:HIS:CD2	7:9:293:GLY:HA2	2.46	0.51
10:a:138:LEU:O	10:a:173:GLN:NE2	2.43	0.51
17:i:20:ILE:HG23	17:i:60:ILE:HD12	1.91	0.51
26:r:28:LYS:HG2	26:r:29:THR:H	1.76	0.51
27:s:4:THR:OG1	31:w:23:LYS:HB3	2.11	0.51
4:3:487:C:H41	4:3:490:A:P	2.34	0.51
4:3:517:G:O2'	4:3:518:A:OP2	2.27	0.51
4:3:1010:G:O4'	4:3:1026:A:N6	2.44	0.51
4:3:1521:A:H2'	4:3:1523:C:N4	2.26	0.51
4:3:1627:U:H2'	4:3:1628:G:C8	2.45	0.51
4:3:1825:U:OP2	10:a:162:ARG:NE	2.39	0.51
4:3:2119:A:C6	6:8:57:C:H2'	2.46	0.51
4:3:2309:A:H2'	4:3:2310:C:C6	2.46	0.51
4:3:2368:A:H1'	19:k:61:ARG:HH12	1.76	0.51
12:c:189:ARG:NH2	12:c:190:ASP:OD1	2.44	0.51
19:k:69:ARG:HG3	19:k:72:PHE:HB2	1.93	0.51
24:p:112:VAL:HG23	24:p:113:LYS:HE2	1.92	0.51
26:r:41:LYS:HB2	26:r:44:ALA:HB2	1.93	0.51
3:2:37:GLY:HA3	4:3:1066:G:H21	1.76	0.51
4:3:627:U:H2'	4:3:628:A:C8	2.46	0.51
4:3:1257:G:H2'	4:3:1258:C:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1342:C:H5'	4:3:1644:A:N1	2.26	0.51
4:3:1722:U:O2'	4:3:1734:A:N7	2.37	0.51
4:3:1841:U:C2	4:3:1979:G:C2	2.99	0.51
4:3:2567:C:H2'	4:3:2568:G:C8	2.46	0.51
4:3:2814:A:N1	4:3:2894:G:O2'	2.42	0.51
4:3:2859:U:H2'	4:3:2860:A:C8	2.45	0.51
18:j:93:PRO:HD3	18:j:114:ILE:HG12	1.93	0.51
4:3:530:G:H2'	4:3:531:G:C8	2.46	0.50
4:3:1087:C:H2'	4:3:1088:A:H8	1.76	0.50
4:3:1588:A:O2'	4:3:1589:A:OP1	2.28	0.50
4:3:2388:C:H2'	4:3:2389:A:C8	2.46	0.50
4:3:2815:G:O6	4:3:2894:G:N2	2.44	0.50
20:l:77:LYS:HG2	20:l:88:GLY:HA2	1.93	0.50
4:3:1003:U:H2'	4:3:1004:U:C6	2.47	0.50
4:3:2017:G:OP2	26:r:41:LYS:NZ	2.43	0.50
4:3:2630:U:H2'	4:3:2631:G:C8	2.46	0.50
7:9:540:LEU:HD23	7:9:669:PHE:CZ	2.47	0.50
15:f:109:GLN:H	15:f:112:MET:HE3	1.76	0.50
21:m:35:LEU:HA	21:m:38:ALA:HB3	1.94	0.50
3:2:35:ARG:HH12	4:3:2750:A:P	2.35	0.50
4:3:712:A:H61	4:3:835:U:H3	1.58	0.50
4:3:791:A:H2'	4:3:792:G:O4'	2.12	0.50
4:3:958:C:H2'	4:3:959:C:C6	2.47	0.50
4:3:990:G:H2'	4:3:991:G:H8	1.77	0.50
4:3:1820:U:HO2'	4:3:1821:G:P	2.33	0.50
4:3:2471:U:H2'	4:3:2472:G:H8	1.77	0.50
4:3:2567:C:H2'	4:3:2568:G:H8	1.76	0.50
20:l:30:GLY:HA3	20:l:105:GLU:HB2	1.92	0.50
31:w:63:LEU:O	31:w:66:GLN:NE2	2.39	0.50
4:3:387:U:H2'	4:3:388:U:C6	2.47	0.50
4:3:1165:U:C2	4:3:2032:G:H5"	2.46	0.50
4:3:1436:C:H2'	4:3:1437:A:C8	2.47	0.50
4:3:1599:C:N4	10:a:29:ASN:O	2.43	0.50
4:3:1796:A:OP1	10:a:229:ARG:N	2.41	0.50
4:3:1815:U:O2'	4:3:1816:A:H8	1.94	0.50
4:3:2018:U:H2'	4:3:2019:G:O4'	2.11	0.50
4:3:2216:U:H2'	4:3:2217:G:C8	2.46	0.50
4:3:2385:A:H2'	4:3:2386:A:C4	2.46	0.50
7:9:369:HIS:NE2	7:9:396:ARG:CZ	2.75	0.50
17:i:35:ALA:O	17:i:39:ILE:HG12	2.11	0.50
18:j:21:ILE:HD13	18:j:41:VAL:HG12	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:k:110:LEU:HD12	19:k:111:PRO:HD2	1.94	0.50
20:l:64:MET:HB3	20:l:106:VAL:HG12	1.93	0.50
4:3:263:C:H2'	4:3:264:G:H8	1.75	0.50
4:3:512:G:H2'	4:3:513:A:H3'	1.93	0.50
4:3:1080:A:H5"	4:3:1146:A:H61	1.77	0.50
4:3:1627:U:H2'	4:3:1628:G:H8	1.76	0.50
4:3:1954:C:H2'	4:3:1955:G:H8	1.77	0.50
10:a:89:ASP:OD1	10:a:91:ASN:ND2	2.44	0.50
20:l:27:VAL:HG23	20:l:67:ARG:HD2	1.92	0.50
23:o:27:ALA:HB1	23:o:101:ILE:HG12	1.94	0.50
24:p:88:GLU:HG2	25:q:47:ALA:HA	1.93	0.50
25:q:70:VAL:HG23	25:q:83:TYR:HB3	1.94	0.50
32:x:14:PHE:HB3	32:x:24:THR:HB	1.94	0.50
4:3:96:A:H3'	4:3:97:A:H8	1.76	0.50
4:3:235:U:H2'	4:3:236:G:C8	2.47	0.50
4:3:1123:A:H4'	4:3:1124:G:H8	1.77	0.50
4:3:1446:G:H2'	4:3:1612:U:C5	2.46	0.50
4:3:1461:A:H2'	4:3:1462:A:C8	2.47	0.50
4:3:1685:G:OP2	21:m:9:LYS:NZ	2.32	0.50
4:3:1738:G:H2'	4:3:1739:G:C8	2.47	0.50
4:3:2148:U:H2'	4:3:2149:U:C6	2.46	0.50
4:3:2231:A:H3'	4:3:2232:G:H8	1.76	0.50
4:3:2700:C:O2'	4:3:2851:U:O2	2.16	0.50
4:3:2740:U:H5"	4:3:2741:A:O4'	2.11	0.50
4:3:2820:G:N3	4:3:2887:A:O2'	2.42	0.50
4:3:2865:U:H2'	4:3:2866:A:C8	2.47	0.50
8:A:22:ALA:HB3	8:A:86:VAL:O	2.12	0.50
11:b:10:LYS:HE3	11:b:27:THR:HB	1.92	0.50
4:3:201:A:H62	4:3:2438:A:H2'	1.75	0.50
4:3:342:G:N2	4:3:513:A:N1	2.59	0.50
4:3:764:G:N2	10:a:12:SER:O	2.44	0.50
4:3:1176:U:H4'	4:3:1177:A:O4'	2.11	0.50
4:3:1261:U:H2'	4:3:1262:G:C8	2.37	0.50
4:3:2178:A:N6	6:8:57:C:C5'	2.75	0.50
4:3:2254:G:H2'	4:3:2255:A:C8	2.47	0.50
4:3:2384:A:N3	22:n:110:ARG:NH1	2.50	0.50
4:3:2555:U:OP2	4:3:2574:A:O2'	2.29	0.50
7:9:576:PHE:CE2	7:9:890:TYR:CD2	2.99	0.50
18:j:77:LEU:HD13	23:o:77:LYS:HE2	1.94	0.50
23:o:76:GLU:OE1	23:o:76:GLU:N	2.37	0.50
26:r:34:ASN:HB2	33:y:36:LYS:HB2	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:159:G:H2'	4:3:160:A:H8	1.74	0.50
4:3:173:C:H2'	4:3:174:A:C8	2.46	0.50
4:3:332:G:N2	4:3:375:U:O4	2.45	0.50
4:3:893:A:OP1	29:u:85:LYS:NZ	2.28	0.50
4:3:1264:U:C4	4:3:1265:G:C6	3.00	0.50
4:3:1672:C:O3'	4:3:2717:G:N2	2.45	0.50
4:3:1867:G:H2'	4:3:1868:A:C8	2.46	0.50
4:3:1927:C:H2'	4:3:1928:G:H8	1.75	0.50
4:3:2213:A:H2'	4:3:2214:A:C8	2.46	0.50
4:3:2354:A:H5'	4:3:2391:G:H1'	1.94	0.50
4:3:2483:C:N4	4:3:2537:G:H22	2.09	0.50
4:3:2800:U:OP2	4:3:2896:G:N2	2.45	0.50
6:8:67:C:H2'	6:8:68:G:C8	2.47	0.50
23:o:77:LYS:HB3	23:o:79:PHE:CE1	2.46	0.50
4:3:43:A:H2'	4:3:44:A:C8	2.46	0.50
4:3:599:U:H2'	4:3:600:U:C6	2.46	0.50
4:3:629:G:O6	4:3:696:U:O4	2.30	0.50
4:3:721:G:H3'	4:3:722:C:H5'	1.94	0.50
4:3:887:A:H2'	4:3:888:A:C8	2.47	0.50
4:3:2078:A:H2'	4:3:2079:G:C8	2.45	0.50
4:3:2149:U:OP2	4:3:2150:C:N4	2.45	0.50
4:3:2376:C:H2'	4:3:2377:A:C8	2.47	0.50
4:3:2378:G:H2'	4:3:2379:G:C8	2.47	0.50
4:3:2496:G:H21	4:3:2526:A:N6	2.10	0.50
4:3:2523:C:H2'	4:3:2524:U:C6	2.47	0.50
4:3:2861:G:N1	4:3:2864:A:OP2	2.44	0.50
12:c:52:ILE:HD13	12:c:89:ILE:HG12	1.94	0.50
16:h:73:SER:H	16:h:76:LEU:HB2	1.76	0.50
24:p:15:LYS:O	24:p:19:GLN:NE2	2.42	0.50
30:v:15:GLY:O	30:v:26:ARG:NH2	2.44	0.50
4:3:622:U:H2'	4:3:623:A:C8	2.47	0.49
4:3:1141:U:N3	8:A:79:LYS:HE2	2.27	0.49
4:3:1287:C:H2'	4:3:1288:C:C6	2.47	0.49
4:3:1700:G:N3	18:j:3:SER:OG	2.40	0.49
4:3:2065:A:H2'	4:3:2066:A:C8	2.47	0.49
8:A:38:THR:HG23	16:h:113:ASN:O	2.11	0.49
10:a:66:TYR:HA	10:a:91:ASN:ND2	2.27	0.49
12:c:32:GLN:HE22	19:k:13:ARG:HH12	1.59	0.49
21:m:71:ASN:OD1	21:m:72:LEU:N	2.44	0.49
21:m:82:LEU:HA	21:m:86:VAL:HB	1.92	0.49
21:m:103:LEU:HA	33:y:42:VAL:HG22	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:167:A:H8	4:3:168:A:C8	2.30	0.49
4:3:227:A:H1'	4:3:456:G:H21	1.77	0.49
4:3:811:G:C8	4:3:2249:A:H5"	2.39	0.49
4:3:1005:G:H2'	4:3:1006:U:C6	2.46	0.49
4:3:2753:C:H5'	14:e:149:THR:HG21	1.93	0.49
17:i:112:LEU:HD13	17:i:118:SER:HB3	1.94	0.49
20:l:39:GLY:CA	20:l:97:VAL:O	2.61	0.49
4:3:161:U:H2'	4:3:162:G:O4'	2.13	0.49
4:3:178:A:N6	4:3:179:A:N6	2.60	0.49
4:3:349:G:H2'	4:3:350:C:C6	2.47	0.49
4:3:517:G:N2	4:3:541:G:O4'	2.44	0.49
4:3:580:U:H5	4:3:1249:A:H2'	1.77	0.49
4:3:1451:A:H2'	4:3:1452:G:H8	1.76	0.49
4:3:1916:C:H2'	4:3:1917:G:C8	2.46	0.49
4:3:1960:A:O2'	4:3:2567:C:O2	2.25	0.49
4:3:2719:A:H5"	4:3:2720:C:H5"	1.94	0.49
6:8:2:G:N2	6:8:74:A:N7	2.60	0.49
10:a:150:ILE:HG23	10:a:160:ILE:HB	1.94	0.49
18:j:87:ILE:O	18:j:94:ARG:NH1	2.46	0.49
25:q:30:GLY:H	25:q:59:VAL:HG13	1.77	0.49
28:t:78:ASP:HB2	28:t:85:THR:H	1.77	0.49
4:3:90:G:H2'	4:3:91:G:C8	2.48	0.49
4:3:90:G:H2'	4:3:91:G:H8	1.77	0.49
4:3:1195:A:H2'	4:3:1196:U:C6	2.46	0.49
4:3:1630:A:H2'	4:3:1631:A:C8	2.47	0.49
4:3:2831:U:H2'	4:3:2832:G:C8	2.47	0.49
5:4:61:A:H2'	5:4:62:G:H8	1.75	0.49
14:e:44:LEU:HD13	14:e:57:ARG:HB3	1.94	0.49
14:e:110:LEU:HD13	14:e:155:ARG:HG3	1.93	0.49
18:j:23:LYS:HB3	18:j:40:VAL:HB	1.93	0.49
4:3:354:C:C2	12:c:174:ASN:HB3	2.47	0.49
4:3:512:G:N2	4:3:514:A:H3'	2.26	0.49
4:3:897:A:O2'	5:4:77:G:H4'	2.12	0.49
4:3:975:G:H2'	4:3:976:C:C6	2.48	0.49
4:3:1260:U:H2'	4:3:1261:U:C6	2.47	0.49
4:3:1662:G:H2'	4:3:1663:G:H8	1.76	0.49
4:3:1987:C:O2'	4:3:1989:U:OP2	2.24	0.49
4:3:2360:A:H2	29:u:47:THR:HG23	1.77	0.49
4:3:2678:A:H2'	4:3:2679:G:H8	1.78	0.49
8:A:38:THR:HG21	16:h:113:ASN:CB	2.42	0.49
13:d:67:ALA:HB3	13:d:84:LEU:HD13	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:o:30:GLU:OE1	23:o:92:ARG:HD2	2.12	0.49
3:2:33:LYS:NZ	4:3:2534:G:O2'	2.40	0.49
4:3:22:U:H2'	4:3:23:A:C8	2.48	0.49
4:3:116:C:H2'	4:3:117:C:C6	2.48	0.49
4:3:292:G:H3'	4:3:293:G:C8	2.47	0.49
4:3:773:G:N1	4:3:794:G:C6	2.81	0.49
4:3:1237:G:H2'	4:3:1238:A:C8	2.47	0.49
4:3:2406:U:H2'	4:3:2407:G:C8	2.47	0.49
7:9:831:PHE:CZ	7:9:913:VAL:HG21	2.47	0.49
17:i:93:ARG:NH2	17:i:94:ASP:OD1	2.45	0.49
4:3:40:A:H2'	4:3:41:C:O4'	2.13	0.49
4:3:564:A:OP1	17:i:116:ARG:NE	2.46	0.49
4:3:763:G:O2'	4:3:765:A:O4'	2.30	0.49
4:3:812:G:H2'	4:3:813:G:C8	2.48	0.49
4:3:1348:C:O2'	4:3:1358:C:N4	2.34	0.49
4:3:1524:C:H2'	4:3:1525:G:C8	2.48	0.49
4:3:1545:A:H2'	4:3:1546:U:C6	2.48	0.49
4:3:1605:A:H2'	4:3:1606:A:H8	1.78	0.49
4:3:1684:A:H2'	4:3:1685:G:C8	2.47	0.49
4:3:2085:C:H2'	4:3:2086:U:C6	2.48	0.49
4:3:2122:G:H21	4:3:2179:A:N6	2.08	0.49
4:3:2551:G:H2'	4:3:2552:G:C8	2.48	0.49
4:3:2678:A:H2'	4:3:2679:G:C8	2.48	0.49
9:B:8:SER:OG	9:B:12:MET:HE3	2.12	0.49
12:c:34:VAL:O	12:c:38:VAL:HG23	2.11	0.49
34:z:19:TYR:CE2	34:z:36:LYS:HE3	2.48	0.49
2:1:11:PHE:HD1	2:1:21:ARG:HB3	1.77	0.49
4:3:760:G:H2'	4:3:761:G:C2	2.48	0.49
4:3:847:C:H4'	24:p:12:ARG:HH22	1.78	0.49
4:3:1085:A:N6	4:3:1144:C:H42	2.11	0.49
4:3:1287:C:H2'	4:3:1288:C:H6	1.77	0.49
4:3:1363:C:H2'	4:3:1364:A:C8	2.47	0.49
4:3:1449:G:H2'	4:3:1450:G:C8	2.47	0.49
4:3:2090:G:O6	4:3:2244:U:O4	2.30	0.49
4:3:2364:A:H4'	29:u:34:ARG:HG2	1.95	0.49
21:m:58:ASN:O	21:m:62:GLN:HG2	2.13	0.49
26:r:127:LYS:O	26:r:130:GLU:HG2	2.13	0.49
34:z:31:LYS:HE2	34:z:48:LYS:HB3	1.95	0.49
4:3:406:C:H2'	4:3:407:U:C6	2.48	0.49
4:3:990:G:H2'	4:3:991:G:C8	2.47	0.49
4:3:1851:U:H2'	4:3:1852:G:C8	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2004:G:H2'	4:3:2005:G:C8	2.48	0.49
4:3:2177:G:N3	6:8:56:U:H3'	2.11	0.49
4:3:2516:G:H2'	4:3:2517:A:H8	1.78	0.49
10:a:130:ILE:O	10:a:131:LYS:NZ	2.38	0.49
12:c:147:LEU:HD21	12:c:178:VAL:HG11	1.94	0.49
21:m:100:VAL:HG22	21:m:116:LEU:HD13	1.95	0.49
23:o:54:ARG:HG3	23:o:100:TYR:CE2	2.48	0.49
2:1:54:ARG:NE	19:k:49:PRO:O	2.45	0.49
4:3:408:G:O2'	4:3:459:A:H3'	2.12	0.49
4:3:612:G:H5'	4:3:2024:C:C6	2.48	0.49
4:3:674:G:H2'	4:3:675:U:C6	2.47	0.49
4:3:694:U:H2'	4:3:695:G:C8	2.47	0.49
4:3:755:C:H2'	4:3:756:A:H8	1.78	0.49
4:3:907:A:OP1	20:l:6:ARG:NH2	2.38	0.49
4:3:1008:A:C8	4:3:1009:A:H2'	2.48	0.49
4:3:1080:A:H5"	4:3:1146:A:N6	2.28	0.49
4:3:1081:A:C3'	8:A:57:ASN:ND2	2.75	0.49
4:3:1308:A:H2'	4:3:1309:G:H8	1.77	0.49
4:3:2100:G:O2'	15:f:26:ALA:O	2.30	0.49
4:3:2238:G:H4'	30:v:30:ASN:HB2	1.94	0.49
4:3:2336:A:H2'	4:3:2337:U:H6	1.78	0.49
17:i:133:HIS:ND1	17:i:135:MET:HB2	2.28	0.49
4:3:140:G:N2	4:3:143:A:OP2	2.33	0.48
4:3:282:C:H3'	4:3:284:U:H5"	1.95	0.48
4:3:512:G:N2	4:3:514:A:H8	2.11	0.48
4:3:571:A:H2'	4:3:572:G:O4'	2.12	0.48
4:3:698:A:H4'	19:k:18:LYS:HE3	1.95	0.48
4:3:1380:U:O2	4:3:1406:A:N7	2.46	0.48
4:3:1418:U:O4	4:3:1423:A:N7	2.46	0.48
4:3:1442:G:H1	4:3:1622:C:H42	1.61	0.48
4:3:1490:G:H2'	4:3:1491:G:H8	1.78	0.48
4:3:2073:C:H2'	4:3:2074:G:C8	2.48	0.48
4:3:2641:A:H2'	4:3:2642:G:C8	2.47	0.48
4:3:2753:C:H2'	4:3:2754:U:C6	2.48	0.48
7:9:835:PHE:CE1	7:9:920:VAL:HG21	2.47	0.48
16:h:78:GLN:HA	16:h:82:LEU:O	2.12	0.48
18:j:88:LYS:NZ	18:j:92:SER:OG	2.31	0.48
23:o:115:LYS:HA	23:o:115:LYS:HD3	1.66	0.48
32:x:9:SER:HB3	32:x:28:THR:HA	1.94	0.48
4:3:160:A:H2'	4:3:161:U:H6	1.77	0.48
4:3:305:U:O4	4:3:399:G:O6	2.31	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:546:U:H3'	4:3:547:G:C8	2.48	0.48
4:3:869:U:H2'	4:3:870:A:H8	1.78	0.48
4:3:947:A:H62	20:l:12:PRO:C	2.21	0.48
4:3:976:C:O2'	4:3:1222:A:OP1	2.30	0.48
4:3:2106:G:H22	4:3:2198:G:H1	1.61	0.48
4:3:2336:A:H2'	4:3:2337:U:C6	2.48	0.48
4:3:2484:A:O2'	4:3:2488:C:N4	2.46	0.48
4:3:2650:A:H2'	4:3:2651:G:H8	1.76	0.48
4:3:2806:A:OP2	4:3:2898:A:O2'	2.28	0.48
11:b:10:LYS:HB3	11:b:201:GLU:HA	1.94	0.48
13:d:9:GLN:O	13:d:14:LYS:NZ	2.46	0.48
20:l:116:LYS:NZ	20:l:120:ARG:HH12	2.11	0.48
3:2:7:VAL:HG12	3:2:34:GLN:HE21	1.77	0.48
4:3:329:G:O6	4:3:377:U:O4	2.30	0.48
4:3:832:C:H2'	4:3:833:C:C6	2.48	0.48
4:3:852:C:H2'	4:3:853:G:O4'	2.12	0.48
4:3:1761:C:O2'	23:o:106:GLU:OE2	2.24	0.48
4:3:2505:A:H2	4:3:2506:C:H41	1.60	0.48
4:3:2514:U:OP2	4:3:2584:G:N1	2.42	0.48
5:4:6:U:H2'	5:4:7:G:H8	1.79	0.48
5:4:76:A:C8	5:4:89:A:C8	3.01	0.48
10:a:33:PRO:HB2	10:a:38:LEU:HD11	1.95	0.48
12:c:4:LEU:HD11	12:c:126:HIS:HA	1.95	0.48
13:d:38:MET:HE1	13:d:57:LEU:HD22	1.94	0.48
25:q:41:LEU:HG	25:q:42:ASP:OD2	2.13	0.48
2:1:5:SER:HA	2:1:8:LYS:HG2	1.95	0.48
4:3:145:A:O2'	27:s:42:LEU:HD22	2.13	0.48
4:3:562:C:C4	4:3:2787:U:H2'	2.49	0.48
4:3:851:U:OP1	4:3:1216:U:O2'	2.30	0.48
4:3:1087:C:H2'	4:3:1088:A:C8	2.49	0.48
4:3:2010:A:C2	4:3:2011:G:H1'	2.49	0.48
4:3:2464:C:H2'	4:3:2465:U:O4'	2.13	0.48
4:3:2580:A:H8	11:b:151:ARG:HG3	1.78	0.48
4:3:2598:C:H2'	4:3:2599:C:C6	2.48	0.48
5:4:22:G:N7	5:4:54:U:O2'	2.47	0.48
5:4:90:G:C4	5:4:91:A:C8	3.01	0.48
6:8:68:G:H2'	6:8:69:A:C8	2.49	0.48
4:3:853:G:OP2	4:3:1218:G:N1	2.38	0.48
4:3:1011:A:N6	4:3:1025:G:H21	2.08	0.48
4:3:1097:G:O6	4:3:1112:A:N6	2.45	0.48
4:3:1125:U:H2'	4:3:1126:G:O4'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1488:U:H2'	4:3:1489:G:C8	2.48	0.48
4:3:1922:U:H3'	4:3:1923:A:H8	1.77	0.48
7:9:795:ILE:HD12	7:9:931:ILE:HD11	1.94	0.48
7:9:926:PHE:CE1	7:9:930:LEU:HD11	2.49	0.48
8:A:141:SER:O	8:A:148:ARG:NH2	2.46	0.48
9:D:23:ALA:CB	9:E:6:ILE:HD11	2.35	0.48
12:c:5:LYS:HD3	12:c:17:PRO:HG3	1.96	0.48
4:3:107:C:H2'	4:3:108:G:C8	2.48	0.48
4:3:518:A:O2'	4:3:532:A:N1	2.47	0.48
4:3:633:G:O6	4:3:692:U:O4	2.31	0.48
4:3:992:G:O2'	4:3:995:A:N6	2.46	0.48
4:3:1063:A:H61	4:3:1160:G:H2'	1.78	0.48
4:3:1414:C:H1'	4:3:1495:A:H2	1.78	0.48
4:3:1723:A:H2'	4:3:1724:A:C8	2.49	0.48
4:3:1789:C:O2	4:3:2616:G:O2'	2.31	0.48
4:3:1848:U:C2	4:3:1849:G:C8	3.02	0.48
4:3:1947:U:H3	4:3:1971:G:H5'	1.79	0.48
4:3:2229:C:H2'	4:3:2230:A:C8	2.48	0.48
4:3:2237:U:H2'	4:3:2238:G:C8	2.48	0.48
4:3:2305:C:H2'	4:3:2306:A:H8	1.79	0.48
10:a:77:ASP:HB2	15:f:89:TYR:CE1	2.47	0.48
28:t:14:THR:HG23	28:t:73:LYS:HE2	1.95	0.48
4:3:160:A:H2'	4:3:161:U:C6	2.48	0.48
4:3:161:U:H3	4:3:171:G:H1	1.61	0.48
4:3:334:A:H1'	4:3:353:G:H1'	1.95	0.48
4:3:513:A:O2'	4:3:514:A:O4'	2.28	0.48
4:3:643:A:N6	4:3:655:G:H21	2.10	0.48
4:3:706:C:H5"	19:k:43:LYS:HD2	1.94	0.48
4:3:851:U:H2'	4:3:852:C:H6	1.77	0.48
4:3:859:G:N3	4:3:2366:A:N6	2.62	0.48
4:3:1317:C:H2'	4:3:1318:U:C6	2.49	0.48
4:3:1909:C:H1'	10:a:252:ASP:HB3	1.95	0.48
4:3:2258:G:O2'	4:3:2504:C:OP1	2.24	0.48
4:3:2497:U:H2'	4:3:2498:G:C8	2.49	0.48
5:4:16:G:H2'	5:4:17:C:C6	2.48	0.48
8:A:49:SER:OG	8:A:86:VAL:HA	2.14	0.48
24:p:11:VAL:O	24:p:15:LYS:HG2	2.13	0.48
4:3:71:C:H4'	4:3:77:G:C5	2.49	0.48
4:3:403:U:O2	4:3:441:U:N3	2.47	0.48
4:3:462:C:H2'	4:3:463:U:C6	2.49	0.48
4:3:1504:G:H2'	4:3:1505:G:C8	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1514:U:O4	4:3:1525:G:O6	2.32	0.48
4:3:1841:U:C2	4:3:1979:G:N1	2.82	0.48
4:3:1962:U:H5'	4:3:2559:C:O2'	2.14	0.48
4:3:2104:A:H2'	4:3:2105:G:C8	2.49	0.48
7:9:807:ALA:HB1	7:9:912:ILE:HG21	1.96	0.48
10:a:57:HIS:HB3	10:a:227:THR:HB	1.95	0.48
10:a:66:TYR:HA	10:a:91:ASN:HD21	1.78	0.48
11:b:37:ALA:HB3	11:b:51:LEU:HD22	1.95	0.48
12:c:76:GLN:NE2	12:c:78:SER:OG	2.47	0.48
14:e:24:HIS:CD2	14:e:37:LYS:HA	2.46	0.48
17:i:39:ILE:HD11	17:i:57:LEU:HB2	1.96	0.48
19:k:6:LEU:HD23	19:k:6:LEU:H	1.79	0.48
23:o:49:THR:HG22	23:o:68:LYS:HE3	1.95	0.48
25:q:14:VAL:HG13	25:q:18:ASP:HB2	1.96	0.48
2:1:25:TYR:CD1	4:3:2400:A:H5"	2.49	0.48
4:3:63:U:N3	4:3:97:A:N3	2.61	0.48
4:3:83:G:H2'	4:3:84:G:O4'	2.14	0.48
4:3:84:G:H21	4:3:106:C:N4	2.11	0.48
4:3:259:A:H3'	4:3:260:A:H8	1.79	0.48
4:3:330:A:H2'	4:3:331:A:H8	1.79	0.48
4:3:633:G:H1	4:3:692:U:H3	1.57	0.48
4:3:696:U:H2'	4:3:697:U:C6	2.49	0.48
4:3:1799:A:H5'	10:a:212:VAL:HG13	1.95	0.48
4:3:1816:A:H2'	4:3:1817:A:C8	2.49	0.48
4:3:2534:G:O6	4:3:2545:U:O4	2.32	0.48
4:3:2842:G:H2'	4:3:2843:G:H8	1.79	0.48
5:4:85:A:H2'	5:4:86:G:C8	2.49	0.48
14:e:34:ILE:HD12	14:e:82:VAL:HB	1.95	0.48
15:f:87:ARG:HG2	15:f:88:PRO:HD2	1.96	0.48
21:m:84:SER:OG	21:m:85:LYS:NZ	2.29	0.48
27:s:9:LYS:HE2	31:w:30:ARG:HG3	1.94	0.48
4:3:79:U:H2'	4:3:80:U:H6	1.78	0.48
4:3:130:C:H2'	4:3:131:C:C6	2.48	0.48
4:3:365:U:OP1	4:3:1267:A:O2'	2.27	0.48
4:3:412:A:C2	4:3:413:G:H1'	2.49	0.48
4:3:716:G:O6	4:3:832:C:N4	2.47	0.48
4:3:755:C:H2'	4:3:756:A:C8	2.49	0.48
4:3:874:U:H2'	4:3:875:G:C8	2.49	0.48
4:3:1698:A:C6	4:3:2734:C:N3	2.82	0.48
4:3:1765:G:O2'	4:3:2722:G:N2	2.47	0.48
4:3:2081:U:H2'	4:3:2082:U:C6	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2208:U:H2'	4:3:2209:U:C6	2.49	0.48
4:3:2264:G:H2'	4:3:2265:U:C6	2.48	0.48
4:3:2706:U:H2'	4:3:2707:A:C8	2.49	0.48
11:b:5:GLY:HA2	11:b:208:ARG:HA	1.96	0.48
11:b:42:GLU:HG2	11:b:48:SER:HB2	1.96	0.48
17:i:9:LYS:HE3	17:i:49:PRO:HD2	1.94	0.48
19:k:133:LYS:O	19:k:136:LEU:HG	2.13	0.48
4:3:46:A:H2'	4:3:47:G:C8	2.49	0.47
4:3:199:A:H2'	4:3:202:C:N4	2.29	0.47
4:3:426:U:O2	4:3:426:U:H2'	2.14	0.47
4:3:485:A:HO2'	4:3:1278:G:H1	1.60	0.47
4:3:640:U:H4'	12:c:102:LYS:HZ1	1.79	0.47
4:3:870:A:H2'	4:3:871:G:O4'	2.14	0.47
4:3:1001:C:H2'	4:3:1002:A:C8	2.49	0.47
4:3:1300:C:H5"	4:3:1301:G:H5'	1.96	0.47
4:3:1604:A:H2'	4:3:1605:A:C8	2.49	0.47
4:3:2208:U:O4	4:3:2232:G:N2	2.47	0.47
5:4:29:C:H1'	5:4:51:A:H61	1.79	0.47
14:e:108:LEU:HB2	14:e:116:ILE:HB	1.96	0.47
24:p:32:LYS:O	24:p:35:LYS:HG2	2.13	0.47
2:1:48:SER:O	2:1:52:PHE:N	2.40	0.47
4:3:208:A:H4'	4:3:209:G:H4'	1.95	0.47
4:3:234:G:H2'	4:3:235:U:H6	1.77	0.47
4:3:652:U:H2'	4:3:653:G:H8	1.78	0.47
4:3:1284:A:C5	4:3:1286:G:H1'	2.49	0.47
4:3:1778:G:H2'	4:3:1779:G:H8	1.78	0.47
4:3:1995:G:H2'	4:3:1996:A:H8	1.79	0.47
4:3:2050:G:H2'	4:3:2051:G:C8	2.49	0.47
4:3:2124:A:O2'	4:3:2126:A:OP1	2.31	0.47
4:3:2229:C:H2'	4:3:2230:A:H8	1.79	0.47
4:3:2528:C:H2'	4:3:2529:C:C6	2.49	0.47
4:3:2651:G:C6	4:3:2780:U:N3	2.82	0.47
7:9:659:TYR:O	7:9:663:VAL:HG23	2.14	0.47
11:b:179:LEU:HD22	11:b:197:ILE:HD11	1.96	0.47
15:f:81:LEU:HD11	15:f:92:ILE:HG12	1.95	0.47
20:l:8:LYS:HG2	20:l:9:TYR:HD2	1.78	0.47
24:p:94:LEU:HD11	25:q:11:GLN:HB3	1.96	0.47
25:q:56:VAL:H	25:q:97:PHE:HA	1.79	0.47
2:1:25:TYR:HB3	2:1:33:LYS:HE3	1.97	0.47
4:3:202:C:O2'	4:3:203:A:H5'	2.13	0.47
4:3:516:A:O2'	28:t:43:THR:O	2.28	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:626:A:H2'	4:3:627:U:C6	2.49	0.47
4:3:817:A:H4'	4:3:818:A:H5'	1.95	0.47
4:3:1192:U:H2'	4:3:1193:U:C6	2.49	0.47
4:3:1613:A:H3'	4:3:1614:G:H8	1.80	0.47
4:3:1664:A:H2'	4:3:1665:G:O4'	2.15	0.47
4:3:2412:A:O3'	19:k:69:ARG:NH2	2.47	0.47
5:4:40:U:H5'	13:d:66:VAL:HB	1.97	0.47
23:o:58:LYS:HG3	23:o:61:SER:HB2	1.95	0.47
4:3:103:G:H4'	4:3:104:A:H5'	1.96	0.47
4:3:158:U:H2'	4:3:159:G:C8	2.49	0.47
4:3:464:A:H2'	4:3:464:A:N3	2.29	0.47
4:3:907:A:H3'	4:3:908:A:H8	1.80	0.47
4:3:1698:A:H2'	18:j:67:LYS:HD3	1.96	0.47
4:3:2379:G:H2'	4:3:2380:U:O4'	2.15	0.47
4:3:2705:G:H2'	4:3:2706:U:O4'	2.15	0.47
9:D:6:ILE:CD1	9:E:23:ALA:HB1	2.35	0.47
10:a:179:TYR:N	10:a:192:PHE:O	2.47	0.47
15:f:115:ASP:OD2	15:f:118:ARG:NE	2.26	0.47
24:p:68:LEU:HD22	24:p:73:MET:HG3	1.96	0.47
27:s:62:PRO:HA	27:s:75:SER:O	2.14	0.47
4:3:318:U:H2'	4:3:319:G:C8	2.50	0.47
4:3:342:G:O2'	4:3:363:G:N2	2.48	0.47
4:3:663:A:H61	4:3:673:A:P	2.38	0.47
4:3:740:A:H2'	4:3:741:A:C8	2.49	0.47
4:3:1081:A:H8	8:A:7:LYS:NZ	1.89	0.47
4:3:1081:A:H4'	8:A:57:ASN:HD21	1.74	0.47
4:3:1530:G:H2'	4:3:1531:C:C6	2.49	0.47
4:3:1937:G:H22	4:3:1976:A:P	2.37	0.47
4:3:2096:U:H2'	4:3:2097:A:C8	2.50	0.47
4:3:2120:G:C2	6:8:57:C:C2	3.01	0.47
4:3:2223:C:H2'	4:3:2224:A:C8	2.49	0.47
4:3:2291:U:C2	4:3:2292:A:C8	3.02	0.47
4:3:2463:G:H2'	4:3:2464:C:C6	2.50	0.47
4:3:2556:C:H2'	4:3:2557:G:C8	2.48	0.47
4:3:2754:U:H2'	4:3:2755:G:O4'	2.13	0.47
4:3:2794:U:H2'	4:3:2795:C:C6	2.49	0.47
4:3:2867:U:H2'	4:3:2868:G:C8	2.50	0.47
11:b:36:VAL:HA	11:b:52:LEU:HA	1.96	0.47
12:c:172:THR:HB	12:c:179:GLN:HA	1.96	0.47
22:n:38:HIS:CE1	22:n:57:SER:H	2.33	0.47
4:3:335:G:H2'	4:3:368:C:H2'	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:612:G:H2'	4:3:613:C:C6	2.50	0.47
4:3:1239:G:O2'	4:3:1267:A:N1	2.44	0.47
4:3:1340:U:H3	4:3:1368:U:H3	1.61	0.47
4:3:1507:G:H1'	4:3:1508:G:P	2.55	0.47
4:3:1747:G:N1	4:3:1751:A:H5"	2.30	0.47
12:c:128:VAL:HB	12:c:198:LEU:HD23	1.96	0.47
15:f:1:MET:HG2	15:f:24:GLY:HA3	1.97	0.47
15:f:114:LYS:NZ	15:f:129:HIS:O	2.40	0.47
20:l:39:GLY:HA3	20:l:97:VAL:O	2.15	0.47
4:3:344:A:H4'	4:3:345:A:C8	2.50	0.47
4:3:450:C:H2'	4:3:451:A:H8	1.80	0.47
4:3:573:A:H4'	17:i:11:GLN:HA	1.97	0.47
4:3:641:U:O2	4:3:657:A:C5	2.68	0.47
4:3:947:A:H2'	4:3:948:A:C8	2.49	0.47
4:3:1005:G:H2'	4:3:1006:U:H6	1.79	0.47
4:3:1210:A:H2'	4:3:1211:U:H6	1.78	0.47
4:3:1416:G:H2'	4:3:1417:G:C8	2.50	0.47
4:3:1537:A:H2'	4:3:1538:U:O4'	2.14	0.47
4:3:1572:U:H2'	4:3:1573:A:H8	1.79	0.47
4:3:1861:A:OP2	4:3:1895:G:N2	2.47	0.47
4:3:1959:A:H62	18:j:22:ILE:HD11	1.79	0.47
4:3:1961:A:O2'	4:3:1963:U:O4	2.31	0.47
4:3:1973:U:O2	4:3:2600:G:O2'	2.25	0.47
4:3:2052:C:H2'	4:3:2053:G:O4'	2.14	0.47
4:3:2175:U:N3	4:3:2179:A:C8	2.78	0.47
4:3:2177:G:H22	6:8:56:U:H5"	1.75	0.47
4:3:2374:A:H3'	4:3:2375:A:H8	1.78	0.47
4:3:2380:U:H2'	4:3:2381:G:H8	1.78	0.47
4:3:2556:C:H2'	4:3:2557:G:H8	1.79	0.47
4:3:2624:C:O3'	33:y:12:ARG:NH2	2.48	0.47
4:3:2702:G:H2'	4:3:2703:U:O4'	2.15	0.47
4:3:2781:C:OP1	11:b:173:LYS:NZ	2.28	0.47
7:9:829:TYR:CE1	7:9:833:LEU:HD11	2.49	0.47
10:a:41:LEU:HD12	10:a:66:TYR:HB2	1.96	0.47
12:c:35:PHE:O	12:c:39:LEU:HG	2.14	0.47
13:d:104:ILE:HA	13:d:108:LEU:HD13	1.96	0.47
22:n:46:PHE:C	22:n:48:GLN:H	2.23	0.47
25:q:59:VAL:HG21	25:q:62:HIS:HE1	1.80	0.47
33:y:12:ARG:HA	33:y:15:LYS:HE2	1.97	0.47
1:0:29:LYS:O	1:0:33:LEU:HG	2.14	0.47
4:3:26:G:C2	4:3:27:U:C5	3.03	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:81:C:H2'	4:3:82:G:C8	2.49	0.47
4:3:188:G:H2'	4:3:189:U:H6	1.80	0.47
4:3:731:A:H2'	4:3:732:G:C8	2.49	0.47
4:3:836:G:C8	12:c:55:LYS:HB3	2.50	0.47
4:3:840:G:N2	4:3:866:G:N3	2.63	0.47
4:3:1079:U:O2	4:3:1147:G:C6	2.68	0.47
4:3:1604:A:H2'	4:3:1605:A:H8	1.79	0.47
4:3:1699:A:H2'	4:3:1700:G:H8	1.80	0.47
4:3:1738:G:C6	4:3:1739:G:C6	3.03	0.47
4:3:2119:A:N6	6:8:58:G:C4'	2.69	0.47
4:3:2383:G:N2	4:3:2386:A:OP2	2.30	0.47
10:a:184:LEU:HD11	10:a:190:ARG:HE	1.80	0.47
14:e:44:LEU:HB3	14:e:46:PHE:CE1	2.49	0.47
17:i:78:TYR:CE1	17:i:89:LYS:HG3	2.50	0.47
20:l:22:LYS:H	20:l:98:LYS:HD2	1.80	0.47
24:p:36:GLN:O	24:p:40:GLN:HG2	2.14	0.47
1:0:12:ARG:HB2	4:3:721:G:H1	1.80	0.47
4:3:17:G:N2	4:3:560:U:O2	2.35	0.47
4:3:27:U:H3	4:3:550:A:N6	2.12	0.47
4:3:332:G:O2'	4:3:356:A:N1	2.48	0.47
4:3:381:A:H2'	4:3:382:U:C6	2.49	0.47
4:3:610:G:H2'	4:3:611:A:C8	2.49	0.47
4:3:983:A:H2	4:3:1020:G:H8	1.63	0.47
4:3:1126:G:N1	4:3:1136:U:N3	2.63	0.47
4:3:1163:G:O6	4:3:2497:U:O2'	2.31	0.47
4:3:1469:C:H2'	4:3:1470:C:O4'	2.13	0.47
4:3:1482:U:O4'	21:m:60:ARG:HG3	2.15	0.47
4:3:2017:G:H4'	26:r:42:LYS:HE2	1.97	0.47
4:3:2119:A:N6	6:8:56:U:C2'	2.66	0.47
4:3:2206:A:N3	15:f:30:LEU:HD22	2.30	0.47
4:3:2208:U:H2'	4:3:2209:U:H6	1.80	0.47
4:3:2750:A:H2'	4:3:2751:C:C6	2.50	0.47
7:9:7:VAL:HG13	7:9:11:TRP:CE3	2.49	0.47
7:9:45:VAL:HG13	7:9:505:LEU:HD22	1.96	0.47
11:b:109:ASP:OD1	11:b:109:ASP:N	2.48	0.47
28:t:41:LYS:HD3	28:t:66:GLU:HG3	1.97	0.47
4:3:20:C:O3'	24:p:22:GLY:HA2	2.15	0.47
4:3:450:C:H2'	4:3:451:A:C8	2.50	0.47
4:3:665:C:O2	4:3:675:U:O2'	2.33	0.47
4:3:668:A:H2'	4:3:669:A:C8	2.50	0.47
4:3:766:C:H2'	4:3:767:C:H6	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:920:G:O6	4:3:931:G:N1	2.48	0.47
4:3:955:A:H1'	5:4:77:G:H21	1.79	0.47
4:3:978:G:H5"	19:k:35:GLY:N	2.30	0.47
4:3:1037:A:H3'	4:3:1038:G:H8	1.79	0.47
4:3:1282:G:H21	24:p:32:LYS:HB3	1.80	0.47
4:3:1640:G:H4'	4:3:1642:G:N3	2.30	0.47
4:3:2629:G:H2'	4:3:2630:U:O4'	2.14	0.47
4:3:2636:U:H1'	4:3:2789:A:C4	2.50	0.47
4:3:2808:A:N3	4:3:2808:A:H2'	2.29	0.47
4:3:2851:U:N3	4:3:2873:G:C6	2.83	0.47
15:f:48:ASP:O	15:f:52:LYS:HG2	2.14	0.47
18:j:19:VAL:HG13	18:j:43:VAL:HA	1.96	0.47
19:k:92:LYS:HA	19:k:125:HIS:HB2	1.96	0.47
22:n:72:LEU:H	22:n:72:LEU:HD12	1.80	0.47
22:n:76:ASP:O	22:n:79:ASP:HB2	2.15	0.47
4:3:147:C:H4'	31:w:65:TRP:CD2	2.49	0.46
4:3:196:G:O2'	4:3:837:A:N3	2.48	0.46
4:3:198:G:H2'	4:3:199:A:C8	2.51	0.46
4:3:610:G:H5"	4:3:1285:U:H1'	1.97	0.46
4:3:612:G:H2'	4:3:613:C:H6	1.79	0.46
4:3:669:A:O2'	4:3:2412:A:OP1	2.33	0.46
4:3:722:C:H2'	4:3:723:U:C6	2.50	0.46
4:3:804:U:H2'	4:3:805:G:C8	2.51	0.46
4:3:883:A:H2'	4:3:884:A:C8	2.49	0.46
4:3:974:C:H2'	4:3:975:G:C8	2.49	0.46
4:3:1199:A:H2'	4:3:1200:U:H6	1.80	0.46
4:3:1542:G:H2'	4:3:1543:U:C6	2.49	0.46
4:3:2050:G:H2'	4:3:2051:G:H8	1.80	0.46
4:3:2239:U:H5"	30:v:29:TRP:HB3	1.97	0.46
4:3:2642:G:H2'	4:3:2643:A:C8	2.50	0.46
4:3:2643:A:H2'	4:3:2644:U:O4'	2.15	0.46
4:3:2870:U:H5'	4:3:2872:A:O5'	2.15	0.46
19:k:135:ALA:O	19:k:139:VAL:HG23	2.15	0.46
20:l:15:VAL:HB	20:l:41:TRP:NE1	2.30	0.46
4:3:539:U:O2	4:3:1264:U:O2'	2.31	0.46
4:3:1081:A:C1'	8:A:7:LYS:HZ2	2.28	0.46
4:3:1126:G:C2	4:3:1136:U:C2	3.03	0.46
4:3:1265:G:H2'	4:3:1266:G:C4	2.50	0.46
4:3:1281:A:OP2	24:p:9:THR:OG1	2.28	0.46
4:3:1315:A:O2'	4:3:1316:U:O5'	2.28	0.46
4:3:1692:A:H2'	4:3:1693:U:H6	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2278:G:C2	4:3:2279:G:H1'	2.50	0.46
4:3:2645:U:H3'	4:3:2646:G:H8	1.80	0.46
13:d:128:TYR:HD2	13:d:156:LEU:HD12	1.79	0.46
14:e:36:LEU:HD22	14:e:75:ILE:HD13	1.97	0.46
14:e:49:LYS:HB2	14:e:52:ASN:HB3	1.97	0.46
31:w:25:GLU:O	31:w:28:GLU:HG2	2.15	0.46
4:3:137:U:O4	4:3:146:G:O6	2.33	0.46
4:3:224:G:H1	4:3:463:U:H3'	1.81	0.46
4:3:243:U:H3	4:3:262:G:H1	1.62	0.46
4:3:386:U:H2'	4:3:387:U:C6	2.50	0.46
4:3:982:G:H2'	4:3:983:A:C8	2.49	0.46
4:3:985:A:N6	4:3:1005:G:O6	2.49	0.46
4:3:1126:G:N1	4:3:1136:U:C2	2.83	0.46
4:3:1152:U:H2'	4:3:1153:U:C6	2.51	0.46
4:3:1221:G:H2'	4:3:1222:A:H8	1.80	0.46
4:3:1398:C:H2'	4:3:1399:G:O4'	2.15	0.46
4:3:1489:G:H2'	4:3:1490:G:C8	2.51	0.46
4:3:1761:C:H2'	4:3:1762:A:C8	2.51	0.46
4:3:1836:A:H3'	4:3:1837:C:H6	1.80	0.46
4:3:1980:G:H2'	4:3:1981:U:C6	2.50	0.46
6:8:67:C:H2'	6:8:68:G:H8	1.80	0.46
7:9:846:THR:HG22	7:9:928:PHE:CD1	2.50	0.46
10:a:87:GLU:HB3	10:a:96:VAL:HG23	1.97	0.46
10:a:139:ALA:HA	10:a:173:GLN:HE22	1.80	0.46
12:c:153:LEU:O	12:c:177:ASN:ND2	2.35	0.46
17:i:73:GLU:HG3	17:i:93:ARG:HD2	1.97	0.46
17:i:99:GLN:HG3	17:i:101:ASP:OD1	2.14	0.46
1:0:28:ARG:O	1:0:32:LYS:HG2	2.16	0.46
4:3:452:U:H2'	4:3:453:U:O4'	2.15	0.46
4:3:485:A:N6	4:3:490:A:H62	2.14	0.46
4:3:694:U:O5'	12:c:102:LYS:HD3	2.15	0.46
4:3:994:U:H5"	20:l:41:TRP:CH2	2.51	0.46
4:3:1006:U:H2'	4:3:1007:C:C6	2.51	0.46
4:3:1363:C:H2'	4:3:1364:A:H8	1.78	0.46
4:3:1544:G:C2	4:3:1545:A:C5	3.04	0.46
4:3:1683:G:H21	21:m:109:ASP:HB3	1.81	0.46
4:3:2403:C:H2'	4:3:2404:G:C8	2.51	0.46
4:3:2683:G:H5"	18:j:31:ARG:NH1	2.31	0.46
4:3:2852:G:N3	4:3:2872:A:N6	2.63	0.46
8:A:86:VAL:HG11	8:A:89:ILE:HD12	1.97	0.46
10:a:67:ARG:O	10:a:69:ILE:HG13	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:c:98:ASN:OD1	12:c:99:TYR:N	2.47	0.46
12:c:140:THR:O	12:c:144:MET:N	2.46	0.46
26:r:126:LYS:HA	26:r:129:VAL:HG22	1.97	0.46
34:z:34:LEU:O	34:z:47:HIS:N	2.47	0.46
1:0:45:SER:OG	4:3:127:A:N7	2.43	0.46
4:3:339:U:O4	4:3:346:G:O6	2.33	0.46
4:3:525:A:H2'	4:3:526:G:C8	2.50	0.46
4:3:644:C:H2'	4:3:645:C:C6	2.51	0.46
4:3:720:A:O2'	4:3:808:U:O4	2.24	0.46
4:3:961:U:O2	4:3:962:U:H5	1.99	0.46
4:3:1384:C:H2'	4:3:1385:U:C6	2.50	0.46
4:3:1555:G:N2	4:3:1576:G:H1'	2.28	0.46
5:4:31:G:H2'	5:4:32:G:C8	2.50	0.46
12:c:5:LYS:HG3	12:c:13:PHE:CD1	2.49	0.46
20:l:86:GLY:HA2	29:u:24:THR:HG23	1.97	0.46
22:n:13:LYS:HA	22:n:16:VAL:HG12	1.97	0.46
28:t:104:PHE:CD1	28:t:109:ASN:HB2	2.50	0.46
4:3:201:A:N3	4:3:2252:U:H5"	2.31	0.46
4:3:253:C:OP2	4:3:2402:C:O2'	2.31	0.46
4:3:625:G:O6	4:3:701:A:N6	2.49	0.46
4:3:689:U:O4	19:k:84:LYS:HE3	2.16	0.46
4:3:1019:A:N3	4:3:1019:A:H2'	2.31	0.46
4:3:1142:G:H2'	4:3:1143:U:C6	2.51	0.46
4:3:1447:A:O2'	4:3:1448:U:H5"	2.16	0.46
4:3:1755:A:H2'	4:3:1756:A:H8	1.80	0.46
4:3:2309:A:H2'	4:3:2310:C:H6	1.80	0.46
4:3:2787:U:H5"	4:3:2788:U:H2'	1.97	0.46
13:d:69:LYS:HA	13:d:84:LEU:HA	1.98	0.46
20:l:119:THR:O	20:l:123:HIS:ND1	2.36	0.46
24:p:39:ILE:HG22	24:p:43:LYS:HE2	1.98	0.46
25:q:36:ASP:HA	25:q:54:ARG:HG3	1.97	0.46
4:3:230:G:OP1	4:3:261:A:H4'	2.16	0.46
4:3:296:U:O2'	4:3:299:A:N3	2.48	0.46
4:3:695:G:N3	19:k:13:ARG:NE	2.63	0.46
4:3:893:A:H2'	4:3:894:G:C8	2.50	0.46
4:3:1327:G:H1	4:3:1673:U:H3'	1.79	0.46
4:3:1344:U:H2'	4:3:1345:G:C8	2.51	0.46
4:3:1414:C:OP2	4:3:1424:U:N3	2.49	0.46
4:3:1943:A:C8	4:3:1952:G:C8	3.04	0.46
4:3:2237:U:H2'	4:3:2238:G:H8	1.81	0.46
4:3:2737:G:H2'	4:3:2738:U:C6	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:a:23:LYS:HA	10:a:23:LYS:HD3	1.75	0.46
11:b:110:VAL:O	11:b:175:THR:HA	2.16	0.46
26:r:18:ARG:HA	26:r:21:CYS:HB3	1.98	0.46
31:w:98:LEU:HD11	31:w:102:ARG:HH21	1.81	0.46
4:3:341:G:C2	4:3:364:A:N6	2.81	0.46
4:3:786:A:N7	4:3:824:A:N6	2.63	0.46
4:3:805:G:H2'	4:3:806:A:H8	1.80	0.46
4:3:865:A:N1	4:3:2453:G:O2'	2.47	0.46
4:3:1248:A:H2'	4:3:1249:A:H8	1.81	0.46
4:3:1323:A:H2'	4:3:1324:A:C8	2.51	0.46
4:3:1338:G:OP2	4:3:1339:U:N3	2.31	0.46
4:3:1489:G:H2'	4:3:1490:G:H8	1.80	0.46
4:3:1603:A:H2'	4:3:1604:A:C8	2.51	0.46
4:3:1632:C:H5"	27:s:37:LYS:HB2	1.98	0.46
4:3:1806:G:O5'	4:3:1826:A:N6	2.49	0.46
4:3:2026:A:N3	24:p:27:ARG:NH2	2.62	0.46
4:3:2348:U:H2'	4:3:2349:G:H8	1.80	0.46
4:3:2547:C:H2'	4:3:2548:G:C8	2.50	0.46
4:3:2862:U:O2'	4:3:2863:G:OP1	2.33	0.46
11:b:40:LYS:NZ	11:b:51:LEU:HB2	2.31	0.46
14:e:146:GLN:O	14:e:150:GLU:HG2	2.16	0.46
15:f:33:LYS:C	15:f:34:LYS:HD2	2.41	0.46
17:i:100:SER:H	17:i:129:LYS:NZ	2.14	0.46
21:m:60:ARG:HD2	21:m:83:PHE:CE1	2.50	0.46
4:3:174:A:H2'	4:3:175:A:H8	1.81	0.46
4:3:276:A:O2'	4:3:405:C:O2	2.22	0.46
4:3:658:G:H2'	4:3:659:C:C6	2.51	0.46
4:3:670:G:H2'	4:3:671:C:C6	2.50	0.46
4:3:829:A:H2'	4:3:830:A:H8	1.79	0.46
4:3:947:A:O2'	4:3:948:A:O4'	2.21	0.46
4:3:1623:U:H2'	4:3:1624:A:C8	2.51	0.46
4:3:1825:U:O2'	10:a:161:ALA:N	2.48	0.46
4:3:2425:C:H2'	4:3:2426:A:C8	2.50	0.46
4:3:2598:C:H2'	4:3:2599:C:H6	1.81	0.46
7:9:895:PHE:HB3	7:9:903:ASN:OD1	2.16	0.46
12:c:34:VAL:HG13	12:c:188:VAL:HG11	1.98	0.46
12:c:165:ASN:OD1	12:c:166:THR:N	2.49	0.46
20:l:66:ILE:HG22	20:l:68:ILE:H	1.81	0.46
26:r:129:VAL:O	26:r:133:GLN:HG3	2.15	0.46
4:3:196:G:H4'	4:3:712:A:H2	1.81	0.46
4:3:622:U:H2'	4:3:623:A:H8	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:748:G:N2	4:3:754:U:O4	2.49	0.46
4:3:1296:G:C6	26:r:16:LYS:HE3	2.50	0.46
4:3:1320:C:H2'	4:3:1321:C:O4'	2.16	0.46
4:3:1628:G:H2'	4:3:1629:U:H6	1.81	0.46
4:3:1759:C:H2'	4:3:1760:G:C8	2.51	0.46
4:3:2160:U:H2'	4:3:2161:G:H8	1.81	0.46
4:3:2184:A:N1	4:3:2185:C:N4	2.64	0.46
4:3:2381:G:H2'	4:3:2382:A:C8	2.51	0.46
4:3:2584:G:O2'	4:3:2587:U:OP2	2.21	0.46
14:e:161:LYS:HA	14:e:174:ARG:HH12	1.81	0.46
19:k:134:GLN:HA	19:k:137:LYS:HE2	1.97	0.46
2:1:4:LYS:HD2	2:1:58:LEU:HG	1.98	0.45
4:3:443:C:H2'	4:3:444:C:C6	2.50	0.45
4:3:484:U:N3	4:3:616:G:O2'	2.47	0.45
4:3:912:A:N6	4:3:939:U:H3	2.10	0.45
4:3:1094:G:C5	4:3:1095:U:C4	3.05	0.45
4:3:1210:A:H2'	4:3:1211:U:C6	2.50	0.45
4:3:1257:G:OP1	4:3:1280:G:N2	2.49	0.45
4:3:1275:C:H2'	4:3:1276:A:C8	2.50	0.45
4:3:1383:G:OP2	10:a:42:LYS:NZ	2.38	0.45
4:3:1777:G:H2'	4:3:1778:G:H8	1.80	0.45
4:3:2132:G:H21	4:3:2182:C:N4	2.14	0.45
5:4:91:A:C2'	5:4:92:A:H5'	2.46	0.45
8:A:60:ARG:NH2	8:A:76:ILE:O	2.49	0.45
10:a:132:PRO:HA	10:a:200:VAL:HG23	1.97	0.45
13:d:99:PHE:CZ	13:d:103:LEU:HD11	2.51	0.45
1:0:4:THR:HG21	4:3:824:A:H5'	1.98	0.45
1:0:38:GLN:HB2	4:3:494:G:H5"	1.99	0.45
4:3:82:G:N2	4:3:328:A:H1'	2.31	0.45
4:3:199:A:H5"	19:k:48:ARG:NH2	2.31	0.45
4:3:225:A:C4	4:3:237:A:H1'	2.51	0.45
4:3:317:U:H2'	4:3:318:U:C6	2.51	0.45
4:3:695:G:N2	19:k:15:HIS:HE1	2.14	0.45
4:3:707:C:H2'	4:3:708:C:H6	1.81	0.45
4:3:714:G:H2'	4:3:715:G:C8	2.50	0.45
4:3:896:U:C2	4:3:897:A:C8	3.04	0.45
4:3:989:G:O6	4:3:1001:C:N4	2.49	0.45
4:3:1063:A:H2'	4:3:1064:A:C8	2.51	0.45
4:3:1213:U:H2'	4:3:1214:U:H6	1.82	0.45
4:3:1340:U:O2	4:3:1367:G:N2	2.32	0.45
4:3:1434:U:H2'	4:3:1435:A:H8	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1821:G:H3'	4:3:1822:A:H8	1.80	0.45
4:3:1951:A:N6	4:3:2565:G:O2'	2.50	0.45
4:3:2024:C:O2	33:y:7:ARG:HB3	2.16	0.45
4:3:2328:A:O2'	4:3:2330:A:N6	2.30	0.45
4:3:2580:A:C8	11:b:151:ARG:HG3	2.51	0.45
4:3:2689:C:N3	4:3:2733:A:N7	2.65	0.45
10:a:22:TYR:O	10:a:23:LYS:NZ	2.33	0.45
23:o:27:ALA:HA	23:o:52:VAL:HB	1.98	0.45
27:s:38:THR:O	27:s:41:LYS:HG2	2.17	0.45
30:v:18:ARG:NH1	30:v:22:LYS:O	2.49	0.45
4:3:31:U:H2'	4:3:32:G:C8	2.42	0.45
4:3:292:G:H3'	4:3:293:G:N7	2.31	0.45
4:3:680:A:H4'	4:3:681:A:C5	2.51	0.45
4:3:1539:U:H2'	4:3:1540:G:C8	2.52	0.45
4:3:2498:G:O3'	4:3:2499:U:H2'	2.16	0.45
4:3:2737:G:O3'	11:b:180:ARG:NH2	2.48	0.45
5:4:21:G:N7	5:4:54:U:O2'	2.45	0.45
13:d:32:GLU:HB2	13:d:157:VAL:HG13	1.98	0.45
15:f:114:LYS:HE3	15:f:129:HIS:HB2	1.97	0.45
23:o:56:ARG:NH1	23:o:61:SER:O	2.44	0.45
26:r:34:ASN:OD1	26:r:35:ILE:N	2.49	0.45
4:3:33:C:H2'	4:3:34:C:C6	2.51	0.45
4:3:382:U:H2'	4:3:383:U:O4'	2.15	0.45
4:3:441:U:H3'	4:3:442:G:H8	1.81	0.45
4:3:573:A:H1'	17:i:51:GLN:NE2	2.32	0.45
4:3:1016:A:N1	4:3:2033:G:N2	2.63	0.45
4:3:1228:G:H1	4:3:1279:U:H3	1.62	0.45
4:3:1440:U:H2'	4:3:1441:A:C8	2.51	0.45
4:3:1451:A:H2'	4:3:1452:G:C8	2.52	0.45
4:3:1626:C:H2'	4:3:1627:U:C6	2.52	0.45
4:3:1721:G:H21	4:3:1735:A:H62	1.64	0.45
4:3:1860:A:H61	4:3:2094:A:H1'	1.80	0.45
4:3:2141:A:N1	4:3:2166:U:H1'	2.30	0.45
4:3:2473:C:H2'	4:3:2474:C:H6	1.78	0.45
7:9:171:ARG:HH12	7:9:318:GLU:CD	2.24	0.45
13:d:123:ASP:CG	13:d:127:ASN:HB2	2.41	0.45
18:j:30:LYS:O	18:j:31:ARG:HG2	2.16	0.45
18:j:105:GLU:N	18:j:105:GLU:OE1	2.48	0.45
4:3:277:C:H1'	4:3:302:G:O2'	2.17	0.45
4:3:351:G:H2'	4:3:352:C:H6	1.81	0.45
4:3:480:C:H2'	4:3:481:C:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1054:U:OP1	4:3:1070:U:O2'	2.23	0.45
4:3:1077:G:H2'	4:3:1078:C:C6	2.52	0.45
4:3:2007:U:H2'	4:3:2008:A:C8	2.51	0.45
4:3:2386:A:HO2'	4:3:2387:U:P	2.38	0.45
4:3:2716:U:O2'	4:3:2717:G:H5'	2.16	0.45
10:a:147:VAL:HA	10:a:200:VAL:HA	1.98	0.45
17:i:50:ASN:OD1	17:i:51:GLN:N	2.46	0.45
18:j:36:GLY:O	18:j:109:ARG:NH1	2.49	0.45
25:q:59:VAL:HG21	25:q:62:HIS:CE1	2.52	0.45
4:3:86:A:O2'	4:3:101:C:N4	2.50	0.45
4:3:116:C:H2'	4:3:117:C:H6	1.81	0.45
4:3:167:A:C8	4:3:168:A:C8	3.05	0.45
4:3:205:C:O2'	4:3:424:G:O6	2.24	0.45
4:3:1141:U:C2	8:A:79:LYS:HG2	2.36	0.45
4:3:1684:A:H2'	4:3:1685:G:H8	1.82	0.45
4:3:1698:A:H2'	4:3:1698:A:N3	2.31	0.45
4:3:1723:A:H2'	4:3:1724:A:H8	1.81	0.45
4:3:2017:G:P	26:r:41:LYS:HZ2	2.40	0.45
4:3:2021:A:H2'	4:3:2022:A:C4	2.52	0.45
4:3:2292:A:O2'	4:3:2296:A:N1	2.37	0.45
4:3:2473:C:H2'	4:3:2474:C:C6	2.52	0.45
4:3:2552:G:H2'	4:3:2553:G:H8	1.79	0.45
4:3:2644:U:O2'	11:b:47:TYR:OH	2.25	0.45
4:3:2746:A:C2	4:3:2747:U:H1'	2.52	0.45
5:4:103:C:H2'	5:4:104:C:H6	1.82	0.45
13:d:33:LYS:HB3	13:d:92:ARG:NH2	2.31	0.45
21:m:73:PHE:HE2	21:m:78:LEU:HA	1.82	0.45
22:n:45:ASP:O	22:n:49:ASN:N	2.50	0.45
4:3:8:A:H2'	4:3:9:G:C8	2.52	0.45
4:3:118:G:OP2	4:3:120:A:O2'	2.23	0.45
4:3:142:A:H2'	4:3:143:A:C8	2.52	0.45
4:3:313:G:N2	4:3:394:C:N3	2.65	0.45
4:3:342:G:N2	4:3:513:A:C2	2.84	0.45
4:3:354:C:H2'	12:c:174:ASN:CG	2.41	0.45
4:3:562:C:N3	4:3:2787:U:H2'	2.31	0.45
4:3:1081:A:N6	8:A:4:LYS:O	2.50	0.45
4:3:1544:G:H2'	4:3:1545:A:C8	2.51	0.45
4:3:1836:A:H3'	4:3:1837:C:C6	2.52	0.45
4:3:2009:U:P	21:m:14:ARG:HH12	2.40	0.45
4:3:2770:U:O2'	14:e:153:LYS:NZ	2.50	0.45
4:3:2796:C:H4'	4:3:2813:A:H8	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:8:16:G:H8	6:8:16:G:OP2	1.99	0.45
7:9:364:TYR:CE1	7:9:399:ARG:NH1	2.85	0.45
12:c:200:GLU:HB2	12:c:203:VAL:HG22	1.99	0.45
13:d:74:ILE:HG22	13:d:77:TYR:H	1.82	0.45
22:n:10:LEU:HA	22:n:13:LYS:HG2	1.99	0.45
24:p:81:LEU:HA	24:p:84:LYS:HE2	1.98	0.45
26:r:1:MET:HG2	26:r:109:ASP:H	1.82	0.45
2:1:24:ALA:HB2	19:k:62:LEU:HD23	1.99	0.45
4:3:30:A:O2'	4:3:31:U:O4'	2.29	0.45
4:3:318:U:H2'	4:3:319:G:H8	1.82	0.45
4:3:333:A:P	4:3:333:A:H8	2.40	0.45
4:3:366:A:O2'	4:3:368:C:OP1	2.27	0.45
4:3:638:A:N6	4:3:661:G:O6	2.44	0.45
4:3:640:U:H5"	12:c:104:ASN:HA	1.99	0.45
4:3:657:A:OP2	19:k:105:SER:OG	2.33	0.45
4:3:892:G:C2	4:3:893:A:C5	3.05	0.45
4:3:1057:G:H1'	4:3:1058:U:H5	1.82	0.45
4:3:1346:G:H2'	4:3:1347:A:C8	2.52	0.45
4:3:2549:A:H5'	4:3:2772:A:H2	1.81	0.45
4:3:2691:C:OP1	23:o:56:ARG:NH2	2.50	0.45
4:3:2820:G:H2'	4:3:2821:U:C6	2.52	0.45
15:f:112:MET:HA	15:f:130:ILE:HD13	1.97	0.45
4:3:232:A:C6	4:3:234:G:C6	3.05	0.45
4:3:451:A:N6	4:3:2417:G:C6	2.85	0.45
4:3:663:A:N6	4:3:673:A:OP2	2.50	0.45
4:3:779:C:H2'	4:3:780:G:H8	1.82	0.45
4:3:998:C:O2'	4:3:2505:A:OP1	2.22	0.45
4:3:1001:C:H1'	4:3:2281:A:C2	2.51	0.45
4:3:1305:G:H2'	4:3:1306:G:H8	1.77	0.45
4:3:1456:C:H41	4:3:1603:A:H3'	1.82	0.45
4:3:1995:G:C2	4:3:1996:A:C5	3.05	0.45
10:a:270:MET:HB3	10:a:275:THR:HG21	1.99	0.45
18:j:58:LEU:HB3	18:j:94:ARG:CZ	2.46	0.45
18:j:91:LYS:HD2	18:j:111:TYR:H	1.82	0.45
18:j:106:LEU:HD23	18:j:106:LEU:H	1.82	0.45
30:v:5:ASP:OD1	30:v:5:ASP:N	2.47	0.45
4:3:19:G:H4'	24:p:24:PHE:HD1	1.82	0.45
4:3:53:G:H1'	4:3:119:A:H61	1.82	0.45
4:3:79:U:H2'	4:3:80:U:C6	2.52	0.45
4:3:139:G:O6	4:3:145:A:N6	2.50	0.45
4:3:176:U:C2	4:3:177:U:C5	3.05	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:330:A:H2'	4:3:331:A:C8	2.52	0.45
4:3:408:G:C6	4:3:460:G:N7	2.85	0.45
4:3:762:A:OP1	4:3:1459:A:O2'	2.29	0.45
4:3:767:C:H2'	4:3:768:G:O4'	2.17	0.45
4:3:988:G:H2'	4:3:989:G:O4'	2.16	0.45
4:3:2238:G:H2'	4:3:2239:U:C6	2.52	0.45
4:3:2737:G:C2	4:3:2738:U:C4	3.05	0.45
4:3:2753:C:O2'	14:e:142:GLU:O	2.33	0.45
4:3:2772:A:N7	4:3:2774:A:N6	2.64	0.45
13:d:102:LYS:HG2	13:d:138:PHE:HE1	1.82	0.45
22:n:34:LYS:HD3	22:n:102:ILE:HD11	1.99	0.45
4:3:28:G:H1'	4:3:549:A:N6	2.32	0.44
4:3:82:G:H21	4:3:328:A:H1'	1.82	0.44
4:3:124:A:H2'	4:3:125:G:C8	2.53	0.44
4:3:496:A:N3	4:3:506:A:N6	2.65	0.44
4:3:673:A:OP1	19:k:134:GLN:HB2	2.17	0.44
4:3:799:A:N7	4:3:1783:G:H1'	2.31	0.44
4:3:1246:U:H2'	4:3:1247:C:C6	2.52	0.44
4:3:1698:A:H3'	4:3:1699:A:H8	1.81	0.44
4:3:1777:G:H1	4:3:1989:U:H3	1.64	0.44
4:3:2269:C:H2'	4:3:2270:U:H6	1.82	0.44
4:3:2310:C:O2'	13:d:123:ASP:HA	2.18	0.44
4:3:2344:A:H61	29:u:57:THR:HG22	1.82	0.44
4:3:2729:A:H2'	4:3:2730:G:O4'	2.17	0.44
4:3:2737:G:H4'	11:b:180:ARG:HH12	1.82	0.44
5:4:53:U:H2'	5:4:54:U:C6	2.52	0.44
5:4:91:A:H3'	5:4:92:A:H8	1.82	0.44
7:9:181:TYR:CD1	7:9:289:LYS:HE2	2.52	0.44
10:a:255:ARG:HG2	10:a:261:ARG:HH11	1.81	0.44
10:a:255:ARG:HD3	10:a:259:GLY:HA2	1.99	0.44
11:b:51:LEU:HA	11:b:83:GLU:HA	1.98	0.44
25:q:1:MET:HE2	25:q:15:HIS:HB3	1.99	0.44
27:s:7:LEU:HD13	27:s:31:VAL:HG12	1.98	0.44
31:w:18:LEU:O	31:w:22:LEU:HG	2.16	0.44
4:3:99:C:H2'	4:3:100:U:O4'	2.17	0.44
4:3:612:G:C4	4:3:1292:A:C6	3.05	0.44
4:3:675:U:O4	4:3:685:G:O6	2.35	0.44
4:3:699:U:H2'	4:3:700:U:O4'	2.17	0.44
4:3:922:C:N3	4:3:928:G:N1	2.65	0.44
4:3:1081:A:C2	8:A:7:LYS:HB3	2.51	0.44
4:3:1351:G:P	26:r:84:ARG:HH21	2.40	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1575:C:H2'	4:3:1576:G:O4'	2.18	0.44
4:3:2001:C:H2'	4:3:2002:U:C6	2.53	0.44
4:3:2288:G:H2'	4:3:2289:C:C6	2.52	0.44
4:3:2516:G:H2'	4:3:2517:A:C8	2.52	0.44
4:3:2812:U:O2'	4:3:2814:A:N7	2.46	0.44
6:8:63:U:H2'	6:8:64:G:C8	2.52	0.44
8:A:38:THR:CG2	16:h:113:ASN:HB3	2.47	0.44
10:a:129:ASP:OD1	10:a:130:ILE:N	2.49	0.44
20:l:111:GLU:HA	20:l:114:MET:HE3	1.98	0.44
21:m:10:THR:H	21:m:13:TRP:HB3	1.82	0.44
2:1:5:SER:O	2:1:9:LYS:HG3	2.16	0.44
4:3:257:C:H2'	4:3:258:G:O4'	2.17	0.44
4:3:900:G:H2'	4:3:901:C:C6	2.52	0.44
4:3:1007:C:H1'	4:3:1019:A:C2	2.52	0.44
4:3:1062:A:H2'	4:3:1063:A:C8	2.50	0.44
4:3:1091:G:H5"	4:3:1092:A:O4'	2.17	0.44
4:3:1115:G:C6	4:3:1116:U:C4	3.05	0.44
4:3:1416:G:H2'	4:3:1417:G:H8	1.83	0.44
4:3:1676:G:H2'	4:3:1677:G:C8	2.52	0.44
4:3:1796:A:H5"	10:a:227:THR:O	2.17	0.44
4:3:1806:G:N3	10:a:160:ILE:HD12	2.33	0.44
4:3:1818:G:H2'	4:3:1819:G:H8	1.82	0.44
4:3:2106:G:N2	4:3:2198:G:H1	2.16	0.44
4:3:2757:A:H4'	14:e:65:LYS:HE3	2.00	0.44
10:a:183:GLN:OE1	10:a:189:THR:OG1	2.35	0.44
13:d:76:THR:HG23	13:d:77:TYR:CD2	2.53	0.44
17:i:19:TYR:HE2	17:i:55:ASP:HB3	1.82	0.44
17:i:52:ASP:OD1	17:i:53:CYS:N	2.51	0.44
19:k:98:LEU:HB3	19:k:103:VAL:HB	1.99	0.44
21:m:22:VAL:HA	21:m:25:VAL:HG12	1.99	0.44
24:p:45:ALA:O	24:p:49:ARG:HG3	2.18	0.44
1:0:10:LEU:HD23	1:0:14:LYS:HD2	1.99	0.44
4:3:166:A:H2'	4:3:167:A:C8	2.53	0.44
4:3:353:G:H2'	4:3:354:C:C6	2.52	0.44
4:3:481:C:H5"	24:p:2:ARG:H	1.83	0.44
4:3:1007:C:H2'	4:3:1008:A:C8	2.52	0.44
4:3:1176:U:C5	17:i:69:GLY:HA3	2.53	0.44
4:3:1432:C:H2'	4:3:1433:U:C6	2.52	0.44
4:3:1903:A:H2'	4:3:1904:G:C8	2.53	0.44
4:3:2260:G:H2'	4:3:2261:G:C8	2.52	0.44
4:3:2639:G:H2'	4:3:2640:A:H8	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2688:C:H5'	11:b:198:ALA:HA	2.00	0.44
4:3:2739:C:H2'	4:3:2740:U:C6	2.52	0.44
4:3:2747:U:H3'	4:3:2771:G:H1	1.82	0.44
7:9:14:LYS:HG2	7:9:615:PHE:CE1	2.53	0.44
11:b:55:ASP:HB2	11:b:79:LYS:HB3	1.99	0.44
20:l:62:GLY:HA2	20:l:108:ASN:HB2	1.99	0.44
26:r:2:ILE:O	26:r:107:LEU:N	2.43	0.44
2:1:14:THR:OG1	2:1:17:GLY:O	2.27	0.44
4:3:263:C:H2'	4:3:264:G:C8	2.52	0.44
4:3:296:U:O2	4:3:300:G:O2'	2.28	0.44
4:3:352:C:H2'	4:3:353:G:C8	2.52	0.44
4:3:427:A:N3	4:3:427:A:H2'	2.32	0.44
4:3:965:U:H2'	4:3:966:U:C6	2.53	0.44
4:3:1526:U:H2'	4:3:1527:U:C6	2.52	0.44
4:3:1641:A:H8	4:3:1655:U:H2'	1.83	0.44
4:3:1815:U:O2'	4:3:1816:A:O5'	2.30	0.44
4:3:1826:A:H1'	4:3:1828:A:C6	2.52	0.44
4:3:2039:G:OP2	4:3:2462:G:O2'	2.33	0.44
4:3:2060:G:N7	4:3:2585:A:N6	2.65	0.44
4:3:2153:U:O2	4:3:2154:A:N6	2.51	0.44
4:3:2332:U:H3'	4:3:2333:G:H5'	2.00	0.44
4:3:2769:G:H2'	4:3:2770:U:C6	2.52	0.44
13:d:15:GLU:O	13:d:18:LYS:HG3	2.18	0.44
4:3:143:A:H3'	4:3:144:C:H6	1.81	0.44
4:3:246:G:H1'	4:3:247:U:H5	1.83	0.44
4:3:822:C:H3'	4:3:826:C:N4	2.32	0.44
4:3:1046:A:H1'	4:3:1188:C:H1'	1.99	0.44
4:3:1061:A:H2'	4:3:1062:A:C8	2.46	0.44
4:3:1081:A:H62	8:A:7:LYS:HB2	1.71	0.44
4:3:1176:U:H1'	4:3:1177:A:C5	2.53	0.44
4:3:1217:G:H2'	4:3:1218:G:O4'	2.17	0.44
4:3:1476:C:H1'	4:3:1554:A:H2	1.83	0.44
4:3:1551:U:H2'	4:3:1552:C:O4'	2.18	0.44
4:3:1602:G:OP2	10:a:31:ASN:ND2	2.50	0.44
4:3:1622:C:H2'	4:3:1623:U:C6	2.53	0.44
4:3:2071:C:H2'	4:3:2072:C:H6	1.83	0.44
4:3:2692:U:P	23:o:56:ARG:HH21	2.40	0.44
4:3:2694:A:H2'	4:3:2695:U:H6	1.82	0.44
8:A:25:VAL:CG2	8:A:89:ILE:HD11	2.48	0.44
10:a:89:ASP:HB2	10:a:96:VAL:HG13	1.99	0.44
12:c:67:LYS:HG3	12:c:69:LYS:O	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:245:U:H5	4:3:260:A:H62	1.66	0.44
4:3:343:A:O2'	28:t:15:GLY:HA2	2.18	0.44
4:3:386:U:H2'	4:3:387:U:H6	1.82	0.44
4:3:569:U:O4	4:3:592:G:O6	2.35	0.44
4:3:695:G:H1'	19:k:13:ARG:CZ	2.48	0.44
4:3:817:A:C8	10:a:228:VAL:HG21	2.53	0.44
4:3:1004:U:H2'	4:3:1005:G:C8	2.53	0.44
4:3:1308:A:H2'	4:3:1309:G:C8	2.52	0.44
4:3:1677:G:H8	4:3:1677:G:OP2	2.01	0.44
4:3:1944:A:H62	4:3:1947:U:H5	1.65	0.44
4:3:2076:G:H2'	4:3:2077:A:H8	1.83	0.44
4:3:2136:A:N6	4:3:2167:G:O6	2.50	0.44
4:3:2239:U:O4	4:3:2240:U:O4	2.36	0.44
4:3:2850:G:H2'	4:3:2851:U:C6	2.53	0.44
4:3:2852:G:O2'	4:3:2872:A:N6	2.37	0.44
7:9:396:ARG:HD2	7:9:399:ARG:NH2	2.33	0.44
17:i:57:LEU:HD23	17:i:125:VAL:HG22	1.99	0.44
20:l:48:GLU:O	20:l:52:ILE:HG12	2.18	0.44
25:q:61:LYS:HB2	25:q:61:LYS:HE3	1.73	0.44
26:r:39:THR:HB	33:y:25:GLN:HE21	1.83	0.44
32:x:10:GLN:N	32:x:29:LEU:HB2	2.33	0.44
4:3:188:G:H2'	4:3:189:U:C6	2.53	0.44
4:3:461:C:H2'	4:3:462:C:H6	1.81	0.44
4:3:485:A:H61	4:3:490:A:H62	1.65	0.44
4:3:529:G:H2'	4:3:530:G:H8	1.82	0.44
4:3:596:G:OP2	4:3:605:A:O2'	2.33	0.44
4:3:1025:G:H5"	4:3:1192:U:H4'	1.99	0.44
4:3:1399:G:N2	4:3:1400:U:O4	2.50	0.44
4:3:2109:A:N1	4:3:2196:G:C6	2.86	0.44
4:3:2291:U:N3	4:3:2292:A:N7	2.66	0.44
5:4:6:U:H2'	5:4:7:G:C8	2.52	0.44
10:a:57:HIS:HB2	10:a:225:ARG:O	2.17	0.44
13:d:44:ILE:HD12	13:d:77:TYR:HD1	1.83	0.44
17:i:121:TRP:HA	17:i:124:LYS:HE2	2.00	0.44
18:j:67:LYS:HA	18:j:67:LYS:HD2	1.71	0.44
4:3:176:U:H2'	4:3:177:U:H6	1.82	0.44
4:3:217:A:H2'	4:3:218:G:C8	2.52	0.44
4:3:295:U:H4'	4:3:296:U:OP2	2.17	0.44
4:3:487:C:N4	4:3:490:A:OP2	2.51	0.44
4:3:992:G:H2'	4:3:993:A:H2'	1.99	0.44
4:3:1081:A:H61	8:A:8:ALA:N	2.16	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1188:C:H5'	24:p:75:TYR:HE1	1.82	0.44
4:3:1199:A:H2'	4:3:1200:U:C6	2.53	0.44
4:3:1757:G:H2'	4:3:1758:C:C6	2.53	0.44
4:3:1838:A:H2'	4:3:1839:C:C6	2.53	0.44
4:3:1841:U:O2	4:3:1979:G:C2	2.70	0.44
4:3:2394:A:H2'	4:3:2395:U:C6	2.53	0.44
5:4:66:A:H3'	5:4:67:G:H8	1.83	0.44
5:4:73:U:H2'	5:4:74:G:C8	2.53	0.44
7:9:615:PHE:CE1	7:9:619:ILE:HD12	2.52	0.44
20:l:109:ILE:HG12	20:l:110:PRO:HD2	1.99	0.44
25:q:4:ILE:HG13	25:q:13:LEU:HD13	2.00	0.44
27:s:86:PRO:HB2	31:w:86:ALA:HB1	1.99	0.44
4:3:176:U:H2'	4:3:177:U:C6	2.53	0.43
4:3:275:A:O2'	4:3:406:C:H4'	2.18	0.43
4:3:323:A:H2'	4:3:324:C:C6	2.52	0.43
4:3:654:G:H2'	4:3:655:G:O4'	2.18	0.43
4:3:678:U:H2'	4:3:679:A:H3'	2.00	0.43
4:3:762:A:H3'	4:3:763:G:C8	2.52	0.43
4:3:1063:A:N6	4:3:1160:G:H2'	2.32	0.43
4:3:1075:G:H2'	4:3:1076:U:O4'	2.17	0.43
4:3:1303:U:O4	4:3:1678:U:O2'	2.26	0.43
4:3:1473:C:H2'	4:3:1474:C:H6	1.83	0.43
4:3:1508:G:H2'	4:3:1509:U:C6	2.53	0.43
4:3:1687:G:H1	4:3:2009:U:H5"	1.82	0.43
4:3:2011:G:C5	4:3:2012:A:C8	3.06	0.43
4:3:2218:U:H4'	4:3:2219:U:C6	2.53	0.43
4:3:2403:C:H2'	4:3:2404:G:H8	1.82	0.43
4:3:2628:U:OP1	11:b:162:GLY:N	2.45	0.43
5:4:95:G:H2'	5:4:96:G:H8	1.82	0.43
7:9:831:PHE:CE2	7:9:913:VAL:HG21	2.52	0.43
23:o:11:ASP:O	23:o:15:GLN:HG3	2.18	0.43
25:q:1:MET:HE3	25:q:16:GLU:HB3	2.00	0.43
31:w:61:ARG:HG2	31:w:62:LYS:HG3	2.00	0.43
2:1:5:SER:OG	4:3:251:G:O6	2.34	0.43
3:2:18:LYS:O	4:3:2764:U:H5"	2.19	0.43
4:3:67:C:H2'	4:3:68:C:C6	2.52	0.43
4:3:250:U:O4	4:3:256:G:O6	2.36	0.43
4:3:370:C:H2'	4:3:371:C:C6	2.52	0.43
4:3:659:C:H2'	4:3:660:U:C6	2.53	0.43
4:3:1069:G:C6	4:3:1157:G:C5	3.06	0.43
4:3:1187:C:H2'	4:3:1188:C:H6	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1325:C:OP1	4:3:2718:C:H4'	2.18	0.43
4:3:1449:G:H1'	4:3:1519:A:N6	2.32	0.43
4:3:1691:U:O2'	4:3:1692:A:H5'	2.18	0.43
4:3:1832:G:O4'	10:a:262:HIS:NE2	2.51	0.43
6:8:10:A:H4'	6:8:47:G:H4'	1.99	0.43
12:c:32:GLN:NE2	19:k:13:ARG:HH12	2.16	0.43
27:s:62:PRO:HB3	27:s:74:LEU:HD21	1.99	0.43
3:2:35:ARG:HH22	4:3:2750:A:P	2.41	0.43
4:3:274:A:C6	4:3:408:G:C6	3.06	0.43
4:3:291:G:C2	4:3:292:G:N7	2.86	0.43
4:3:385:U:H2'	4:3:386:U:H6	1.83	0.43
4:3:557:G:C2'	4:3:558:C:H5'	2.48	0.43
4:3:1137:C:H2'	4:3:1138:A:C8	2.40	0.43
4:3:1415:A:H2'	4:3:1416:G:H8	1.84	0.43
4:3:1642:G:O2'	4:3:1644:A:OP2	2.31	0.43
4:3:1754:U:H2'	4:3:1755:A:H8	1.81	0.43
4:3:1777:G:H2'	4:3:1778:G:C8	2.53	0.43
4:3:1871:U:O2'	4:3:2417:G:N2	2.52	0.43
4:3:1974:U:H2'	4:3:1975:G:O4'	2.17	0.43
4:3:2733:A:C4	4:3:2735:G:N7	2.86	0.43
7:9:399:ARG:NH2	7:9:417:GLU:OE2	2.51	0.43
7:9:838:ARG:HH22	7:9:879:GLY:HA3	1.83	0.43
17:i:68:THR:O	17:i:71:LYS:HG2	2.18	0.43
19:k:137:LYS:O	19:k:140:GLU:HG2	2.17	0.43
22:n:12:HIS:CD2	22:n:94:GLY:HA2	2.53	0.43
23:o:54:ARG:NH2	23:o:63:THR:OG1	2.51	0.43
23:o:56:ARG:HG2	23:o:56:ARG:NH1	2.32	0.43
32:x:11:SER:HB2	32:x:25:ILE:O	2.18	0.43
4:3:261:A:H3'	4:3:262:G:H8	1.83	0.43
4:3:823:A:OP1	4:3:826:C:N4	2.45	0.43
4:3:1258:C:H2'	4:3:1259:A:O4'	2.17	0.43
4:3:1487:U:H2'	4:3:1488:U:C6	2.52	0.43
4:3:1488:U:H2'	4:3:1489:G:H8	1.82	0.43
4:3:2331:G:H2'	4:3:2332:U:C6	2.53	0.43
4:3:2405:G:H1	4:3:2427:U:H3	1.67	0.43
4:3:2675:C:N3	14:e:113:SER:OG	2.36	0.43
4:3:2840:U:H2'	4:3:2841:A:C8	2.53	0.43
5:4:94:A:H3'	5:4:95:G:H8	1.83	0.43
15:f:128:LEU:HD23	15:f:128:LEU:HA	1.88	0.43
4:3:191:G:H21	4:3:1393:A:H61	1.67	0.43
4:3:210:U:C2	4:3:211:A:C8	3.07	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:252:G:C4	4:3:254:G:N2	2.86	0.43
4:3:291:G:C2	4:3:292:G:C8	3.06	0.43
4:3:525:A:H2'	4:3:526:G:N9	2.33	0.43
4:3:634:C:H2'	4:3:635:G:C8	2.53	0.43
4:3:986:G:O6	4:3:1003:U:O4	2.35	0.43
4:3:1309:G:H2'	4:3:1310:U:H6	1.83	0.43
4:3:1464:G:H2'	4:3:1465:U:C6	2.53	0.43
4:3:1494:U:O3'	4:3:1495:A:H8	2.02	0.43
4:3:1534:A:H1'	4:3:1535:A:C8	2.53	0.43
4:3:1956:G:C6	4:3:1957:G:C6	3.06	0.43
4:3:2052:C:H5"	33:y:15:LYS:HD2	2.00	0.43
4:3:2493:G:H2'	4:3:2494:C:C6	2.54	0.43
4:3:2681:G:N2	18:j:27:SER:OG	2.49	0.43
14:e:81:GLY:HA2	14:e:85:GLY:HA2	2.01	0.43
25:q:31:LYS:O	25:q:59:VAL:HG12	2.18	0.43
4:3:82:G:O2'	4:3:328:A:N1	2.45	0.43
4:3:696:U:H2'	4:3:697:U:H6	1.83	0.43
4:3:802:U:H2'	4:3:803:G:H8	1.83	0.43
4:3:1262:G:C2	4:3:1263:G:C8	3.07	0.43
4:3:1750:A:H8	4:3:1750:A:O5'	2.01	0.43
4:3:1941:C:H2'	4:3:1942:G:C8	2.53	0.43
4:3:2044:C:H2'	4:3:2045:C:H6	1.83	0.43
4:3:2303:U:H2'	4:3:2304:U:H6	1.84	0.43
4:3:2350:C:H2'	4:3:2351:U:C6	2.51	0.43
4:3:2551:G:H2'	4:3:2552:G:H8	1.82	0.43
4:3:2679:G:H2'	4:3:2680:C:C6	2.53	0.43
12:c:66:TYR:CZ	12:c:73:LYS:HD3	2.53	0.43
14:e:75:ILE:O	14:e:79:ILE:HG12	2.18	0.43
29:u:52:TYR:HB3	29:u:73:LEU:HB2	2.00	0.43
4:3:220:A:N7	4:3:467:U:O2	2.51	0.43
4:3:746:G:H2'	4:3:747:A:C8	2.50	0.43
4:3:905:U:C4	4:3:949:C:H1'	2.54	0.43
4:3:1010:G:N7	4:3:1217:G:N2	2.67	0.43
4:3:1058:U:O2'	4:3:1157:G:H5'	2.18	0.43
4:3:1200:U:O2'	4:3:1201:A:H5'	2.19	0.43
4:3:1818:G:H2'	4:3:1819:G:C8	2.53	0.43
4:3:1830:G:H2'	4:3:1831:G:C8	2.53	0.43
4:3:2502:G:H2'	4:3:2503:G:C8	2.54	0.43
31:w:15:LEU:O	31:w:19:VAL:HG23	2.18	0.43
4:3:802:U:H2'	4:3:803:G:C8	2.54	0.43
4:3:1104:A:H4'	4:3:1105:A:H2'	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1138:A:OP2	4:3:1139:C:N4	2.46	0.43
4:3:1445:U:H2'	4:3:1446:G:C8	2.53	0.43
4:3:1609:U:H2'	4:3:1610:U:C6	2.53	0.43
4:3:1815:U:O2'	4:3:1816:A:C8	2.72	0.43
4:3:1884:A:H2'	4:3:1885:G:C8	2.54	0.43
4:3:2224:A:H2'	4:3:2225:G:C8	2.53	0.43
4:3:2321:C:H2'	4:3:2322:G:C8	2.53	0.43
5:4:21:G:O2'	5:4:22:G:O4'	2.33	0.43
9:B:6:ILE:HD11	9:C:23:ALA:CB	2.45	0.43
11:b:113:ILE:HD11	11:b:171:HIS:ND1	2.34	0.43
12:c:112:LEU:O	12:c:115:VAL:HG12	2.18	0.43
27:s:44:PHE:HA	27:s:47:VAL:HG12	2.01	0.43
29:u:89:LYS:O	29:u:90:GLN:HG2	2.19	0.43
30:v:33:LEU:HD22	30:v:49:LEU:HB3	2.00	0.43
33:y:47:MET:HG3	33:y:52:ARG:HA	2.01	0.43
4:3:723:U:H2'	4:3:724:A:H8	1.84	0.43
4:3:1033:A:H2'	4:3:1034:A:C8	2.53	0.43
4:3:1290:G:H2'	4:3:1291:C:C6	2.53	0.43
4:3:1307:G:H2'	4:3:1308:A:H8	1.83	0.43
4:3:1844:C:O2'	4:3:1934:A:H1'	2.19	0.43
4:3:1846:A:C8	4:3:1934:A:C5	3.07	0.43
4:3:2605:G:O2'	4:3:2606:A:O4'	2.31	0.43
4:3:2683:G:H2'	4:3:2684:G:C8	2.54	0.43
4:3:2689:C:O2	4:3:2733:A:N6	2.50	0.43
21:m:59:ASN:O	21:m:63:VAL:HG23	2.19	0.43
4:3:250:U:O2	4:3:256:G:N2	2.37	0.43
4:3:550:A:H2	4:3:1290:G:H21	1.66	0.43
4:3:1605:A:H2'	4:3:1606:A:C8	2.54	0.43
4:3:1755:A:H2'	4:3:1756:A:C8	2.54	0.43
4:3:1865:A:H2'	4:3:1866:G:O4'	2.19	0.43
4:3:2026:A:H2'	4:3:2027:G:O4'	2.19	0.43
4:3:2108:C:N3	4:3:2109:A:C6	2.86	0.43
4:3:2110:U:H2'	4:3:2194:G:N2	2.34	0.43
11:b:10:LYS:O	11:b:202:GLY:N	2.52	0.43
20:l:10:ARG:H	20:l:10:ARG:HG2	1.51	0.43
4:3:143:A:H1'	4:3:1436:C:H4'	1.99	0.42
4:3:421:A:H62	4:3:423:C:H2'	1.82	0.42
4:3:596:G:H2'	4:3:597:C:H6	1.83	0.42
4:3:1010:G:H1	4:3:1025:G:H1'	1.83	0.42
4:3:1362:C:H2'	4:3:1363:C:C6	2.55	0.42
4:3:1938:U:H2'	4:3:1939:A:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2022:A:H8	4:3:2023:U:C5	2.37	0.42
4:3:2177:G:H8	4:3:2177:G:OP1	2.02	0.42
4:3:2395:U:H3'	4:3:2396:A:H5"	2.00	0.42
4:3:2488:C:H2'	4:3:2489:G:O4'	2.19	0.42
4:3:2537:G:H5"	4:3:2538:A:H5"	2.01	0.42
4:3:2869:U:H2'	4:3:2870:U:C5	2.54	0.42
4:3:2880:A:H2'	4:3:2881:A:C8	2.54	0.42
10:a:169:ARG:HB2	10:a:183:GLN:HB3	2.00	0.42
11:b:105:GLY:HA3	11:b:218:LYS:O	2.19	0.42
11:b:152:GLY:O	11:b:157:GLN:HG3	2.18	0.42
19:k:82:LEU:HA	19:k:85:ILE:HG22	2.00	0.42
22:n:77:ILE:HA	22:n:80:LYS:HD3	2.01	0.42
2:1:2:LYS:HG2	4:3:246:G:N7	2.33	0.42
4:3:129:U:H2'	4:3:130:C:C6	2.54	0.42
4:3:189:U:H2'	4:3:190:G:H8	1.84	0.42
4:3:464:A:H3'	4:3:465:A:N7	2.34	0.42
4:3:512:G:H22	4:3:514:A:H3'	1.84	0.42
4:3:601:U:N3	4:3:604:A:OP2	2.28	0.42
4:3:625:G:H2'	4:3:626:A:H8	1.84	0.42
4:3:704:G:N3	4:3:704:G:H2'	2.33	0.42
4:3:793:C:H2'	4:3:794:G:C8	2.54	0.42
4:3:820:U:H2'	4:3:821:C:C6	2.54	0.42
4:3:1270:C:H2'	4:3:1271:A:H8	1.83	0.42
4:3:1445:U:H2'	4:3:1446:G:N9	2.34	0.42
4:3:1638:C:H2'	4:3:1639:C:C6	2.55	0.42
4:3:1673:U:H1'	4:3:2707:A:H5'	2.01	0.42
4:3:2061:A:H62	4:3:2585:A:H2	1.68	0.42
4:3:2177:G:H2'	4:3:2178:A:C8	2.54	0.42
4:3:2685:A:H61	4:3:2739:C:H42	1.67	0.42
4:3:2795:C:H2'	4:3:2796:C:C6	2.53	0.42
7:9:803:GLY:HA3	7:9:916:PHE:CZ	2.53	0.42
8:A:161:LYS:HE3	9:E:17:ILE:CD1	2.47	0.42
11:b:26:ILE:HG23	11:b:192:LEU:HB3	2.00	0.42
12:c:37:ALA:HA	12:c:40:VAL:HG12	2.01	0.42
22:n:3:THR:C	22:n:5:THR:H	2.26	0.42
23:o:6:LYS:HA	23:o:6:LYS:HD3	1.91	0.42
26:r:18:ARG:HH22	33:y:17:ARG:HH11	1.67	0.42
4:3:201:A:O2'	4:3:2252:U:OP1	2.34	0.42
4:3:691:G:H2'	4:3:692:U:C6	2.54	0.42
4:3:730:G:N2	4:3:802:U:O2	2.38	0.42
4:3:1212:C:C2	4:3:1213:U:C5	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1235:U:H3’	4:3:1236:G:H5”	2.01	0.42
4:3:1273:U:H2’	4:3:1274:A:H8	1.82	0.42
4:3:1343:C:H2’	4:3:1344:U:C6	2.54	0.42
4:3:1382:A:H5”	10:a:42:LYS:HD3	2.01	0.42
4:3:1443:A:H2	4:3:1621:U:H3	1.67	0.42
4:3:1621:U:O2’	4:3:1622:C:H5’	2.19	0.42
4:3:1717:C:H2’	4:3:1718:C:C6	2.54	0.42
4:3:1841:U:O2’	4:3:1976:A:H3’	2.20	0.42
4:3:2294:A:C2	34:z:23:LYS:HB2	2.54	0.42
4:3:2429:G:H5”	34:z:2:ALA:N	2.34	0.42
4:3:2527:U:O4’	4:3:2550:A:N6	2.51	0.42
4:3:2683:G:H5”	18:j:31:ARG:HH12	1.84	0.42
4:3:2764:U:H4’	4:3:2765:A:OP1	2.18	0.42
4:3:2780:U:H4’	11:b:175:THR:HB	2.01	0.42
6:8:16:G:O2’	6:8:21:U:O4	2.37	0.42
7:9:584:ILE:HG12	7:9:838:ARG:NH2	2.35	0.42
11:b:62:LEU:HD12	11:b:62:LEU:HA	1.88	0.42
14:e:92:LEU:HD13	14:e:165:VAL:HG22	2.02	0.42
14:e:100:ASN:ND2	14:e:102:GLU:OE1	2.52	0.42
15:f:9:VAL:HG13	15:f:14:LYS:HG2	2.00	0.42
31:w:37:GLU:OE1	31:w:37:GLU:N	2.52	0.42
34:z:38:CYS:HB2	34:z:47:HIS:NE2	2.34	0.42
4:3:8:A:H2’	4:3:9:G:H8	1.84	0.42
4:3:194:A:N6	4:3:211:A:H1’	2.35	0.42
4:3:219:G:H21	4:3:468:A:N6	2.16	0.42
4:3:231:A:H62	4:3:446:A:H1’	1.84	0.42
4:3:289:U:H2’	4:3:290:A:C8	2.54	0.42
4:3:381:A:H2’	4:3:382:U:H6	1.84	0.42
4:3:626:A:H2’	4:3:627:U:H6	1.84	0.42
4:3:897:A:C4	4:3:898:A:C8	3.07	0.42
4:3:1015:G:H2’	4:3:1018:G:N7	2.35	0.42
4:3:1187:C:H2’	4:3:1188:C:C6	2.53	0.42
4:3:1286:G:H2’	4:3:1286:G:N3	2.35	0.42
4:3:1856:G:H2’	4:3:1857:G:C8	2.54	0.42
4:3:2279:G:H2’	4:3:2280:U:C6	2.54	0.42
4:3:2344:A:O2’	4:3:2345:G:H5’	2.19	0.42
4:3:2363:C:O2	29:u:53:ARG:NH2	2.52	0.42
4:3:2646:G:H1’	4:3:2786:A:N6	2.34	0.42
4:3:2664:U:H2’	4:3:2665:A:C8	2.53	0.42
7:9:593:PHE:CZ	7:9:597:ILE:HD11	2.55	0.42
23:o:34:ALA:HA	23:o:46:GLN:O	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:r:35:ILE:HB	33:y:27:LEU:HD11	2.01	0.42
4:3:101:C:H3'	4:3:102:A:H8	1.83	0.42
4:3:245:U:H4'	4:3:246:G:H4'	2.02	0.42
4:3:363:G:N7	28:t:73:LYS:NZ	2.39	0.42
4:3:562:C:HO2'	17:i:120:ARG:HH12	1.66	0.42
4:3:899:A:H2'	4:3:900:G:C5	2.55	0.42
4:3:956:U:C2	4:3:957:G:C8	3.08	0.42
4:3:2316:G:N3	4:3:2316:G:H2'	2.34	0.42
4:3:2468:U:H2'	4:3:2469:A:H8	1.85	0.42
4:3:2670:A:C8	4:3:2671:G:C8	3.06	0.42
11:b:125:ARG:HG3	11:b:169:TYR:CD1	2.55	0.42
12:c:159:PHE:CD1	12:c:198:LEU:HB2	2.52	0.42
19:k:129:HIS:CE1	19:k:149:LEU:HD22	2.55	0.42
25:q:74:ILE:HG21	25:q:77:LYS:HD3	2.02	0.42
3:2:4:ARG:H	3:2:36:GLN:HB3	1.85	0.42
4:3:115:U:H2'	4:3:116:C:C6	2.55	0.42
4:3:444:C:H2'	4:3:445:C:C6	2.54	0.42
4:3:495:U:H2'	4:3:496:A:C8	2.54	0.42
4:3:613:C:H2'	4:3:614:C:H6	1.85	0.42
4:3:1354:U:O2'	4:3:2017:G:O2'	2.21	0.42
4:3:1382:A:C8	4:3:1383:G:C8	3.07	0.42
4:3:1713:U:N3	4:3:1996:A:H2	2.17	0.42
4:3:1886:C:O2'	4:3:1887:U:OP1	2.36	0.42
4:3:2238:G:H5"	30:v:30:ASN:HB2	2.02	0.42
4:3:2495:A:H2'	4:3:2496:G:C8	2.54	0.42
11:b:72:LYS:HB2	11:b:72:LYS:HE3	1.84	0.42
11:b:161:LYS:HD3	11:b:162:GLY:H	1.84	0.42
20:l:31:GLU:OE1	20:l:31:GLU:N	2.52	0.42
21:m:80:ASP:O	21:m:84:SER:HB3	2.19	0.42
24:p:14:LYS:O	24:p:18:LYS:HG2	2.19	0.42
29:u:52:TYR:HE2	29:u:54:GLN:HB3	1.83	0.42
31:w:44:ILE:O	31:w:48:ARG:HG3	2.20	0.42
4:3:142:A:N3	4:3:1437:A:H1'	2.34	0.42
4:3:614:C:H2'	4:3:615:G:C8	2.54	0.42
4:3:615:G:H2'	4:3:616:G:C8	2.54	0.42
4:3:808:U:H4'	10:a:52:LYS:HG2	2.01	0.42
4:3:822:C:H3'	4:3:826:C:H41	1.85	0.42
4:3:2021:A:H2'	4:3:2022:A:C8	2.55	0.42
4:3:2399:G:N1	4:3:2432:C:H3'	2.34	0.42
4:3:2501:U:H3'	4:3:2502:G:H5"	2.01	0.42
4:3:2846:A:H2'	4:3:2847:C:H6	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2887:A:H4'	33:y:40:HIS:NE2	2.35	0.42
7:9:890:TYR:CE2	7:9:894:ASN:ND2	2.87	0.42
22:n:79:ASP:HA	22:n:82:VAL:HG22	2.00	0.42
26:r:20:VAL:HA	26:r:23:LEU:HB2	2.00	0.42
26:r:122:LYS:HA	26:r:125:VAL:HG12	2.01	0.42
29:u:39:LYS:HG3	29:u:45:ILE:HD13	2.01	0.42
33:y:47:MET:HE2	33:y:47:MET:HB2	1.75	0.42
2:1:58:LEU:HD12	19:k:49:PRO:HB2	2.02	0.42
4:3:448:A:H62	4:3:2420:A:H1'	1.83	0.42
4:3:603:G:H1	4:3:2507:C:P	2.42	0.42
4:3:616:G:H2'	4:3:617:C:H6	1.84	0.42
4:3:816:A:H2'	4:3:1784:U:H1'	2.01	0.42
4:3:1186:A:H4'	24:p:80:ASN:ND2	2.34	0.42
4:3:1206:U:O2'	4:3:1208:A:N6	2.52	0.42
4:3:1294:G:H3'	4:3:1295:A:C8	2.54	0.42
4:3:1305:G:C6	4:3:1322:A:C6	3.07	0.42
4:3:1694:A:H2'	4:3:1695:G:C8	2.54	0.42
4:3:2100:G:N7	4:3:2233:A:H2'	2.35	0.42
4:3:2236:G:H2'	4:3:2237:U:C6	2.54	0.42
4:3:2470:C:H2'	4:3:2471:U:C6	2.55	0.42
4:3:2662:A:H4'	4:3:2663:G:H4'	2.02	0.42
10:a:280:ARG:HE	10:a:282:ARG:HA	1.85	0.42
26:r:22:GLN:O	26:r:25:VAL:HG22	2.20	0.42
34:z:6:SER:OG	34:z:21:THR:O	2.26	0.42
4:3:81:C:H2'	4:3:82:G:H8	1.85	0.42
4:3:831:U:H2'	4:3:832:C:C6	2.55	0.42
4:3:1158:C:H2'	4:3:1159:C:C6	2.54	0.42
4:3:1294:G:H3'	4:3:1295:A:H8	1.85	0.42
4:3:1497:A:N6	4:3:1547:G:H21	2.17	0.42
4:3:1603:A:O3'	10:a:65:LYS:NZ	2.48	0.42
4:3:1701:G:N1	4:3:1999:G:OP2	2.51	0.42
4:3:1798:A:H2'	4:3:1799:A:O4'	2.19	0.42
4:3:1939:A:H2'	4:3:1940:G:O4'	2.20	0.42
4:3:2087:G:C6	4:3:2249:A:N6	2.88	0.42
4:3:2094:A:N6	4:3:2095:A:H62	2.16	0.42
4:3:2251:U:O2'	4:3:2442:A:N1	2.45	0.42
4:3:2372:C:H2'	4:3:2373:G:O4'	2.19	0.42
4:3:2467:A:H2'	4:3:2468:U:O4'	2.20	0.42
4:3:2480:G:N2	4:3:2486:A:H62	2.18	0.42
4:3:2710:G:H2'	4:3:2711:C:C6	2.54	0.42
4:3:2839:A:H61	4:3:2882:U:H3'	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:4:44:A:H5”	22:n:4:ARG:HG3	2.02	0.42
7:9:838:ARG:NH2	7:9:879:GLY:CA	2.82	0.42
10:a:144:GLY:HA2	10:a:169:ARG:HH12	1.85	0.42
20:l:42:ILE:HG21	20:l:125:LEU:HD23	2.01	0.42
24:p:65:ASN:O	24:p:69:ARG:HG2	2.19	0.42
4:3:154:U:H2’	4:3:155:A:C8	2.53	0.42
4:3:430:U:H2’	4:3:431:U:C6	2.54	0.42
4:3:450:C:O2	4:3:1871:U:O2’	2.35	0.42
4:3:853:G:H4’	4:3:873:G:O3’	2.20	0.42
4:3:897:A:C5	4:3:898:A:C8	3.08	0.42
4:3:961:U:O2	4:3:962:U:C5	2.73	0.42
4:3:1029:A:O2’	4:3:1030:U:H5’	2.20	0.42
4:3:1041:C:H2’	4:3:1042:C:C6	2.55	0.42
4:3:1048:A:H2’	4:3:1049:U:C6	2.55	0.42
4:3:1119:A:N6	4:3:1120:A:N1	2.67	0.42
4:3:1138:A:H3’	4:3:1139:C:C6	2.55	0.42
4:3:1523:C:H2’	4:3:1524:C:C6	2.55	0.42
4:3:1653:C:H2’	4:3:1654:G:C8	2.55	0.42
4:3:1691:U:H3’	11:b:141:HIS:HE1	1.84	0.42
4:3:1748:U:O2	4:3:1750:A:C5	2.73	0.42
4:3:2006:C:H5”	4:3:2731:U:O2’	2.20	0.42
4:3:2055:A:C6	4:3:2056:A:C8	3.08	0.42
4:3:2076:G:H2’	4:3:2077:A:C8	2.55	0.42
4:3:2332:U:H3’	4:3:2333:G:C5’	2.50	0.42
4:3:2623:U:H2’	4:3:2624:C:H6	1.84	0.42
19:k:78:VAL:HG13	19:k:112:ILE:HG23	2.01	0.42
23:o:38:LYS:HA	23:o:42:LYS:O	2.20	0.42
1:0:25:ALA:HA	1:0:28:ARG:HE	1.84	0.41
4:3:86:A:H2’	28:t:5:LYS:HZ3	1.84	0.41
4:3:1183:A:H2’	4:3:1184:U:C6	2.55	0.41
4:3:1526:U:H1’	10:a:104:GLY:HA2	2.02	0.41
4:3:1612:U:H2’	4:3:1613:A:H8	1.84	0.41
4:3:1805:U:P	10:a:282:ARG:HH21	2.43	0.41
4:3:1990:C:H2’	4:3:1991:U:C6	2.55	0.41
4:3:2044:C:H2’	4:3:2045:C:C6	2.55	0.41
4:3:2142:U:O2	4:3:2166:U:O2’	2.37	0.41
4:3:2179:A:H1’	4:3:2180:U:C6	2.55	0.41
4:3:2463:G:H2’	4:3:2464:C:H6	1.83	0.41
4:3:2521:A:C6	4:3:2582:G:C6	3.08	0.41
4:3:2815:G:H5”	11:b:63:ASN:ND2	2.35	0.41
4:3:2824:A:N3	11:b:200:PRO:HB2	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:9:100:TYR:CE1	7:9:177:ILE:HG23	2.55	0.41
13:d:74:ILE:HB	13:d:79:LEU:HB2	2.02	0.41
4:3:65:A:H62	4:3:93:A:N6	2.17	0.41
4:3:149:A:H2'	4:3:150:U:C6	2.55	0.41
4:3:546:U:H3'	4:3:547:G:H8	1.84	0.41
4:3:593:C:H2'	4:3:594:G:O4'	2.20	0.41
4:3:761:G:H3'	4:3:1460:G:H4'	2.01	0.41
4:3:992:G:N1	4:3:994:U:O2'	2.41	0.41
4:3:1462:A:O2'	4:3:1463:G:H8	2.03	0.41
4:3:1544:G:C2	4:3:1545:A:N7	2.88	0.41
4:3:1669:A:H2'	4:3:1670:U:O4'	2.19	0.41
4:3:2460:C:N4	4:3:2512:U:O4	2.52	0.41
4:3:2639:G:H2'	4:3:2640:A:C8	2.55	0.41
4:3:2828:C:H2'	4:3:2829:G:O4'	2.20	0.41
5:4:8:C:H2'	5:4:9:C:O4'	2.19	0.41
12:c:52:ILE:HG12	12:c:88:GLY:HA2	2.02	0.41
23:o:49:THR:H	23:o:68:LYS:HZ2	1.68	0.41
24:p:43:LYS:HG3	25:q:71:ILE:HD13	2.01	0.41
25:q:19:THR:HG22	25:q:93:LYS:HD2	2.02	0.41
26:r:39:THR:OG1	26:r:41:LYS:HG2	2.20	0.41
4:3:201:A:H2	4:3:2442:A:H62	1.68	0.41
4:3:217:A:H2	4:3:221:A:H4'	1.84	0.41
4:3:225:A:N3	4:3:237:A:H1'	2.34	0.41
4:3:941:C:C2	4:3:942:A:C8	3.08	0.41
4:3:1282:G:N2	24:p:32:LYS:HB3	2.36	0.41
4:3:1297:U:O2'	4:3:1298:A:OP1	2.37	0.41
4:3:1305:G:O6	4:3:1322:A:N6	2.53	0.41
4:3:1475:C:H2'	4:3:1476:C:H6	1.85	0.41
4:3:1622:C:H2'	4:3:1623:U:H6	1.85	0.41
4:3:1910:G:H2'	4:3:1911:G:H8	1.84	0.41
4:3:1947:U:H4'	4:3:1972:C:H41	1.84	0.41
4:3:2504:C:O2'	4:3:2505:A:OP1	2.38	0.41
4:3:2516:G:O2'	4:3:2562:U:O2'	2.27	0.41
4:3:2533:A:H2'	4:3:2534:G:C8	2.54	0.41
4:3:2802:C:H5"	4:3:2806:A:N6	2.35	0.41
7:9:767:MET:HE1	7:9:805:PHE:CE1	2.55	0.41
13:d:98:ALA:O	13:d:101:GLU:HG3	2.20	0.41
17:i:10:GLU:OE1	17:i:48:THR:OG1	2.27	0.41
4:3:158:U:H2'	4:3:159:G:H8	1.84	0.41
4:3:335:G:O2'	4:3:336:C:O5'	2.35	0.41
4:3:379:A:H1'	4:3:381:A:H62	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:937:A:H3'	4:3:938:A:H8	1.85	0.41
4:3:1057:G:O2'	4:3:1059:G:O6	2.29	0.41
4:3:1375:G:C6	4:3:1634:A:C6	3.09	0.41
4:3:1442:G:H2'	4:3:1443:A:O4'	2.20	0.41
4:3:2079:G:H2'	4:3:2080:C:C6	2.55	0.41
4:3:2519:U:H4'	11:b:129:LYS:O	2.20	0.41
4:3:2803:G:H21	4:3:2804:C:H3'	1.84	0.41
11:b:28:VAL:HG13	11:b:190:LEU:HD21	2.02	0.41
15:f:93:ILE:HG22	15:f:94:THR:H	1.84	0.41
25:q:47:ALA:HB3	25:q:48:PRO:HD3	2.03	0.41
1:0:18:PHE:O	1:0:22:MET:N	2.53	0.41
2:1:3:VAL:HG13	2:1:59:ILE:HG23	2.01	0.41
4:3:225:A:N1	4:3:269:A:O2'	2.53	0.41
4:3:500:U:H3'	4:3:501:G:N7	2.35	0.41
4:3:525:A:C6	4:3:1312:A:N1	2.88	0.41
4:3:666:G:H22	4:3:668:A:H3'	1.83	0.41
4:3:708:C:H4'	12:c:76:GLN:HE22	1.84	0.41
4:3:724:A:H2	4:3:814:U:H4'	1.85	0.41
4:3:895:G:H4'	4:3:896:U:H5'	2.02	0.41
4:3:1306:G:H5'	21:m:21:GLN:NE2	2.29	0.41
4:3:1444:C:O2'	4:3:1445:U:OP2	2.39	0.41
4:3:1600:A:H8	4:3:1600:A:OP1	2.04	0.41
4:3:1856:G:H2'	4:3:1857:G:H8	1.85	0.41
4:3:1953:U:H2'	4:3:1954:C:C6	2.56	0.41
4:3:2177:G:H21	6:8:56:U:C5'	2.31	0.41
4:3:2506:C:H4'	4:3:2507:C:OP1	2.21	0.41
4:3:2651:G:C5	4:3:2652:U:C4	3.09	0.41
4:3:2652:U:H2'	4:3:2653:G:N9	2.35	0.41
4:3:2726:G:H4'	23:o:100:TYR:CG	2.56	0.41
4:3:2739:C:H5"	11:b:178:ASN:HD22	1.85	0.41
4:3:2814:A:H5"	11:b:64:LYS:HG2	2.01	0.41
5:4:103:C:H2'	5:4:104:C:C6	2.56	0.41
9:B:19:GLU:HB3	9:C:2:LYS:HD3	2.02	0.41
10:a:148:HIS:CD2	10:a:203:VAL:HG22	2.55	0.41
17:i:18:TRP:O	17:i:141:THR:N	2.54	0.41
19:k:77:TRP:CE3	19:k:111:PRO:HB2	2.55	0.41
22:n:38:HIS:CE1	22:n:56:SER:HB2	2.52	0.41
4:3:77:G:HO2'	31:w:49:ARG:NH2	2.19	0.41
4:3:220:A:C8	4:3:467:U:N3	2.89	0.41
4:3:246:G:H22	4:3:259:A:P	2.44	0.41
4:3:573:A:H2'	4:3:574:G:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:615:G:H2'	4:3:616:G:H8	1.85	0.41
4:3:759:U:C2'	4:3:760:G:H5'	2.51	0.41
4:3:779:C:H2'	4:3:780:G:C8	2.56	0.41
4:3:1065:G:C6	4:3:1160:G:N2	2.88	0.41
4:3:1166:G:H1	4:3:2046:G:H21	1.67	0.41
4:3:1186:A:H2'	4:3:1187:C:C6	2.56	0.41
4:3:1227:C:C2	4:3:1228:G:C8	3.08	0.41
4:3:1278:G:C6	24:p:2:ARG:HB2	2.55	0.41
4:3:1320:C:O2	21:m:71:ASN:HB3	2.20	0.41
4:3:1521:A:H2'	4:3:1523:C:H41	1.85	0.41
4:3:2750:A:H2'	4:3:2751:C:H6	1.83	0.41
7:9:43:GLY:CA	7:9:46:PHE:CE2	3.00	0.41
7:9:440:PHE:CE1	7:9:456:PHE:CD1	3.09	0.41
15:f:27:ILE:O	15:f:31:PHE:HB2	2.20	0.41
15:f:71:VAL:O	15:f:74:GLN:HG3	2.20	0.41
18:j:25:LEU:HB2	18:j:38:VAL:O	2.20	0.41
22:n:34:LYS:HA	22:n:39:ILE:HG13	2.02	0.41
22:n:108:ALA:O	22:n:111:GLU:HG2	2.20	0.41
23:o:92:ARG:HB3	23:o:115:LYS:HD2	2.01	0.41
28:t:31:ARG:NE	28:t:33:GLN:HG3	2.36	0.41
1:0:9:LYS:HE2	4:3:1338:G:OP1	2.21	0.41
4:3:385:U:H2'	4:3:386:U:C6	2.56	0.41
4:3:501:G:H21	4:3:719:G:H4'	1.85	0.41
4:3:518:A:H1'	4:3:541:G:C6	2.56	0.41
4:3:556:U:C2	4:3:557:G:C8	3.09	0.41
4:3:642:A:OP2	4:3:655:G:N2	2.51	0.41
4:3:676:U:C4	4:3:677:U:O4	2.73	0.41
4:3:816:A:H5"	10:a:228:VAL:HG23	2.03	0.41
4:3:874:U:H3	4:3:975:G:H1	1.68	0.41
4:3:884:A:H2'	4:3:885:A:C8	2.55	0.41
4:3:1263:G:H2'	4:3:1264:U:H6	1.85	0.41
4:3:1409:G:H2'	4:3:1410:A:C8	2.55	0.41
4:3:1634:A:H2'	4:3:1635:G:C8	2.56	0.41
4:3:2029:U:O2'	4:3:2624:C:O2'	2.37	0.41
4:3:2767:G:H21	14:e:142:GLU:CD	2.28	0.41
12:c:141:LYS:O	12:c:145:GLN:HG2	2.21	0.41
21:m:19:ARG:HA	21:m:22:VAL:HG22	2.02	0.41
31:w:85:ASN:O	31:w:89:GLN:HG2	2.21	0.41
4:3:343:A:H1'	4:3:363:G:N3	2.36	0.41
4:3:554:U:H2'	4:3:555:A:C8	2.54	0.41
4:3:601:U:H2'	4:3:603:G:N7	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:639:G:H2'	4:3:640:U:O4'	2.21	0.41
4:3:1896:A:H1'	4:3:2094:A:H4'	2.02	0.41
4:3:2147:G:C2	4:3:2148:U:C4	3.09	0.41
4:3:2397:G:H5"	4:3:2398:U:H5'	2.03	0.41
5:4:34:U:H2'	5:4:35:C:C6	2.56	0.41
8:A:157:VAL:HG22	9:D:28:PHE:CD2	2.56	0.41
10:a:3:ILE:HD13	10:a:210:LEU:HB3	2.03	0.41
15:f:33:LYS:HA	15:f:33:LYS:HD3	1.78	0.41
21:m:98:SER:OG	21:m:116:LEU:HD11	2.20	0.41
24:p:1:MET:HE3	24:p:3:ILE:HG13	2.03	0.41
27:s:2:ASP:CG	27:s:4:THR:H	2.28	0.41
31:w:91:LEU:HG	31:w:95:LYS:HE3	2.03	0.41
3:2:19:ARG:HD3	4:3:2763:C:C4	2.55	0.41
4:3:62:G:H1'	4:3:64:U:C4	2.56	0.41
4:3:223:A:H2'	4:3:224:G:C8	2.55	0.41
4:3:225:A:H4'	4:3:226:A:N3	2.36	0.41
4:3:267:A:H1'	4:3:466:A:N3	2.35	0.41
4:3:312:U:H2'	4:3:313:G:C8	2.55	0.41
4:3:908:A:OP2	20:l:5:LYS:HG3	2.21	0.41
4:3:1081:A:C1'	8:A:57:ASN:HD21	2.21	0.41
4:3:1100:U:H2'	4:3:1101:U:C2	2.54	0.41
4:3:1249:A:O3'	4:3:1250:A:H2'	2.20	0.41
4:3:1282:G:H22	24:p:36:GLN:HG3	1.85	0.41
4:3:1467:U:C2	4:3:1468:U:C6	3.09	0.41
4:3:1529:U:H2'	4:3:1530:G:C8	2.56	0.41
4:3:1705:U:H1'	11:b:135:HIS:CE1	2.56	0.41
4:3:1821:G:OP2	4:3:1822:A:H3'	2.21	0.41
4:3:1825:U:C4	10:a:159:GLN:HB3	2.56	0.41
4:3:1849:G:C2'	4:3:1850:C:H5'	2.51	0.41
4:3:1881:C:H2'	4:3:1882:G:O4'	2.21	0.41
4:3:1936:G:H4'	4:3:1937:G:OP1	2.20	0.41
4:3:1992:C:H2'	4:3:1993:U:C6	2.56	0.41
4:3:2038:A:O2'	4:3:2462:G:N2	2.39	0.41
4:3:2160:U:H2'	4:3:2161:G:C8	2.55	0.41
4:3:2352:U:P	34:z:34:LEU:HD22	2.61	0.41
4:3:2359:G:N2	4:3:2373:G:H2'	2.36	0.41
4:3:2480:G:H21	4:3:2486:A:H62	1.68	0.41
4:3:2540:G:N2	4:3:2672:G:O4'	2.51	0.41
4:3:2721:C:H3'	4:3:2722:G:H5"	2.02	0.41
7:9:796:ALA:HA	7:9:923:LEU:CD2	2.51	0.41
10:a:149:ASN:ND2	10:a:158:GLY:HA3	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:a:233:MET:HE3	10:a:233:MET:HB3	1.91	0.41
12:c:39:LEU:O	12:c:43:ALA:N	2.51	0.41
13:d:169:LEU:O	13:d:173:LEU:HG	2.21	0.41
18:j:102:VAL:O	18:j:122:VAL:N	2.45	0.41
19:k:91:ASP:O	19:k:92:LYS:HG2	2.20	0.41
19:k:101:LYS:HD3	19:k:101:LYS:HA	1.81	0.41
19:k:119:LYS:HE2	19:k:121:GLU:HG2	2.01	0.41
20:l:28:ALA:HA	20:l:134:ARG:CZ	2.51	0.41
21:m:63:VAL:HG12	21:m:67:LEU:HD11	2.01	0.41
22:n:7:GLN:O	22:n:7:GLN:NE2	2.52	0.41
27:s:56:ASN:HB2	27:s:82:VAL:CG1	2.51	0.41
31:w:33:LEU:HD11	31:w:44:ILE:HG13	2.03	0.41
1:0:36:LYS:HD3	4:3:185:U:C4	2.56	0.41
3:2:36:GLN:OE1	4:3:1159:C:O2'	2.24	0.41
4:3:237:A:N6	4:3:268:C:O2'	2.54	0.41
4:3:710:A:N3	4:3:2451:C:O2'	2.47	0.41
4:3:931:G:H2'	4:3:932:U:O4'	2.20	0.41
4:3:1006:U:H5'	4:3:1024:A:H61	1.86	0.41
4:3:1191:A:P	24:p:54:ARG:HH21	2.44	0.41
4:3:1284:A:OP2	4:3:1286:G:H5"	2.21	0.41
4:3:1481:U:H1'	4:3:1482:U:H3'	2.03	0.41
4:3:1781:C:H1'	10:a:13:GLY:HA3	2.03	0.41
4:3:1941:C:H5'	4:3:1981:U:H4'	2.03	0.41
4:3:2094:A:H2'	4:3:2095:A:C8	2.56	0.41
4:3:2223:C:H2'	4:3:2224:A:H8	1.85	0.41
4:3:2244:U:H2'	4:3:2245:G:O4'	2.20	0.41
4:3:2274:A:H5'	4:3:2275:A:C4	2.56	0.41
4:3:2352:U:H2'	34:z:34:LEU:HD13	2.02	0.41
4:3:2436:G:H21	19:k:61:ARG:NH2	2.19	0.41
4:3:2675:C:H1'	14:e:112:TYR:CD2	2.56	0.41
4:3:2685:A:H2'	4:3:2686:C:C6	2.56	0.41
4:3:2792:C:H2'	4:3:2793:U:C6	2.56	0.41
5:4:89:A:N3	5:4:90:G:C8	2.89	0.41
8:A:36:GLU:HG2	8:A:99:VAL:HG12	2.03	0.41
10:a:41:LEU:HD23	10:a:41:LEU:HA	1.95	0.41
10:a:110:ILE:H	10:a:110:ILE:HD12	1.86	0.41
17:i:97:LYS:HE3	17:i:97:LYS:HB3	1.90	0.41
20:l:1:MET:SD	20:l:44:ALA:HB3	2.61	0.41
25:q:72:LYS:HA	25:q:72:LYS:HD2	1.85	0.41
2:1:34:THR:HG22	2:1:36:LYS:H	1.85	0.40
3:2:8:LYS:HD2	4:3:1066:G:H4'	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:669:A:OP1	19:k:74:LYS:HG3	2.21	0.40
4:3:682:A:N3	4:3:682:A:H2'	2.36	0.40
4:3:766:C:H2'	4:3:767:C:C6	2.56	0.40
4:3:1252:C:H2'	4:3:1253:G:O4'	2.21	0.40
4:3:1262:G:N3	4:3:1263:G:C8	2.89	0.40
4:3:1493:A:N7	4:3:1579:G:H2'	2.35	0.40
4:3:1922:U:H3'	4:3:1923:A:C8	2.56	0.40
4:3:1943:A:OP2	4:3:1969:C:N4	2.54	0.40
4:3:2116:U:O4	4:3:2187:C:N4	2.54	0.40
4:3:2272:C:H2'	4:3:2273:U:O4'	2.22	0.40
13:d:38:MET:HG3	13:d:152:PHE:HA	2.03	0.40
14:e:4:ILE:HG12	14:e:7:ARG:NE	2.35	0.40
19:k:12:ALA:O	19:k:13:ARG:HG2	2.21	0.40
21:m:49:ILE:O	21:m:53:LYS:HG3	2.21	0.40
23:o:23:PRO:HG3	23:o:88:ILE:HD12	2.03	0.40
26:r:3:ALA:HB3	26:r:107:LEU:HB2	2.03	0.40
29:u:64:ASN:HA	29:u:76:LEU:HD23	2.03	0.40
34:z:19:TYR:OH	34:z:37:PHE:O	2.26	0.40
3:2:27:CYS:HB3	3:2:32:HIS:HB2	2.03	0.40
4:3:21:U:H2'	4:3:22:U:C6	2.56	0.40
4:3:77:G:H22	4:3:112:A:H61	1.69	0.40
4:3:427:A:H4'	4:3:448:A:O3'	2.22	0.40
4:3:598:G:H2'	4:3:599:U:C6	2.56	0.40
4:3:640:U:H4'	12:c:102:LYS:NZ	2.37	0.40
4:3:889:G:H2'	4:3:890:U:H6	1.86	0.40
4:3:895:G:N3	4:3:953:G:C2	2.90	0.40
4:3:1054:U:C2	4:3:1179:G:N1	2.89	0.40
4:3:1084:C:H41	4:3:1145:G:N2	2.17	0.40
4:3:1409:G:H2'	4:3:1410:A:H8	1.87	0.40
4:3:1613:A:H3'	4:3:1614:G:C8	2.56	0.40
4:3:1744:U:H4'	4:3:2862:U:O4	2.21	0.40
4:3:1745:A:H2'	4:3:1746:U:C6	2.57	0.40
4:3:1799:A:H2'	4:3:1800:C:H6	1.86	0.40
4:3:2062:C:O2	4:3:2580:A:N6	2.55	0.40
4:3:2382:A:H2'	4:3:2383:G:H8	1.85	0.40
4:3:2470:C:H1'	4:3:2499:U:H3	1.86	0.40
4:3:2744:A:H2'	4:3:2745:G:C8	2.55	0.40
4:3:2795:C:O2'	4:3:2814:A:H4'	2.21	0.40
4:3:2806:A:H2'	4:3:2807:G:O4'	2.21	0.40
7:9:526:ILE:HG23	7:9:886:LEU:HD22	2.02	0.40
10:a:56:ARG:HE	10:a:56:ARG:HB3	1.73	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:a:182:LEU:HD12	10:a:192:PHE:CD1	2.56	0.40
18:j:19:VAL:HG22	18:j:43:VAL:HG23	2.03	0.40
20:l:116:LYS:HE3	20:l:120:ARG:HH22	1.87	0.40
23:o:62:GLU:HB3	23:o:81:ILE:HB	2.03	0.40
30:v:53:ARG:O	30:v:57:THR:HG23	2.20	0.40
2:1:10:ARG:HG2	19:k:64:LYS:HA	2.03	0.40
4:3:235:U:H2'	4:3:236:G:O4'	2.22	0.40
4:3:428:U:C2	4:3:429:U:C5	3.09	0.40
4:3:675:U:H2'	4:3:676:U:H5	1.87	0.40
4:3:832:C:H2'	4:3:833:C:H6	1.86	0.40
4:3:989:G:H22	4:3:1000:U:H3	1.68	0.40
4:3:1111:C:O2'	16:h:88:ASN:HA	2.22	0.40
4:3:1422:U:H5"	4:3:1637:A:H4'	2.04	0.40
4:3:1552:C:H2'	4:3:1553:G:C8	2.56	0.40
4:3:1683:G:H2'	4:3:1684:A:C8	2.56	0.40
4:3:1762:A:N1	4:3:2724:U:H1'	2.36	0.40
4:3:1949:C:H2'	4:3:1950:U:C5	2.56	0.40
4:3:2130:A:H2'	4:3:2131:G:C8	2.57	0.40
4:3:2273:U:O2'	4:3:2282:A:N6	2.54	0.40
4:3:2288:G:O2'	4:3:2396:A:N1	2.53	0.40
4:3:2400:A:N3	19:k:61:ARG:HG2	2.36	0.40
4:3:2407:G:C6	4:3:2426:A:N1	2.90	0.40
4:3:2770:U:H2'	4:3:2771:G:O4'	2.21	0.40
13:d:14:LYS:HB2	13:d:14:LYS:HE2	1.92	0.40
13:d:91:LEU:HB2	13:d:95:ARG:HG3	2.03	0.40
14:e:101:VAL:HG23	14:e:106:LEU:HD22	2.02	0.40
25:q:4:ILE:HA	25:q:12:TYR:O	2.22	0.40
3:2:21:GLN:NE2	4:3:2765:A:OP2	2.54	0.40
4:3:140:G:N2	4:3:142:A:H3'	2.37	0.40
4:3:437:A:H2'	4:3:438:A:O4'	2.21	0.40
4:3:477:U:H2'	4:3:478:G:C8	2.57	0.40
4:3:660:U:H2'	4:3:661:G:C8	2.57	0.40
4:3:731:A:H2'	4:3:732:G:H8	1.87	0.40
4:3:739:G:N2	4:3:761:G:N3	2.69	0.40
4:3:1446:G:H1'	4:3:1614:G:O6	2.22	0.40
4:3:1510:A:N6	4:3:1530:G:O6	2.53	0.40
4:3:1588:A:O2'	4:3:1589:A:P	2.79	0.40
4:3:1702:A:H2	4:3:1709:C:H41	1.69	0.40
4:3:1724:A:H3'	4:3:1725:G:H8	1.86	0.40
4:3:1768:G:H2'	4:3:1769:A:N9	2.36	0.40
4:3:2098:U:H3'	4:3:2099:U:H2'	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2110:U:H2'	4:3:2194:G:H21	1.86	0.40
4:3:2190:G:C6	4:3:2191:G:C6	3.09	0.40
4:3:2361:G:N2	29:u:48:GLY:O	2.34	0.40
4:3:2503:G:H5"	20:l:82:ARG:HD3	2.03	0.40
4:3:2670:A:H3'	4:3:2671:G:C8	2.54	0.40
4:3:2820:G:H2'	4:3:2821:U:H6	1.86	0.40
10:a:5:LYS:HB3	10:a:5:LYS:HE2	1.85	0.40
10:a:37:LEU:HA	10:a:68:ILE:HD12	2.03	0.40
10:a:47:ARG:HD2	10:a:51:GLY:O	2.21	0.40
12:c:161:VAL:HG22	12:c:164:LEU:H	1.86	0.40
13:d:48:LYS:O	13:d:51:GLU:HG2	2.21	0.40
14:e:56:THR:HA	14:e:68:HIS:HE1	1.86	0.40
20:l:34:LEU:HB2	20:l:118:LEU:HG	2.03	0.40
20:l:124:LYS:HA	20:l:124:LYS:HD3	1.85	0.40
24:p:77:VAL:O	24:p:81:LEU:HG	2.22	0.40
4:3:41:C:H2'	4:3:42:U:C6	2.57	0.40
4:3:216:C:H2'	4:3:217:A:O4'	2.21	0.40
4:3:275:A:H3'	4:3:276:A:H5"	2.03	0.40
4:3:603:G:N2	4:3:2037:A:O4'	2.55	0.40
4:3:827:G:H4'	4:3:828:A:O4'	2.22	0.40
4:3:1091:G:O2'	4:3:1138:A:N6	2.54	0.40
4:3:1361:U:H2'	4:3:1362:C:C6	2.57	0.40
4:3:1682:C:N4	4:3:2017:G:O6	2.54	0.40
4:3:1806:G:O2'	10:a:190:ARG:NH1	2.54	0.40
4:3:2034:G:H2'	4:3:2035:U:O4'	2.21	0.40
4:3:2659:U:H2'	4:3:2660:C:C6	2.56	0.40
4:3:2681:G:H2'	4:3:2681:G:N3	2.36	0.40
5:4:99:A:H2'	5:4:100:G:O4'	2.22	0.40
12:c:145:GLN:O	12:c:148:LYS:HG3	2.21	0.40
17:i:10:GLU:H	17:i:48:THR:HG21	1.87	0.40
20:l:21:ALA:O	20:l:25:SER:OG	2.39	0.40
23:o:101:ILE:O	23:o:101:ILE:HG13	2.21	0.40
25:q:72:LYS:HB2	25:q:81:LYS:HB2	2.03	0.40
26:r:130:GLU:O	26:r:134:LYS:CB	2.69	0.40
29:u:82:LYS:HD2	29:u:82:LYS:HA	1.77	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	45/47 (96%)	45 (100%)	0	0	100	100
2	1	57/59 (97%)	54 (95%)	3 (5%)	0	100	100
3	2	35/37 (95%)	35 (100%)	0	0	100	100
7	9	895/944 (95%)	849 (95%)	37 (4%)	9 (1%)	12	48
8	A	159/161 (99%)	154 (97%)	4 (2%)	1 (1%)	21	59
9	B	27/29 (93%)	27 (100%)	0	0	100	100
9	C	27/29 (93%)	27 (100%)	0	0	100	100
9	D	27/29 (93%)	27 (100%)	0	0	100	100
9	E	27/29 (93%)	27 (100%)	0	0	100	100
10	a	283/285 (99%)	260 (92%)	23 (8%)	0	100	100
11	b	227/229 (99%)	213 (94%)	14 (6%)	0	100	100
12	c	208/210 (99%)	199 (96%)	9 (4%)	0	100	100
13	d	173/175 (99%)	161 (93%)	12 (7%)	0	100	100
14	e	174/176 (99%)	164 (94%)	10 (6%)	0	100	100
15	f	143/145 (99%)	130 (91%)	13 (9%)	0	100	100
16	h	126/128 (98%)	121 (96%)	5 (4%)	0	100	100
17	i	142/144 (99%)	130 (92%)	12 (8%)	0	100	100
18	j	120/122 (98%)	117 (98%)	3 (2%)	0	100	100
19	k	146/148 (99%)	137 (94%)	9 (6%)	0	100	100
20	l	134/136 (98%)	122 (91%)	12 (9%)	0	100	100
21	m	117/119 (98%)	112 (96%)	5 (4%)	0	100	100
22	n	108/116 (93%)	101 (94%)	7 (6%)	0	100	100
23	o	113/115 (98%)	104 (92%)	9 (8%)	0	100	100
24	p	112/114 (98%)	109 (97%)	3 (3%)	0	100	100
25	q	97/99 (98%)	83 (86%)	14 (14%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
26	r	137/139 (99%)	128 (93%)	9 (7%)	0	100	100
27	s	90/92 (98%)	85 (94%)	5 (6%)	0	100	100
28	t	109/111 (98%)	102 (94%)	7 (6%)	0	100	100
29	u	84/86 (98%)	77 (92%)	7 (8%)	0	100	100
30	v	61/63 (97%)	58 (95%)	3 (5%)	0	100	100
31	w	96/108 (89%)	88 (92%)	8 (8%)	0	100	100
32	x	42/44 (96%)	38 (90%)	4 (10%)	0	100	100
33	y	54/56 (96%)	50 (93%)	4 (7%)	0	100	100
34	z	48/50 (96%)	45 (94%)	3 (6%)	0	100	100
All	All	4443/4574 (97%)	4179 (94%)	254 (6%)	10 (0%)	44	78

All (10) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
7	9	398	LEU
7	9	43	GLY
7	9	265	GLY
7	9	376	LYS
7	9	400	SER
7	9	504	PRO
8	A	106	MET
7	9	81	ASN
7	9	378	ASN
7	9	259	GLY

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	40/40 (100%)	40 (100%)	0	100	100
2	1	51/51 (100%)	51 (100%)	0	100	100
3	2	35/35 (100%)	35 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
7	9	766/808 (95%)	741 (97%)	25 (3%)	33 55
8	A	129/129 (100%)	129 (100%)	0	100 100
9	B	26/26 (100%)	26 (100%)	0	100 100
9	C	26/26 (100%)	26 (100%)	0	100 100
9	D	26/26 (100%)	26 (100%)	0	100 100
9	E	26/26 (100%)	26 (100%)	0	100 100
10	a	241/241 (100%)	241 (100%)	0	100 100
11	b	186/186 (100%)	186 (100%)	0	100 100
12	c	182/182 (100%)	182 (100%)	0	100 100
13	d	150/150 (100%)	150 (100%)	0	100 100
14	e	153/153 (100%)	153 (100%)	0	100 100
15	f	123/131 (94%)	123 (100%)	0	100 100
16	h	102/102 (100%)	102 (100%)	0	100 100
17	i	126/126 (100%)	126 (100%)	0	100 100
18	j	103/103 (100%)	103 (100%)	0	100 100
19	k	123/123 (100%)	123 (100%)	0	100 100
20	l	113/113 (100%)	113 (100%)	0	100 100
21	m	105/105 (100%)	105 (100%)	0	100 100
22	n	96/99 (97%)	96 (100%)	0	100 100
23	o	101/101 (100%)	101 (100%)	0	100 100
24	p	100/100 (100%)	100 (100%)	0	100 100
25	q	90/90 (100%)	90 (100%)	0	100 100
26	r	116/116 (100%)	116 (100%)	0	100 100
27	s	82/82 (100%)	82 (100%)	0	100 100
28	t	96/96 (100%)	96 (100%)	0	100 100
29	u	69/69 (100%)	69 (100%)	0	100 100
30	v	58/58 (100%)	58 (100%)	0	100 100
31	w	87/95 (92%)	87 (100%)	0	100 100
32	x	41/41 (100%)	41 (100%)	0	100 100
33	y	48/48 (100%)	45 (94%)	3 (6%)	16 37
34	z	47/47 (100%)	47 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	3863/3924 (98%)	3835 (99%)	28 (1%)	73 81

All (28) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
7	9	3	LEU
7	9	13	LEU
7	9	33	SER
7	9	206	LEU
7	9	218	SER
7	9	250	THR
7	9	337	LEU
7	9	375	THR
7	9	377	ASP
7	9	385	ASP
7	9	402	ASP
7	9	500	LEU
7	9	505	LEU
7	9	508	THR
7	9	509	LEU
7	9	673	HIS
7	9	733	THR
7	9	752	LEU
7	9	797	LEU
7	9	810	LEU
7	9	821	THR
7	9	824	LEU
7	9	904	LEU
7	9	934	TRP
7	9	936	SER
33	y	47	MET
33	y	51	LEU
33	y	52	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (46) such sidechains are listed below:

Mol	Chain	Res	Type
2	1	18	GLN
2	1	28	HIS
3	2	34	GLN
7	9	215	ASN

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Mol	Chain	Res	Type
7	9	453	ASN
7	9	641	GLN
7	9	642	GLN
7	9	658	ASN
7	9	819	GLN
7	9	836	GLN
7	9	868	ASN
7	9	894	ASN
7	9	932	ASN
8	A	16	HIS
8	A	56	ASN
8	A	57	ASN
10	a	91	ASN
10	a	149	ASN
11	b	34	ASN
11	b	80	HIS
11	b	95	GLN
12	c	81	ASN
12	c	130	GLN
14	e	6	ASN
14	e	21	GLN
14	e	24	HIS
14	e	107	ASN
15	f	78	HIS
15	f	100	GLN
17	i	17	GLN
17	i	43	ASN
18	j	76	HIS
22	n	38	HIS
22	n	42	GLN
22	n	49	ASN
23	o	80	GLN
26	r	94	ASN
26	r	102	ASN
26	r	112	ASN
26	r	115	GLN
26	r	132	GLN
28	t	17	ASN
29	u	54	GLN
29	u	84	GLN
30	v	34	GLN
31	w	89	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
4	3	2875/2878 (99%)	844 (29%)	34 (1%)
5	4	103/105 (98%)	42 (40%)	3 (2%)
6	8	49/51 (96%)	22 (44%)	1 (2%)
All	All	3027/3034 (99%)	908 (29%)	38 (1%)

All (908) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
4	3	12	A
4	3	14	U
4	3	15	A
4	3	20	C
4	3	27	U
4	3	28	G
4	3	29	G
4	3	30	A
4	3	36	U
4	3	37	G
4	3	41	C
4	3	48	G
4	3	52	U
4	3	53	G
4	3	56	G
4	3	61	U
4	3	64	U
4	3	65	A
4	3	73	A
4	3	75	A
4	3	76	A
4	3	77	G
4	3	85	U
4	3	90	G
4	3	94	A
4	3	97	A
4	3	101	C
4	3	102	A
4	3	103	G
4	3	115	U
4	3	119	A
4	3	120	A
4	3	121	U

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Mol	Chain	Res	Type
4	3	122	G
4	3	126	C
4	3	132	G
4	3	136	G
4	3	139	G
4	3	147	C
4	3	152	A
4	3	163	A
4	3	165	U
4	3	170	A
4	3	179	A
4	3	184	A
4	3	198	G
4	3	200	A
4	3	204	U
4	3	208	A
4	3	210	U
4	3	212	G
4	3	218	G
4	3	219	G
4	3	220	A
4	3	226	A
4	3	228	A
4	3	230	G
4	3	232	A
4	3	233	U
4	3	234	G
4	3	237	A
4	3	245	U
4	3	247	U
4	3	251	G
4	3	252	G
4	3	256	G
4	3	261	A
4	3	265	G
4	3	266	A
4	3	269	A
4	3	270	G
4	3	276	A
4	3	283	A
4	3	284	U
4	3	287	G

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Mol	Chain	Res	Type
4	3	288	A
4	3	292	G
4	3	293	G
4	3	294	G
4	3	295	U
4	3	296	U
4	3	297	G
4	3	298	U
4	3	299	A
4	3	309	A
4	3	310	U
4	3	314	G
4	3	315	A
4	3	316	C
4	3	317	U
4	3	319	G
4	3	320	A
4	3	335	G
4	3	336	C
4	3	345	A
4	3	351	G
4	3	355	A
4	3	357	A
4	3	363	G
4	3	364	A
4	3	366	A
4	3	369	C
4	3	377	U
4	3	396	A
4	3	397	G
4	3	399	G
4	3	400	A
4	3	401	G
4	3	402	A
4	3	403	U
4	3	404	C
4	3	405	C
4	3	408	G
4	3	409	A
4	3	410	G
4	3	411	U
4	3	418	G

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Mol	Chain	Res	Type
4	3	422	A
4	3	423	C
4	3	424	G
4	3	426	U
4	3	432	G
4	3	437	A
4	3	439	U
4	3	440	C
4	3	441	U
4	3	447	G
4	3	448	A
4	3	460	G
4	3	464	A
4	3	465	A
4	3	466	A
4	3	471	A
4	3	472	A
4	3	473	U
4	3	478	G
4	3	482	G
4	3	484	U
4	3	487	C
4	3	490	A
4	3	495	U
4	3	500	U
4	3	501	G
4	3	502	A
4	3	503	G
4	3	506	A
4	3	509	G
4	3	511	U
4	3	514	A
4	3	515	A
4	3	517	G
4	3	521	C
4	3	531	G
4	3	539	U
4	3	543	U
4	3	544	U
4	3	548	A
4	3	554	U
4	3	558	C

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Mol	Chain	Res	Type
4	3	563	A
4	3	565	C
4	3	566	G
4	3	567	U
4	3	568	G
4	3	583	U
4	3	584	G
4	3	589	A
4	3	595	U
4	3	596	G
4	3	598	G
4	3	599	U
4	3	601	U
4	3	605	A
4	3	606	G
4	3	607	U
4	3	608	A
4	3	616	G
4	3	633	G
4	3	636	U
4	3	637	U
4	3	648	G
4	3	650	G
4	3	656	G
4	3	657	A
4	3	663	A
4	3	673	A
4	3	679	A
4	3	680	A
4	3	681	A
4	3	682	A
4	3	683	G
4	3	689	U
4	3	691	G
4	3	693	U
4	3	701	A
4	3	705	A
4	3	706	C
4	3	707	C
4	3	710	A
4	3	712	A
4	3	719	G

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Mol	Chain	Res	Type
4	3	720	A
4	3	721	G
4	3	722	C
4	3	723	U
4	3	725	G
4	3	734	A
4	3	738	U
4	3	739	G
4	3	740	A
4	3	752	C
4	3	754	U
4	3	760	G
4	3	761	G
4	3	763	G
4	3	764	G
4	3	765	A
4	3	774	A
4	3	775	C
4	3	777	C
4	3	782	U
4	3	787	C
4	3	792	G
4	3	797	U
4	3	799	A
4	3	810	G
4	3	811	G
4	3	812	G
4	3	816	A
4	3	817	A
4	3	818	A
4	3	819	U
4	3	820	U
4	3	825	U
4	3	827	G
4	3	828	A
4	3	837	A
4	3	840	G
4	3	841	C
4	3	842	U
4	3	846	U
4	3	847	C
4	3	854	A

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Mol	Chain	Res	Type
4	3	862	U
4	3	864	A
4	3	865	A
4	3	873	G
4	3	883	A
4	3	885	A
4	3	887	A
4	3	889	G
4	3	896	U
4	3	902	U
4	3	903	A
4	3	904	C
4	3	906	G
4	3	914	G
4	3	916	U
4	3	917	G
4	3	932	U
4	3	934	C
4	3	936	G
4	3	947	A
4	3	949	C
4	3	951	C
4	3	952	U
4	3	953	G
4	3	968	U
4	3	971	U
4	3	977	A
4	3	981	A
4	3	982	G
4	3	989	G
4	3	991	G
4	3	993	A
4	3	994	U
4	3	997	G
4	3	1001	C
4	3	1008	A
4	3	1009	A
4	3	1010	G
4	3	1016	A
4	3	1017	A
4	3	1018	G
4	3	1019	A

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Mol	Chain	Res	Type
4	3	1021	C
4	3	1026	A
4	3	1027	U
4	3	1031	U
4	3	1032	A
4	3	1035	U
4	3	1041	C
4	3	1045	A
4	3	1049	U
4	3	1055	A
4	3	1057	G
4	3	1061	A
4	3	1067	A
4	3	1068	U
4	3	1069	G
4	3	1075	G
4	3	1081	A
4	3	1082	A
4	3	1083	A
4	3	1092	A
4	3	1095	U
4	3	1096	U
4	3	1100	U
4	3	1101	U
4	3	1102	A
4	3	1103	G
4	3	1104	A
4	3	1105	A
4	3	1106	G
4	3	1107	C
4	3	1109	G
4	3	1112	A
4	3	1119	A
4	3	1122	G
4	3	1123	A
4	3	1124	G
4	3	1125	U
4	3	1130	A
4	3	1132	C
4	3	1139	C
4	3	1144	C
4	3	1145	G

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Mol	Chain	Res	Type
4	3	1146	A
4	3	1147	G
4	3	1151	U
4	3	1154	U
4	3	1155	G
4	3	1162	A
4	3	1165	U
4	3	1167	U
4	3	1168	A
4	3	1170	C
4	3	1171	G
4	3	1174	G
4	3	1176	U
4	3	1177	A
4	3	1178	A
4	3	1179	G
4	3	1186	A
4	3	1189	G
4	3	1191	A
4	3	1195	A
4	3	1201	A
4	3	1207	U
4	3	1208	A
4	3	1209	U
4	3	1210	A
4	3	1212	C
4	3	1213	U
4	3	1215	G
4	3	1217	G
4	3	1226	G
4	3	1227	C
4	3	1229	U
4	3	1233	A
4	3	1235	U
4	3	1236	G
4	3	1240	U
4	3	1250	A
4	3	1251	G
4	3	1253	G
4	3	1255	G
4	3	1256	A
4	3	1257	G

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Mol	Chain	Res	Type
4	3	1265	G
4	3	1266	G
4	3	1268	U
4	3	1274	A
4	3	1277	A
4	3	1278	G
4	3	1279	U
4	3	1281	A
4	3	1283	A
4	3	1286	G
4	3	1292	A
4	3	1295	A
4	3	1296	G
4	3	1297	U
4	3	1298	A
4	3	1301	G
4	3	1303	U
4	3	1314	A
4	3	1317	C
4	3	1322	A
4	3	1325	C
4	3	1328	A
4	3	1329	U
4	3	1330	U
4	3	1334	U
4	3	1340	U
4	3	1342	C
4	3	1349	C
4	3	1351	G
4	3	1353	G
4	3	1356	G
4	3	1360	U
4	3	1370	A
4	3	1371	G
4	3	1372	U
4	3	1373	C
4	3	1378	C
4	3	1393	A
4	3	1403	G
4	3	1406	A
4	3	1407	U
4	3	1408	G

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Mol	Chain	Res	Type
4	3	1413	A
4	3	1420	A
4	3	1422	U
4	3	1423	A
4	3	1424	U
4	3	1428	U
4	3	1432	C
4	3	1437	A
4	3	1444	C
4	3	1447	A
4	3	1448	U
4	3	1449	G
4	3	1456	C
4	3	1457	A
4	3	1463	G
4	3	1466	U
4	3	1467	U
4	3	1479	A
4	3	1480	A
4	3	1481	U
4	3	1482	U
4	3	1483	G
4	3	1487	U
4	3	1495	A
4	3	1502	A
4	3	1503	A
4	3	1506	U
4	3	1507	G
4	3	1508	G
4	3	1510	A
4	3	1515	A
4	3	1518	C
4	3	1520	A
4	3	1528	G
4	3	1532	A
4	3	1534	A
4	3	1535	A
4	3	1541	A
4	3	1542	G
4	3	1546	U
4	3	1548	A
4	3	1550	G

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Mol	Chain	Res	Type
4	3	1555	G
4	3	1557	G
4	3	1559	A
4	3	1571	G
4	3	1582	G
4	3	1584	U
4	3	1585	A
4	3	1586	U
4	3	1587	U
4	3	1588	A
4	3	1589	A
4	3	1593	U
4	3	1594	G
4	3	1600	A
4	3	1603	A
4	3	1612	U
4	3	1615	G
4	3	1618	U
4	3	1619	A
4	3	1622	C
4	3	1632	C
4	3	1636	U
4	3	1641	A
4	3	1642	G
4	3	1643	A
4	3	1644	A
4	3	1648	A
4	3	1649	C
4	3	1650	A
4	3	1651	C
4	3	1656	A
4	3	1661	A
4	3	1668	G
4	3	1677	G
4	3	1679	U
4	3	1681	G
4	3	1682	C
4	3	1683	G
4	3	1685	G
4	3	1692	A
4	3	1694	A
4	3	1697	C

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Mol	Chain	Res	Type
4	3	1698	A
4	3	1699	A
4	3	1701	G
4	3	1702	A
4	3	1704	C
4	3	1706	C
4	3	1707	U
4	3	1708	G
4	3	1709	C
4	3	1710	A
4	3	1714	U
4	3	1715	A
4	3	1716	A
4	3	1727	U
4	3	1728	A
4	3	1732	A
4	3	1735	A
4	3	1747	G
4	3	1748	U
4	3	1751	A
4	3	1755	A
4	3	1758	C
4	3	1761	C
4	3	1762	A
4	3	1763	G
4	3	1764	U
4	3	1766	A
4	3	1768	G
4	3	1769	A
4	3	1770	A
4	3	1771	C
4	3	1772	G
4	3	1780	A
4	3	1784	U
4	3	1788	A
4	3	1789	C
4	3	1791	A
4	3	1792	A
4	3	1807	C
4	3	1808	C
4	3	1809	A
4	3	1812	C

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Mol	Chain	Res	Type
4	3	1816	A
4	3	1821	G
4	3	1822	A
4	3	1823	U
4	3	1827	U
4	3	1828	A
4	3	1836	A
4	3	1843	C
4	3	1850	C
4	3	1858	U
4	3	1863	G
4	3	1869	G
4	3	1871	U
4	3	1873	A
4	3	1887	U
4	3	1888	U
4	3	1891	A
4	3	1892	A
4	3	1906	G
4	3	1907	A
4	3	1908	A
4	3	1910	G
4	3	1913	G
4	3	1920	A
4	3	1922	U
4	3	1923	A
4	3	1926	A
4	3	1934	A
4	3	1937	G
4	3	1938	U
4	3	1943	A
4	3	1944	A
4	3	1945	A
4	3	1950	U
4	3	1952	G
4	3	1957	G
4	3	1959	A
4	3	1961	A
4	3	1962	U
4	3	1971	G
4	3	1972	C
4	3	1974	U

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Mol	Chain	Res	Type
4	3	1977	A
4	3	1978	U
4	3	1979	G
4	3	1982	G
4	3	1995	G
4	3	1997	C
4	3	1998	U
4	3	1999	G
4	3	2000	U
4	3	2009	U
4	3	2011	G
4	3	2020	A
4	3	2025	C
4	3	2028	G
4	3	2030	A
4	3	2037	A
4	3	2038	A
4	3	2040	A
4	3	2041	C
4	3	2043	C
4	3	2050	G
4	3	2053	G
4	3	2056	A
4	3	2059	G
4	3	2062	C
4	3	2063	G
4	3	2065	A
4	3	2067	A
4	3	2068	G
4	3	2069	A
4	3	2071	C
4	3	2075	U
4	3	2076	G
4	3	2083	U
4	3	2084	A
4	3	2087	G
4	3	2099	U
4	3	2100	G
4	3	2106	G
4	3	2107	A
4	3	2109	A
4	3	2111	U

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Mol	Chain	Res	Type
4	3	2112	A
4	3	2114	C
4	3	2118	U
4	3	2119	A
4	3	2123	A
4	3	2124	A
4	3	2125	U
4	3	2126	A
4	3	2131	G
4	3	2133	A
4	3	2139	C
4	3	2140	G
4	3	2141	A
4	3	2143	G
4	3	2150	C
4	3	2151	G
4	3	2153	U
4	3	2166	U
4	3	2171	A
4	3	2177	G
4	3	2178	A
4	3	2179	A
4	3	2180	U
4	3	2182	C
4	3	2193	U
4	3	2194	G
4	3	2195	U
4	3	2196	G
4	3	2198	G
4	3	2202	U
4	3	2206	A
4	3	2212	U
4	3	2219	U
4	3	2220	A
4	3	2222	C
4	3	2231	A
4	3	2233	A
4	3	2234	C
4	3	2242	G
4	3	2243	G
4	3	2246	G
4	3	2252	U

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Mol	Chain	Res	Type
4	3	2254	G
4	3	2263	G
4	3	2267	G
4	3	2274	A
4	3	2276	A
4	3	2277	A
4	3	2280	U
4	3	2286	A
4	3	2290	G
4	3	2291	U
4	3	2294	A
4	3	2295	A
4	3	2305	C
4	3	2309	A
4	3	2313	U
4	3	2316	G
4	3	2317	A
4	3	2327	U
4	3	2329	G
4	3	2330	A
4	3	2331	G
4	3	2333	G
4	3	2335	A
4	3	2341	G
4	3	2342	U
4	3	2343	A
4	3	2345	G
4	3	2352	U
4	3	2355	C
4	3	2358	U
4	3	2362	A
4	3	2365	U
4	3	2366	A
4	3	2380	U
4	3	2382	A
4	3	2387	U
4	3	2391	G
4	3	2393	C
4	3	2396	A
4	3	2400	A
4	3	2410	C
4	3	2414	U

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Mol	Chain	Res	Type
4	3	2415	A
4	3	2418	G
4	3	2425	C
4	3	2431	U
4	3	2433	A
4	3	2436	G
4	3	2437	G
4	3	2438	A
4	3	2439	U
4	3	2449	U
4	3	2456	A
4	3	2457	U
4	3	2469	A
4	3	2477	A
4	3	2481	U
4	3	2483	C
4	3	2484	A
4	3	2486	A
4	3	2492	G
4	3	2495	A
4	3	2499	U
4	3	2502	G
4	3	2505	A
4	3	2506	C
4	3	2507	C
4	3	2509	C
4	3	2511	A
4	3	2513	G
4	3	2514	U
4	3	2521	A
4	3	2526	A
4	3	2527	U
4	3	2528	C
4	3	2538	A
4	3	2539	A
4	3	2543	G
4	3	2544	G
4	3	2545	U
4	3	2555	U
4	3	2560	U
4	3	2574	A
4	3	2575	G

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Mol	Chain	Res	Type
4	3	2577	G
4	3	2580	A
4	3	2581	C
4	3	2584	G
4	3	2586	G
4	3	2590	G
4	3	2591	G
4	3	2593	U
4	3	2594	C
4	3	2596	A
4	3	2604	U
4	3	2605	G
4	3	2607	G
4	3	2610	A
4	3	2611	G
4	3	2617	U
4	3	2618	C
4	3	2619	C
4	3	2621	U
4	3	2622	A
4	3	2631	G
4	3	2637	A
4	3	2638	G
4	3	2643	A
4	3	2644	U
4	3	2647	A
4	3	2649	G
4	3	2653	G
4	3	2654	U
4	3	2664	U
4	3	2668	A
4	3	2669	G
4	3	2681	G
4	3	2695	U
4	3	2697	C
4	3	2698	U
4	3	2707	A
4	3	2710	G
4	3	2712	C
4	3	2715	C
4	3	2717	G
4	3	2722	G

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Mol	Chain	Res	Type
4	3	2732	A
4	3	2734	C
4	3	2737	G
4	3	2739	C
4	3	2740	U
4	3	2741	A
4	3	2747	U
4	3	2752	G
4	3	2756	A
4	3	2759	G
4	3	2760	C
4	3	2765	A
4	3	2772	A
4	3	2773	A
4	3	2774	A
4	3	2777	A
4	3	2786	A
4	3	2788	U
4	3	2790	A
4	3	2795	C
4	3	2796	C
4	3	2799	U
4	3	2801	U
4	3	2805	A
4	3	2809	A
4	3	2811	G
4	3	2812	U
4	3	2813	A
4	3	2822	C
4	3	2823	A
4	3	2824	A
4	3	2825	A
4	3	2828	C
4	3	2837	U
4	3	2838	G
4	3	2839	A
4	3	2840	U
4	3	2844	U
4	3	2852	G
4	3	2854	A
4	3	2862	U
4	3	2863	G

Continued on next page...

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Mol	Chain	Res	Type
4	3	2865	U
4	3	2866	A
4	3	2871	G
4	3	2872	A
4	3	2876	G
4	3	2883	A
4	3	2884	C
4	3	2888	U
4	3	2890	G
4	3	2897	G
4	3	2898	A
4	3	2899	C
4	3	2900	U
5	4	4	G
5	4	8	C
5	4	10	C
5	4	11	A
5	4	13	G
5	4	14	U
5	4	17	C
5	4	19	G
5	4	23	A
5	4	24	A
5	4	27	A
5	4	28	C
5	4	31	G
5	4	33	U
5	4	35	C
5	4	38	U
5	4	39	U
5	4	40	U
5	4	41	C
5	4	42	G
5	4	46	C
5	4	48	A
5	4	49	G
5	4	51	A
5	4	55	A
5	4	60	C
5	4	65	G
5	4	74	G
5	4	75	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
5	4	76	A
5	4	77	G
5	4	78	C
5	4	79	U
5	4	86	G
5	4	88	G
5	4	89	A
5	4	92	A
5	4	98	A
5	4	99	A
5	4	102	A
5	4	103	C
5	4	108	C
6	8	3	G
6	8	4	U
6	8	9	U
6	8	11	G
6	8	13	U
6	8	17	U
6	8	18	C
6	8	19	G
6	8	20	G
6	8	21	U
6	8	22	A
6	8	24	A
6	8	48	U
6	8	49	C
6	8	50	G
6	8	54	G
6	8	56	U
6	8	57	C
6	8	58	G
6	8	62	C
6	8	72	C
6	8	74	A

All (38) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
4	3	295	U
4	3	315	A
4	3	409	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
4	3	410	G
4	3	425	U
4	3	500	U
4	3	513	A
4	3	688	U
4	3	753	A
4	3	901	C
4	3	903	A
4	3	952	U
4	3	1048	A
4	3	1209	U
4	3	1211	U
4	3	1234	U
4	3	1297	U
4	3	1371	G
4	3	1507	G
4	3	1583	G
4	3	1588	A
4	3	1667	G
4	3	1820	U
4	3	1886	C
4	3	2064	G
4	3	2342	U
4	3	2386	A
4	3	2504	C
4	3	2506	C
4	3	2668	A
4	3	2764	U
4	3	2823	A
4	3	2862	U
4	3	2897	G
5	4	50	C
5	4	54	U
5	4	59	A
6	8	57	C

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

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

There are no ligands in this entry.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
6	8	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	8	24:A	O3'	47:G	P	15.45

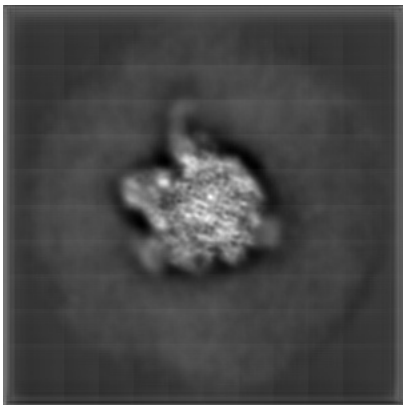
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-53630. These allow visual inspection of the internal detail of the map and identification of artifacts.

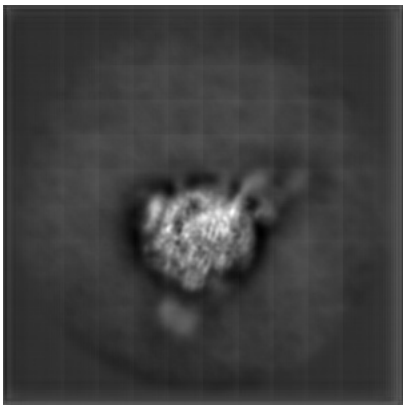
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

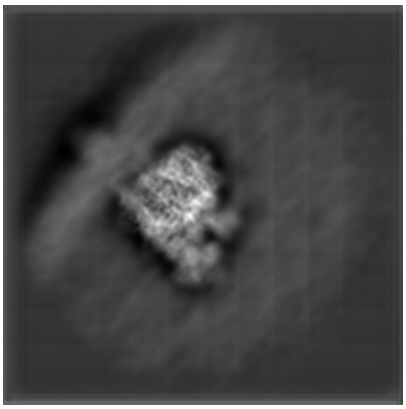
6.1.1 Primary map



X

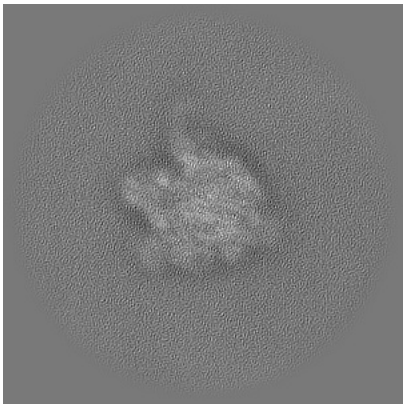


Y

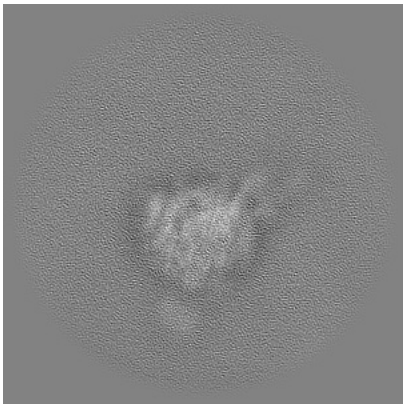


Z

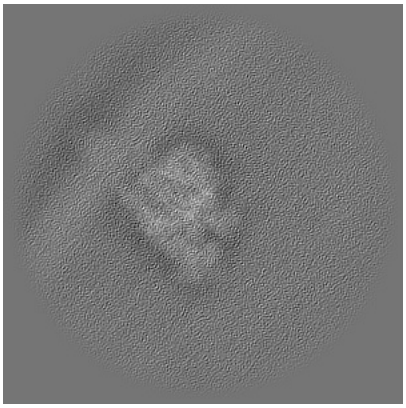
6.1.2 Raw map



X



Y

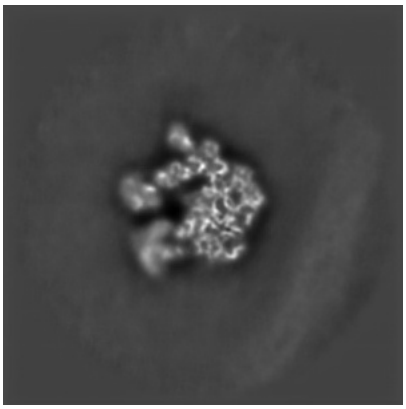


Z

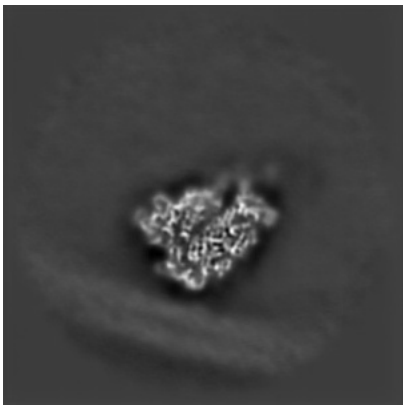
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

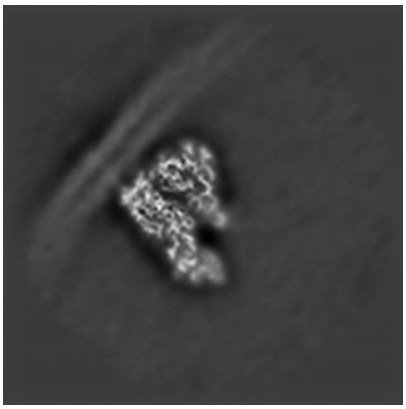
6.2.1 Primary map



X Index: 150

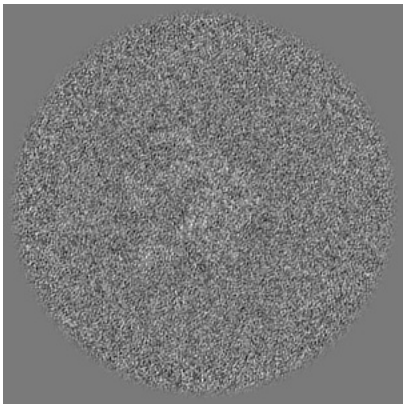


Y Index: 150

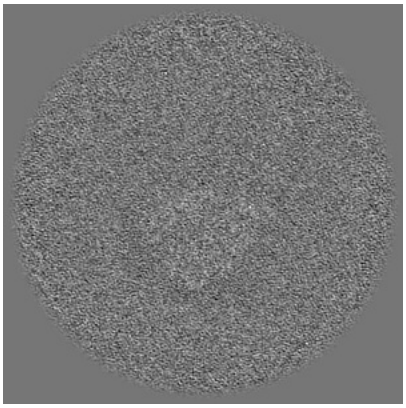


Z Index: 150

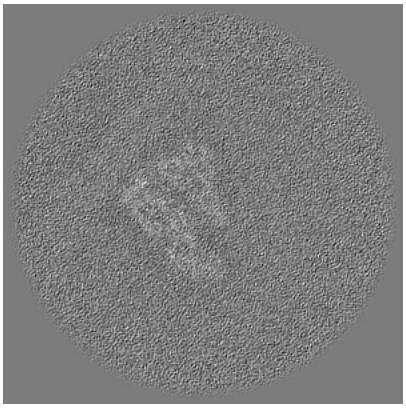
6.2.2 Raw map



X Index: 150



Y Index: 150

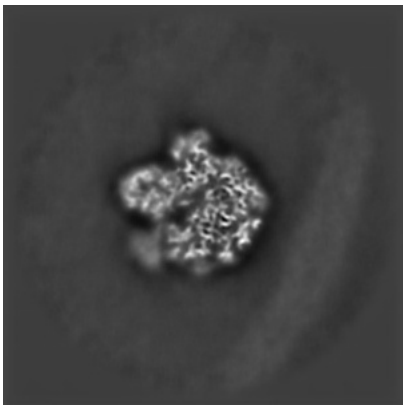


Z Index: 150

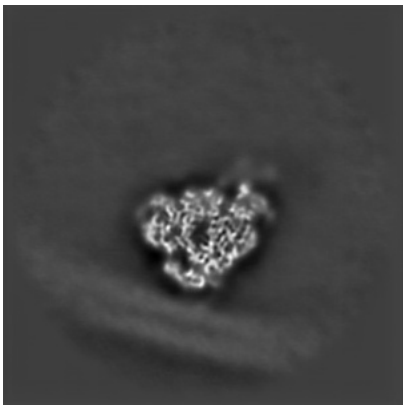
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

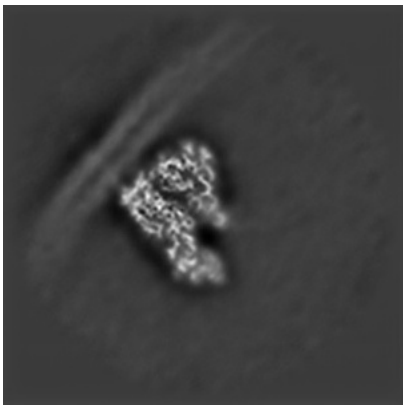
6.3.1 Primary map



X Index: 142

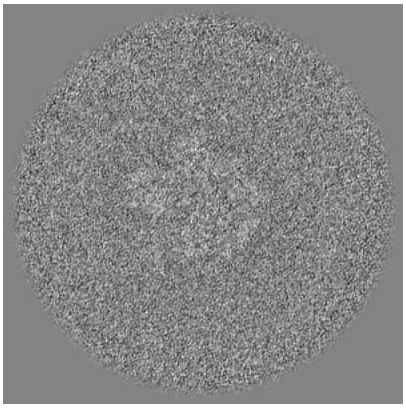


Y Index: 154

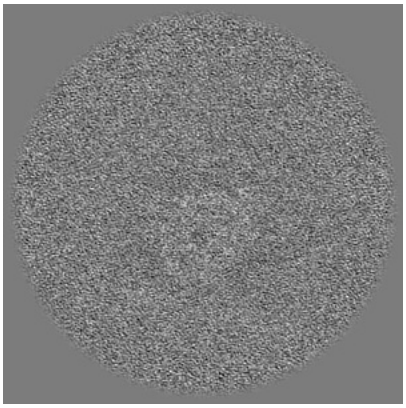


Z Index: 150

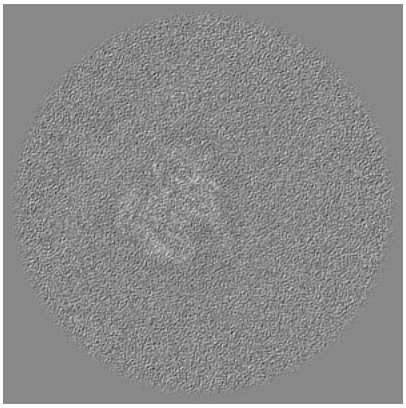
6.3.2 Raw map



X Index: 142



Y Index: 157

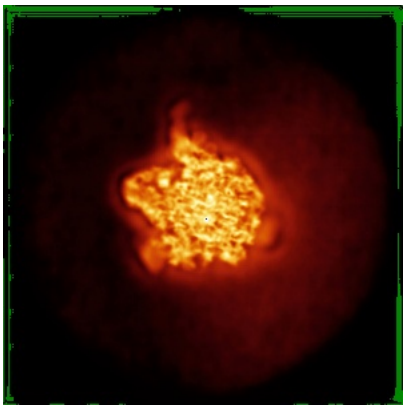


Z Index: 141

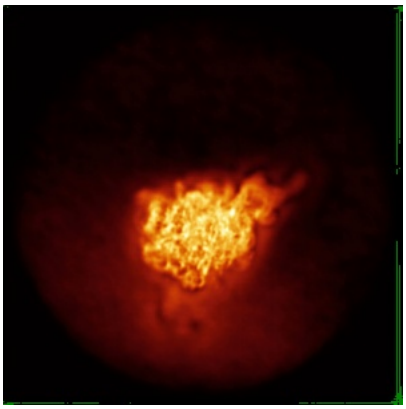
The images above show the largest variance slices of the map in three orthogonal directions.

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

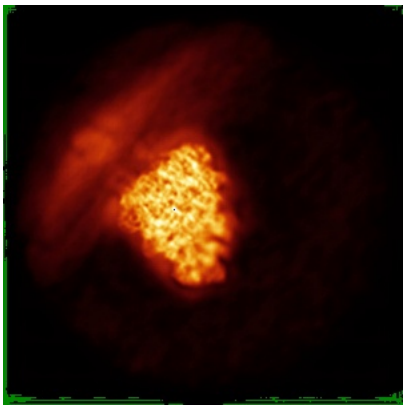
6.4.1 Primary map



X

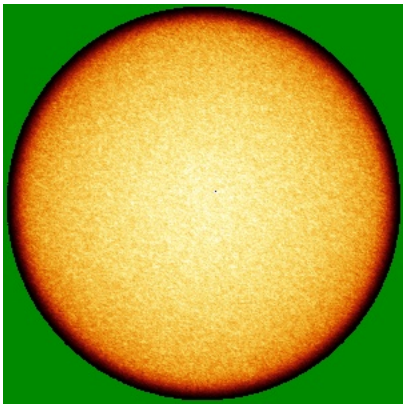


Y

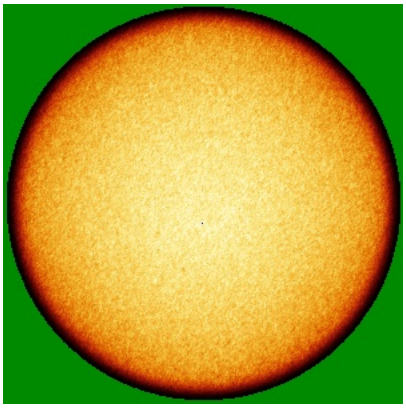


Z

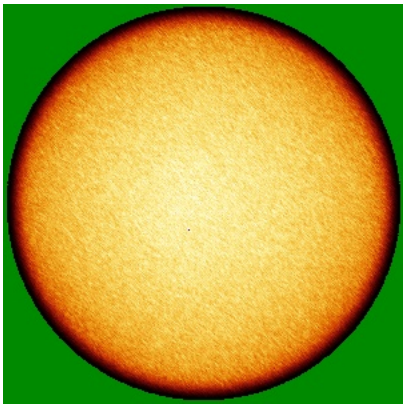
6.4.2 Raw map



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.

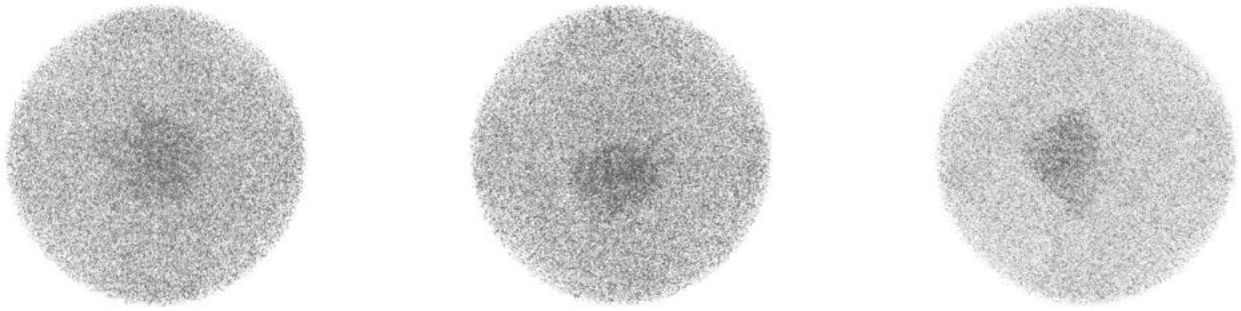
6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.00147. 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.

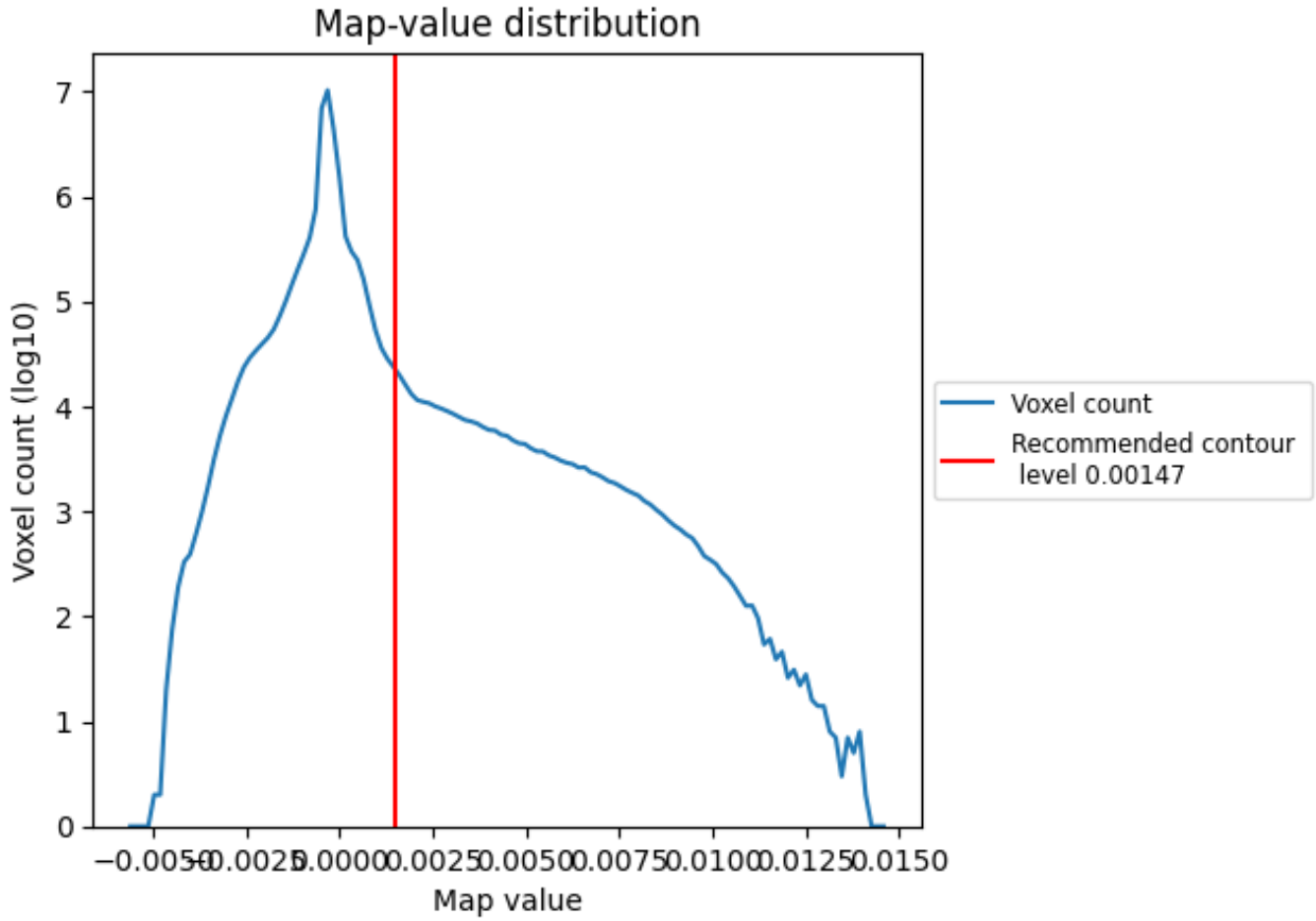
6.6 Mask visualisation (i)

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

7 Map analysis

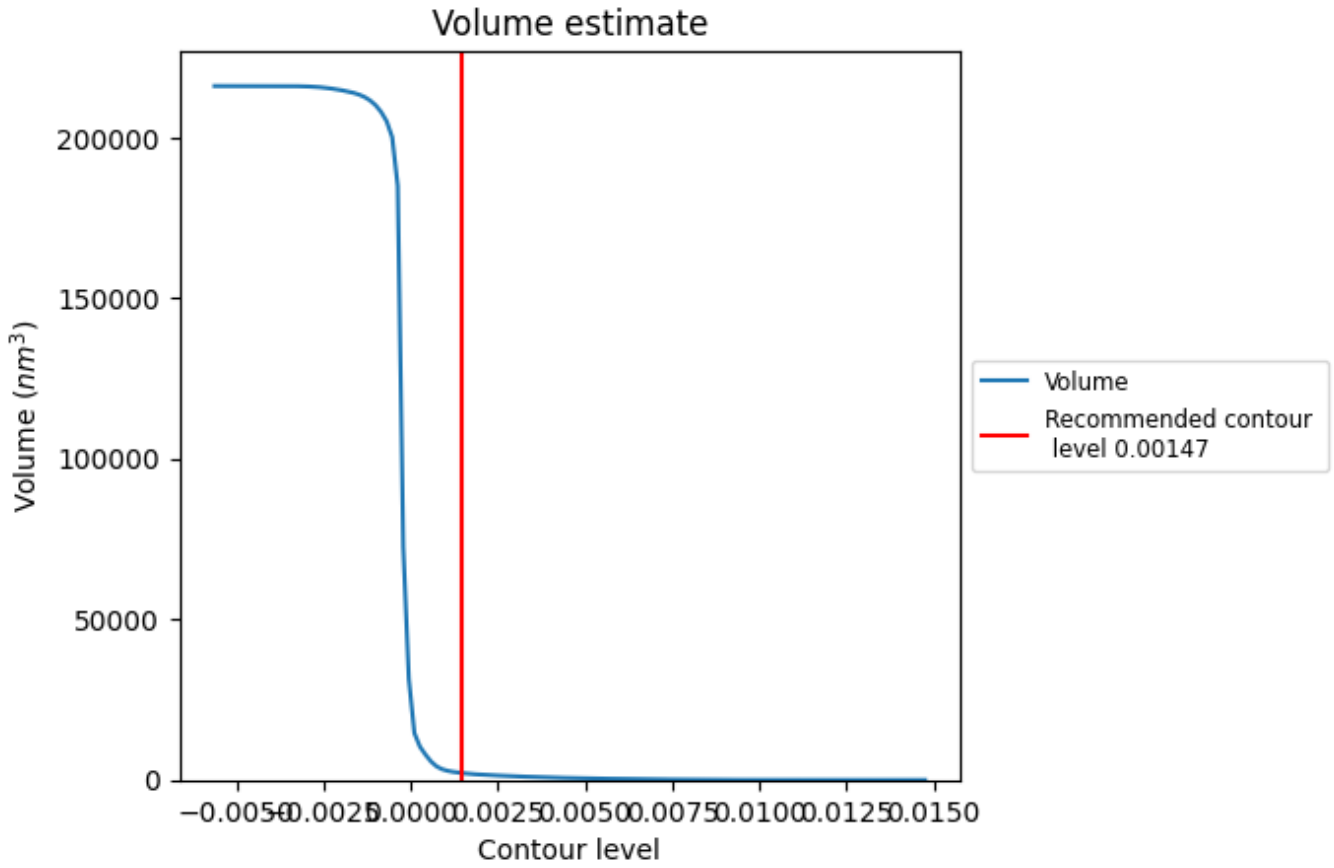
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

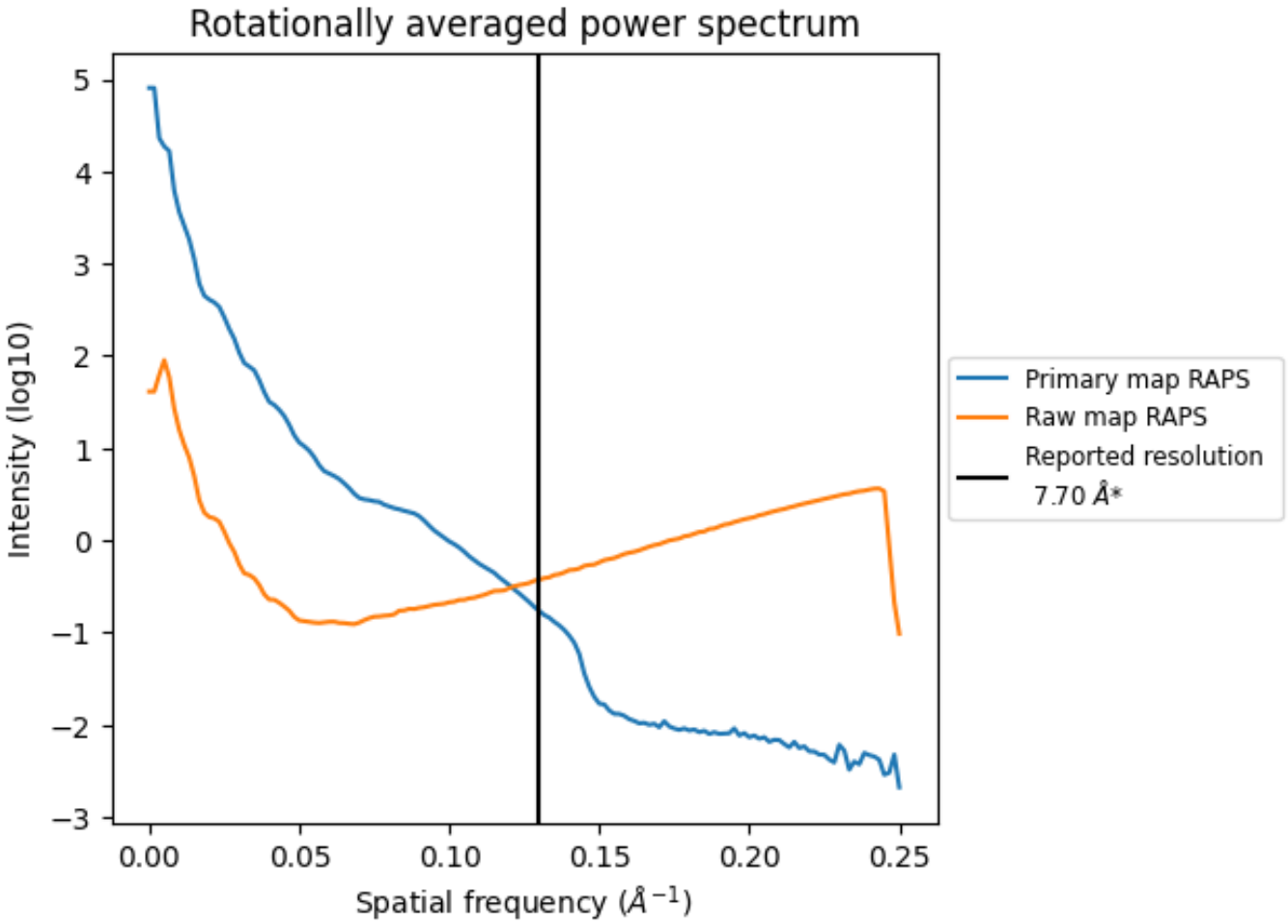
7.2 Volume estimate



The volume at the recommended contour level is 2169 nm^3; this corresponds to an approximate mass of 1959 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)

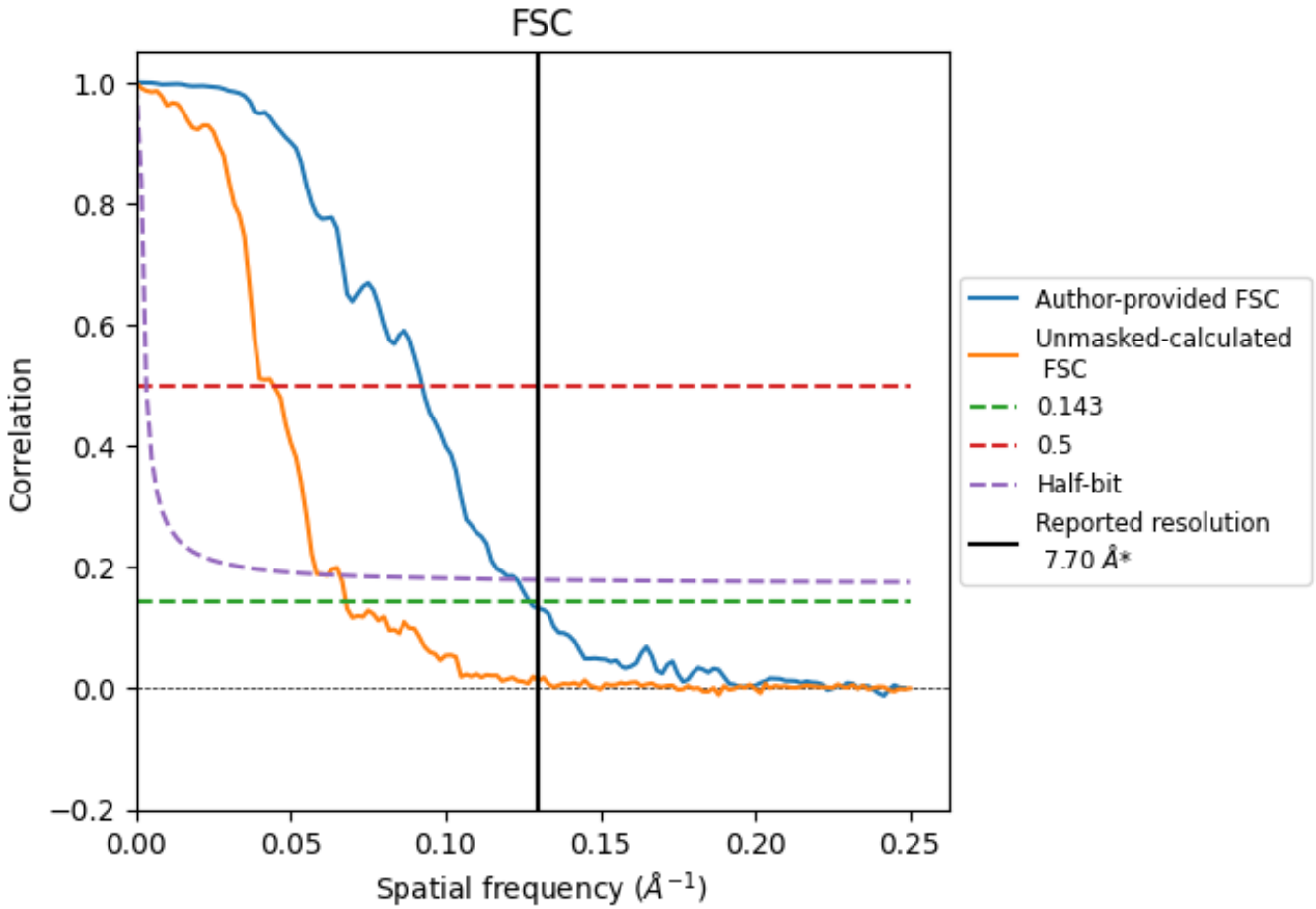


*Reported resolution corresponds to spatial frequency of 0.130 Å^{-1}

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 0.130 Å^{-1}

8.2 Resolution estimates (i)

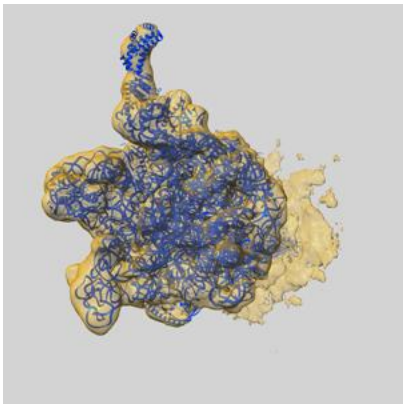
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	7.70	-	-
Author-provided FSC curve	7.86	10.81	8.12
Unmasked-calculated*	14.73	22.52	16.61

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 14.73 differs from the reported value 7.7 by more than 10 %

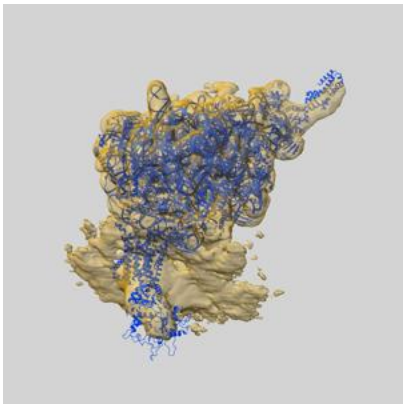
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-53630 and PDB model 9SKD. Per-residue inclusion information can be found in section 3 on page 11.

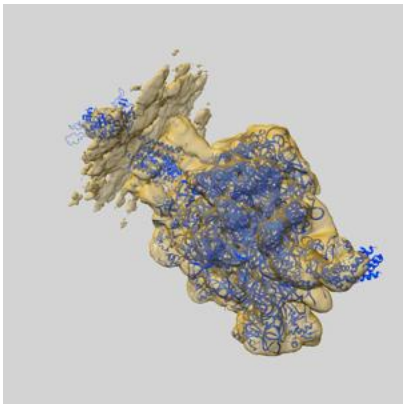
9.1 Map-model overlay



X



Y



Z

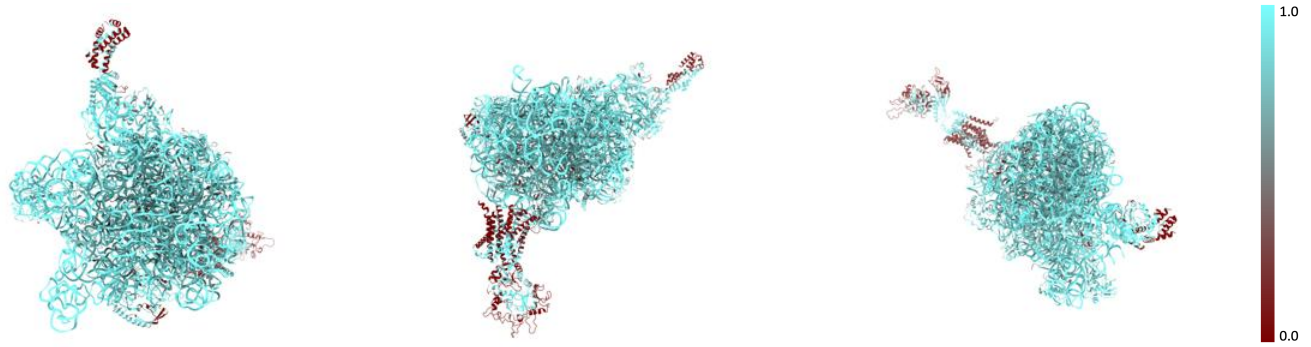
The images above show the 3D surface view of the map at the recommended contour level 0.00147 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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.

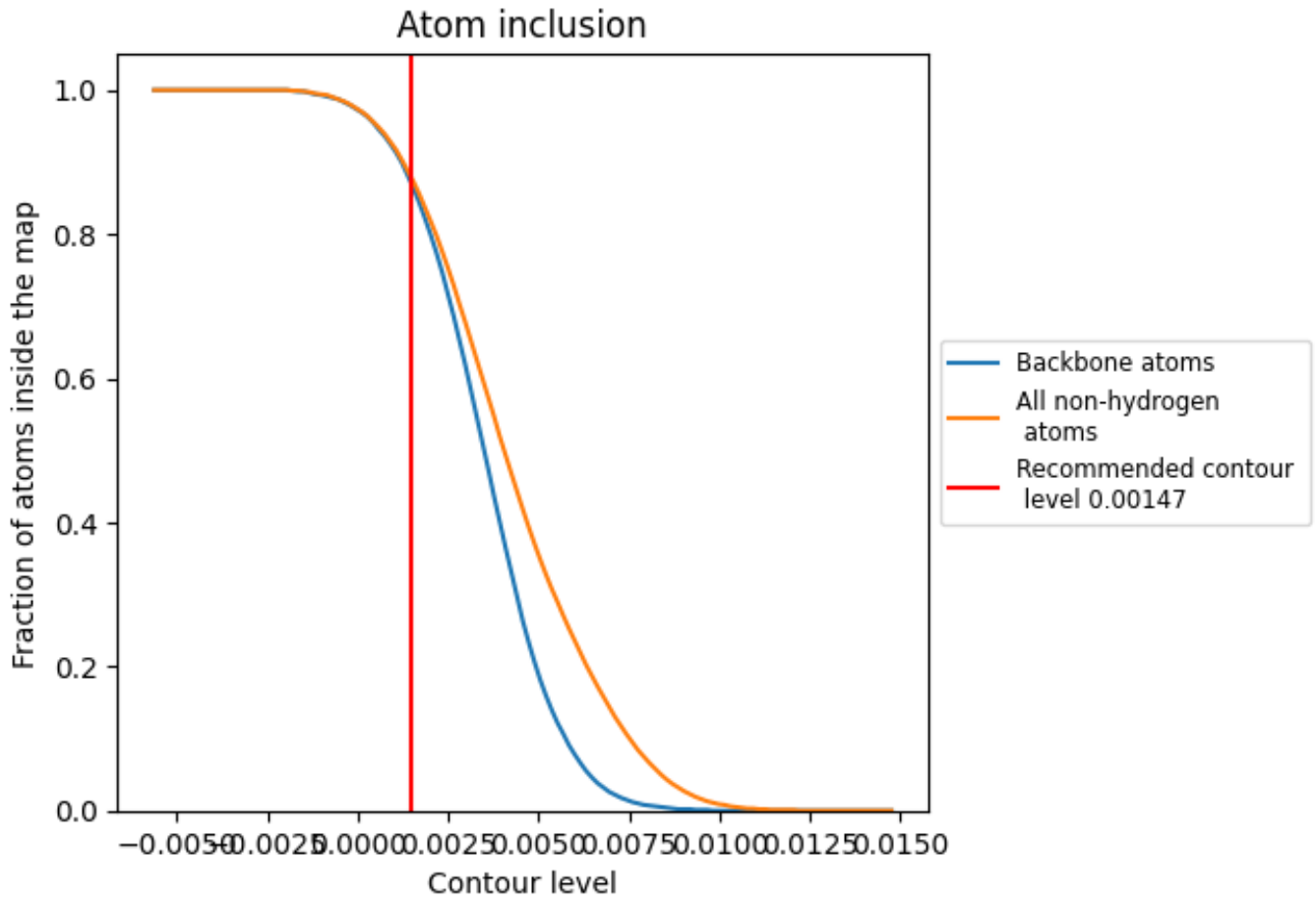
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.00147).

9.4 Atom inclusion (i)



At the recommended contour level, 87% of all backbone atoms, 88% 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 (0.00147) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8800	0.1240
0	0.7560	0.0980
1	0.7920	0.1070
2	0.8350	0.0350
3	0.9580	0.1490
4	0.9950	0.1440
8	0.9220	0.0960
9	0.4160	0.0280
A	0.7300	0.0610
B	0.7240	0.0540
C	0.5520	0.0650
D	0.4960	0.0840
E	0.1290	0.0570
a	0.8660	0.0820
b	0.8560	0.0840
c	0.7990	0.1040
d	0.9550	0.0900
e	0.8740	0.1050
f	0.6850	0.0930
h	0.8810	0.0740
i	0.8650	0.1140
j	0.8550	0.0920
k	0.8820	0.0960
l	0.8530	0.1070
m	0.8010	0.1040
n	0.9330	0.1040
o	0.8800	0.0960
p	0.8720	0.1080
q	0.8750	0.1060
r	0.7460	0.1160
s	0.6800	0.1030
t	0.5320	0.0520
u	0.8300	0.0500
v	0.7560	0.0700
w	0.7650	0.1280

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Chain	Atom inclusion	Q-score
x	0.9560	0.1160
y	0.7700	0.0780
z	0.8940	0.0680