Full wwPDB EM Validation Report

Oct 7, 2025 – 10:35 AM JST

PDB ID	:	9V1L / pdb_00009v1l
EMDB ID	:	EMD-64697
Title	:	Cryo- EM structure of large subunit (LSU) of 75S ribosome with P- tRNA from Entamoeba histolytica
Authors	:	Sharma, S.; Mishra, S.; Gourinath, S.; Kaushal, P.S.
Deposited on	:	2025-05-19
Resolution	:	3.00 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:

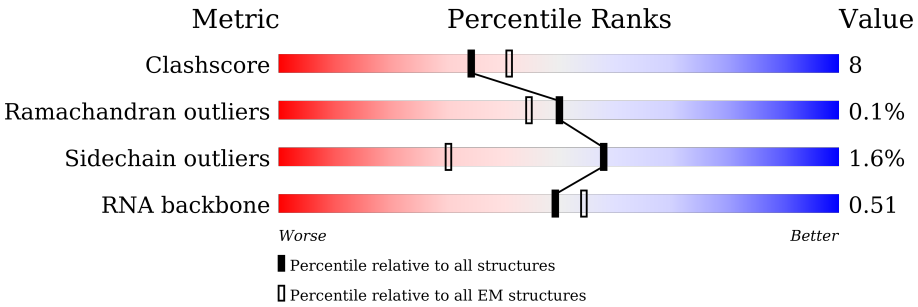
EMDB validation analysis	:	0.0.1.dev129
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.46

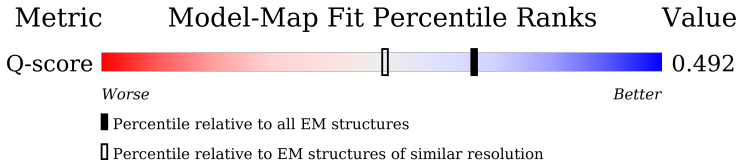
1 Overall quality at a glance

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

The reported resolution of this entry is 3.00 Å.

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





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	14081 (2.50 - 3.50)

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	lA	3503	51% 32% 8% 10%
2	lB	155	49% 35% 10% 6%
3	lC	117	36% 55% 9%

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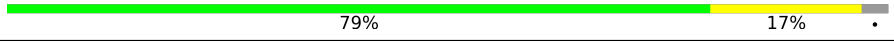
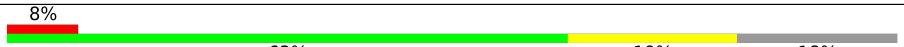
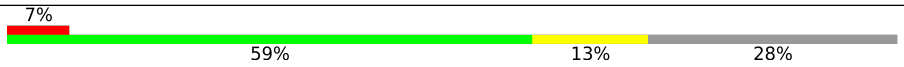
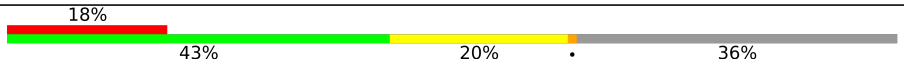
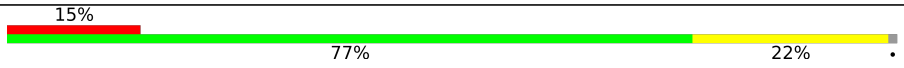
Mol	Chain	Length	Quality of chain
4	lD	257	
5	lE	402	
6	lF	431	
7	lG	286	
8	lH	204	
9	lI	230	
10	lJ	246	
11	lK	197	
12	lL	210	
13	lM	174	
14	lN	291	
15	lO	205	
16	lP	135	
17	lQ	205	
18	lR	179	
19	lS	168	
20	lT	173	
21	lU	198	
22	lV	166	
23	lW	137	
24	lX	140	
25	lY	121	
26	lZ	163	
27	la	213	
28	lb	139	

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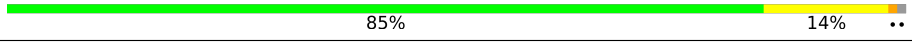
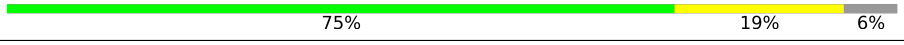
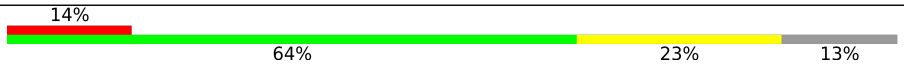
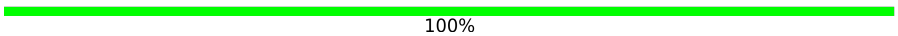
Mol	Chain	Length	Quality of chain
29	lc	149	
30	ld	64	
31	le	109	
32	lf	150	
33	lg	134	
34	lh	137	
35	li	122	
36	lj	106	
37	lk	104	
38	ll	77	
39	lm	93	
40	ln	84	
41	lo	51	
42	lp	56	
43	lq	98	
44	ls	14	
45	sH	76	

2 Entry composition (i)

There are 45 unique types of molecules in this entry. The entry contains 122723 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 25S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	lA	3158	67497	30260	12256	21823	3158	0	0

- Molecule 2 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	lB	145	3097	1390	560	1002	145	0	0

- Molecule 3 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	lC	117	2477	1108	425	827	117	0	0

- Molecule 4 is a protein called Large ribosomal subunit protein uL2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	lD	246	1881	1165	382	326	8	0	0

- Molecule 5 is a protein called 60S ribosomal protein L3, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	lE	388	3085	1961	579	530	15	0	0

- Molecule 6 is a protein called Large ribosomal subunit protein uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	lF	424	3253	2069	619	551	14	0	0

- Molecule 7 is a protein called 60S ribosomal protein L5, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	lG	280	Total	C	N	O	S	0	0
			2232	1427	403	394	8		

- Molecule 8 is a protein called Large ribosomal subunit protein eL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	lH	168	Total	C	N	O	S	0	0
			1323	872	226	221	4		

- Molecule 9 is a protein called 60S ribosomal protein L7, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	lI	210	Total	C	N	O	S	0	0
			1658	1067	301	282	8		

- Molecule 10 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	lJ	178	Total	C	N	O	S	0	0
			1451	938	270	238	5		

- Molecule 11 is a protein called 60S ribosomal protein L9, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	lK	193	Total	C	N	O	S	0	0
			1538	974	279	279	6		

- Molecule 12 is a protein called Ribosomal protein L10, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	lL	200	Total	C	N	O	S	0	0
			1597	1017	302	264	14		

- Molecule 13 is a protein called 60S ribosomal protein L11, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	lM	170	Total	C	N	O	S	0	0
			1350	857	243	245	5		

- Molecule 14 is a protein called 60S ribosomal protein L13, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	lN	226	Total	C	N	O	S	0	0
			1815	1151	356	301	7		

- Molecule 15 is a protein called 60S ribosomal protein L13, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	lO	204	Total	C	N	O	S	0	0
			1616	1030	302	275	9		

- Molecule 16 is a protein called 60S ribosomal protein L14, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	lP	130	Total	C	N	O	S	0	0
			1020	654	188	174	4		

- Molecule 17 is a protein called Ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	lQ	204	Total	C	N	O	S	0	0
			1676	1051	356	264	5		

- Molecule 18 is a protein called 60S ribosomal protein L17, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	lR	155	Total	C	N	O	S	0	0
			1211	765	234	207	5		

- Molecule 19 is a protein called 60S ribosomal protein L18, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	lS	167	Total	C	N	O	S	0	0
			1316	832	257	218	9		

- Molecule 20 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	lT	173	Total	C	N	O	S	0	0
			1413	910	259	235	9		

- Molecule 21 is a protein called Ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	lU	150	Total	C	N	O	S	0	0
			1235	787	246	197	5		

- Molecule 22 is a protein called 60S ribosomal protein L21, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	lV	165	Total	C	N	O	S	0	0
			1320	846	254	217	3		

- Molecule 23 is a protein called Large ribosomal subunit protein eL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	lW	87	Total	C	N	O	S	0	0
			716	463	123	125	5		

- Molecule 24 is a protein called 60S ribosomal protein L23, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	lX	133	Total	C	N	O	S	0	0
			1015	629	196	182	8		

- Molecule 25 is a protein called Ribosomal protein L23A, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	lY	116	Total	C	N	O	S	0	0
			926	597	166	159	4		

- Molecule 26 is a protein called 60S ribosomal protein L24, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	lZ	57	Total	C	N	O	S	0	0
			481	318	88	73	2		

- Molecule 27 is a protein called 60S ribosomal protein L26, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	la	210	Total	C	N	O	S	0	0
			1651	1055	304	285	7		

- Molecule 28 is a protein called 60S ribosomal protein L27, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	lb	137	Total	C	N	O	S	0	0
			1094	707	196	187	4		

- Molecule 29 is a protein called Large ribosomal subunit protein uL15A.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	lc	148	Total	C	N	O	S	0	0
			1192	757	236	194	5		

- Molecule 30 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	ld	60	Total	C	N	O	S	0	0
			478	297	97	82	2		

- Molecule 31 is a protein called 60S ribosomal protein L30, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	le	100	Total	C	N	O	S	0	0
			748	475	128	143	2		

- Molecule 32 is a protein called 60S ribosomal protein L31, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	lf	129	Total	C	N	O	S	0	0
			1048	676	194	172	6		

- Molecule 33 is a protein called 60S ribosomal protein L32, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	lg	129	Total	C	N	O	S	0	0
			1058	672	209	172	5		

- Molecule 34 is a protein called 60S ribosomal protein L34, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	lh	105	Total	C	N	O	S	0	0
			820	512	169	133	6		

- Molecule 35 is a protein called uL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	li	122	Total	C	N	O	S	0	0
			974	620	188	162	4		

- Molecule 36 is a protein called 60S ribosomal protein L35a, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	lj	106	Total	C	N	O	S	0	0
			841	545	158	135	3		

- Molecule 37 is a protein called 60S ribosomal protein L36, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	lk	89	Total	C	N	O	S	0	0
			712	447	144	116	5		

- Molecule 38 is a protein called 60S ribosomal protein L37-A, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	ll	72	Total	C	N	O	S	0	0
			591	361	132	91	7		

- Molecule 39 is a protein called 60S ribosomal protein L37A, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	lm	90	Total	C	N	O	S	0	0
			688	428	135	119	6		

- Molecule 40 is a protein called 60S ribosomal protein L38, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	ln	73	Total	C	N	O	S	0	0
			584	378	104	100	2		

- Molecule 41 is a protein called Ribosomal protein L39, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	lo	50	Total	C	N	O	S	0	0
			432	275	91	63	3		

- Molecule 42 is a protein called 60S ribosomal protein L40, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	lp	53	Total	C	N	O	S	0	0
			420	259	86	69	6		

- Molecule 43 is a protein called 60S ribosomal protein L44, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	lq	92	Total	C	N	O	S	0	0
			756	480	148	122	6		

- Molecule 44 is a protein called Nascent peptide.

Mol	Chain	Residues	Atoms				AltConf	Trace
44	ls	14	Total	C	N	O	0	0
			76	45	17	14		

- Molecule 45 is a RNA chain called P-tRNA.

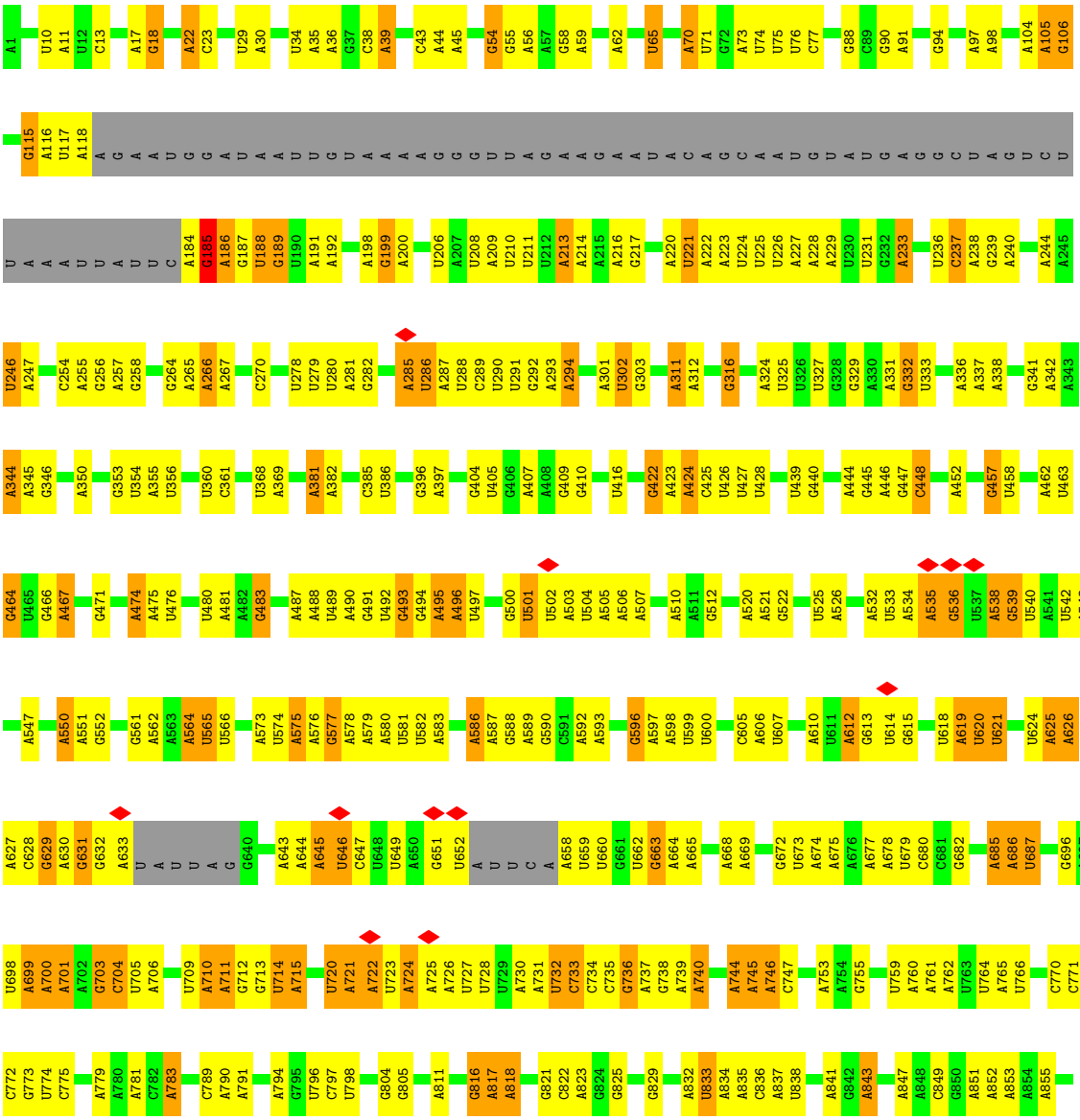
Mol	Chain	Residues	Atoms					AltConf	Trace
45	sH	17	Total	C	N	O	P	0	0
			361	162	66	116	17		

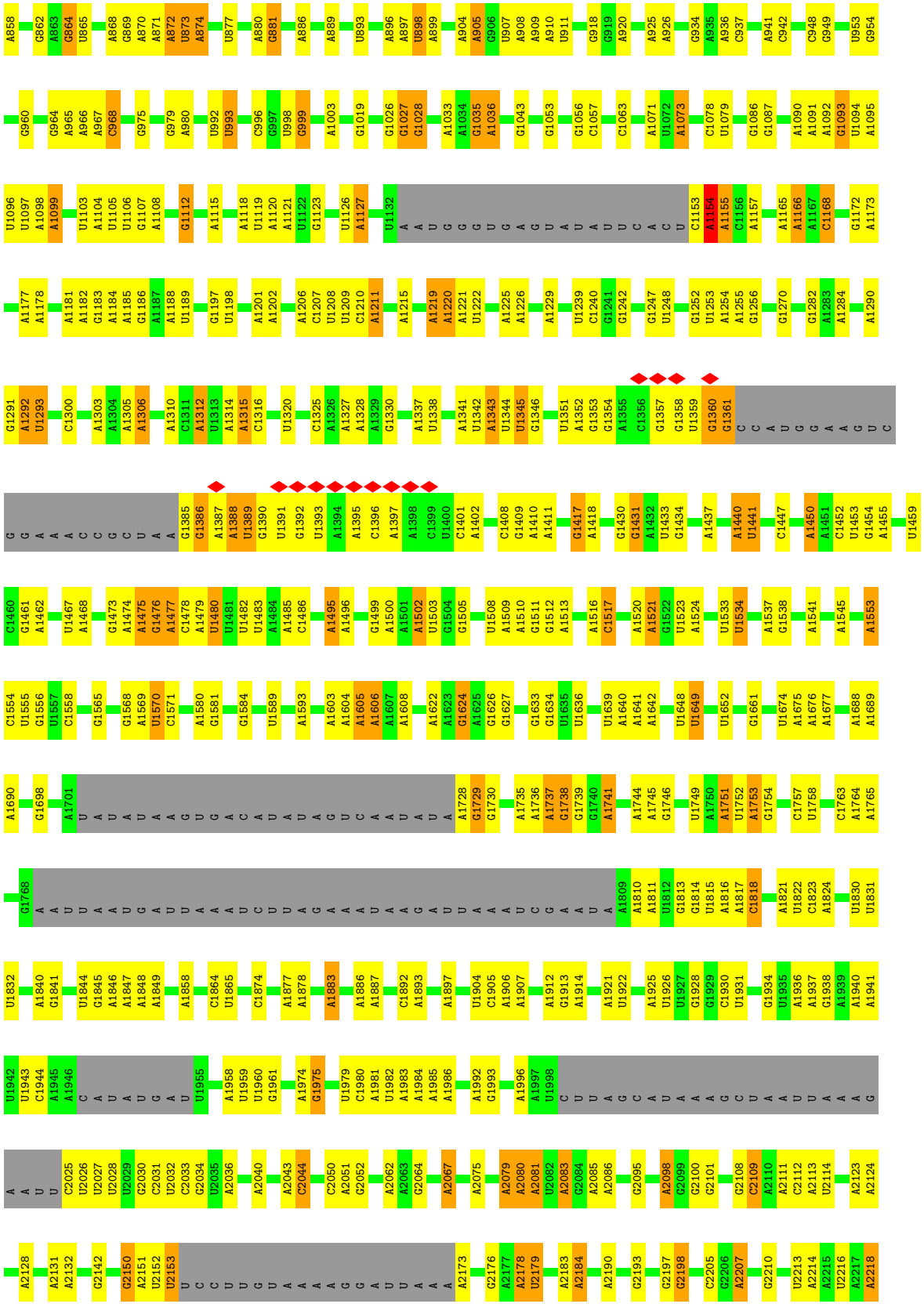
3 Residue-property plots (i)

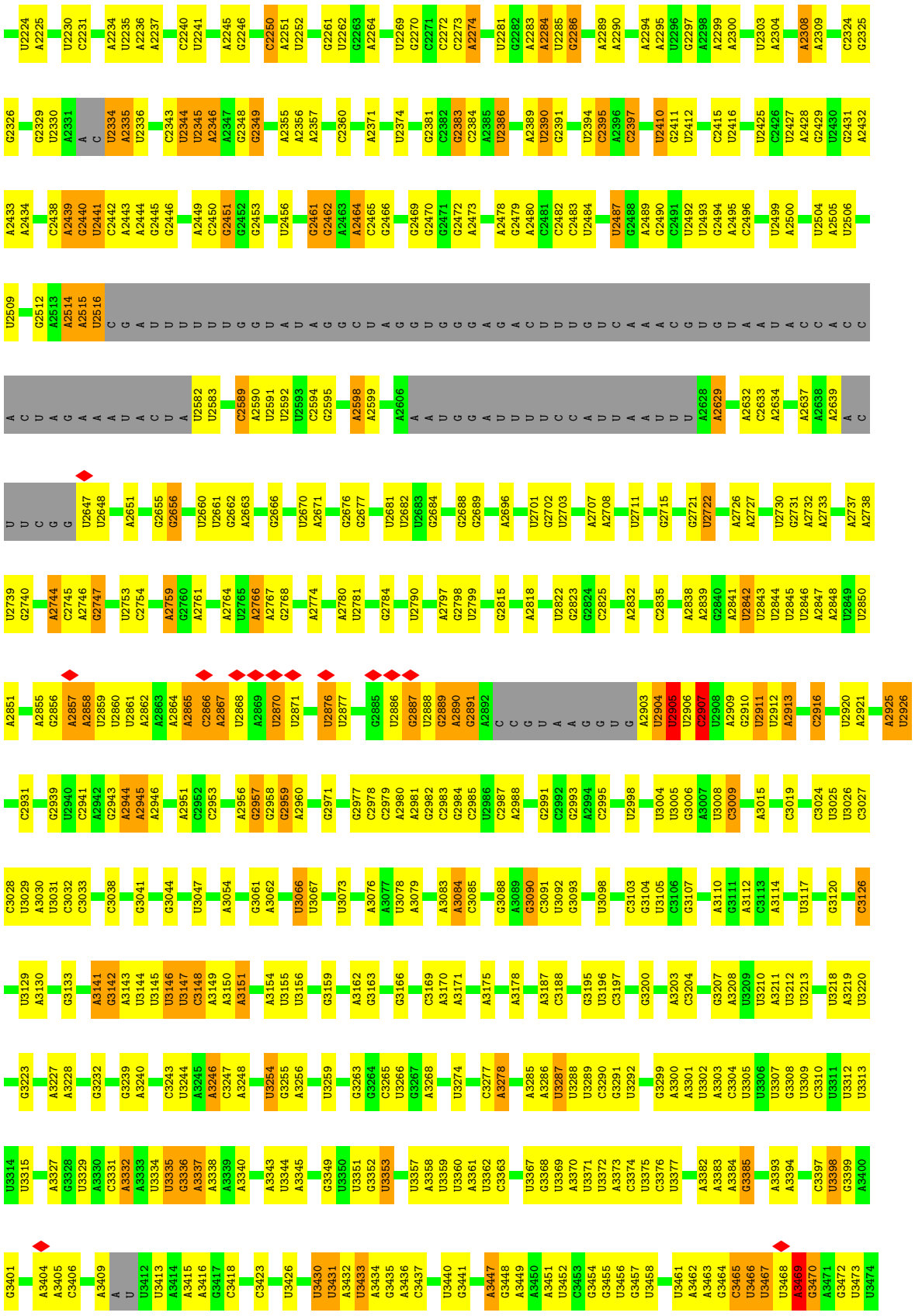
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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.

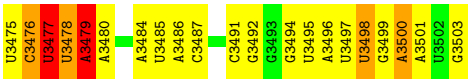
- Molecule 1: 25S rRNA

Chain lA:



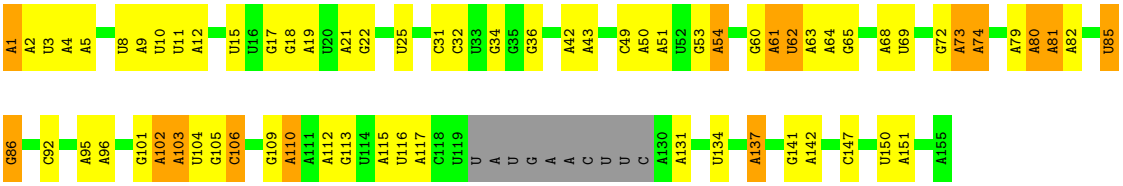






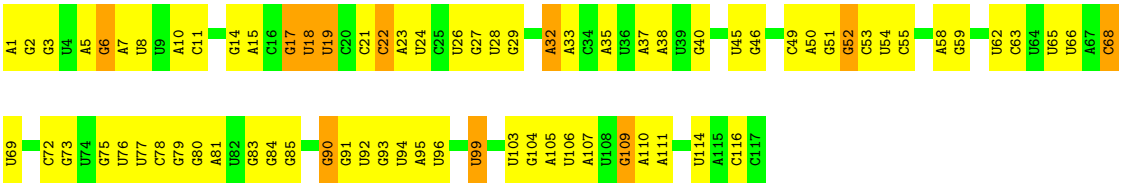
• Molecule 2: 5.8S rRNA

Chain lB:



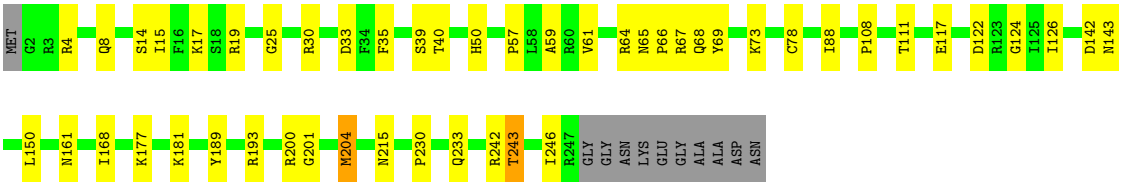
• Molecule 3: 5S rRNA

Chain lC:



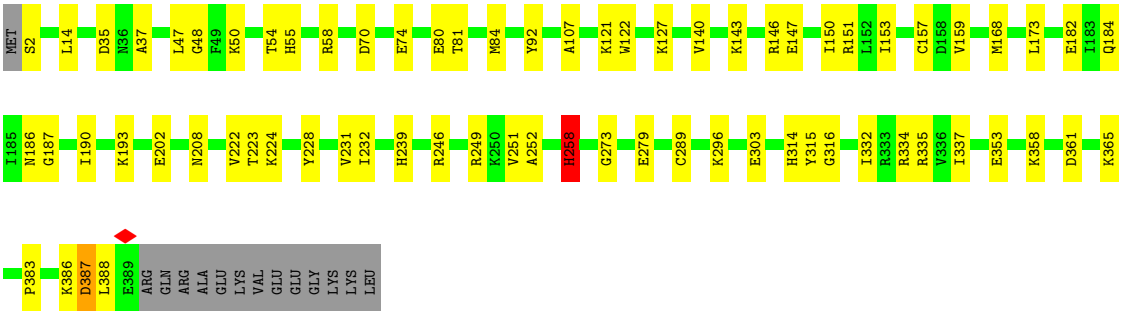
• Molecule 4: Large ribosomal subunit protein uL2

Chain lD:



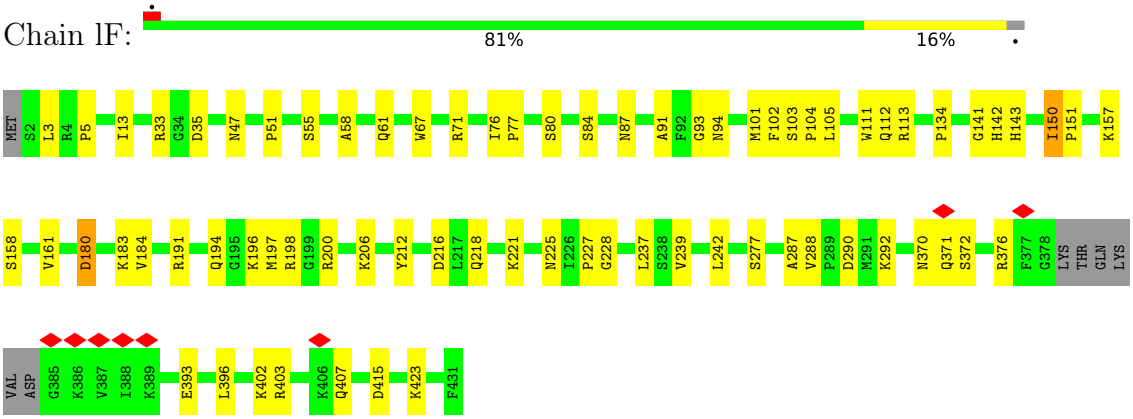
• Molecule 5: 60S ribosomal protein L3, putative

Chain lE:



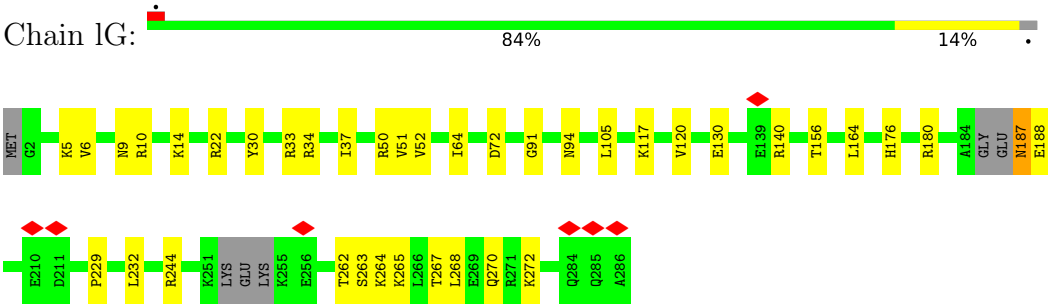
• Molecule 6: Large ribosomal subunit protein uL4

Chain lF:



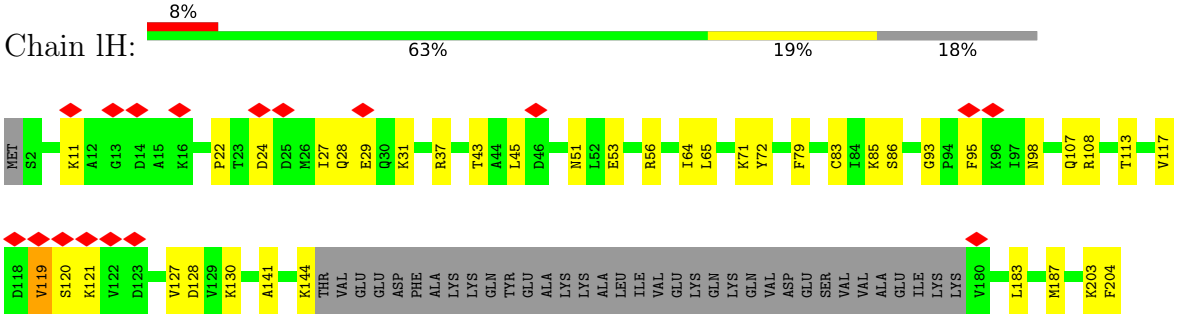
• Molecule 7: 60S ribosomal protein L5, putative

Chain lG:



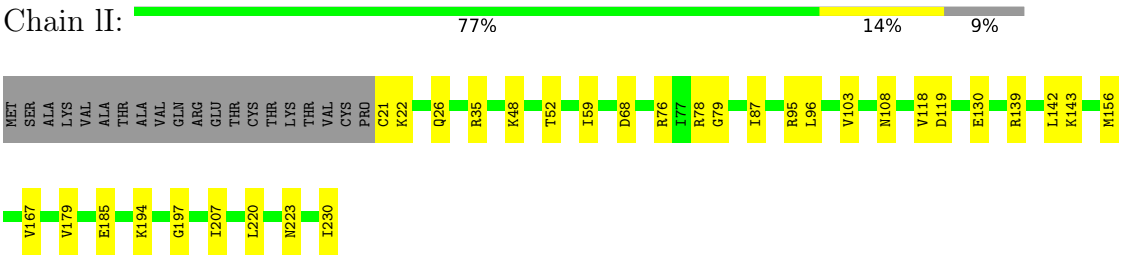
• Molecule 8: Large ribosomal subunit protein eL6

Chain lH:



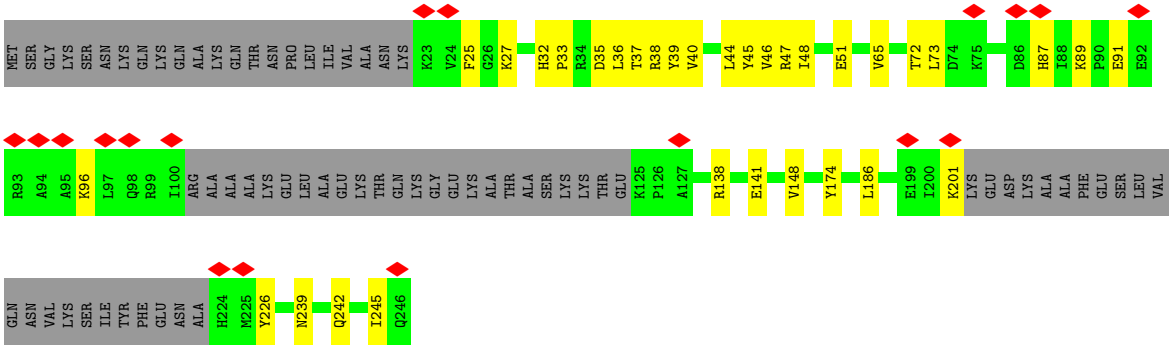
• Molecule 9: 60S ribosomal protein L7, putative

Chain lI:



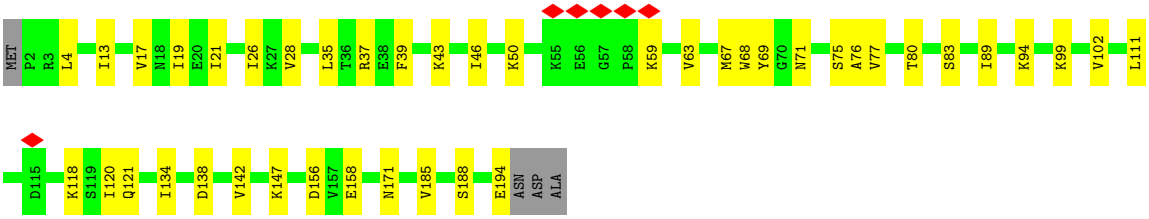
• Molecule 10: 60S ribosomal protein L7a

Chain lJ:



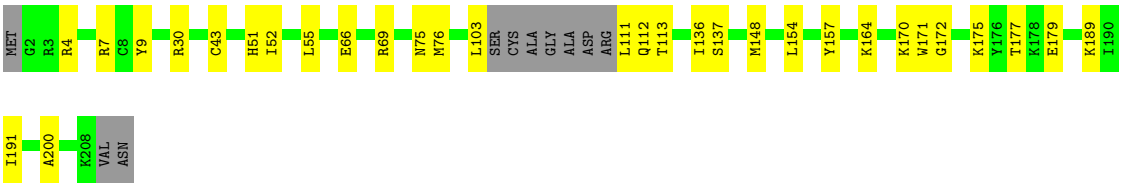
• Molecule 11: 60S ribosomal protein L9, putative

Chain lK:



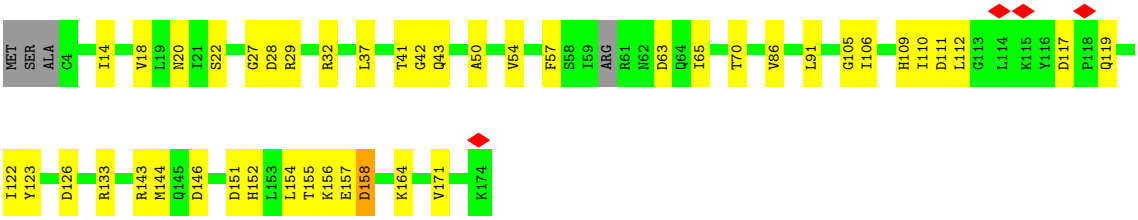
• Molecule 12: Ribosomal protein L10, putative

Chain lL:



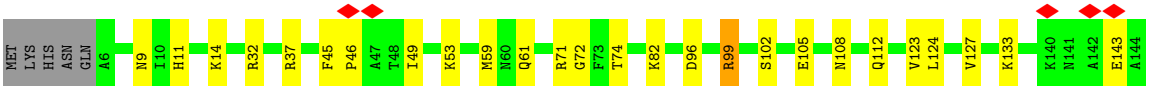
• Molecule 13: 60S ribosomal protein L11, putative

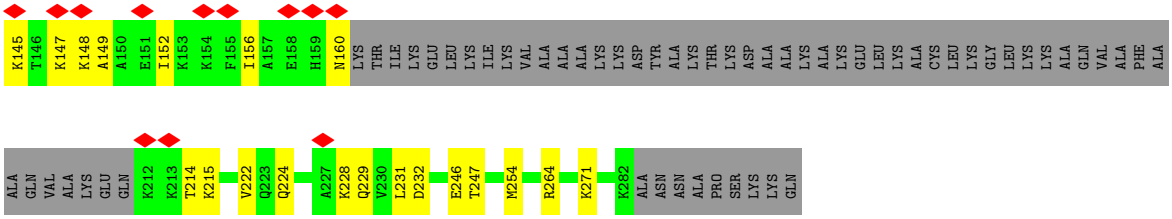
Chain lM:



• Molecule 14: 60S ribosomal protein L13, putative

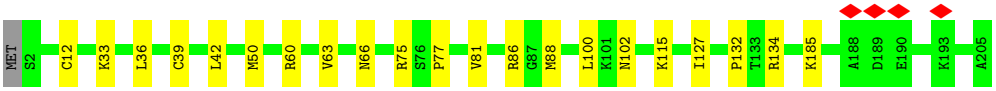
Chain lN:





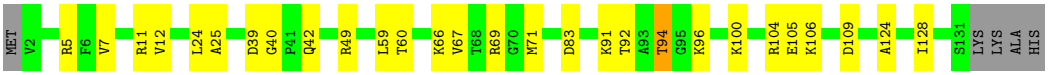
• Molecule 15: 60S ribosomal protein L13, putative

Chain lO:



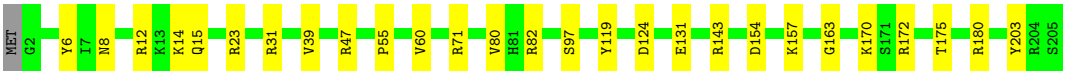
• Molecule 16: 60S ribosomal protein L14, putative

Chain lP:



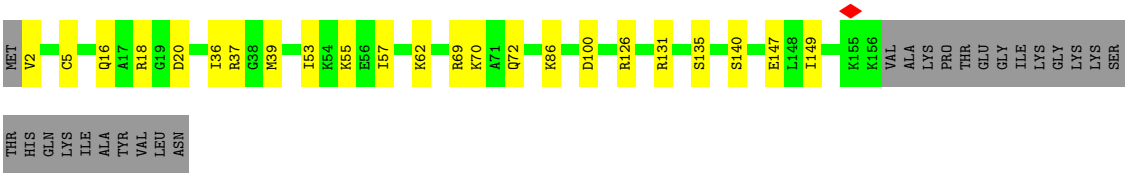
• Molecule 17: Ribosomal protein L15

Chain lQ:



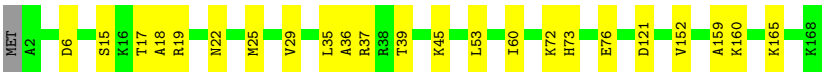
• Molecule 18: 60S ribosomal protein L17, putative

Chain lR:



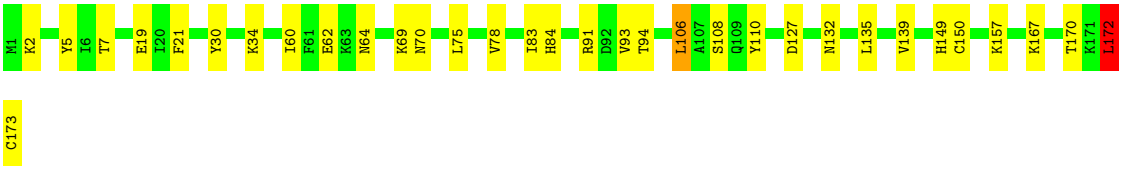
• Molecule 19: 60S ribosomal protein L18, putative

Chain lS:

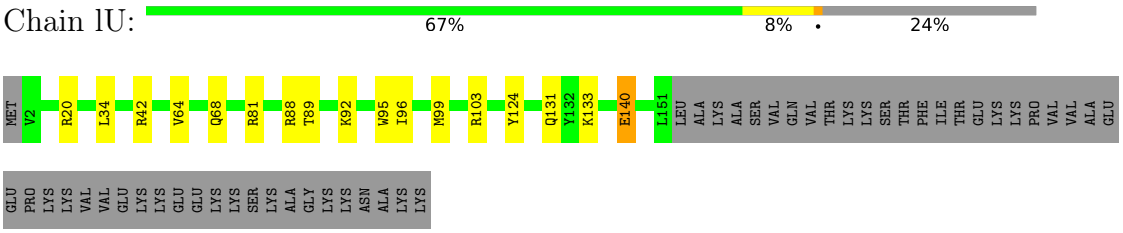


• Molecule 20: 60S ribosomal protein L18a

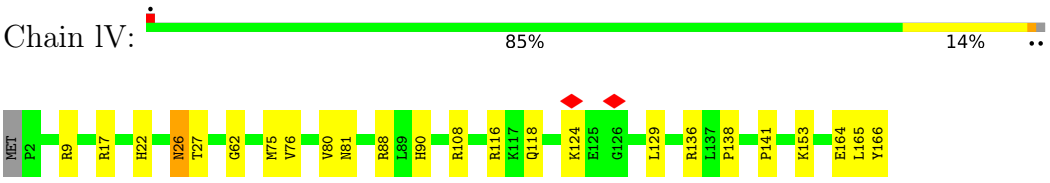
Chain lT:



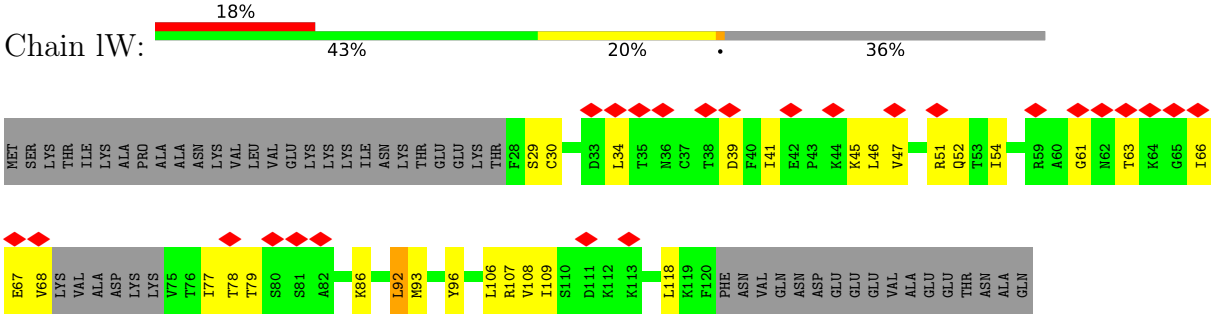
• Molecule 21: Ribosomal protein L19



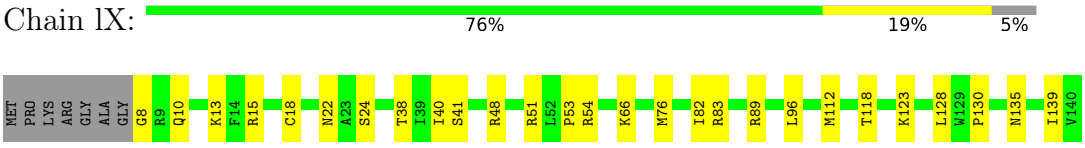
• Molecule 22: 60S ribosomal protein L21, putative



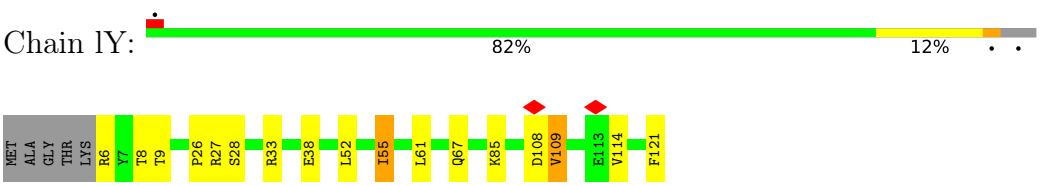
• Molecule 23: Large ribosomal subunit protein eL22



• Molecule 24: 60S ribosomal protein L23, putative

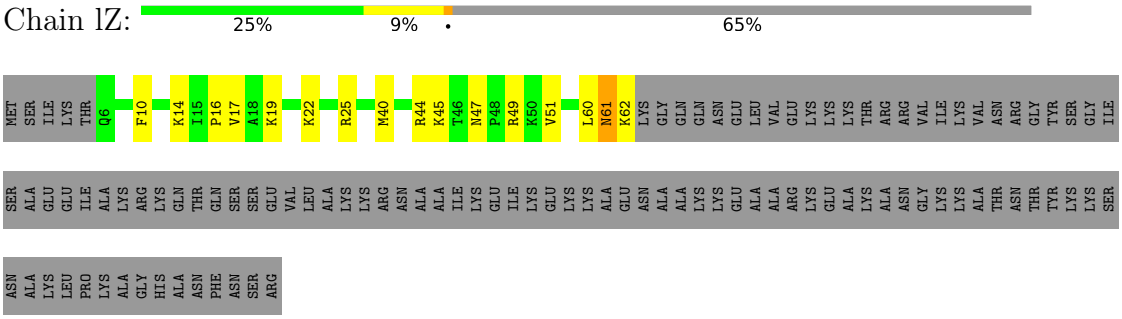


• Molecule 25: Ribosomal protein L23A, putative



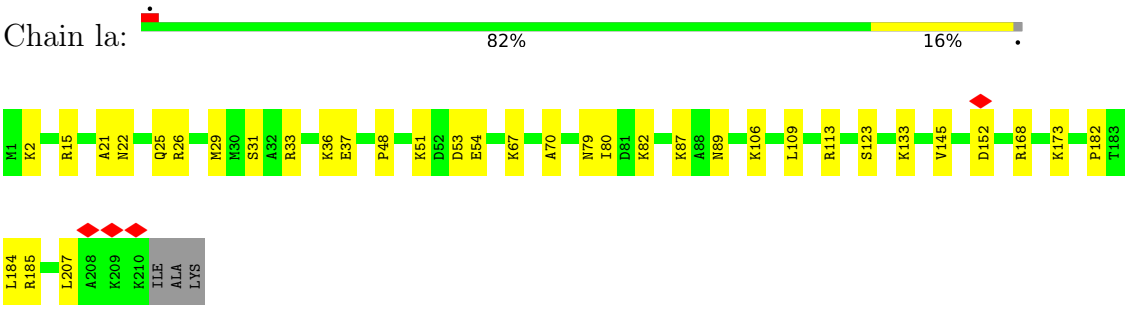
• Molecule 26: 60S ribosomal protein L24, putative

Chain lZ:



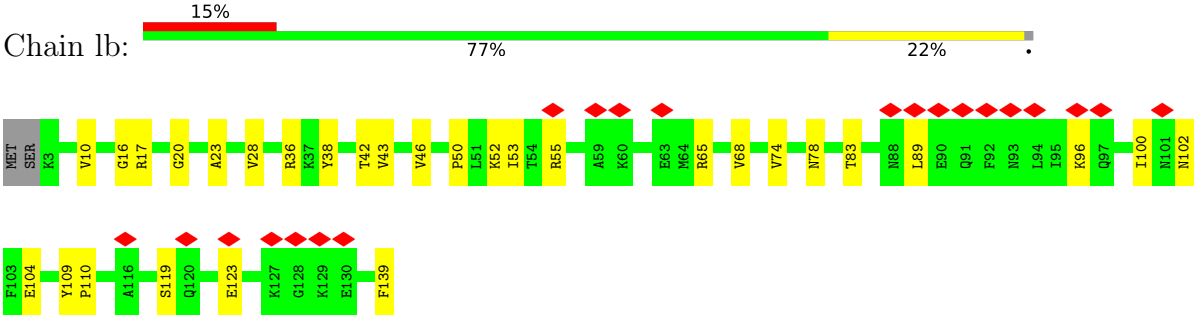
• Molecule 27: 60S ribosomal protein L26, putative

Chain la:



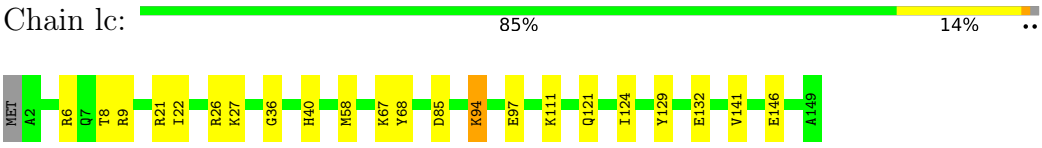
• Molecule 28: 60S ribosomal protein L27, putative

Chain lb:



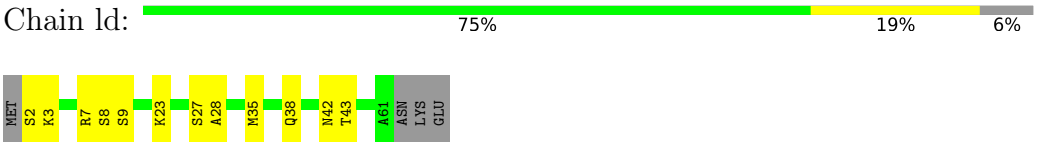
• Molecule 29: Large ribosomal subunit protein uL15A

Chain lc:



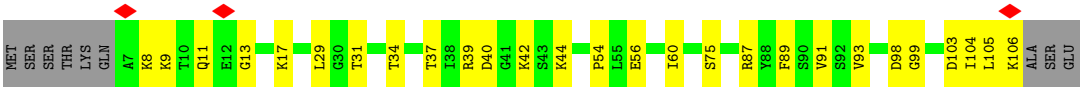
• Molecule 30: 60S ribosomal protein L29

Chain ld:



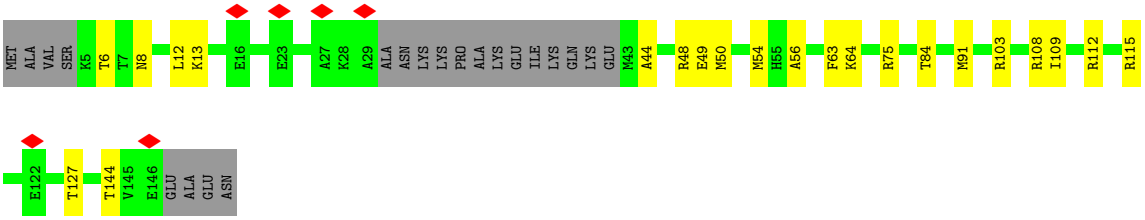
• Molecule 31: 60S ribosomal protein L30, putative

Chain le:



• Molecule 32: 60S ribosomal protein L31, putative

Chain lf:

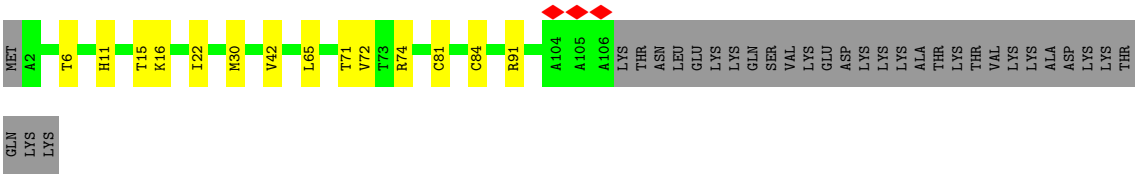


• Molecule 33: 60S ribosomal protein L32, putative

Chain lg:

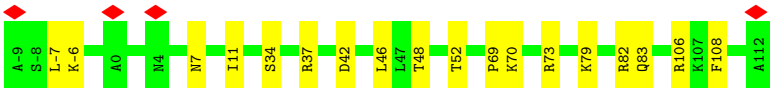
• Molecule 34: 60S ribosomal protein L34, putative

Chain lh:



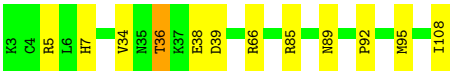
• Molecule 35: uL29

Chain li:



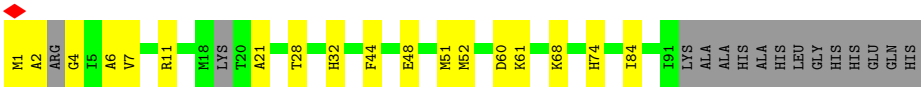
• Molecule 36: 60S ribosomal protein L35a, putative

Chain lj:

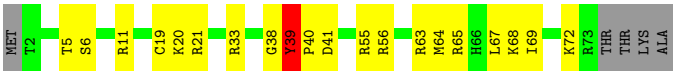


• Molecule 37: 60S ribosomal protein L36, putative

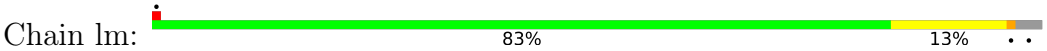
Chain lk:

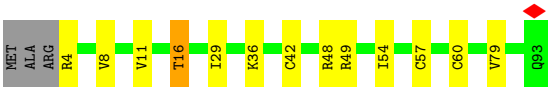


• Molecule 38: 60S ribosomal protein L37-A, putative

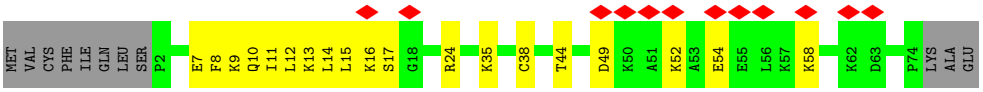


• Molecule 39: 60S ribosomal protein L37A, putative

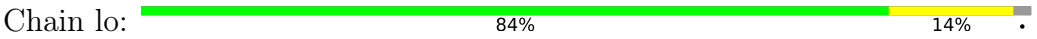


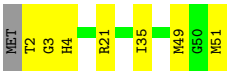


• Molecule 40: 60S ribosomal protein L38, putative



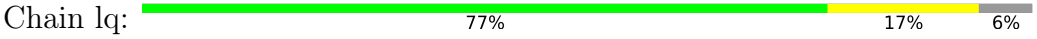
• Molecule 41: Ribosomal protein L39, putative

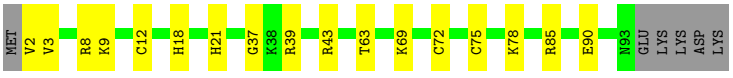




• Molecule 42: 60S ribosomal protein L40, putative

• Molecule 43: 60S ribosomal protein L44, putative





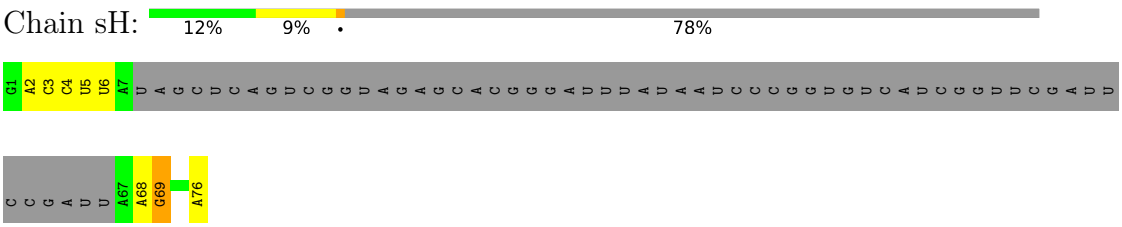
• Molecule 44: Nascent peptide

Chain ls:

There are no outlier residues recorded for this chain.

• Molecule 45: P-tRNA

Chain sH:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	53764	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 ($e^-/Å^2$)	1.106	Depositor
Minimum defocus (nm)	1800	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	75000	Depositor
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	15.718	Depositor
Minimum map value	-3.902	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	1.000	Depositor
Recommended contour level	2.5	Depositor
Map size (Å)	374.50003, 374.50003, 374.50003	wwPDB
Map dimensions	350, 350, 350	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.07, 1.07, 1.07	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

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	lA	0.25	5/75634 (0.0%)	0.33	10/117816 (0.0%)
2	lB	0.24	0/3470	0.32	1/5401 (0.0%)
3	lC	0.25	0/2765	0.39	2/4303 (0.0%)
4	lD	0.22	0/1920	0.31	0/2582
5	lE	0.21	0/3149	0.27	0/4228
6	lF	0.20	0/3311	0.27	0/4446
7	lG	0.19	0/2270	0.30	0/3039
8	lH	0.17	0/1352	0.30	0/1819
9	lI	0.20	0/1680	0.26	0/2252
10	lJ	0.17	0/1477	0.32	0/1983
11	lK	0.18	0/1562	0.25	0/2103
12	lL	0.19	0/1633	0.28	0/2184
13	lM	0.17	0/1369	0.27	0/1834
14	lN	0.20	0/1842	0.29	0/2460
15	lO	0.20	0/1646	0.28	0/2209
16	lP	0.20	0/1032	0.25	0/1388
17	lQ	0.23	0/1707	0.24	0/2276
18	lR	0.21	0/1230	0.24	0/1647
19	lS	0.22	0/1337	0.27	0/1789
20	lT	0.21	0/1445	0.27	0/1946
21	lU	0.20	0/1253	0.27	0/1666
22	lV	0.20	0/1351	0.26	0/1819
23	lW	0.12	0/726	0.30	0/967
24	lX	0.22	0/1030	0.28	0/1384
25	lY	0.17	0/941	0.25	0/1262
26	lZ	0.21	0/492	0.24	0/656
27	la	0.17	0/1673	0.24	0/2236
28	lb	0.16	0/1112	0.25	0/1489
29	lc	0.23	0/1223	0.26	0/1636
30	ld	0.22	0/485	0.29	0/639
31	le	0.19	0/756	0.35	0/1017
32	lf	0.19	0/1067	0.25	0/1425
33	lg	0.21	0/1075	0.24	0/1434
34	lh	0.20	0/833	0.27	0/1115

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
35	li	0.16	0/984	0.25	0/1310
36	lj	0.23	0/862	0.29	0/1163
37	lk	0.16	0/721	0.26	0/955
38	ll	0.24	0/602	0.31	0/797
39	lm	0.22	0/696	0.33	0/928
40	ln	0.17	0/592	0.29	0/789
41	lo	0.23	0/444	0.22	0/587
42	lp	0.21	0/425	0.52	2/563 (0.4%)
43	lq	0.20	0/770	0.24	0/1019
44	ls	0.99	0/10	1.39	0/11
45	sH	0.15	0/402	0.24	0/621
All	All	0.23	5/132356 (0.0%)	0.31	15/195193 (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
5	lE	0	1
20	lT	0	1
38	ll	0	1
All	All	0	3

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	lA	2150	G	O3'-P	-7.93	1.49	1.61
1	lA	3469	A	C1'-N9	-6.04	1.38	1.48
1	lA	2905	U	O3'-P	-5.88	1.52	1.61
1	lA	3473	U	C1'-N1	5.79	1.57	1.48
1	lA	3465	C	C1'-N1	5.17	1.56	1.48

All (15) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	lC	62	U	OP1-P-O3'	-8.82	81.55	108.00
3	lC	62	U	OP2-P-O3'	-8.72	81.85	108.00
1	lA	3477	U	C4'-C3'-O3'	7.06	119.99	109.40
1	lA	185	G	C4'-C3'-O3'	-7.02	102.47	113.00
42	lp	24	CYS	CA-CB-SG	6.73	129.88	114.40
1	lA	2913	A	C1'-C2'-O2'	-6.14	99.19	108.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	lA	1154	A	C4'-C3'-O3'	-6.07	103.89	113.00
2	lB	1	A	C1'-C2'-O2'	-6.03	99.36	108.40
1	lA	185	G	C1'-C2'-O2'	5.92	117.27	108.40
1	lA	3479	A	C2'-C3'-O3'	-5.87	104.89	113.70
42	lp	35	CYS	CA-CB-SG	5.70	127.52	114.40
1	lA	2334	U	O3'-P-O5'	5.47	112.20	104.00
1	lA	2907	C	C1'-C2'-O2'	-5.36	100.36	108.40
1	lA	2916	C	C1'-C2'-O2'	-5.32	100.42	108.40
1	lA	2334	U	P-O3'-C3'	-5.07	112.59	120.20

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
5	lE	258	HIS	Peptide
20	lT	172	LEU	Peptide
38	ll	39	TYR	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	lA	67497	0	33861	968	0
2	lB	3097	0	1552	44	0
3	lC	2477	0	1252	87	0
4	lD	1881	0	1928	34	0
5	lE	3085	0	3215	52	0
6	lF	3253	0	3444	52	0
7	lG	2232	0	2315	26	0
8	lH	1323	0	1425	30	0
9	lI	1658	0	1802	20	0
10	lJ	1451	0	1562	21	0
11	lK	1538	0	1598	26	0
12	lL	1597	0	1654	22	0
13	lM	1350	0	1390	29	0
14	lN	1815	0	1964	40	0
15	lO	1616	0	1700	16	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
16	lP	1020	0	1104	22	0
17	lQ	1676	0	1777	19	0
18	lR	1211	0	1280	19	0
19	lS	1316	0	1420	18	0
20	lT	1413	0	1479	21	0
21	lU	1235	0	1369	13	0
22	lV	1320	0	1406	17	0
23	lW	716	0	760	23	0
24	lX	1015	0	1054	19	0
25	lY	926	0	997	14	0
26	lZ	481	0	518	8	0
27	la	1651	0	1822	27	0
28	lb	1094	0	1174	24	0
29	lc	1192	0	1205	17	0
30	ld	478	0	507	8	0
31	le	748	0	794	21	0
32	lf	1048	0	1127	14	0
33	lg	1058	0	1140	14	0
34	lh	820	0	864	11	0
35	li	974	0	1093	12	0
36	lj	841	0	878	10	0
37	lk	712	0	755	13	0
38	ll	591	0	617	14	0
39	lm	688	0	728	13	0
40	ln	584	0	643	16	0
41	lo	432	0	444	6	0
42	lp	420	0	450	11	0
43	lq	756	0	821	13	0
44	ls	76	0	34	0	0
45	sH	361	0	186	5	0
All	All	122723	0	89108	1644	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 8.

All (1644) 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)
23:lW:47:VAL:HG13	23:lW:68:VAL:CG1	1.53	1.37
1:lA:3454:G:N1	1:lA:3501:A:C2	2.16	1.14
1:lA:3454:G:N1	1:lA:3501:A:H2	1.47	1.13

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:3469:A:N6	1:lA:3485:U:H3	1.46	1.12
3:lC:79:G:N1	3:lC:95:A:H2	1.45	1.12
3:lC:81:A:H2	3:lC:93:G:N1	1.47	1.12
5:lE:383:PRO:CB	5:lE:388:LEU:HD11	1.79	1.11
3:lC:79:G:N1	3:lC:95:A:C2	2.16	1.11
5:lE:383:PRO:HB2	5:lE:388:LEU:CD1	1.80	1.11
1:lA:3455:G:N1	1:lA:3500:A:C2	2.20	1.10
1:lA:3455:G:N1	1:lA:3500:A:H2	1.51	1.09
23:lW:47:VAL:HG13	23:lW:68:VAL:HG11	1.06	1.06
1:lA:3466:U:H3	1:lA:3487:C:H42	1.04	1.03
3:lC:27:G:H1	3:lC:50:A:H61	1.01	1.00
23:lW:47:VAL:CG1	23:lW:68:VAL:HG11	1.92	1.00
1:lA:2856:G:H8	1:lA:2903:A:H62	1.07	1.00
1:lA:3469:A:N6	1:lA:3485:U:N3	2.09	0.99
3:lC:81:A:C2	3:lC:93:G:N1	2.26	0.98
1:lA:3469:A:N1	1:lA:3486:A:C2	2.34	0.96
3:lC:26:U:H3	3:lC:51:G:H22	1.12	0.95
7:lG:187:ASN:N	7:lG:187:ASN:HD22	1.62	0.93
2:lB:49:C:HO2'	2:lB:63:A:HO2'	1.10	0.92
1:lA:2152:U:H2'	1:lA:2153:U:H4'	1.53	0.91
1:lA:869:G:H21	1:lA:872:A:N6	1.69	0.90
1:lA:3467:U:O4	1:lA:3469:A:C2	2.25	0.90
1:lA:869:G:N2	1:lA:872:A:N6	2.18	0.89
6:lF:101:MET:HE3	6:lF:104:PRO:HA	1.54	0.89
3:lC:52:G:N2	3:lC:54:U:O4	2.06	0.88
19:lS:73:HIS:HB3	19:lS:76:GLU:HG3	1.53	0.88
3:lC:27:G:H1	3:lC:50:A:N6	1.71	0.87
23:lW:47:VAL:HG13	23:lW:68:VAL:HG12	1.54	0.87
23:lW:47:VAL:CG1	23:lW:68:VAL:CG1	2.48	0.85
1:lA:3470:G:N2	1:lA:3485:U:C4	2.45	0.85
1:lA:3431:U:H3	1:lA:3441:G:H1	1.23	0.85
1:lA:1605:A:H2	1:lA:3430:U:H3	1.24	0.84
3:lC:75:G:H1	3:lC:99:U:H5	1.24	0.83
1:lA:1818:C:OP2	34:lh:74:ARG:NH2	2.12	0.82
1:lA:869:G:N2	1:lA:872:A:C6	2.47	0.82
3:lC:79:G:O6	3:lC:95:A:N1	2.13	0.82
5:lE:386:LYS:O	5:lE:387:ASP:HB2	1.78	0.81
3:lC:81:A:N1	3:lC:93:G:O6	2.13	0.81
1:lA:493:G:H21	1:lA:580:A:H61	1.28	0.81
1:lA:869:G:N2	1:lA:872:A:C5	2.49	0.81
5:lE:383:PRO:HB2	5:lE:388:LEU:HD11	0.88	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:737:A:H3'	1:lA:738:G:H21	1.48	0.79
1:lA:2848:A:N1	1:lA:2911:U:H5	1.81	0.79
1:lA:3467:U:O4	1:lA:3469:A:H2	1.63	0.78
1:lA:3469:A:C6	1:lA:3486:A:C2	2.71	0.78
8:lH:98:ASN:ND2	8:lH:187:MET:O	2.17	0.78
1:lA:3456:U:H3	1:lA:3496:A:H2	1.31	0.78
1:lA:723:U:O2	1:lA:726:A:N6	2.17	0.78
3:lC:84:G:H1	3:lC:91:G:H22	1.32	0.77
1:lA:1093:G:OP1	19:lS:19:ARG:NH2	2.16	0.77
1:lA:3454:G:O6	1:lA:3501:A:N1	2.17	0.77
3:lC:27:G:N2	3:lC:50:A:N1	2.30	0.77
1:lA:2152:U:H2'	1:lA:2153:U:C4'	2.14	0.77
1:lA:3457:G:H1	1:lA:3495:U:H3	1.33	0.77
1:lA:920:A:OP1	29:lc:27:LYS:NZ	2.18	0.77
1:lA:2269:U:H5'	1:lA:2270:G:H5'	1.68	0.76
1:lA:869:G:N2	1:lA:872:A:H62	1.81	0.76
1:lA:225:U:H3	1:lA:282:G:H1	1.34	0.76
1:lA:1357:G:H2'	1:lA:1358:G:C8	2.21	0.76
1:lA:409:G:OP2	38:ll:56:ARG:NH2	2.18	0.76
1:lA:908:A:H2'	1:lA:909:A:C8	2.21	0.76
3:lC:59:G:H5'	7:lG:265:LYS:HG2	1.68	0.75
40:ln:8:PHE:HE2	40:ln:52:LYS:HB3	1.50	0.75
3:lC:6:G:H1	3:lC:111:A:H2	1.32	0.75
1:lA:3146:U:H4'	1:lA:3147:U:H5"	1.69	0.75
40:ln:7:GLU:N	40:ln:7:GLU:OE1	2.19	0.74
1:lA:3455:G:H1	1:lA:3500:A:H2	0.77	0.74
6:lF:194:GLN:HG3	6:lF:197:MET:HE3	1.69	0.74
1:lA:1648:U:OP2	1:lA:2081:A:O2'	2.05	0.74
1:lA:631:G:N2	1:lA:659:U:O2	2.19	0.74
1:lA:2152:U:C2'	1:lA:2153:U:H4'	2.17	0.74
3:lC:85:G:H22	3:lC:90:G:H22	1.36	0.73
5:lE:296:LYS:HZ1	5:lE:303:GLU:HG3	1.53	0.73
3:lC:85:G:N2	3:lC:90:G:H22	1.86	0.73
1:lA:3476:C:H41	1:lA:3478:U:H4'	1.52	0.73
1:lA:3469:A:C2	1:lA:3486:A:C2	2.76	0.73
1:lA:774:U:OP1	29:lc:21:ARG:NH2	2.22	0.72
3:lC:69:U:H3	3:lC:104:G:H1	1.35	0.72
1:lA:631:G:H1	1:lA:659:U:H3	1.12	0.72
1:lA:3470:G:N2	1:lA:3484:A:C2	2.58	0.72
12:lL:112:GLN:O	12:lL:112:GLN:NE2	2.21	0.72
9:lI:21:CYS:SG	9:lI:22:LYS:N	2.63	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:1763:C:H2'	1:lA:1764:A:H8	1.55	0.72
21:lU:140:GLU:OE1	21:lU:140:GLU:N	2.23	0.71
1:lA:1502:A:N6	19:lS:15:SER:OG	2.24	0.71
1:lA:491:G:O6	1:lA:581:U:O2	2.08	0.71
1:lA:341:G:OP2	17:lQ:15:GLN:NE2	2.24	0.71
1:lA:1841:G:H22	1:lA:1975:G:H1	1.37	0.71
18:lR:18:ARG:NH1	18:lR:20:ASP:OD1	2.23	0.71
20:lT:78:VAL:HG22	20:lT:83:ILE:HG12	1.71	0.71
1:lA:1086:G:H1	1:lA:1240:C:H5	1.38	0.71
1:lA:3469:A:C6	1:lA:3486:A:N3	2.59	0.71
1:lA:1118:A:H2	1:lA:1165:A:H62	1.37	0.71
3:lC:79:G:C6	3:lC:95:A:N1	2.59	0.70
22:lV:88:ARG:NH2	30:ld:28:ALA:O	2.22	0.70
1:lA:98:A:H4'	14:lN:59:MET:HE2	1.73	0.70
1:lA:487:A:H2'	1:lA:488:A:H8	1.57	0.70
1:lA:2335:A:H8	1:lA:2335:A:OP1	1.74	0.70
2:lB:141:G:H2'	2:lB:142:A:H8	1.56	0.70
3:lC:17:G:H1	3:lC:59:G:H22	1.39	0.70
16:lP:69:ARG:NH2	20:lT:127:ASP:OD2	2.22	0.70
13:lM:143:ARG:HG2	13:lM:144:MET:HG3	1.74	0.70
22:lV:80:VAL:HG12	22:lV:81:ASN:H	1.56	0.70
1:lA:3455:G:O6	1:lA:3500:A:N1	2.25	0.69
36:lj:5:ARG:NH1	36:lj:7:HIS:O	2.25	0.69
14:lN:156:ILE:O	14:lN:160:ASN:ND2	2.25	0.69
1:lA:618:U:H3	1:lA:677:A:H61	1.40	0.69
1:lA:816:G:N2	1:lA:829:G:OP2	2.25	0.69
1:lA:3454:G:H1	1:lA:3501:A:H2	0.72	0.69
2:lB:1:A:H2'	2:lB:2:A:C8	2.28	0.69
4:lD:117:GLU:HG2	4:lD:124:GLY:H	1.57	0.69
7:lG:201:ALA:HB2	7:lG:232:LEU:HD12	1.74	0.69
24:lX:22:ASN:ND2	24:lX:40:ILE:O	2.26	0.69
1:lA:896:A:O2'	1:lA:2790:U:OP1	2.11	0.69
1:lA:3469:A:N6	1:lA:3486:A:C4	2.60	0.69
1:lA:836:C:H2'	1:lA:837:A:H8	1.56	0.69
1:lA:1763:C:H2'	1:lA:1764:A:C8	2.28	0.69
3:lC:22:C:H2'	3:lC:23:A:H8	1.58	0.69
1:lA:3469:A:H62	1:lA:3485:U:H3	1.41	0.68
28:lb:52:LYS:O	28:lb:65:ARG:NH1	2.26	0.68
32:lf:49:GLU:HG2	32:lf:112:ARG:HB2	1.75	0.68
1:lA:3454:G:C6	1:lA:3501:A:N1	2.62	0.68
1:lA:1186:G:H21	1:lA:1220:A:H61	1.40	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:lC:14:G:H2'	3:lC:15:A:H8	1.58	0.68
2:lB:60:G:O6	38:ll:63:ARG:NH2	2.26	0.68
1:lA:331:A:OP2	43:lq:39:ARG:NH1	2.25	0.68
1:lA:1883:A:H62	1:lA:1931:U:H3	1.40	0.67
1:lA:3478:U:H5'	1:lA:3478:U:H6	1.60	0.67
2:lB:15:U:H5'	18:lR:2:VAL:HG13	1.77	0.67
1:lA:3073:U:O2'	24:lX:41:SER:OG	2.11	0.67
1:lA:682:G:H5'	20:lT:2:LYS:HD3	1.76	0.67
1:lA:2991:G:OP1	42:lp:25:TYR:OH	2.13	0.67
1:lA:3263:G:OP2	42:lp:37:LYS:NZ	2.27	0.67
1:lA:3467:U:C4	1:lA:3469:A:C2	2.82	0.67
1:lA:3091:C:OP1	5:lE:246:ARG:NH1	2.28	0.67
1:lA:3463:A:H3'	1:lA:3464:G:H21	1.60	0.67
3:lC:21:C:N4	3:lC:52:G:O2'	2.28	0.67
1:lA:1290:A:OP1	36:lj:85:ARG:NH2	2.28	0.67
1:lA:2979:C:H5	1:lA:2995:C:H42	1.43	0.67
1:lA:3454:G:C2	1:lA:3501:A:H2	2.13	0.67
1:lA:3476:C:N4	1:lA:3478:U:H4'	2.11	0.66
27:la:21:ALA:O	27:la:26:ARG:NH1	2.28	0.66
1:lA:2101:G:O2'	1:lA:2410:U:O4	2.13	0.66
8:lH:56:ARG:NH2	8:lH:107:GLN:O	2.29	0.66
1:lA:1523:U:OP1	33:lg:105:LYS:NZ	2.29	0.66
2:lB:32:C:OP1	14:lN:32:ARG:NH2	2.28	0.66
6:lF:33:ARG:NH2	6:lF:35:ASP:OD2	2.28	0.66
1:lA:3455:G:C2	1:lA:3500:A:H2	2.14	0.66
3:lC:84:G:H22	3:lC:91:G:N2	1.94	0.66
1:lA:643:A:OP1	16:lP:91:LYS:NZ	2.26	0.65
14:lN:148:LYS:O	14:lN:152:ILE:HG13	1.96	0.65
37:lk:2:ALA:O	37:lk:4:GLY:N	2.28	0.65
43:lq:72:CYS:SG	43:lq:75:CYS:N	2.68	0.65
8:lH:56:ARG:NH1	36:lj:108:ILE:O	2.29	0.65
1:lA:220:A:H2'	1:lA:221:U:C6	2.32	0.65
1:lA:1841:G:N2	1:lA:1975:G:H22	1.94	0.65
1:lA:3038:C:O2'	42:lp:25:TYR:O	2.14	0.65
1:lA:3367:U:H2'	1:lA:3368:G:C8	2.32	0.65
6:lF:393:GLU:HB3	6:lF:396:LEU:HD21	1.77	0.65
1:lA:1814:G:N2	1:lA:1817:A:OP2	2.29	0.65
1:lA:705:U:H2'	1:lA:706:A:H8	1.61	0.65
1:lA:789:C:H2'	1:lA:790:A:H8	1.61	0.65
1:lA:2634:A:OP2	4:lD:64:ARG:NH2	2.30	0.65
1:lA:1661:G:O2'	1:lA:1751:A:N6	2.29	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:lB:141:G:H2'	2:lB:142:A:C8	2.32	0.64
28:lb:42:THR:HG22	28:lb:74:VAL:HG22	1.77	0.64
1:lA:487:A:H2'	1:lA:488:A:C8	2.32	0.64
3:lC:29:G:O6	3:lC:46:G:O6	2.16	0.64
1:lA:1153:C:H5"	1:lA:1153:C:H6	1.62	0.64
1:lA:2075:A:OP2	21:lU:20:ARG:NH1	2.30	0.64
1:lA:2515:A:H2'	1:lA:2516:U:O4'	1.97	0.64
1:lA:500:G:O6	1:lA:573:A:N6	2.30	0.64
1:lA:3211:A:H2	1:lA:3239:G:H21	1.46	0.64
1:lA:3315:U:O2'	1:lA:3418:C:OP2	2.14	0.64
1:lA:2098:A:H61	1:lA:2415:C:H42	1.46	0.64
6:lF:402:LYS:HE2	6:lF:402:LYS:HA	1.79	0.64
16:lP:25:ALA:HA	16:lP:40:GLY:HA3	1.80	0.64
3:lC:17:G:H22	3:lC:59:G:H22	1.45	0.64
22:lV:75:MET:SD	22:lV:88:ARG:NH1	2.71	0.64
1:lA:590:G:OP1	8:lH:37:ARG:NH1	2.31	0.64
1:lA:2629:A:H8	31:le:54:PRO:HB3	1.61	0.63
1:lA:3458:U:H3	1:lA:3494:G:H1	1.44	0.63
1:lA:3107:G:N2	1:lA:3110:A:OP2	2.30	0.63
3:lC:6:G:O3'	7:lG:33:ARG:NH2	2.31	0.63
24:lX:83:ARG:NH2	24:lX:118:THR:O	2.31	0.63
1:lA:2865:A:O2'	1:lA:2866:C:O4'	2.11	0.63
14:lN:145:LYS:HE3	14:lN:149:ALA:HB2	1.80	0.63
1:lA:2416:U:OP2	5:lE:239:HIS:ND1	2.29	0.63
38:ll:39:TYR:O	38:ll:41:ASP:N	2.32	0.63
1:lA:118:A:N6	1:lA:189:G:O2'	2.32	0.63
1:lA:1157:A:H4'	7:lG:5:LYS:H	1.63	0.63
1:lA:2261:G:O2'	1:lA:2390:U:OP2	2.17	0.63
6:lF:61:GLN:OE1	38:ll:55:ARG:NH2	2.29	0.63
3:lC:80:G:H1	3:lC:94:U:H3	1.44	0.63
4:lD:108:PRO:O	4:lD:111:THR:OG1	2.15	0.63
6:lF:77:PRO:HB2	6:lF:91:ALA:HB3	1.81	0.63
1:lA:3497:U:OP2	1:lA:3500:A:N6	2.27	0.63
39:lm:8:VAL:HG13	39:lm:11:VAL:HG23	1.80	0.63
1:lA:105:A:N1	1:lA:368:U:O2'	2.32	0.62
1:lA:2848:A:N1	1:lA:2911:U:C5	2.64	0.62
7:lG:10:ARG:HH21	7:lG:14:LYS:HE3	1.63	0.62
1:lA:732:U:O2'	1:lA:733:C:O5'	2.17	0.62
1:lA:1858:A:OP1	23:lW:86:LYS:NZ	2.27	0.62
2:lB:11:U:H2'	2:lB:12:A:H8	1.64	0.62
12:lL:170:LYS:HA	12:lL:177:THR:HA	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:404:G:N2	1:lA:407:A:OP2	2.27	0.62
1:lA:909:A:H2'	1:lA:910:A:H8	1.64	0.62
3:lC:3:G:H22	3:lC:114:U:H3	1.47	0.62
1:lA:871:A:H2'	1:lA:872:A:C8	2.34	0.62
45:sH:5:U:H2'	45:sH:6:U:H6	1.64	0.62
25:lY:38:GLU:OE1	25:lY:38:GLU:N	2.26	0.62
33:lg:130:GLN:HA	33:lg:134:GLN:HB3	1.82	0.62
1:lA:908:A:H2'	1:lA:909:A:H8	1.63	0.62
1:lA:2721:G:H1	1:lA:2941:C:H5	1.46	0.62
3:lC:85:G:H22	3:lC:90:G:H1	1.46	0.62
13:lM:157:GLU:OE1	13:lM:157:GLU:N	2.29	0.62
32:lf:54:MET:HE3	32:lf:109:ILE:HD12	1.81	0.62
1:lA:1874:C:O2'	1:lA:1960:U:O2'	2.18	0.62
1:lA:3336:G:O2'	15:lO:115:LYS:O	2.16	0.62
1:lA:3455:G:C6	1:lA:3500:A:N1	2.68	0.62
9:lI:130:GLU:OE2	9:lI:130:GLU:N	2.18	0.62
1:lA:605:C:H2'	1:lA:606:A:H8	1.65	0.61
1:lA:2850:U:O2	1:lA:2910:G:C2	2.53	0.61
1:lA:817:A:H2'	1:lA:818:A:C8	2.35	0.61
2:lB:101:G:OP2	2:lB:103:A:O2'	2.17	0.61
6:lF:101:MET:HE1	6:lF:105:LEU:HG	1.81	0.61
7:lG:50:ARG:NH2	7:lG:72:ASP:OD2	2.32	0.61
1:lA:493:G:N2	1:lA:580:A:H61	1.98	0.61
1:lA:1209:U:OP1	1:lA:1211:A:O2'	2.17	0.61
1:lA:1813:G:N7	28:lb:17:ARG:NH2	2.48	0.61
40:ln:8:PHE:HE1	40:ln:12:LEU:HD21	1.64	0.61
1:lA:493:G:O2'	1:lA:578:A:N6	2.33	0.61
1:lA:1173:A:H5"	1:lA:2707:A:H61	1.65	0.61
1:lA:2745:C:N4	13:lM:22:SER:OG	2.33	0.61
1:lA:626:A:OP1	1:lA:664:A:N6	2.33	0.61
1:lA:1744:A:H2'	1:lA:1745:A:C8	2.36	0.61
3:lC:84:G:H22	3:lC:91:G:H22	1.45	0.61
1:lA:1431:G:OP2	15:lO:60:ARG:NH1	2.33	0.61
1:lA:2381:G:OP2	1:lA:2381:G:N2	2.27	0.61
1:lA:1737:A:OP2	34:lh:11:HIS:ND1	2.33	0.61
1:lA:2213:U:OP2	1:lA:2218:A:N6	2.29	0.61
1:lA:2589:C:OP2	1:lA:2656:G:N2	2.33	0.61
1:lA:2730:U:H2'	1:lA:2731:G:H8	1.64	0.61
1:lA:3340:A:N7	20:lT:167:LYS:NZ	2.49	0.61
3:lC:17:G:H22	3:lC:59:G:N2	1.98	0.61
35:li:-7:LEU:HD22	35:li:42:ASP:HB3	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:1430:G:O6	1:lA:2442:C:O2'	2.19	0.61
1:lA:3349:G:OP1	16:lP:94:THR:OG1	2.19	0.61
1:lA:665:A:OP1	20:lT:64:ASN:ND2	2.32	0.61
1:lA:3469:A:H5"	1:lA:3470:G:N7	2.16	0.61
3:lC:85:G:H22	3:lC:90:G:N2	1.98	0.61
12:lL:66:GLU:OE1	12:lL:69:ARG:NH2	2.34	0.61
29:lc:111:LYS:HG3	29:lc:129:TYR:HB2	1.81	0.61
37:lk:1:MET:HE3	37:lk:2:ALA:H	1.65	0.61
1:lA:1247:G:H1	3:lC:92:U:H5	1.49	0.60
1:lA:2466:G:N2	5:lE:228:TYR:OH	2.23	0.60
10:lJ:89:LYS:HE2	10:lJ:186:LEU:HA	1.83	0.60
11:lK:138:ASP:OD1	11:lK:138:ASP:N	2.32	0.60
1:lA:191:A:H2'	1:lA:192:A:H8	1.66	0.60
1:lA:1553:A:OP1	2:lB:22:G:O2'	2.18	0.60
5:lE:386:LYS:O	5:lE:387:ASP:CB	2.49	0.60
17:lQ:143:ARG:NH2	35:li:82:ARG:O	2.34	0.60
3:lC:17:G:H1	3:lC:59:G:H1	1.49	0.60
28:lb:102:ASN:ND2	28:lb:102:ASN:O	2.33	0.60
1:lA:1177:A:H2'	1:lA:1178:A:C8	2.37	0.60
34:lh:22:ILE:HG22	34:lh:30:MET:HE3	1.83	0.60
5:lE:58:ARG:NH1	5:lE:353:GLU:OE2	2.33	0.60
20:lT:69:LYS:NZ	20:lT:93:VAL:O	2.34	0.60
1:lA:493:G:H1'	1:lA:579:A:H61	1.66	0.60
3:lC:10:A:N1	3:lC:65:U:O2'	2.34	0.60
3:lC:18:U:H3	3:lC:58:A:H61	1.49	0.60
7:lG:64:ILE:HG13	7:lG:105:LEU:HD21	1.83	0.60
1:lA:764:U:H2'	1:lA:765:A:H8	1.67	0.60
35:li:34:SER:HA	35:li:37:ARG:HD3	1.83	0.60
32:lf:48:ARG:NH1	32:lf:144:THR:OG1	2.34	0.60
1:lA:2944:A:O2'	1:lA:2945:A:H2'	2.02	0.60
20:lT:5:TYR:HB2	20:lT:60:ILE:HD11	1.83	0.60
34:lh:81:CYS:SG	34:lh:84:CYS:N	2.68	0.60
1:lA:2432:A:H61	1:lA:3126:C:H5	1.49	0.59
7:lG:187:ASN:N	7:lG:187:ASN:ND2	2.36	0.59
25:lY:55:ILE:HD11	25:lY:61:LEU:HD23	1.84	0.59
3:lC:79:G:C2	3:lC:95:A:H2	2.16	0.59
11:lK:43:LYS:HE3	15:lO:132:PRO:HG2	1.85	0.59
1:lA:428:U:O2'	18:lR:100:ASP:OD2	2.16	0.59
1:lA:457:G:N2	18:lR:5:CYS:SG	2.75	0.59
1:lA:1538:G:N2	1:lA:1541:A:OP2	2.32	0.59
1:lA:2114:U:N3	1:lA:2198:G:OP2	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:2912:U:O5'	1:lA:2912:U:H6	1.85	0.59
8:lH:64:ILE:O	8:lH:113:THR:OG1	2.19	0.59
29:lc:85:ASP:OD1	29:lc:85:ASP:N	2.36	0.59
1:lA:2688:G:O2'	1:lA:3008:U:OP1	2.18	0.59
1:lA:227:A:H2'	1:lA:228:A:C8	2.37	0.59
1:lA:1154:A:H3'	1:lA:1155:A:C8	2.37	0.59
1:lA:2971:G:OP2	12:lL:7:ARG:NH2	2.32	0.59
14:lN:82:LYS:NZ	14:lN:215:LYS:O	2.35	0.59
9:lI:87:ILE:HG23	9:lI:118:VAL:HG12	1.85	0.59
1:lA:1401:C:H2'	1:lA:1402:A:H8	1.68	0.59
1:lA:1512:G:OP2	6:lF:191:ARG:NH1	2.34	0.59
1:lA:1912:A:H61	39:lm:42:CYS:HA	1.67	0.59
1:lA:1980:C:OP2	39:lm:49:ARG:NH2	2.31	0.59
1:lA:2415:C:OP1	24:lX:54:ARG:NH2	2.35	0.59
2:lB:11:U:H2'	2:lB:12:A:C8	2.37	0.59
3:lC:106:U:H2'	3:lC:107:A:H8	1.67	0.59
4:lD:39:SER:OG	4:lD:40:THR:N	2.36	0.59
31:le:56:GLU:OE2	31:le:56:GLU:N	2.36	0.59
1:lA:255:A:N3	6:lF:225:ASN:ND2	2.51	0.58
1:lA:1841:G:H22	1:lA:1975:G:H22	1.50	0.58
1:lA:2064:G:N1	1:lA:2067:A:OP2	2.36	0.58
1:lA:3467:U:H3	1:lA:3486:A:H2	1.51	0.58
5:lE:383:PRO:HB3	5:lE:388:LEU:HD21	1.84	0.58
7:lG:91:GLY:O	7:lG:94:ASN:ND2	2.36	0.58
1:lA:497:U:H3	1:lA:576:A:H2	1.51	0.58
1:lA:1154:A:H3'	1:lA:1155:A:H8	1.68	0.58
1:lA:2515:A:H8	1:lA:2515:A:O5'	1.86	0.58
1:lA:2838:A:O2'	43:lq:69:LYS:NZ	2.35	0.58
3:lC:80:G:H22	3:lC:94:U:H3	1.51	0.58
31:le:44:LYS:HB3	31:le:105:LEU:HD22	1.83	0.58
1:lA:386:U:OP2	6:lF:198:ARG:NH2	2.25	0.58
1:lA:2780:A:H2'	1:lA:2781:U:C6	2.38	0.58
11:lK:94:LYS:HB3	11:lK:194:GLU:HB2	1.85	0.58
1:lA:662:U:H2'	1:lA:663:G:O4'	2.03	0.58
1:lA:1511:G:OP1	6:lF:200:ARG:NH1	2.34	0.58
1:lA:1764:A:H2'	1:lA:1765:A:H8	1.69	0.58
37:lk:44:PHE:HB3	37:lk:48:GLU:HB2	1.84	0.58
1:lA:1476:G:O2'	1:lA:1477:A:H5'	2.03	0.58
1:lA:3476:C:H5	1:lA:3479:A:OP1	1.86	0.58
5:lE:361:ASP:OD2	5:lE:365:LYS:NZ	2.37	0.58
1:lA:457:G:OP1	18:lR:62:LYS:NZ	2.33	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:2062:A:O2'	1:lA:3220:U:OP1	2.17	0.58
23:lW:63:THR:HB	23:lW:66:ILE:HG13	1.86	0.58
1:lA:502:U:H2'	1:lA:503:A:H8	1.68	0.58
1:lA:993:U:OP2	1:lA:2109:C:O2'	2.17	0.58
1:lA:1639:U:H2'	1:lA:1640:A:H8	1.67	0.58
2:lB:8:U:H2'	2:lB:9:A:H8	1.68	0.58
1:lA:779:A:O2'	1:lA:783:A:N6	2.37	0.58
1:lA:1892:C:H2'	1:lA:1893:A:H8	1.67	0.58
1:lA:3452:U:H3	1:lA:3503:G:H22	1.50	0.58
5:lE:223:THR:OG1	5:lE:273:GLY:O	2.22	0.58
24:lX:8:GLY:O	24:lX:10:GLN:NE2	2.37	0.58
10:lJ:141:GLU:OE2	17:lQ:6:TYR:OH	2.22	0.57
1:lA:772:C:N4	1:lA:773:G:O6	2.37	0.57
12:lL:171:TRP:CD1	12:lL:172:GLY:H	2.22	0.57
20:lT:157:LYS:HG2	36:lj:36:THR:HB	1.86	0.57
1:lA:213:A:H5"	14:lN:133:LYS:HB2	1.86	0.57
1:lA:525:U:H2'	1:lA:526:A:H8	1.69	0.57
1:lA:720:U:H2'	1:lA:721:A:C8	2.39	0.57
1:lA:3479:A:H2'	1:lA:3480:A:O4'	2.04	0.57
19:lS:152:VAL:HA	19:lS:159:ALA:H	1.69	0.57
28:lb:78:ASN:OD1	31:le:39:ARG:NH2	2.38	0.57
1:lA:199:G:N1	1:lA:311:A:OP2	2.31	0.57
1:lA:312:A:OP2	37:lk:28:THR:OG1	2.19	0.57
1:lA:1312:A:H62	1:lA:1441:U:H3	1.53	0.57
1:lA:71:U:OP2	14:lN:102:SER:OG	2.19	0.57
1:lA:106:G:OP2	14:lN:71:ARG:NH2	2.38	0.57
1:lA:1071:A:H4'	1:lA:1087:G:N2	2.18	0.57
5:lE:231:VAL:HG11	5:lE:251:VAL:HG23	1.87	0.57
1:lA:539:G:OP2	14:lN:160:ASN:ND2	2.37	0.57
3:lC:28:U:H3'	3:lC:29:G:H21	1.69	0.57
1:lA:869:G:C5	1:lA:870:A:H1'	2.40	0.57
1:lA:2856:G:H8	1:lA:2903:A:N6	1.91	0.57
5:lE:70:ASP:O	5:lE:358:LYS:NZ	2.38	0.57
10:lJ:40:VAL:HG21	25:lY:6:ARG:HD3	1.86	0.57
1:lA:17:A:H2	2:lB:137:A:H61	1.53	0.56
1:lA:886:A:H4'	30:ld:27:SER:HB2	1.87	0.56
25:lY:26:PRO:HD2	35:li:69:PRO:HG3	1.87	0.56
5:lE:168:MET:HE1	5:lE:173:LEU:HD12	1.87	0.56
30:ld:7:ARG:NH2	30:ld:9:SER:OG	2.38	0.56
1:lA:732:U:O2'	1:lA:733:C:H6	1.88	0.56
1:lA:3170:A:H2'	1:lA:3171:A:H8	1.69	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:3368:G:H2'	1:lA:3369:U:C6	2.40	0.56
6:lF:143:HIS:N	6:lF:180:ASP:OD1	2.36	0.56
7:lG:120:VAL:O	7:lG:244:ARG:NH2	2.31	0.56
14:lN:46:PRO:HA	14:lN:49:ILE:HG13	1.87	0.56
17:lQ:31:ARG:NH1	17:lQ:124:ASP:OD2	2.38	0.56
1:lA:506:A:H2'	1:lA:507:A:C8	2.39	0.56
1:lA:535:A:HO2'	1:lA:536:G:H8	1.54	0.56
1:lA:619:A:O2'	1:lA:620:U:O5'	2.21	0.56
1:lA:789:C:H2'	1:lA:790:A:C8	2.39	0.56
1:lA:1393:U:H3	1:lA:1395:A:H3'	1.70	0.56
1:lA:2582:U:H2'	1:lA:2583:U:C6	2.41	0.56
3:lC:2:G:O2'	3:lC:24:U:O2	2.22	0.56
1:lA:2079:A:H2'	1:lA:2080:A:O4'	2.05	0.56
1:lA:3349:G:OP2	16:lP:5:ARG:NH2	2.33	0.56
31:le:11:GLN:HE21	31:le:75:SER:HB3	1.71	0.56
1:lA:452:A:C2	2:lB:19:A:H1'	2.41	0.56
1:lA:502:U:H2'	1:lA:503:A:C8	2.40	0.56
3:lC:81:A:N1	3:lC:93:G:C6	2.73	0.56
4:lD:30:ARG:NH2	4:lD:33:ASP:OD2	2.39	0.56
1:lA:1633:G:H1'	1:lA:2044:C:H5"	1.86	0.56
3:lC:3:G:H1	3:lC:114:U:H3	1.54	0.56
4:lD:242:ARG:NH1	4:lD:243:THR:O	2.39	0.56
1:lA:189:G:H5'	17:lQ:55:PRO:HG3	1.88	0.56
1:lA:1639:U:H2'	1:lA:1640:A:C8	2.41	0.56
5:lE:50:LYS:HB2	5:lE:337:ILE:HD11	1.87	0.56
24:lX:96:LEU:HD13	26:lZ:22:LYS:HD2	1.87	0.56
1:lA:645:A:H1'	1:lA:646:U:H2'	1.88	0.56
1:lA:2711:U:OP2	22:lV:9:ARG:NH2	2.38	0.56
4:lD:33:ASP:OD2	4:lD:67:ARG:NH2	2.39	0.56
1:lA:476:U:OP1	36:lj:66:ARG:NH1	2.39	0.55
1:lA:1270:G:OP1	33:lg:45:ARG:NH1	2.39	0.55
1:lA:1545:A:H4'	33:lg:122:ASN:HD21	1.72	0.55
1:lA:3426:U:O4	5:lE:121:LYS:NZ	2.39	0.55
1:lA:491:G:C5	1:lA:492:U:C4	2.93	0.55
1:lA:1764:A:H2'	1:lA:1765:A:C8	2.41	0.55
1:lA:2335:A:OP1	1:lA:2335:A:C8	2.58	0.55
1:lA:3476:C:H3'	1:lA:3477:U:C6	2.40	0.55
1:lA:115:G:N7	10:lJ:138:ARG:NH1	2.53	0.55
1:lA:979:G:C5	4:lD:181:LYS:HB3	2.41	0.55
1:lA:1057:C:OP2	29:lc:26:ARG:NH1	2.37	0.55
6:lF:237:LEU:HD22	6:lF:242:LEU:HD21	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:lK:50:LYS:HB3	11:lK:59:LYS:HD3	1.88	0.55
37:lk:68:LYS:HD3	37:lk:74:HIS:HA	1.87	0.55
1:lA:550:A:H2'	1:lA:551:A:C8	2.42	0.55
1:lA:3343:A:OP1	20:lT:149:HIS:ND1	2.36	0.55
19:lS:35:LEU:O	19:lS:39:THR:OG1	2.20	0.55
1:lA:685:A:H5"	1:lA:1450:A:H61	1.70	0.55
1:lA:1728:A:N7	1:lA:1729:G:N2	2.55	0.55
1:lA:1996:A:OP2	28:lb:65:ARG:NH2	2.40	0.55
1:lA:700:A:O2'	1:lA:701:A:OP1	2.23	0.55
1:lA:836:C:H2'	1:lA:837:A:C8	2.39	0.55
1:lA:3500:A:H2'	1:lA:3501:A:C8	2.42	0.55
8:lH:43:THR:OG1	8:lH:85:LYS:NZ	2.39	0.55
42:lp:4:GLU:OE1	42:lp:4:GLU:N	2.28	0.55
1:lA:764:U:H2'	1:lA:765:A:C8	2.41	0.55
1:lA:3469:A:N1	1:lA:3486:A:N1	2.55	0.55
1:lA:700:A:H5"	1:lA:745:A:N6	2.22	0.55
1:lA:1627:G:H21	34:lh:6:THR:HG22	1.71	0.55
4:lD:168:ILE:HD11	39:lm:79:VAL:HG21	1.89	0.55
23:lW:30:CYS:H	23:lW:77:ILE:HG22	1.71	0.55
1:lA:38:C:O2'	1:lA:39:A:H5'	2.06	0.55
1:lA:631:G:N1	1:lA:659:U:N3	2.30	0.55
3:lC:17:G:N2	3:lC:59:G:H22	2.04	0.55
3:lC:79:G:H1	3:lC:95:A:H2	0.68	0.55
13:lM:151:ASP:N	13:lM:151:ASP:OD1	2.40	0.55
1:lA:586:A:N6	8:lH:43:THR:O	2.40	0.55
1:lA:765:A:N3	36:lj:92:PRO:HG2	2.22	0.55
3:lC:109:G:H2'	3:lC:110:A:C8	2.42	0.55
38:ll:21:ARG:NH2	38:ll:38:GLY:O	2.39	0.55
1:lA:220:A:H2'	1:lA:221:U:H6	1.70	0.54
1:lA:2429:G:H5"	18:lR:86:LYS:HB2	1.88	0.54
3:lC:17:G:H1	3:lC:59:G:N2	2.04	0.54
9:lI:142:LEU:HD12	9:lI:156:MET:HE2	1.88	0.54
20:lT:19:GLU:HG3	22:lV:153:LYS:HE3	1.89	0.54
38:ll:33:ARG:NH2	38:ll:41:ASP:OD2	2.40	0.54
45:sH:5:U:H2'	45:sH:6:U:C6	2.41	0.54
1:lA:685:A:O4'	1:lA:1450:A:N6	2.40	0.54
1:lA:1220:A:H2'	1:lA:1220:A:N3	2.20	0.54
1:lA:1353:G:H2'	1:lA:1354:G:C8	2.42	0.54
14:lN:124:LEU:O	35:li:106:ARG:NH2	2.40	0.54
1:lA:466:G:O2'	1:lA:2441:U:OP2	2.16	0.54
1:lA:739:A:H2'	1:lA:740:A:C8	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:3044:G:O2'	1:lA:3178:A:N1	2.37	0.54
1:lA:3372:U:O2'	1:lA:3374:C:OP2	2.24	0.54
1:lA:3478:U:H5'	1:lA:3478:U:C6	2.43	0.54
42:lp:29:PRO:HG2	42:lp:32:ALA:HB2	1.89	0.54
1:lA:1112:G:O2'	1:lA:1172:G:O6	2.26	0.54
1:lA:3156:U:O2'	5:lE:182:GLU:OE2	2.21	0.54
3:lC:22:C:H2'	3:lC:23:A:C8	2.40	0.54
10:lJ:91:GLU:HG2	10:lJ:96:LYS:HB2	1.89	0.54
14:lN:9:ASN:HB2	19:lS:165:LYS:HB2	1.89	0.54
27:la:70:ALA:HB3	27:la:79:ASN:HB2	1.88	0.54
31:le:103:ASP:OD1	31:le:103:ASP:N	2.38	0.54
1:lA:258:G:C8	6:lF:227:PRO:HG3	2.42	0.54
1:lA:960:G:O2'	21:lU:131:GLN:OE1	2.24	0.54
1:lA:1358:G:OP2	1:lA:1359:U:O2'	2.22	0.54
3:lC:1:A:H61	3:lC:116:C:H42	1.55	0.54
3:lC:55:C:O2'	13:lM:146:ASP:OD2	2.26	0.54
1:lA:709:U:O2'	1:lA:710:A:OP1	2.23	0.54
1:lA:1992:A:H2'	1:lA:1993:G:H8	1.72	0.54
3:lC:75:G:N1	3:lC:99:U:H5	2.00	0.54
12:lL:51:HIS:ND1	12:lL:137:SER:OG	2.36	0.54
13:lM:18:VAL:HG13	13:lM:70:THR:HG22	1.89	0.54
1:lA:424:A:O2'	1:lA:425:C:OP2	2.25	0.54
1:lA:725:A:N6	9:lI:59:ILE:HG13	2.23	0.54
1:lA:3149:A:H2'	1:lA:3150:A:H8	1.73	0.54
6:lF:184:VAL:HG11	6:lF:228:GLY:HA3	1.90	0.54
32:lf:44:ALA:O	32:lf:115:ARG:NH1	2.41	0.54
40:ln:8:PHE:CE1	40:ln:12:LEU:HD21	2.41	0.54
41:lo:49:MET:HE3	41:lo:51:MET:HE3	1.90	0.54
1:lA:668:A:H2'	1:lA:669:A:C8	2.43	0.54
1:lA:2981:A:N6	1:lA:2993:G:O2'	2.38	0.54
1:lA:1186:G:H21	1:lA:1220:A:N6	2.05	0.54
5:lE:35:ASP:OD2	5:lE:193:LYS:NZ	2.41	0.54
28:lb:104:GLU:OE1	28:lb:104:GLU:N	2.38	0.54
1:lA:104:A:N6	14:lN:53:LYS:HE2	2.23	0.54
1:lA:1003:A:OP1	38:ll:5:THR:OG1	2.25	0.54
1:lA:1197:G:H2'	1:lA:1198:U:H6	1.73	0.54
1:lA:2098:A:H61	1:lA:2415:C:N4	2.06	0.54
1:lA:2499:U:H2'	1:lA:2500:A:C8	2.43	0.54
1:lA:3149:A:H2'	1:lA:3150:A:C8	2.42	0.54
2:lB:62:U:OP1	25:lY:33:ARG:NH2	2.36	0.54
3:lC:14:G:H2'	3:lC:15:A:C8	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:lC:32:A:H2'	3:lC:33:A:C8	2.43	0.54
9:lI:108:ASN:HB2	22:lV:138:PRO:HB2	1.90	0.54
11:lK:21:ILE:HG12	11:lK:26:ILE:HG13	1.90	0.54
15:lO:127:ILE:HD12	20:lT:170:THR:HG23	1.90	0.54
1:lA:464:G:OP2	1:lA:464:G:N2	2.32	0.53
1:lA:720:U:H2'	1:lA:721:A:H8	1.73	0.53
1:lA:893:U:H3	1:lA:897:A:H2	1.55	0.53
1:lA:1293:U:O4	1:lA:1454:G:O2'	2.18	0.53
21:lU:95:TRP:CH2	21:lU:99:MET:HE3	2.43	0.53
18:lR:36:ILE:HA	18:lR:39:MET:SD	2.49	0.53
1:lA:2151:A:H2'	1:lA:2152:U:O4'	2.09	0.53
1:lA:3150:A:H2'	1:lA:3151:A:H8	1.73	0.53
1:lA:43:C:OP2	1:lA:44:A:O2'	2.25	0.53
1:lA:1342:U:H2'	1:lA:1343:A:H4'	1.90	0.53
1:lA:2100:G:HO2'	24:lX:24:SER:HG	1.56	0.53
1:lA:3169:C:H2'	1:lA:3170:A:H8	1.73	0.53
1:lA:700:A:H2'	1:lA:701:A:H8	1.73	0.53
1:lA:1353:G:H2'	1:lA:1354:G:H8	1.73	0.53
1:lA:1905:C:OP2	21:lU:103:ARG:NH1	2.42	0.53
1:lA:3397:C:OP2	1:lA:3398:U:O2'	2.27	0.53
5:lE:383:PRO:CB	5:lE:388:LEU:CD1	2.61	0.53
6:lF:150:ILE:HG22	6:lF:151:PRO:HD3	1.91	0.53
3:lC:84:G:N2	3:lC:91:G:H22	2.06	0.53
8:lH:203:LYS:HE2	16:lP:106:LYS:HA	1.91	0.53
1:lA:191:A:H2'	1:lA:192:A:C8	2.44	0.53
1:lA:227:A:H2'	1:lA:228:A:H8	1.73	0.53
1:lA:1019:G:H1'	1:lA:1737:A:N6	2.23	0.53
1:lA:1073:A:H62	1:lA:1086:G:H21	1.56	0.53
3:lC:6:G:N1	3:lC:111:A:H2	2.04	0.53
10:lJ:91:GLU:OE1	10:lJ:91:GLU:N	2.29	0.53
1:lA:2660:U:H2'	1:lA:2661:U:C6	2.43	0.53
6:lF:212:TYR:HB2	6:lF:216:ASP:HB2	1.91	0.53
12:lL:189:LYS:HA	12:lL:200:ALA:HB3	1.91	0.53
27:la:54:GLU:OE2	27:la:67:LYS:NZ	2.40	0.53
43:lq:8:ARG:O	43:lq:21:HIS:N	2.35	0.53
1:lA:760:A:H2'	1:lA:761:A:H8	1.73	0.53
1:lA:1476:G:N3	1:lA:1476:G:H2'	2.24	0.53
16:lP:12:VAL:O	16:lP:60:THR:OG1	2.21	0.53
22:lV:164:GLU:HG3	22:lV:166:TYR:H	1.73	0.53
37:lk:1:MET:CE	37:lk:2:ALA:H	2.22	0.53
1:lA:631:G:O6	1:lA:659:U:O4	2.26	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:1086:G:H2'	1:lA:1087:G:H8	1.74	0.53
1:lA:1226:A:O2'	1:lA:1229:A:O2'	2.26	0.53
1:lA:336:A:H5"	17:lQ:97:SER:HB3	1.91	0.52
1:lA:700:A:H5"	1:lA:745:A:H62	1.74	0.52
1:lA:1359:U:H4'	1:lA:1360:G:H3'	1.90	0.52
1:lA:2343:C:H2'	1:lA:2344:U:H5'	1.89	0.52
8:lH:24:ASP:HA	8:lH:27:ILE:HB	1.90	0.52
10:lJ:37:THR:C	10:lJ:39:TYR:H	2.16	0.52
14:lN:264:ARG:NH1	29:lc:132:GLU:OE2	2.26	0.52
27:la:87:LYS:O	27:la:89:ASN:N	2.41	0.52
1:lA:721:A:H2'	1:lA:722:A:H8	1.75	0.52
1:lA:2241:U:OP1	4:lD:4:ARG:NH2	2.34	0.52
1:lA:2767:A:H2'	1:lA:2768:G:C8	2.44	0.52
8:lH:11:LYS:NZ	8:lH:27:ILE:O	2.43	0.52
11:lK:13:ILE:HD11	11:lK:63:VAL:HG23	1.90	0.52
40:ln:11:ILE:HG13	40:ln:15:LEU:HD23	1.90	0.52
1:lA:221:U:H2'	1:lA:222:A:H8	1.75	0.52
1:lA:759:U:H2'	1:lA:760:A:H8	1.74	0.52
1:lA:948:C:O2'	1:lA:949:G:N7	2.42	0.52
1:lA:996:C:HO2'	1:lA:999:G:HO2'	1.58	0.52
1:lA:1729:G:O2'	1:lA:1730:G:O4'	2.24	0.52
4:lD:242:ARG:NH2	4:lD:246:ILE:HG12	2.25	0.52
1:lA:65:U:O2'	1:lA:97:A:O2'	2.26	0.52
1:lA:208:U:H2'	1:lA:209:A:H8	1.74	0.52
1:lA:796:U:H2'	1:lA:797:C:C6	2.44	0.52
1:lA:1327:A:N3	1:lA:2998:U:O2'	2.42	0.52
1:lA:2634:A:OP1	4:lD:69:TYR:OH	2.26	0.52
4:lD:126:ILE:HG21	4:lD:150:LEU:HD22	1.91	0.52
11:lK:67:MET:HE3	11:lK:75:SER:HA	1.91	0.52
24:lX:82:ILE:HG13	24:lX:83:ARG:HG2	1.89	0.52
1:lA:926:A:N1	1:lA:2487:U:O2'	2.38	0.52
1:lA:1912:A:OP2	31:le:31:THR:OG1	2.24	0.52
1:lA:2205:C:N4	1:lA:2395:C:H41	2.07	0.52
1:lA:3352:G:H4'	1:lA:3353:U:H5"	1.92	0.52
1:lA:3469:A:C6	1:lA:3486:A:C4	2.97	0.52
14:lN:46:PRO:HG3	35:li:108:PHE:O	2.09	0.52
1:lA:333:U:O2'	17:lQ:180:ARG:O	2.28	0.52
1:lA:700:A:HO2'	1:lA:701:A:P	2.33	0.52
1:lA:822:C:H2'	1:lA:823:A:C8	2.45	0.52
1:lA:1841:G:H22	1:lA:1975:G:N2	2.08	0.52
1:lA:1904:U:OP2	21:lU:124:TYR:OH	2.26	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:3033:C:O2'	1:lA:3076:A:N3	2.40	0.52
1:lA:3254:U:H4'	1:lA:3255:G:H5'	1.91	0.52
3:lC:18:U:O2'	3:lC:19:U:H5'	2.09	0.52
5:lE:47:LEU:HB3	5:lE:84:MET:HE3	1.90	0.52
42:lp:21:CYS:HB3	42:lp:24:CYS:HB2	1.91	0.52
1:lA:184:A:N7	1:lA:185:G:C8	2.78	0.52
1:lA:1220:A:N7	22:lV:116:ARG:NH2	2.57	0.52
1:lA:2744:A:H5"	13:lM:105:GLY:HA3	1.92	0.52
3:lC:78:C:H2'	3:lC:79:G:H8	1.74	0.52
10:lJ:47:ARG:O	10:lJ:51:GLU:HG3	2.10	0.52
31:le:103:ASP:HB2	31:le:106:LYS:HD2	1.92	0.52
1:lA:698:U:O2'	1:lA:699:A:N3	2.43	0.52
1:lA:1086:G:H2'	1:lA:1087:G:C8	2.45	0.52
1:lA:1846:A:H2'	1:lA:1847:A:C8	2.44	0.52
2:lB:73:A:H4'	2:lB:74:A:H5'	1.91	0.52
3:lC:84:G:H1	3:lC:91:G:N2	2.04	0.52
33:lg:50:THR:O	33:lg:50:THR:OG1	2.27	0.52
1:lA:760:A:H2'	1:lA:761:A:C8	2.45	0.52
1:lA:3103:C:H2'	1:lA:3104:G:H8	1.74	0.52
1:lA:3469:A:H5"	1:lA:3470:G:C8	2.44	0.52
1:lA:3475:U:H3	1:lA:3479:A:H62	1.57	0.52
30:ld:38:GLN:NE2	30:ld:42:ASN:OD1	2.40	0.52
1:lA:525:U:H2'	1:lA:526:A:C8	2.44	0.52
1:lA:3302:U:H2'	1:lA:3303:A:H8	1.75	0.52
3:lC:2:G:H2'	3:lC:3:G:H8	1.74	0.52
13:lM:109:HIS:CE1	13:lM:123:TYR:H	2.28	0.52
15:lO:185:LYS:NZ	15:lO:185:LYS:HB2	2.24	0.52
35:li:48:THR:O	35:li:52:THR:OG1	2.22	0.52
40:ln:49:ASP:HB3	40:ln:52:LYS:HG3	1.91	0.52
42:lp:24:CYS:HA	42:lp:40:CYS:HB3	1.92	0.52
1:lA:467:A:N1	1:lA:2438:C:O2'	2.35	0.51
1:lA:1115:A:O2'	3:lC:76:U:O2	2.27	0.51
1:lA:1303:A:N3	1:lA:1453:U:O2'	2.41	0.51
1:lA:2515:A:C8	1:lA:2515:A:OP2	2.64	0.51
14:lN:74:THR:HG22	14:lN:99:ARG:HB3	1.92	0.51
1:lA:790:A:H2'	1:lA:791:A:C8	2.45	0.51
1:lA:996:C:O2'	1:lA:999:G:O2'	2.26	0.51
1:lA:1095:A:H2	1:lA:1099:A:H2	1.58	0.51
1:lA:2632:A:O2'	28:lb:139:PHE:O	2.24	0.51
4:lD:201:GLY:HA2	4:lD:204:MET:HG3	1.92	0.51
13:lM:63:ASP:N	13:lM:63:ASP:OD1	2.42	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:2910:G:C6	1:lA:2911:U:C5	2.99	0.51
5:lE:383:PRO:HB3	5:lE:388:LEU:CG	2.41	0.51
43:lq:9:LYS:HB2	43:lq:9:LYS:NZ	2.26	0.51
26:lZ:61:ASN:N	26:lZ:61:ASN:OD1	2.44	0.51
1:lA:582:U:H2'	1:lA:583:A:C8	2.46	0.51
1:lA:765:A:H2'	1:lA:766:U:C6	2.46	0.51
1:lA:1640:A:H2'	1:lA:1641:A:C8	2.45	0.51
1:lA:3393:A:H2'	1:lA:3394:A:C8	2.46	0.51
1:lA:3497:U:H4'	1:lA:3498:U:H5'	1.92	0.51
6:lF:141:GLY:O	6:lF:183:LYS:NZ	2.41	0.51
1:lA:489:U:H2'	1:lA:490:A:C8	2.46	0.51
1:lA:501:U:H2'	1:lA:502:U:H6	1.76	0.51
1:lA:2432:A:H2	18:lR:131:ARG:HH22	1.58	0.51
1:lA:2876:U:O2'	1:lA:2877:U:O4'	2.23	0.51
3:lC:45:U:H2'	3:lC:46:G:H8	1.76	0.51
5:lE:48:GLY:HA3	5:lE:81:THR:HG22	1.93	0.51
17:lQ:14:LYS:O	17:lQ:23:ARG:NH2	2.43	0.51
1:lA:873:U:H2'	1:lA:874:A:H8	1.76	0.51
1:lA:1640:A:H2'	1:lA:1641:A:H8	1.76	0.51
1:lA:1844:U:H2'	1:lA:1845:G:H8	1.76	0.51
1:lA:2850:U:C2	1:lA:2910:G:C2	2.98	0.51
2:lB:21:A:H2'	2:lB:22:G:H8	1.75	0.51
3:lC:5:A:H4'	7:lG:52:VAL:HG11	1.92	0.51
8:lH:183:LEU:O	8:lH:187:MET:HG2	2.11	0.51
1:lA:739:A:H2'	1:lA:740:A:H8	1.74	0.51
1:lA:1982:U:H2'	4:lD:50:HIS:CD2	2.46	0.51
5:lE:224:LYS:HB2	5:lE:332:ILE:HG23	1.93	0.51
40:ln:14:LEU:HD21	40:ln:38:CYS:SG	2.51	0.51
1:lA:425:C:H2'	1:lA:426:U:H6	1.75	0.51
1:lA:673:U:OP2	6:lF:403:ARG:NH1	2.43	0.51
1:lA:735:C:H2'	1:lA:736:G:O4'	2.11	0.51
1:lA:1555:U:H2'	1:lA:1556:G:H8	1.75	0.51
1:lA:3103:C:H2'	1:lA:3104:G:C8	2.45	0.51
6:lF:55:SER:HB3	6:lF:58:ALA:HB2	1.92	0.51
10:lJ:87:HIS:HB3	10:lJ:201:LYS:HD2	1.93	0.51
31:le:60:ILE:HD13	31:le:93:VAL:HG21	1.93	0.51
1:lA:213:A:H2'	14:lN:127:VAL:HG21	1.91	0.51
1:lA:495:A:N7	1:lA:577:G:O2'	2.44	0.51
1:lA:2250:C:OP1	4:lD:193:ARG:NH2	2.39	0.51
2:lB:115:A:H2'	2:lB:116:U:C6	2.45	0.51
18:lR:18:ARG:NH2	18:lR:147:GLU:HG2	2.26	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:ln:7:GLU:HG2	40:ln:9:LYS:HG2	1.93	0.51
1:lA:231:U:H4'	27:la:123:SER:HB3	1.93	0.50
1:lA:868:A:H2'	1:lA:869:G:C8	2.45	0.50
5:lE:222:VAL:O	5:lE:335:ARG:NH1	2.43	0.50
14:lN:105:GLU:N	14:lN:105:GLU:OE1	2.42	0.50
19:lS:22:ASN:HB3	19:lS:25:MET:HB2	1.93	0.50
39:lm:16:THR:O	39:lm:16:THR:OG1	2.27	0.50
1:lA:701:A:C6	1:lA:703:G:H1'	2.46	0.50
1:lA:2732:A:H2'	1:lA:2733:A:H8	1.77	0.50
3:lC:5:A:OP2	7:lG:22:ARG:NH2	2.44	0.50
9:lI:220:LEU:O	9:lI:223:ASN:ND2	2.43	0.50
40:ln:8:PHE:CE2	40:ln:52:LYS:HB3	2.40	0.50
1:lA:2489:A:H2'	1:lA:2490:G:H8	1.76	0.50
1:lA:2730:U:H2'	1:lA:2731:G:C8	2.44	0.50
1:lA:3008:U:HO2'	1:lA:3009:C:P	2.34	0.50
1:lA:3477:U:H1'	1:lA:3478:U:OP1	2.11	0.50
19:lS:36:ALA:HB1	19:lS:45:LYS:HG2	1.92	0.50
27:la:54:GLU:HG3	27:la:106:LYS:HB3	1.93	0.50
1:lA:804:G:H2'	1:lA:805:G:C8	2.47	0.50
8:lH:141:ALA:HB3	8:lH:144:LYS:HG3	1.93	0.50
32:lf:84:THR:HG1	32:lf:127:THR:HG1	1.46	0.50
1:lA:504:U:H2'	1:lA:505:A:C8	2.47	0.50
1:lA:832:A:O2'	1:lA:833:U:OP1	2.25	0.50
1:lA:1153:C:H6	1:lA:1153:C:C5'	2.24	0.50
1:lA:2308:A:H2'	1:lA:2309:A:C8	2.47	0.50
1:lA:3456:U:N3	1:lA:3496:A:H2	2.04	0.50
1:lA:3500:A:H2'	1:lA:3501:A:H8	1.76	0.50
10:lJ:72:THR:OG1	10:lJ:73:LEU:N	2.44	0.50
24:lX:123:LYS:HG2	24:lX:139:ILE:HG22	1.94	0.50
27:la:152:ASP:OD1	27:la:152:ASP:N	2.44	0.50
34:lh:71:THR:OG1	34:lh:72:VAL:N	2.44	0.50
1:lA:975:G:H22	39:lm:4:ARG:HH12	1.59	0.50
1:lA:2033:C:OP1	25:lY:67:GLN:NE2	2.44	0.50
4:lD:19:ARG:NH1	4:lD:189:TYR:O	2.44	0.50
15:lO:36:LEU:HB2	15:lO:39:CYS:SG	2.52	0.50
31:le:29:LEU:HD22	31:le:91:VAL:HG11	1.94	0.50
1:lA:278:U:H2'	1:lA:279:U:H6	1.75	0.50
1:lA:520:A:H2'	1:lA:521:A:C8	2.47	0.50
1:lA:1239:U:H5"	29:lc:22:ILE:HD12	1.93	0.50
1:lA:1502:A:H3'	1:lA:1502:A:N3	2.27	0.50
1:lA:2131:A:H4'	1:lA:2397:C:H5'	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:2492:U:H2'	1:lA:2493:U:C6	2.46	0.50
1:lA:3337:A:C5	15:lO:115:LYS:HG2	2.47	0.50
1:lA:3362:U:H2'	1:lA:3363:C:C6	2.46	0.50
2:lB:21:A:H2'	2:lB:22:G:C8	2.47	0.50
2:lB:141:G:H5"	17:lQ:60:VAL:HG11	1.94	0.50
1:lA:70:A:H5'	14:lN:102:SER:HB3	1.94	0.50
1:lA:422:G:O5'	27:la:87:LYS:NZ	2.44	0.50
1:lA:495:A:H1'	1:lA:496:A:C8	2.47	0.50
1:lA:565:U:H2'	1:lA:566:U:C6	2.46	0.50
1:lA:645:A:O2'	1:lA:646:U:H5"	2.12	0.50
1:lA:2865:A:O2'	1:lA:2866:C:OP1	2.30	0.50
1:lA:3368:G:H2'	1:lA:3369:U:H6	1.75	0.50
2:lB:54:A:H5'	41:lo:21:ARG:HD3	1.93	0.50
20:lT:106:LEU:HD13	20:lT:110:TYR:HD2	1.77	0.50
1:lA:847:A:O2'	14:lN:271:LYS:NZ	2.45	0.50
1:lA:2978:C:H2'	1:lA:2979:C:O2	2.12	0.50
1:lA:3024:C:H2'	1:lA:3025:U:C6	2.47	0.50
1:lA:3463:A:H3'	1:lA:3464:G:N2	2.24	0.50
1:lA:3498:U:H5"	32:lf:56:ALA:HB1	1.94	0.50
12:lL:179:GLU:N	12:lL:179:GLU:OE1	2.45	0.50
19:lS:6:ASP:OD1	19:lS:6:ASP:N	2.43	0.50
33:lg:87:MET:HA	33:lg:118:ILE:HD11	1.94	0.50
1:lA:686:A:H2'	1:lA:687:U:C6	2.48	0.49
1:lA:2483:C:H2'	1:lA:2484:U:H6	1.77	0.49
3:lC:11:C:OP2	3:lC:66:U:O2'	2.27	0.49
28:lb:20:GLY:HA3	28:lb:139:PHE:HZ	1.77	0.49
1:lA:301:A:H2'	1:lA:302:U:C6	2.47	0.49
18:lR:131:ARG:HB2	18:lR:135:SER:HB2	1.95	0.49
24:lX:112:MET:HE1	24:lX:135:ASN:HB2	1.94	0.49
27:la:53:ASP:CG	27:la:113:ARG:HH12	2.20	0.49
42:lp:8:GLU:OE1	42:lp:8:GLU:HA	2.12	0.49
1:lA:2283:A:H2'	1:lA:2284:A:C8	2.47	0.49
1:lA:3088:G:O2'	1:lA:3091:C:OP2	2.19	0.49
27:la:80:ILE:HG22	27:la:82:LYS:H	1.77	0.49
36:lj:34:VAL:HG13	36:lj:39:ASP:HB2	1.93	0.49
1:lA:504:U:H2'	1:lA:505:A:H8	1.77	0.49
1:lA:542:U:H2'	1:lA:543:A:H8	1.78	0.49
1:lA:1520:A:H4'	1:lA:1521:A:O5'	2.12	0.49
1:lA:2461:G:O2'	1:lA:2462:G:OP2	2.29	0.49
1:lA:3248:A:OP2	24:lX:15:ARG:NH2	2.43	0.49
7:lG:262:THR:OG1	7:lG:263:SER:N	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:lH:83:CYS:SG	8:lH:86:SER:OG	2.66	0.49
9:lI:48:LYS:O	9:lI:52:THR:HG23	2.12	0.49
1:lA:445:G:H5"	1:lA:448:C:H1'	1.93	0.49
1:lA:1944:C:H5"	23:lW:109:ILE:HD12	1.93	0.49
1:lA:3290:C:C2	1:lA:3291:G:C8	3.01	0.49
3:lC:81:A:C2	3:lC:93:G:C6	2.98	0.49
8:lH:128:ASP:OD1	8:lH:130:LYS:N	2.42	0.49
1:lA:244:A:H2'	1:lA:265:A:H2	1.77	0.49
1:lA:605:C:H2'	1:lA:606:A:C8	2.47	0.49
1:lA:668:A:H2'	1:lA:669:A:H8	1.76	0.49
1:lA:1508:U:H2'	1:lA:1509:A:C8	2.48	0.49
1:lA:3382:A:OP2	5:lE:151:ARG:NH2	2.40	0.49
11:lK:71:ASN:OD1	11:lK:71:ASN:N	2.45	0.49
28:lb:46:VAL:HG13	28:lb:68:VAL:HG13	1.93	0.49
1:lA:278:U:H2'	1:lA:279:U:C6	2.48	0.49
1:lA:873:U:H2'	1:lA:874:A:C8	2.48	0.49
1:lA:1027:G:H4'	1:lA:1028:G:O5'	2.12	0.49
1:lA:2857:A:H1'	1:lA:2858:A:H5"	1.94	0.49
16:lP:100:LYS:O	16:lP:104:ARG:HG2	2.13	0.49
27:la:109:LEU:H	27:la:109:LEU:HD23	1.77	0.49
1:lA:631:G:H2'	1:lA:631:G:N3	2.28	0.49
1:lA:816:G:H22	1:lA:829:G:P	2.32	0.49
5:lE:184:GLN:NE2	5:lE:186:ASN:OD1	2.42	0.49
1:lA:1337:A:H2'	1:lA:1338:U:H6	1.78	0.49
1:lA:1459:U:H5"	9:lI:194:LYS:HB3	1.95	0.49
1:lA:2334:U:O2	1:lA:2334:U:H2'	2.13	0.49
1:lA:3278:A:N1	11:lK:80:THR:OG1	2.36	0.49
1:lA:65:U:HO2'	1:lA:97:A:HO2'	1.59	0.49
1:lA:222:A:H2'	1:lA:223:A:H8	1.77	0.49
1:lA:721:A:H2'	1:lA:722:A:C8	2.46	0.49
1:lA:2034:G:O2'	41:lo:3:GLY:O	2.29	0.49
1:lA:3309:U:H2'	1:lA:3310:C:C6	2.48	0.49
18:lR:126:ARG:NH1	18:lR:140:SER:OG	2.46	0.49
1:lA:462:A:H2'	1:lA:463:U:C6	2.48	0.48
2:lB:115:A:H2'	2:lB:116:U:H6	1.78	0.48
10:lJ:27:LYS:HE2	10:lJ:33:PRO:HD2	1.93	0.48
25:lY:6:ARG:HH21	25:lY:8:THR:HG23	1.78	0.48
31:le:34:THR:O	31:le:37:THR:OG1	2.26	0.48
1:lA:239:G:H2'	1:lA:240:A:C8	2.47	0.48
1:lA:700:A:H2'	1:lA:701:A:C8	2.48	0.48
1:lA:2052:G:O2'	38:ll:6:SER:OG	2.31	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:lE:314:HIS:O	5:lE:334:ARG:NH1	2.45	0.48
7:lG:9:ASN:OD1	7:lG:9:ASN:N	2.46	0.48
38:ll:64:MET:HE3	38:ll:67:LEU:HD23	1.95	0.48
1:lA:208:U:H2'	1:lA:209:A:C8	2.48	0.48
1:lA:625:A:O2'	1:lA:626:A:OP1	2.32	0.48
1:lA:897:A:O2'	1:lA:899:A:N1	2.43	0.48
1:lA:2505:A:H2'	1:lA:2506:U:C6	2.48	0.48
3:lC:76:U:H2'	3:lC:77:U:O4'	2.13	0.48
20:lT:30:TYR:HD1	20:lT:34:LYS:HE3	1.79	0.48
1:lA:1517:C:O2	6:lF:143:HIS:NE2	2.46	0.48
1:lA:1606:A:H5"	18:lR:53:ILE:HB	1.95	0.48
1:lA:1883:A:N6	1:lA:1931:U:H3	2.07	0.48
1:lA:2499:U:H2'	1:lA:2500:A:H8	1.77	0.48
2:lB:116:U:H2'	2:lB:117:A:H8	1.78	0.48
3:lC:35:A:O5'	3:lC:35:A:H8	1.97	0.48
5:lE:383:PRO:CB	5:lE:388:LEU:HD21	2.42	0.48
16:lP:83:ASP:OD1	16:lP:83:ASP:N	2.47	0.48
22:lV:17:ARG:HB2	22:lV:22:HIS:CE1	2.49	0.48
1:lA:628:C:H2'	1:lA:629:G:C8	2.48	0.48
1:lA:1744:A:H2'	1:lA:1745:A:H8	1.76	0.48
1:lA:3433:U:OP1	5:lE:334:ARG:NH2	2.45	0.48
1:lA:236:U:O4'	27:la:33:ARG:NH1	2.46	0.48
1:lA:279:U:H2'	1:lA:280:U:H6	1.78	0.48
1:lA:765:A:C2	36:lj:92:PRO:HG2	2.48	0.48
1:lA:2416:U:O2'	1:lA:3246:A:N1	2.32	0.48
1:lA:2846:U:H2'	1:lA:2847:A:C8	2.49	0.48
1:lA:3163:G:O2'	5:lE:14:LEU:O	2.31	0.48
1:lA:3461:U:H4'	1:lA:3462:A:H5'	1.94	0.48
11:lK:102:VAL:HG21	11:lK:111:LEU:HD11	1.95	0.48
37:lk:60:ASP:OD1	37:lk:61:LYS:N	2.47	0.48
1:lA:713:G:H3'	1:lA:714:U:C5'	2.43	0.48
1:lA:1392:G:H2'	1:lA:1393:U:C6	2.49	0.48
1:lA:1979:U:HO2'	1:lA:1981:A:H8	1.60	0.48
1:lA:2128:A:H5"	39:lm:8:VAL:HG21	1.96	0.48
1:lA:2335:A:O4'	1:lA:2335:A:P	2.72	0.48
1:lA:2515:A:H8	1:lA:2515:A:P	2.36	0.48
16:lP:67:VAL:HA	16:lP:71:MET:HE2	1.96	0.48
1:lA:858:A:O2'	1:lA:1185:A:N7	2.46	0.48
1:lA:2495:A:H2'	1:lA:2496:C:C6	2.49	0.48
8:lH:65:LEU:HD11	8:lH:79:PHE:HB2	1.96	0.48
45:sH:4:C:H2'	45:sH:5:U:C6	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:905:A:C8	19:lS:60:ILE:HD11	2.49	0.48
1:lA:1476:G:O2'	1:lA:1477:A:N3	2.46	0.48
1:lA:1524:A:H5"	33:lg:102:SER:HB3	1.95	0.48
1:lA:3447:A:H2'	1:lA:3448:G:O4'	2.14	0.48
4:lD:177:LYS:HA	39:lm:29:ILE:HD13	1.96	0.48
5:lE:383:PRO:CB	5:lE:388:LEU:CG	2.92	0.48
40:ln:54:GLU:O	40:ln:58:LYS:HG2	2.13	0.48
1:lA:246:U:N3	1:lA:266:A:OP2	2.40	0.48
1:lA:658:A:H1'	1:lA:659:U:C5	2.49	0.48
1:lA:790:A:H2'	1:lA:791:A:H8	1.78	0.48
1:lA:1103:U:H2'	1:lA:1104:A:H8	1.78	0.48
1:lA:1392:G:N2	1:lA:1396:C:OP2	2.46	0.48
2:lB:110:A:N6	41:lo:51:MET:O	2.47	0.48
6:lF:13:ILE:HG12	6:lF:158:SER:HB2	1.96	0.48
40:ln:13:LYS:HA	40:ln:16:LYS:HG2	1.96	0.48
1:lA:90:G:H2'	1:lA:91:A:C8	2.48	0.47
1:lA:1649:U:O2'	1:lA:2429:G:O2'	2.30	0.47
1:lA:1921:A:H2'	1:lA:1922:U:O2	2.14	0.47
7:lG:188:GLU:O	7:lG:192:ARG:N	2.42	0.47
23:lW:67:GLU:HB2	23:lW:78:THR:HG23	1.96	0.47
28:lb:10:VAL:O	28:lb:83:THR:OG1	2.28	0.47
28:lb:50:PRO:HD3	28:lb:68:VAL:HG22	1.95	0.47
31:le:40:ASP:N	31:le:40:ASP:OD1	2.47	0.47
1:lA:381:A:H2'	1:lA:382:A:H8	1.78	0.47
1:lA:3090:G:N3	5:lE:252:ALA:HB1	2.29	0.47
14:lN:72:GLY:HA3	14:lN:96:ASP:HB2	1.95	0.47
1:lA:496:A:H2'	1:lA:497:U:O4'	2.14	0.47
1:lA:1816:A:N3	1:lA:1892:C:O2'	2.43	0.47
1:lA:2745:C:OP2	1:lA:2746:A:O2'	2.25	0.47
1:lA:3335:U:H3'	1:lA:3336:G:H5"	1.95	0.47
16:lP:39:ASP:OD2	16:lP:49:ARG:NH2	2.46	0.47
1:lA:344:A:N7	37:lk:32:HIS:NE2	2.63	0.47
1:lA:1513:A:OP1	6:lF:206:LYS:HE2	2.14	0.47
1:lA:2732:A:H2'	1:lA:2733:A:C8	2.49	0.47
1:lA:2981:A:H2'	1:lA:2982:G:O4'	2.14	0.47
2:lB:8:U:H2'	2:lB:9:A:C8	2.49	0.47
4:lD:35:PHE:CD1	4:lD:66:PRO:HB2	2.49	0.47
10:lJ:245:ILE:HD12	10:lJ:245:ILE:O	2.14	0.47
14:lN:254:MET:HE1	29:lc:124:ILE:HD13	1.96	0.47
23:lW:29:SER:HA	23:lW:78:THR:HA	1.95	0.47
26:lZ:14:LYS:HE2	26:lZ:14:LYS:HB2	1.70	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:761:A:H2'	1:lA:762:A:C8	2.50	0.47
1:lA:1166:A:N3	1:lA:2703:U:O2'	2.47	0.47
1:lA:1940:A:H2'	1:lA:1941:A:H8	1.80	0.47
12:lL:191:ILE:HD11	12:lL:200:ALA:HB2	1.96	0.47
1:lA:255:A:H4'	1:lA:257:A:N7	2.30	0.47
1:lA:699:A:H5"	1:lA:746:A:H62	1.79	0.47
1:lA:1892:C:H2'	1:lA:1893:A:C8	2.47	0.47
1:lA:2515:A:C6	1:lA:2516:U:C4	3.03	0.47
1:lA:3303:A:H2'	1:lA:3304:C:C6	2.49	0.47
1:lA:3357:U:H4'	1:lA:3358:A:H5'	1.95	0.47
3:lC:2:G:H2'	3:lC:3:G:C8	2.49	0.47
8:lH:117:VAL:HG22	8:lH:119:VAL:HG23	1.96	0.47
9:lI:35:ARG:HH22	9:lI:167:VAL:HG13	1.80	0.47
31:le:11:GLN:HE21	31:le:75:SER:H	1.63	0.47
1:lA:13:C:P	25:lY:27:ARG:HH22	2.37	0.47
1:lA:797:C:OP2	29:lc:6:ARG:NH2	2.43	0.47
1:lA:1219:A:H4'	1:lA:1220:A:H5'	1.97	0.47
1:lA:2445:G:H2'	1:lA:2446:G:C8	2.50	0.47
1:lA:2701:U:H2'	1:lA:2702:G:H8	1.79	0.47
1:lA:2739:U:H2'	1:lA:2740:G:H8	1.79	0.47
5:lE:80:GLU:OE1	5:lE:315:TYR:OH	2.21	0.47
5:lE:383:PRO:HB3	5:lE:388:LEU:CD2	2.44	0.47
13:lM:27:GLY:O	13:lM:29:ARG:N	2.47	0.47
39:lm:36:LYS:HG2	39:lm:48:ARG:HD3	1.96	0.47
42:lp:35:CYS:O	42:lp:42:HIS:HA	2.15	0.47
1:lA:94:G:N7	14:lN:11:HIS:HE1	2.12	0.47
1:lA:821:G:OP1	14:lN:37:ARG:NE	2.47	0.47
1:lA:1090:A:H2'	1:lA:1091:A:C8	2.50	0.47
2:lB:2:A:H2'	2:lB:3:U:C6	2.50	0.47
2:lB:74:A:OP2	27:la:51:LYS:HB2	2.15	0.47
13:lM:111:ASP:HB3	13:lM:112:LEU:H	1.49	0.47
31:le:8:LYS:HG3	31:le:9:LYS:H	1.80	0.47
1:lA:1225:A:H5"	9:lI:95:ARG:HD2	1.97	0.47
1:lA:2289:A:H2'	1:lA:2290:A:C8	2.50	0.47
1:lA:3304:C:H2'	1:lA:3305:U:H6	1.80	0.47
1:lA:3465:C:O2'	1:lA:3466:U:OP1	2.30	0.47
1:lA:3476:C:O2	1:lA:3476:C:O4'	2.33	0.47
3:lC:103:U:H2'	3:lC:104:G:C8	2.50	0.47
1:lA:222:A:H2'	1:lA:223:A:C8	2.49	0.47
1:lA:862:G:C6	1:lA:880:A:C2	3.03	0.47
1:lA:1452:C:H2'	1:lA:1453:U:H6	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:1736:A:C6	41:lo:4:HIS:HB3	2.50	0.47
1:lA:2427:U:H2'	1:lA:2428:A:H8	1.80	0.47
1:lA:2482:C:H2'	1:lA:2483:C:C6	2.50	0.47
1:lA:3496:A:OP2	32:lf:108:ARG:NH2	2.47	0.47
4:lD:142:ASP:OD1	4:lD:142:ASP:N	2.48	0.47
23:lW:47:VAL:CG1	23:lW:68:VAL:HG12	2.31	0.47
1:lA:213:A:H5'	14:lN:133:LYS:H	1.79	0.46
1:lA:598:A:H2'	1:lA:599:U:C6	2.50	0.46
1:lA:941:A:H2'	1:lA:942:C:C6	2.50	0.46
1:lA:1482:U:H2'	1:lA:1483:U:C6	2.50	0.46
1:lA:2236:A:H2'	1:lA:2237:A:C8	2.49	0.46
1:lA:2383:G:O2'	1:lA:2386:U:OP2	2.32	0.46
1:lA:3150:A:H2'	1:lA:3151:A:C8	2.50	0.46
1:lA:3218:U:H2'	1:lA:3219:A:H8	1.79	0.46
1:lA:3289:U:H2'	1:lA:3290:C:H6	1.81	0.46
20:lT:127:ASP:OD1	20:lT:139:VAL:HB	2.15	0.46
1:lA:316:G:OP1	17:lQ:47:ARG:NE	2.47	0.46
1:lA:493:G:H1'	1:lA:579:A:N6	2.28	0.46
1:lA:501:U:H2'	1:lA:502:U:C6	2.50	0.46
1:lA:564:A:H1'	1:lA:565:U:OP2	2.15	0.46
1:lA:745:A:O2'	1:lA:746:A:N3	2.41	0.46
1:lA:1206:A:H2'	1:lA:1207:C:C6	2.50	0.46
1:lA:2767:A:H2'	1:lA:2768:G:H8	1.80	0.46
1:lA:3170:A:H2'	1:lA:3171:A:C8	2.49	0.46
11:lK:120:ILE:HG12	11:lK:121:GLN:H	1.80	0.46
16:lP:92:THR:O	16:lP:96:LYS:HG3	2.14	0.46
27:la:29:MET:HB2	27:la:29:MET:HE3	1.77	0.46
30:ld:2:SER:O	30:ld:2:SER:OG	2.27	0.46
43:lq:12:CYS:HB2	43:lq:21:HIS:CE1	2.51	0.46
1:lA:897:A:H8	1:lA:898:U:O2'	1.99	0.46
1:lA:1533:U:H2'	1:lA:1534:U:C6	2.51	0.46
3:lC:8:U:OP1	22:lV:26:ASN:HB3	2.15	0.46
18:lR:53:ILE:HG13	18:lR:55:LYS:HG2	1.98	0.46
33:lg:128:LYS:HB3	33:lg:130:GLN:HE22	1.80	0.46
3:lC:26:U:O2	3:lC:52:G:N2	2.48	0.46
11:lK:37:ARG:HD3	11:lK:39:PHE:CE1	2.51	0.46
12:lL:4:ARG:NH1	12:lL:9:TYR:OH	2.46	0.46
18:lR:16:GLN:HG2	18:lR:149:ILE:HG12	1.97	0.46
1:lA:596:G:OP1	8:lH:108:ARG:NH1	2.48	0.46
1:lA:797:C:H2'	1:lA:798:U:C6	2.51	0.46
1:lA:975:G:N2	39:lm:4:ARG:HH12	2.13	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:1105:U:H2'	1:lA:1106:U:C6	2.50	0.46
1:lA:1554:C:OP2	6:lF:196:LYS:NZ	2.38	0.46
1:lA:1581:G:O2'	1:lA:2431:G:O6	2.32	0.46
1:lA:2303:U:H2'	1:lA:2304:A:C8	2.51	0.46
1:lA:2344:U:O2'	1:lA:2345:U:O5'	2.32	0.46
1:lA:3476:C:C5	1:lA:3479:A:OP1	2.68	0.46
5:lE:92:TYR:HB2	5:lE:159:VAL:HB	1.97	0.46
6:lF:290:ASP:OD1	6:lF:292:LYS:N	2.48	0.46
11:lK:4:LEU:HD12	11:lK:4:LEU:HA	1.82	0.46
13:lM:164:LYS:HD3	13:lM:171:VAL:HG22	1.98	0.46
20:lT:62:GLU:HG2	20:lT:94:THR:HG22	1.98	0.46
23:lW:45:LYS:HB2	23:lW:45:LYS:HE3	1.79	0.46
40:ln:13:LYS:O	40:ln:17:SER:OG	2.25	0.46
1:lA:279:U:H2'	1:lA:280:U:C6	2.50	0.46
1:lA:630:A:C4	1:lA:631:G:C8	3.03	0.46
1:lA:1846:A:H2'	1:lA:1847:A:H8	1.80	0.46
1:lA:2262:U:OP2	4:lD:200:ARG:HD2	2.15	0.46
1:lA:3104:G:H2'	1:lA:3105:U:C6	2.50	0.46
3:lC:85:G:H1	3:lC:90:G:H1	1.63	0.46
31:le:98:ASP:OD1	31:le:99:GLY:N	2.49	0.46
35:li:79:LYS:O	35:li:83:GLN:HG2	2.16	0.46
1:lA:405:U:OP1	38:ll:11:ARG:NH2	2.49	0.46
1:lA:1386:G:H2'	1:lA:1388:A:H4'	1.98	0.46
1:lA:1811:A:C8	1:lA:1824:A:H2'	2.51	0.46
1:lA:1886:A:H2'	1:lA:1887:A:C8	2.50	0.46
2:lB:25:U:OP2	27:la:15:ARG:NH1	2.49	0.46
10:lJ:44:LEU:O	10:lJ:48:ILE:HG13	2.15	0.46
1:lA:1974:A:H2'	1:lA:1975:G:C8	2.51	0.46
11:lK:19:ILE:HG12	11:lK:28:VAL:HG22	1.97	0.46
11:lK:156:ASP:OD1	11:lK:158:GLU:N	2.49	0.46
27:la:22:ASN:OD1	27:la:25:GLN:NE2	2.36	0.46
1:lA:226:U:H2'	1:lA:227:A:C8	2.51	0.46
1:lA:542:U:H2'	1:lA:543:A:C8	2.51	0.46
1:lA:1627:G:N2	34:lh:6:THR:HG22	2.30	0.46
6:lF:47:ASN:HA	6:lF:112:GLN:HG3	1.98	0.46
1:lA:490:A:N1	1:lA:583:A:N6	2.64	0.46
1:lA:723:U:O2'	1:lA:724:A:H5'	2.15	0.46
1:lA:759:U:H2'	1:lA:760:A:C8	2.51	0.46
1:lA:1832:U:OP2	4:lD:73:LYS:NZ	2.46	0.46
1:lA:1847:A:H2'	1:lA:1848:A:C8	2.50	0.46
1:lA:2357:A:H8	1:lA:3117:U:H1'	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:2440:G:H22	1:lA:2472:G:H1'	1.81	0.46
1:lA:2912:U:H2'	1:lA:2913:A:O4'	2.16	0.46
10:lJ:37:THR:O	10:lJ:38:ARG:HG2	2.16	0.46
12:lL:103:LEU:HD22	12:lL:103:LEU:H	1.81	0.46
1:lA:223:A:H2'	1:lA:224:U:C6	2.51	0.45
1:lA:1208:U:C4	1:lA:1211:A:H5"	2.51	0.45
1:lA:2112:C:C2	1:lA:2113:A:C8	3.04	0.45
1:lA:2123:A:H2'	1:lA:2124:A:C8	2.51	0.45
1:lA:3154:A:H2'	1:lA:3155:U:C6	2.51	0.45
25:lY:52:LEU:HD13	25:lY:121:PHE:HE1	1.81	0.45
35:li:7:ASN:O	35:li:11:ILE:HD12	2.16	0.45
1:lA:76:U:H2'	1:lA:77:C:H6	1.80	0.45
1:lA:526:A:H5"	1:lA:538:A:N1	2.31	0.45
1:lA:1327:A:H2'	1:lA:1328:A:C8	2.51	0.45
1:lA:1345:U:H4'	1:lA:1346:G:H5'	1.98	0.45
1:lA:1389:U:H2'	1:lA:1390:G:C8	2.51	0.45
1:lA:1440:A:OP2	15:lO:134:ARG:HD3	2.15	0.45
1:lA:1841:G:N2	1:lA:1975:G:H1	2.11	0.45
1:lA:2482:C:H2'	1:lA:2483:C:H6	1.81	0.45
1:lA:2598:A:H5'	25:lY:9:THR:HG21	1.98	0.45
1:lA:2670:U:H2'	1:lA:2671:A:H8	1.82	0.45
1:lA:3008:U:O2'	1:lA:3009:C:OP1	2.26	0.45
1:lA:3162:A:OP2	15:lO:75:ARG:NH2	2.46	0.45
1:lA:3476:C:H3'	1:lA:3477:U:C5	2.52	0.45
7:lG:30:TYR:O	7:lG:34:ARG:HG3	2.16	0.45
20:lT:70:ASN:OD1	20:lT:91:ARG:NH1	2.46	0.45
28:lb:23:ALA:HB1	28:lb:43:VAL:HB	1.97	0.45
28:lb:89:LEU:HD13	28:lb:96:LYS:HD2	1.99	0.45
38:ll:63:ARG:HD2	38:ll:65:ARG:HB2	1.98	0.45
1:lA:210:U:H2'	1:lA:211:U:C6	2.51	0.45
1:lA:880:A:H2'	1:lA:881:G:O4'	2.17	0.45
1:lA:2425:U:O2'	1:lA:3436:A:N3	2.48	0.45
1:lA:3195:G:H2'	1:lA:3196:U:C6	2.50	0.45
23:lW:66:ILE:HA	23:lW:79:THR:OG1	2.17	0.45
1:lA:964:G:N2	1:lA:967:A:OP2	2.47	0.45
1:lA:1330:G:OP1	12:lL:157:TYR:OH	2.34	0.45
1:lA:1385:G:O2'	1:lA:1402:A:N1	2.44	0.45
1:lA:2150:G:C4	1:lA:2176:G:N2	2.84	0.45
1:lA:2747:G:N3	1:lA:2747:G:H2'	2.31	0.45
1:lA:3084:A:H8	1:lA:3084:A:OP2	2.00	0.45
1:lA:3274:U:H4'	42:lp:29:PRO:HG3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:3370:A:H2'	1:lA:3371:U:C6	2.51	0.45
9:lI:143:LYS:HE3	9:lI:143:LYS:HB2	1.68	0.45
20:lT:132:ASN:HB3	20:lT:135:LEU:HB3	1.98	0.45
28:lb:119:SER:O	28:lb:123:GLU:HG2	2.16	0.45
38:ll:19:CYS:SG	38:ll:20:LYS:N	2.89	0.45
1:lA:332:G:C6	43:lq:43:ARG:HD3	2.51	0.45
6:lF:113:ARG:HA	6:lF:113:ARG:HD3	1.74	0.45
31:le:17:LYS:HB3	31:le:104:ILE:HG23	1.98	0.45
36:lj:95:MET:HE3	36:lj:95:MET:HB2	1.81	0.45
1:lA:629:G:C2	1:lA:630:A:C4	3.05	0.45
1:lA:897:A:H4'	1:lA:898:U:OP1	2.16	0.45
1:lA:1208:U:H4'	30:ld:43:THR:HG23	1.98	0.45
1:lA:1351:U:N3	1:lA:1352:A:N7	2.65	0.45
1:lA:2236:A:H2'	1:lA:2237:A:H8	1.80	0.45
1:lA:2661:U:H2'	1:lA:2662:G:O4'	2.17	0.45
1:lA:2979:C:H2'	1:lA:2980:A:O4'	2.16	0.45
16:lP:124:ALA:O	16:lP:128:ILE:HG12	2.16	0.45
26:lZ:10:PHE:HZ	26:lZ:51:VAL:HG21	1.82	0.45
43:lq:2:VAL:O	43:lq:90:GLU:N	2.45	0.45
1:lA:353:G:H2'	1:lA:354:U:C6	2.52	0.45
1:lA:474:A:H2'	1:lA:475:A:H8	1.80	0.45
1:lA:612:A:H62	1:lA:715:A:H2'	1.80	0.45
1:lA:1392:G:H21	1:lA:1397:A:H62	1.63	0.45
1:lA:1479:A:H4'	1:lA:1480:U:O5'	2.16	0.45
1:lA:1558:C:H4'	27:la:182:PRO:HG2	1.99	0.45
1:lA:2224:U:H2'	1:lA:2225:A:C8	2.52	0.45
1:lA:2591:U:H2'	1:lA:2592:U:H6	1.80	0.45
3:lC:94:U:H2'	3:lC:95:A:C8	2.52	0.45
15:lO:86:ARG:HG3	15:lO:100:LEU:HD22	1.98	0.45
19:lS:17:THR:OG1	19:lS:18:ALA:N	2.50	0.45
23:lW:39:ASP:OD1	23:lW:39:ASP:N	2.46	0.45
23:lW:92:LEU:O	23:lW:96:TYR:N	2.44	0.45
1:lA:213:A:C5'	14:lN:133:LYS:H	2.29	0.45
1:lA:237:C:H2'	1:lA:238:A:H8	1.81	0.45
1:lA:532:A:H2'	1:lA:533:U:C6	2.52	0.45
1:lA:1555:U:H2'	1:lA:1556:G:C8	2.52	0.45
1:lA:3476:C:C5	1:lA:3478:U:OP2	2.70	0.45
1:lA:3477:U:C6	1:lA:3477:U:O5'	2.70	0.45
2:lB:9:A:H2'	2:lB:10:U:C6	2.52	0.45
4:lD:143:ASN:OD1	4:lD:143:ASN:N	2.42	0.45
8:lH:11:LYS:HG2	8:lH:24:ASP:HB3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:lJ:87:HIS:O	10:lJ:201:LYS:HE3	2.17	0.45
28:lb:36:ARG:HG3	28:lb:38:TYR:CZ	2.52	0.45
31:le:40:ASP:HB2	31:le:42:LYS:HG2	1.99	0.45
1:lA:505:A:H2'	1:lA:506:A:C8	2.51	0.45
1:lA:1537:A:O2'	33:lg:66:ASN:OD1	2.35	0.45
1:lA:2085:A:H2'	1:lA:2086:A:H8	1.82	0.45
1:lA:2205:C:H41	1:lA:2395:C:H41	1.63	0.45
1:lA:3268:A:O2'	11:lK:76:ALA:O	2.31	0.45
5:lE:37:ALA:HA	5:lE:187:GLY:O	2.16	0.45
5:lE:122:TRP:CZ2	5:lE:127:LYS:HG2	2.52	0.45
8:lH:120:SER:O	8:lH:121:LYS:HG2	2.17	0.45
18:lR:70:LYS:HA	18:lR:70:LYS:HD3	1.78	0.45
28:lb:109:TYR:CD1	28:lb:110:PRO:HD2	2.52	0.45
32:lf:63:PHE:HB3	32:lf:103:ARG:HG2	1.98	0.45
1:lA:663:G:OP1	16:lP:71:MET:HA	2.16	0.45
1:lA:1608:A:H2	1:lA:2083:A:N3	2.15	0.45
1:lA:2514:A:H8	1:lA:2514:A:OP2	2.00	0.45
1:lA:2815:G:N2	1:lA:2818:A:OP2	2.42	0.45
1:lA:3377:U:H5"	32:lf:13:LYS:HE2	1.98	0.45
2:lB:1:A:H2'	2:lB:2:A:H8	1.78	0.45
2:lB:116:U:H2'	2:lB:117:A:C8	2.52	0.45
6:lF:371:GLN:OE1	6:lF:396:LEU:HD22	2.17	0.45
7:lG:130:GLU:HB3	7:lG:188:GLU:HG2	1.98	0.45
14:lN:49:ILE:HA	14:lN:231:LEU:O	2.17	0.45
1:lA:832:A:OP1	6:lF:277:SER:HB3	2.16	0.44
1:lA:1757:C:H2'	1:lA:1758:U:C6	2.52	0.44
1:lA:2207:A:C8	1:lA:2264:A:C8	3.05	0.44
3:lC:7:A:H5"	22:lV:27:THR:OG1	2.17	0.44
6:lF:218:GLN:O	6:lF:221:LYS:HE3	2.17	0.44
8:lH:11:LYS:HD2	8:lH:29:GLU:HG2	1.99	0.44
23:lW:66:ILE:HG22	23:lW:68:VAL:HG23	1.99	0.44
1:lA:221:U:H2'	1:lA:222:A:C8	2.51	0.44
1:lA:471:G:OP1	33:lg:19:LYS:NZ	2.37	0.44
1:lA:1197:G:H2'	1:lA:1198:U:C6	2.52	0.44
1:lA:1475:A:H1'	27:la:185:ARG:HH22	1.82	0.44
1:lA:1485:A:H2'	1:lA:1486:C:O4'	2.16	0.44
2:lB:85:U:H3'	2:lB:86:G:H5'	2.00	0.44
10:lJ:239:ASN:O	10:lJ:242:GLN:HG2	2.18	0.44
28:lb:20:GLY:HA3	28:lb:139:PHE:CZ	2.52	0.44
31:le:87:ARG:HG2	31:le:89:PHE:CZ	2.52	0.44
34:lh:15:THR:HG22	34:lh:16:LYS:H	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:ln:11:ILE:HG23	40:ln:12:LEU:HD23	2.00	0.44
1:lA:698:U:O2'	1:lA:746:A:N6	2.50	0.44
1:lA:1352:A:H2'	1:lA:1353:G:H8	1.82	0.44
2:lB:9:A:H2'	2:lB:10:U:H6	1.83	0.44
12:lL:111:LEU:HD13	12:lL:111:LEU:O	2.17	0.44
24:lX:10:GLN:HG2	24:lX:130:PRO:HD3	1.99	0.44
29:lc:36:GLY:HA3	29:lc:40:HIS:CE1	2.52	0.44
1:lA:1282:G:OP1	9:lI:78:ARG:NH1	2.43	0.44
1:lA:1434:G:HO2'	1:lA:2456:U:HO2'	1.58	0.44
1:lA:1502:A:N7	19:lS:19:ARG:NH2	2.65	0.44
1:lA:1934:G:O3'	40:ln:44:THR:HG21	2.18	0.44
1:lA:2737:A:H2'	1:lA:2738:A:O4'	2.17	0.44
1:lA:2835:C:O3'	43:lq:37:GLY:HA3	2.18	0.44
1:lA:3196:U:H2'	1:lA:3197:C:C6	2.52	0.44
1:lA:3204:C:O2	24:lX:89:ARG:NH1	2.38	0.44
3:lC:38:A:H2	13:lM:70:THR:H	1.64	0.44
17:lQ:163:GLY:O	17:lQ:172:ARG:NH1	2.45	0.44
19:lS:18:ALA:HB2	19:lS:29:VAL:HG21	2.00	0.44
21:lU:81:ARG:HG2	21:lU:88:ARG:CZ	2.47	0.44
21:lU:92:LYS:O	21:lU:96:ILE:HG13	2.18	0.44
22:lV:118:GLN:HA	22:lV:118:GLN:OE1	2.16	0.44
1:lA:576:A:H62	1:lA:577:G:N2	2.15	0.44
1:lA:1624:G:C8	1:lA:1626:G:C8	3.06	0.44
1:lA:1858:A:O2'	1:lA:1943:U:O2'	2.32	0.44
1:lA:2335:A:OP1	1:lA:2335:A:O4'	2.36	0.44
1:lA:3376:C:H2'	1:lA:3377:U:C6	2.53	0.44
5:lE:153:ILE:O	5:lE:157:CYS:HB2	2.18	0.44
1:lA:1177:A:H4'	1:lA:2708:A:C4	2.53	0.44
17:lQ:80:VAL:HB	17:lQ:82:ARG:HD2	1.98	0.44
18:lR:55:LYS:HA	18:lR:55:LYS:HD3	1.82	0.44
27:la:133:LYS:HE3	27:la:133:LYS:HB3	1.89	0.44
1:lA:624:U:H2'	1:lA:625:A:O4'	2.18	0.44
1:lA:1252:G:N2	1:lA:1255:A:OP2	2.43	0.44
1:lA:2746:A:H5'	1:lA:2747:G:C8	2.53	0.44
1:lA:2753:U:H2'	1:lA:2754:C:C6	2.52	0.44
1:lA:2850:U:O2	1:lA:2910:G:N2	2.51	0.44
1:lA:2904:U:H2'	1:lA:2905:U:C6	2.52	0.44
2:lB:17:G:H2'	2:lB:18:G:O4'	2.18	0.44
2:lB:61:A:OP2	2:lB:96:A:O2'	2.30	0.44
6:lF:67:TRP:HB3	6:lF:71:ARG:HD3	1.99	0.44
7:lG:268:LEU:HD11	7:lG:272:LYS:HE2	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:lO:77:PRO:O	15:lO:81:VAL:HG23	2.17	0.44
21:lU:95:TRP:CZ2	21:lU:99:MET:HE3	2.53	0.44
29:lc:146:GLU:HB3	37:lk:1:MET:HE1	1.99	0.44
1:lA:18:G:H1'	2:lB:102:A:N3	2.33	0.44
1:lA:324:A:H2'	1:lA:325:U:C6	2.52	0.44
1:lA:1154:A:C8	1:lA:1154:A:H5"	2.53	0.44
1:lA:1848:A:H2'	1:lA:1849:A:H8	1.83	0.44
1:lA:1930:C:H2'	1:lA:1931:U:H6	1.82	0.44
1:lA:2151:A:O2'	1:lA:2152:U:H5'	2.18	0.44
1:lA:2844:U:H2'	1:lA:2845:U:C6	2.53	0.44
1:lA:2888:U:H3'	1:lA:2889:G:H2'	2.00	0.44
1:lA:2910:G:H5'	1:lA:2911:U:OP2	2.18	0.44
1:lA:3371:U:H2'	1:lA:3372:U:C6	2.53	0.44
3:lC:95:A:O5'	3:lC:95:A:H8	2.00	0.44
6:lF:376:ARG:CZ	6:lF:376:ARG:HB2	2.48	0.44
10:lJ:35:ASP:OD1	10:lJ:36:LEU:N	2.51	0.44
43:lq:3:VAL:HA	43:lq:90:GLU:O	2.18	0.44
1:lA:43:C:H5"	14:lN:14:LYS:HG3	2.00	0.44
1:lA:291:U:OP2	1:lA:292:G:O2'	2.29	0.44
1:lA:710:A:HO2'	1:lA:736:G:H22	1.60	0.44
1:lA:909:A:H2'	1:lA:910:A:C8	2.49	0.44
1:lA:1188:A:H2'	1:lA:1189:U:C6	2.52	0.44
1:lA:1569:A:H5"	1:lA:1570:U:O5'	2.18	0.44
1:lA:1634:G:OP2	1:lA:1634:G:N2	2.46	0.44
8:lH:204:PHE:HD1	16:lP:109:ASP:HB2	1.83	0.44
14:lN:45:PHE:CG	14:lN:229:GLN:HG2	2.53	0.44
15:lO:63:VAL:HG12	15:lO:66:ASN:H	1.83	0.44
23:lW:47:VAL:HG12	23:lW:51:ARG:NH2	2.33	0.44
1:lA:185:G:H3'	1:lA:186:A:C2	2.52	0.43
1:lA:425:C:H2'	1:lA:426:U:C6	2.52	0.43
1:lA:480:U:H2'	1:lA:481:A:O4'	2.18	0.43
1:lA:1408:C:N4	1:lA:1409:G:O6	2.50	0.43
1:lA:1461:G:H2'	1:lA:1462:A:H8	1.81	0.43
1:lA:2230:U:H2'	1:lA:2231:C:C6	2.53	0.43
1:lA:3025:U:H2'	1:lA:3026:U:C6	2.53	0.43
8:lH:31:LYS:HD2	8:lH:31:LYS:HA	1.74	0.43
8:lH:45:LEU:HD21	8:lH:130:LYS:HG3	2.00	0.43
12:lL:111:LEU:O	12:lL:113:THR:HG23	2.17	0.43
27:la:37:GLU:N	27:la:37:GLU:OE1	2.51	0.43
37:lk:51:MET:HE2	37:lk:51:MET:HB3	1.84	0.43
43:lq:63:THR:O	43:lq:85:ARG:NH1	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:97:A:H2'	1:lA:98:A:O4'	2.18	0.43
1:lA:355:A:H2'	1:lA:356:U:C6	2.53	0.43
1:lA:493:G:H21	1:lA:580:A:N6	2.06	0.43
1:lA:926:A:H62	1:lA:1053:G:H1	1.66	0.43
1:lA:2324:C:H2'	1:lA:2349:G:H5"	2.00	0.43
1:lA:2505:A:H2'	1:lA:2506:U:H6	1.82	0.43
1:lA:2681:U:H2'	1:lA:2682:U:C6	2.53	0.43
1:lA:2839:A:H5"	43:lq:78:LYS:HD2	2.01	0.43
1:lA:3083:A:N7	5:lE:2:SER:N	2.66	0.43
1:lA:3455:G:N2	1:lA:3500:A:H2	2.16	0.43
6:lF:76:ILE:HD11	6:lF:93:GLY:HA3	2.00	0.43
8:lH:22:PRO:HG2	8:lH:27:ILE:HD11	2.00	0.43
14:lN:49:ILE:O	14:lN:232:ASP:HA	2.17	0.43
31:le:29:LEU:HD11	31:le:87:ARG:HE	1.83	0.43
39:lm:57:CYS:HB3	39:lm:60:CYS:HB3	2.01	0.43
1:lA:58:G:H22	1:lA:75:U:H4'	1.83	0.43
1:lA:426:U:H2'	1:lA:427:U:C6	2.53	0.43
1:lA:463:U:O2'	1:lA:464:G:H5'	2.19	0.43
1:lA:574:U:H2'	1:lA:575:A:C8	2.53	0.43
1:lA:621:U:OP1	6:lF:372:SER:OG	2.20	0.43
1:lA:843:A:N3	1:lA:893:U:O2'	2.51	0.43
1:lA:1641:A:H2'	1:lA:1642:A:O4'	2.18	0.43
1:lA:1848:A:H2'	1:lA:1849:A:C8	2.54	0.43
1:lA:2152:U:H3'	1:lA:2153:U:H5"	2.00	0.43
1:lA:3207:G:H2'	1:lA:3208:A:C8	2.53	0.43
3:lC:45:U:H2'	3:lC:46:G:C8	2.53	0.43
3:lC:54:U:H4'	13:lM:152:HIS:HB2	1.99	0.43
11:lK:26:ILE:HD11	11:lK:46:ILE:HG21	1.99	0.43
28:lb:16:GLY:O	34:lh:74:ARG:HG3	2.18	0.43
29:lc:6:ARG:HB3	29:lc:8:THR:HG22	2.01	0.43
1:lA:1219:A:H4'	1:lA:1220:A:OP2	2.18	0.43
1:lA:2721:G:H5"	1:lA:2722:U:O4'	2.18	0.43
1:lA:2851:A:C6	1:lA:2909:A:N1	2.86	0.43
22:lV:62:GLY:HA3	22:lV:76:VAL:HG12	2.00	0.43
1:lA:22:A:H2'	1:lA:23:C:H6	1.82	0.43
1:lA:228:A:H2'	1:lA:229:A:C8	2.53	0.43
1:lA:467:A:C2	1:lA:2439:A:H4'	2.53	0.43
1:lA:551:A:H2'	1:lA:552:G:O4'	2.19	0.43
1:lA:596:G:C2	1:lA:597:A:C8	3.07	0.43
1:lA:773:G:OP1	33:lg:41:ASN:ND2	2.41	0.43
1:lA:838:U:O2'	1:lA:907:U:OP1	2.36	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:1121:A:N1	1:lA:1168:C:O2'	2.45	0.43
1:lA:1181:A:H5"	1:lA:1182:A:H5'	2.00	0.43
1:lA:1589:U:O2	32:lf:64:LYS:NZ	2.44	0.43
1:lA:1745:A:H2'	1:lA:1746:G:C8	2.54	0.43
1:lA:1749:U:P	21:lU:42:ARG:HH22	2.42	0.43
1:lA:2647:U:H2'	1:lA:2648:U:H6	1.84	0.43
1:lA:2739:U:H2'	1:lA:2740:G:C8	2.53	0.43
4:lD:61:VAL:HG11	4:lD:88:ILE:HD11	2.00	0.43
4:lD:230:PRO:HD2	4:lD:233:GLN:OE1	2.19	0.43
1:lA:992:U:H3'	1:lA:993:U:H4'	2.01	0.43
1:lA:1305:A:H1'	1:lA:1306:A:C8	2.54	0.43
1:lA:1358:G:H3'	1:lA:1359:U:H2'	2.01	0.43
1:lA:1675:A:H2'	1:lA:1676:A:C8	2.53	0.43
1:lA:2639:A:OP1	28:lb:55:ARG:HG2	2.19	0.43
1:lA:3432:A:HO2'	1:lA:3433:U:P	2.41	0.43
7:lG:164:LEU:HD21	7:lG:176:HIS:CD2	2.54	0.43
11:lK:99:LYS:O	11:lK:188:SER:OG	2.36	0.43
14:lN:143:GLU:HG2	14:lN:147:LYS:NZ	2.33	0.43
14:lN:228:LYS:HA	14:lN:228:LYS:HD3	1.77	0.43
16:lP:49:ARG:NH2	16:lP:71:MET:O	2.32	0.43
17:lQ:71:ARG:HD3	17:lQ:71:ARG:HA	1.91	0.43
17:lQ:119:TYR:OH	17:lQ:131:GLU:OE1	2.26	0.43
1:lA:225:U:O2	1:lA:282:G:N2	2.44	0.43
1:lA:327:U:O2'	1:lA:329:G:N7	2.45	0.43
1:lA:699:A:H5"	1:lA:746:A:N6	2.34	0.43
1:lA:1103:U:H2'	1:lA:1104:A:C8	2.54	0.43
1:lA:1904:U:O2'	1:lA:1906:A:N7	2.43	0.43
1:lA:2443:A:H2'	1:lA:2444:A:C8	2.54	0.43
1:lA:3066:U:H2'	1:lA:3067:U:C6	2.54	0.43
4:lD:161:ASN:OD1	4:lD:161:ASN:N	2.45	0.43
6:lF:80:SER:O	6:lF:87:ASN:ND2	2.41	0.43
7:lG:201:ALA:HB1	7:lG:229:PRO:O	2.19	0.43
11:lK:35:LEU:HD23	11:lK:35:LEU:HA	1.87	0.43
11:lK:171:ASN:HD22	11:lK:185:VAL:HG23	1.83	0.43
13:lM:50:ALA:HB2	13:lM:65:ILE:HD12	2.00	0.43
37:lk:52:MET:HG3	37:lk:84:ILE:HG23	2.00	0.43
1:lA:54:G:H5"	17:lQ:154:ASP:HB3	2.00	0.43
1:lA:71:U:H1'	14:lN:59:MET:SD	2.59	0.43
1:lA:381:A:H2'	1:lA:382:A:C8	2.53	0.43
1:lA:1188:A:H2'	1:lA:1189:U:H6	1.82	0.43
6:lF:157:LYS:HE3	27:la:145:VAL:HG12	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:lM:133:ARG:HG3	13:lM:154:LEU:HD21	2.01	0.43
1:lA:631:G:N2	1:lA:660:U:H1'	2.34	0.43
1:lA:658:A:H1'	1:lA:659:U:C6	2.54	0.43
1:lA:1292:A:O2'	9:lI:197:GLY:O	2.21	0.43
1:lA:2286:G:H8	1:lA:2286:G:OP1	2.02	0.43
1:lA:2870:U:H2'	1:lA:2871:U:C6	2.54	0.43
1:lA:3435:G:H2'	1:lA:3436:A:H5"	2.01	0.43
5:lE:143:LYS:O	5:lE:147:GLU:HG2	2.18	0.43
13:lM:28:ASP:C	13:lM:28:ASP:OD1	2.62	0.43
13:lM:41:THR:OG1	13:lM:42:GLY:N	2.52	0.43
13:lM:117:ASP:OD1	13:lM:117:ASP:N	2.51	0.43
21:lU:20:ARG:H	21:lU:20:ARG:HG2	1.62	0.43
1:lA:575:A:H8	1:lA:575:A:OP2	2.01	0.43
1:lA:597:A:N3	8:lH:51:ASN:ND2	2.65	0.43
1:lA:837:A:H2'	1:lA:838:U:C6	2.54	0.43
1:lA:1738:G:C2	1:lA:1739:G:C8	3.07	0.43
1:lA:1741:A:N3	1:lA:1763:C:O2'	2.47	0.43
1:lA:2025:C:H2'	1:lA:2026:U:C6	2.53	0.43
1:lA:2294:A:H2'	1:lA:2295:A:H8	1.83	0.43
1:lA:2911:U:O2	1:lA:2911:U:O4'	2.36	0.43
1:lA:3302:U:H2'	1:lA:3303:A:C8	2.53	0.43
4:lD:65:ASN:HB3	4:lD:68:GLN:O	2.19	0.43
19:lS:160:LYS:HD3	19:lS:160:LYS:HA	1.85	0.43
27:la:207:LEU:HD23	27:la:207:LEU:HA	1.82	0.43
28:lb:52:LYS:HE2	28:lb:52:LYS:HB3	1.84	0.43
29:lc:67:LYS:HG2	29:lc:68:TYR:CD1	2.53	0.43
1:lA:216:A:H2'	1:lA:217:G:O4'	2.19	0.42
1:lA:678:A:H2'	1:lA:679:U:C6	2.54	0.42
1:lA:941:A:H2'	1:lA:942:C:H6	1.84	0.42
1:lA:1565:G:N7	29:lc:9:ARG:NH2	2.67	0.42
1:lA:1912:A:N6	39:lm:42:CYS:HA	2.34	0.42
1:lA:2273:C:H4'	1:lA:2274:A:O5'	2.19	0.42
1:lA:2841:A:O2'	1:lA:2842:U:OP2	2.33	0.42
2:lB:105:G:O2'	2:lB:106:C:OP1	2.36	0.42
5:lE:107:ALA:HB1	5:lE:202:GLU:HG3	2.01	0.42
24:lX:48:ARG:HD2	24:lX:51:ARG:NH1	2.34	0.42
45:sH:68:A:H2'	45:sH:69:G:O4'	2.18	0.42
1:lA:10:U:H2'	1:lA:11:A:H8	1.84	0.42
1:lA:474:A:H2'	1:lA:475:A:C8	2.54	0.42
1:lA:703:G:O6	1:lA:744:A:C6	2.72	0.42
1:lA:967:A:C5	1:lA:968:C:H1'	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:1509:A:H2'	1:lA:1510:A:C8	2.53	0.42
1:lA:1533:U:HO2'	1:lA:1534:U:P	2.41	0.42
1:lA:1815:U:O2	1:lA:1893:A:H4'	2.19	0.42
1:lA:2085:A:H2'	1:lA:2086:A:C8	2.53	0.42
1:lA:2150:G:H2'	1:lA:2151:A:C8	2.54	0.42
1:lA:2433:A:H2'	1:lA:2434:A:H8	1.84	0.42
1:lA:3332:A:H1'	1:lA:3375:U:O2'	2.19	0.42
1:lA:3373:A:H1'	1:lA:3385:G:C4	2.54	0.42
12:lL:52:ILE:HD12	12:lL:136:ILE:HB	2.01	0.42
14:lN:46:PRO:HB3	35:li:108:PHE:CE1	2.54	0.42
22:lV:108:ARG:HD3	22:lV:136:ARG:HD2	2.00	0.42
1:lA:619:A:H2'	1:lA:619:A:N3	2.34	0.42
1:lA:1126:U:H2'	1:lA:1127:A:O4'	2.19	0.42
1:lA:1533:U:O2'	1:lA:1534:U:OP1	2.31	0.42
1:lA:2464:A:H2'	1:lA:2465:C:C5	2.54	0.42
6:lF:102:PHE:O	6:lF:103:SER:C	2.62	0.42
11:lK:118:LYS:HE3	11:lK:118:LYS:HB3	1.81	0.42
26:lZ:16:PRO:HB2	26:lZ:19:LYS:HD2	2.00	0.42
42:lp:4:GLU:HG2	42:lp:7:LEU:HG	2.02	0.42
1:lA:677:A:H2'	1:lA:678:A:H8	1.84	0.42
1:lA:678:A:H2'	1:lA:679:U:H6	1.84	0.42
1:lA:2272:C:O2'	1:lA:2346:A:N3	2.48	0.42
1:lA:2632:A:C8	34:lh:91:ARG:HD2	2.54	0.42
1:lA:3304:C:H2'	1:lA:3305:U:C6	2.54	0.42
2:lB:31:C:H2'	2:lB:32:C:H6	1.84	0.42
5:lE:54:THR:OG1	5:lE:55:HIS:N	2.52	0.42
9:lI:185:GLU:OE1	9:lI:185:GLU:N	2.47	0.42
12:lL:55:LEU:HD21	12:lL:164:LYS:HE2	2.00	0.42
12:lL:75:ASN:ND2	12:lL:154:LEU:HD12	2.34	0.42
24:lX:22:ASN:HB2	24:lX:53:PRO:HD2	2.02	0.42
1:lA:59:A:N3	1:lA:74:U:O2'	2.36	0.42
1:lA:597:A:H4'	8:lH:53:GLU:CD	2.45	0.42
1:lA:610:A:O5'	1:lA:610:A:H8	2.02	0.42
1:lA:2153:U:N3	1:lA:2173:A:C6	2.88	0.42
1:lA:3404:A:H2'	8:lH:95:PHE:CZ	2.54	0.42
3:lC:7:A:O5'	3:lC:7:A:H8	2.02	0.42
10:lJ:45:TYR:CE1	10:lJ:46:VAL:HG23	2.54	0.42
12:lL:43:CYS:O	12:lL:171:TRP:NE1	2.50	0.42
13:lM:158:ASP:OD1	13:lM:158:ASP:N	2.51	0.42
17:lQ:157:LYS:HE3	17:lQ:157:LYS:HB3	1.89	0.42
1:lA:576:A:N6	1:lA:577:G:H21	2.17	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:606:A:H2'	1:lA:607:U:C6	2.54	0.42
1:lA:711:A:H2'	1:lA:712:G:O4'	2.19	0.42
1:lA:1473:G:O6	19:lS:37:ARG:NH2	2.52	0.42
1:lA:2142:G:H21	1:lA:3484:A:H8	1.66	0.42
1:lA:2865:A:H4'	37:lk:21:ALA:HA	2.02	0.42
1:lA:3265:C:H2'	1:lA:3266:U:C6	2.54	0.42
1:lA:3477:U:H1'	1:lA:3478:U:P	2.60	0.42
6:lF:142:HIS:ND1	6:lF:180:ASP:OD2	2.40	0.42
33:lg:84:GLU:HA	33:lg:87:MET:HB3	2.02	0.42
1:lA:285:A:H4'	1:lA:286:U:C5'	2.49	0.42
1:lA:672:G:N2	1:lA:674:A:H2	2.17	0.42
1:lA:953:U:H2'	1:lA:954:G:O4'	2.19	0.42
1:lA:1467:U:H2'	1:lA:1468:A:C8	2.55	0.42
1:lA:2178:A:HO2'	1:lA:2179:U:H6	1.67	0.42
1:lA:2753:U:H2'	1:lA:2754:C:H6	1.85	0.42
1:lA:3031:U:C2	1:lA:3054:A:N6	2.87	0.42
1:lA:3309:U:H5	1:lA:3329:U:H3	1.68	0.42
3:lC:68:C:H42	3:lC:105:A:H61	1.67	0.42
3:lC:84:G:H1	3:lC:91:G:H1	1.66	0.42
23:lW:52:GLN:HA	23:lW:61:GLY:HA2	2.01	0.42
1:lA:187:G:H4'	1:lA:188:U:H5"	2.00	0.42
1:lA:236:U:O4	27:la:36:LYS:HG2	2.20	0.42
1:lA:337:A:H2'	1:lA:338:A:H8	1.85	0.42
1:lA:397:A:N6	41:lo:35:ILE:HG23	2.34	0.42
1:lA:1300:C:H1'	15:lO:88:MET:HB3	2.02	0.42
1:lA:1749:U:OP2	21:lU:42:ARG:NH2	2.52	0.42
1:lA:2483:C:H2'	1:lA:2484:U:C6	2.54	0.42
1:lA:3501:A:H4'	5:lE:316:GLY:HA2	2.00	0.42
4:lD:17:LYS:HB2	4:lD:17:LYS:HE3	1.71	0.42
6:lF:84:SER:OG	6:lF:87:ASN:OD1	2.30	0.42
6:lF:402:LYS:HD3	6:lF:403:ARG:N	2.34	0.42
8:lH:130:LYS:HE2	8:lH:130:LYS:HB3	1.86	0.42
9:lI:76:ARG:NH2	9:lI:79:GLY:O	2.37	0.42
9:lI:96:LEU:HD21	9:lI:103:VAL:HG22	2.00	0.42
9:lI:139:ARG:HH21	9:lI:230:ILE:C	2.26	0.42
20:lT:7:THR:HA	20:lT:21:PHE:O	2.20	0.42
28:lb:100:ILE:HD12	28:lb:100:ILE:HA	1.79	0.42
29:lc:94:LYS:HD3	29:lc:97:GLU:OE2	2.19	0.42
1:lA:1090:A:H2'	1:lA:1091:A:H8	1.84	0.42
1:lA:1593:A:H2	32:lf:91:MET:HE1	1.84	0.42
1:lA:2841:A:H5"	1:lA:2842:U:H5"	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:3028:C:O2'	1:lA:3029:U:H5'	2.18	0.42
1:lA:3098:U:OP2	1:lA:3120:G:N1	2.46	0.42
1:lA:3155:U:H2'	1:lA:3156:U:C6	2.55	0.42
3:lC:80:G:N2	3:lC:94:U:H3	2.16	0.42
10:lJ:174:TYR:OH	10:lJ:226:TYR:OH	2.22	0.42
13:lM:54:VAL:HG12	13:lM:57:PHE:H	1.85	0.42
1:lA:255:A:H4'	1:lA:257:A:C8	2.55	0.42
1:lA:439:U:H2'	1:lA:440:G:O4'	2.20	0.42
1:lA:503:A:H2'	1:lA:504:U:C6	2.55	0.42
1:lA:534:A:OP1	14:lN:215:LYS:HE2	2.20	0.42
1:lA:672:G:H22	6:lF:415:ASP:CG	2.28	0.42
1:lA:679:U:H2'	1:lA:680:C:H6	1.85	0.42
1:lA:1337:A:H2'	1:lA:1338:U:C6	2.55	0.42
1:lA:1495:A:H2'	1:lA:1496:A:H8	1.85	0.42
1:lA:3148:C:H2'	1:lA:3149:A:H8	1.84	0.42
1:lA:3187:A:H2'	1:lA:3188:C:H6	1.85	0.42
1:lA:3448:G:H2'	1:lA:3449:A:C8	2.55	0.42
1:lA:3454:G:N2	1:lA:3501:A:H2	2.18	0.42
7:lG:156:THR:OG1	7:lG:180:ARG:NH1	2.53	0.42
15:lO:12:CYS:HB3	15:lO:42:LEU:HG	2.01	0.42
19:lS:72:LYS:H	19:lS:72:LYS:HG2	1.67	0.42
28:lb:53:ILE:C	28:lb:53:ILE:HD12	2.45	0.42
1:lA:1201:A:H5'	7:lG:140:ARG:HG3	2.02	0.41
1:lA:1508:U:H2'	1:lA:1509:A:H8	1.83	0.41
1:lA:1840:A:H2'	1:lA:1841:G:C8	2.54	0.41
1:lA:2294:A:H2'	1:lA:2295:A:C8	2.55	0.41
1:lA:2303:U:H2'	1:lA:2304:A:H8	1.85	0.41
1:lA:3112:A:N7	4:lD:215:ASN:ND2	2.67	0.41
1:lA:3432:A:N6	1:lA:3434:A:N3	2.68	0.41
1:lA:3467:U:C4	1:lA:3469:A:N3	2.88	0.41
5:lE:208:ASN:HD22	5:lE:289:CYS:HB3	1.85	0.41
21:lU:64:VAL:O	21:lU:68:GLN:HG2	2.20	0.41
1:lA:290:U:H2'	1:lA:291:U:C6	2.54	0.41
1:lA:592:A:H2'	1:lA:593:A:C8	2.55	0.41
1:lA:965:A:H2'	1:lA:966:A:O4'	2.19	0.41
1:lA:2371:A:H1'	24:lX:76:MET:SD	2.59	0.41
1:lA:3084:A:OP2	5:lE:258:HIS:HB2	2.20	0.41
1:lA:3331:C:O2'	32:lf:6:THR:HA	2.20	0.41
5:lE:190:ILE:H	5:lE:190:ILE:HG12	1.60	0.41
16:lP:24:LEU:HD23	16:lP:24:LEU:HA	1.79	0.41
23:lW:106:LEU:HD12	23:lW:106:LEU:HA	1.91	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:lg:41:ASN:O	33:lg:45:ARG:HG3	2.20	0.41
1:lA:244:A:H2'	1:lA:265:A:C2	2.56	0.41
1:lA:731:A:O2'	1:lA:732:U:H5'	2.20	0.41
1:lA:864:G:O6	1:lA:877:U:O2	2.37	0.41
1:lA:1253:U:H2'	1:lA:1254:A:O4'	2.20	0.41
1:lA:1636:U:H5	1:lA:2036:A:N1	2.17	0.41
1:lA:1992:A:H2'	1:lA:1993:G:C8	2.55	0.41
1:lA:2027:U:H2'	1:lA:2028:U:C6	2.55	0.41
1:lA:2451:G:O2'	1:lA:2453:G:OP2	2.36	0.41
1:lA:2838:A:H2'	1:lA:2839:A:C8	2.54	0.41
1:lA:3005:U:H2'	1:lA:3006:G:O4'	2.21	0.41
1:lA:3141:A:H1'	1:lA:3142:G:C8	2.55	0.41
1:lA:3203:A:H4'	5:lE:365:LYS:HD2	2.02	0.41
1:lA:3470:G:N2	1:lA:3484:A:H2	2.12	0.41
11:lK:17:VAL:HG11	11:lK:89:ILE:HG12	2.02	0.41
13:lM:37:LEU:HA	13:lM:37:LEU:HD23	1.89	0.41
15:lO:33:LYS:HG2	15:lO:102:ASN:HB3	2.02	0.41
17:lQ:8:ASN:O	17:lQ:12:ARG:HG3	2.20	0.41
17:lQ:170:LYS:HG2	17:lQ:175:THR:HG22	2.01	0.41
24:lX:18:CYS:HB2	24:lX:54:ARG:HB3	2.03	0.41
30:ld:7:ARG:HG2	30:ld:8:SER:N	2.35	0.41
40:ln:7:GLU:OE2	40:ln:10:GLN:NE2	2.54	0.41
43:lq:12:CYS:HB2	43:lq:21:HIS:HE1	1.84	0.41
1:lA:573:A:H2'	1:lA:574:U:C6	2.55	0.41
1:lA:779:A:H1'	1:lA:781:A:C8	2.55	0.41
1:lA:1847:A:H2'	1:lA:1848:A:H8	1.84	0.41
1:lA:2032:U:O2	2:lB:112:A:O2'	2.37	0.41
1:lA:2183:A:H2'	1:lA:2184:A:H8	1.86	0.41
1:lA:2504:U:H2'	1:lA:2505:A:H8	1.85	0.41
1:lA:3243:C:H2'	1:lA:3244:U:O4'	2.20	0.41
1:lA:3335:U:H5	1:lA:3373:A:H2	1.68	0.41
1:lA:3437:C:N3	18:lR:69:ARG:NH1	2.69	0.41
12:lL:76:MET:SD	12:lL:148:MET:HA	2.60	0.41
16:lP:66:LYS:HE3	16:lP:66:LYS:HB2	1.84	0.41
26:lZ:40:MET:O	26:lZ:44:ARG:HG3	2.20	0.41
1:lA:937:C:O2'	1:lA:2214:A:N1	2.51	0.41
1:lA:2308:A:H2'	1:lA:2309:A:H8	1.85	0.41
1:lA:3061:G:C2	1:lA:3062:A:N7	2.88	0.41
1:lA:3129:U:C2	1:lA:3130:A:C8	3.08	0.41
2:lB:10:U:H2'	2:lB:11:U:C6	2.55	0.41
2:lB:68:A:H2'	2:lB:69:U:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:lF:51:PRO:HA	6:lF:111:TRP:CE2	2.55	0.41
18:lR:57:ILE:HB	18:lR:72:GLN:HB2	2.02	0.41
24:lX:13:LYS:HB2	24:lX:128:LEU:HD21	2.03	0.41
40:ln:24:ARG:HG3	40:ln:35:LYS:HB2	2.02	0.41
1:lA:483:G:H5'	1:lA:753:A:H61	1.86	0.41
1:lA:534:A:O2'	1:lA:535:A:H5"	2.21	0.41
1:lA:618:U:H4'	16:lP:42:GLN:HB3	2.03	0.41
1:lA:1201:A:H2'	1:lA:1202:A:O4'	2.21	0.41
1:lA:1593:A:OP1	32:lf:75:ARG:NH2	2.44	0.41
1:lA:2030:G:H5"	1:lA:2031:C:H5'	2.02	0.41
1:lA:2504:U:H2'	1:lA:2505:A:C8	2.56	0.41
1:lA:2633:C:H2'	1:lA:2634:A:O4'	2.21	0.41
1:lA:3090:G:C2	5:lE:252:ALA:HB1	2.55	0.41
1:lA:3169:C:H2'	1:lA:3170:A:C8	2.53	0.41
2:lB:42:A:H2'	2:lB:43:A:C8	2.56	0.41
13:lM:20:ASN:HB3	13:lM:126:ASP:OD1	2.20	0.41
16:lP:7:VAL:HG22	16:lP:59:LEU:HD21	2.03	0.41
16:lP:11:ARG:HG2	16:lP:59:LEU:HD22	2.02	0.41
1:lA:1752:U:H2'	1:lA:1753:A:O4'	2.21	0.41
1:lA:2701:U:H2'	1:lA:2702:G:C8	2.55	0.41
1:lA:2925:A:O2'	1:lA:2926:U:H6	2.03	0.41
1:lA:3452:U:H3	1:lA:3503:G:N2	2.17	0.41
2:lB:80:A:O2'	2:lB:81:A:OP1	2.35	0.41
3:lC:84:G:H2'	3:lC:85:G:C8	2.56	0.41
12:lL:175:LYS:HD2	12:lL:175:LYS:HA	1.71	0.41
13:lM:28:ASP:O	13:lM:32:ARG:HD3	2.20	0.41
13:lM:32:ARG:HG2	13:lM:119:GLN:O	2.20	0.41
23:lW:107:ARG:CZ	23:lW:109:ILE:HD11	2.51	0.41
29:lc:94:LYS:H	29:lc:97:GLU:CD	2.29	0.41
36:lj:89:ASN:OD1	36:lj:89:ASN:N	2.51	0.41
1:lA:360:U:H2'	1:lA:361:C:C6	2.55	0.41
1:lA:775:C:OP1	29:lc:21:ARG:HB3	2.21	0.41
1:lA:979:G:H3'	1:lA:979:G:N3	2.35	0.41
1:lA:1417:G:H2'	1:lA:1418:A:H8	1.85	0.41
1:lA:1688:A:H2'	1:lA:1689:A:C8	2.56	0.41
1:lA:2766:A:H2'	1:lA:2767:A:C8	2.55	0.41
9:lI:68:ASP:HB2	22:lV:141:PRO:HB3	2.02	0.41
35:li:42:ASP:O	35:li:46:LEU:N	2.36	0.41
1:lA:13:C:OP2	25:lY:27:ARG:NH2	2.45	0.41
1:lA:210:U:OP1	14:lN:215:LYS:NZ	2.45	0.41
1:lA:223:A:H2'	1:lA:224:U:H6	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:247:A:H5'	1:lA:266:A:O2'	2.21	0.41
1:lA:294:A:N3	1:lA:294:A:H2'	2.36	0.41
1:lA:576:A:H62	1:lA:577:G:H21	1.69	0.41
1:lA:1094:U:H5'	19:lS:53:LEU:HD22	2.03	0.41
1:lA:1107:G:H2'	1:lA:1108:A:C8	2.56	0.41
1:lA:1320:U:O2'	3:lC:83:G:N2	2.52	0.41
1:lA:1361:G:H2'	1:lA:1361:G:N3	2.35	0.41
1:lA:2153:U:C4	1:lA:2173:A:C6	3.08	0.41
1:lA:2240:C:OP1	4:lD:8:GLN:NE2	2.48	0.41
1:lA:2890:A:H2'	1:lA:2891:G:C8	2.55	0.41
1:lA:2958:G:O2'	1:lA:2959:G:OP1	2.30	0.41
1:lA:2983:C:H2'	1:lA:2984:G:O4'	2.20	0.41
1:lA:3312:U:H2'	1:lA:3313:U:C6	2.54	0.41
1:lA:3479:A:N3	1:lA:3479:A:O5'	2.53	0.41
4:lD:59:ALA:HB2	4:lD:78:CYS:SG	2.61	0.41
5:lE:232:ILE:HG13	5:lE:249:ARG:HB3	2.01	0.41
6:lF:112:GLN:HB3	17:lQ:203:TYR:CE2	2.56	0.41
6:lF:402:LYS:HD3	6:lF:403:ARG:H	1.86	0.41
8:lH:93:GLY:O	8:lH:98:ASN:HB2	2.20	0.41
10:lJ:27:LYS:HG2	10:lJ:32:HIS:HA	2.03	0.41
11:lK:68:TRP:O	11:lK:69:TYR:C	2.63	0.41
12:lL:30:ARG:HD2	12:lL:30:ARG:HA	1.84	0.41
13:lM:91:LEU:HD23	13:lM:91:LEU:HA	1.83	0.41
13:lM:106:ILE:HD13	13:lM:106:ILE:HA	1.83	0.41
16:lP:105:GLU:H	16:lP:105:GLU:HG3	1.74	0.41
35:li:70:LYS:HG2	35:li:73:ARG:NH1	2.35	0.41
1:lA:1035:G:H5'	1:lA:1036:A:OP1	2.20	0.41
1:lA:1154:A:H4'	1:lA:1154:A:OP1	2.20	0.41
1:lA:1513:A:H5'	6:lF:206:LYS:HG2	2.02	0.41
1:lA:2867:A:H61	1:lA:2886:U:H3	1.69	0.41
1:lA:2956:A:H2'	1:lA:2957:G:O4'	2.20	0.41
2:lB:134:U:H4'	25:lY:28:SER:HB2	2.03	0.41
7:lG:117:LYS:HD3	7:lG:117:LYS:HA	1.78	0.41
7:lG:187:ASN:HB2	7:lG:188:GLU:H	1.70	0.41
7:lG:267:THR:HG23	7:lG:270:GLN:HE21	1.86	0.41
22:lV:165:LEU:H	22:lV:165:LEU:HD23	1.85	0.41
26:lZ:45:LYS:HA	26:lZ:45:LYS:HD3	1.98	0.41
32:lf:8:ASN:O	32:lf:12:LEU:HG	2.20	0.41
33:lg:128:LYS:HB3	33:lg:130:GLN:NE2	2.36	0.41
38:ll:68:LYS:HG2	38:ll:69:ILE:N	2.36	0.41
1:lA:458:U:H5"	18:lR:37:ARG:NH2	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:565:U:H2'	1:lA:566:U:H6	1.86	0.40
1:lA:703:G:C8	1:lA:704:C:C6	3.09	0.40
1:lA:1315:A:C2	15:lO:50:MET:HE3	2.56	0.40
1:lA:1341:A:H2'	1:lA:1342:U:H6	1.86	0.40
1:lA:1830:U:H2'	1:lA:1831:U:C6	2.57	0.40
1:lA:1877:A:H2'	1:lA:1878:A:C8	2.56	0.40
1:lA:2153:U:C4	1:lA:2173:A:N6	2.89	0.40
1:lA:2906:U:C2'	1:lA:2907:C:H5'	2.52	0.40
1:lA:3287:U:H2'	1:lA:3288:U:C6	2.55	0.40
3:lC:33:A:N1	3:lC:45:U:O2'	2.47	0.40
5:lE:146:ARG:O	5:lE:150:ILE:HG12	2.21	0.40
6:lF:5:PRO:HG3	27:la:168:ARG:O	2.21	0.40
9:lI:87:ILE:HD12	9:lI:118:VAL:HG12	2.02	0.40
11:lK:147:LYS:HA	11:lK:147:LYS:HD2	1.69	0.40
11:lK:156:ASP:OD1	11:lK:156:ASP:C	2.64	0.40
13:lM:155:THR:HG22	13:lM:156:LYS:H	1.85	0.40
14:lN:9:ASN:OD1	14:lN:11:HIS:NE2	2.54	0.40
20:lT:150:CYS:HB2	20:lT:173:CYS:HB2	1.98	0.40
1:lA:34:U:H2'	1:lA:35:A:O4'	2.21	0.40
1:lA:210:U:H2'	1:lA:211:U:H6	1.86	0.40
1:lA:1341:A:H2'	1:lA:1342:U:C6	2.56	0.40
1:lA:1985:A:H2'	1:lA:1986:A:C8	2.56	0.40
1:lA:2111:A:H2'	1:lA:2112:C:H6	1.86	0.40
1:lA:3227:A:H2'	1:lA:3228:A:O4'	2.21	0.40
1:lA:3479:A:C2	1:lA:3480:A:C2	3.09	0.40
6:lF:288:VAL:O	6:lF:290:ASP:N	2.51	0.40
12:lL:177:THR:OG1	12:lL:179:GLU:OE1	2.24	0.40
13:lM:109:HIS:HE1	13:lM:122:ILE:HA	1.87	0.40
14:lN:123:VAL:O	14:lN:222:VAL:HA	2.21	0.40
34:lh:65:LEU:HD23	34:lh:65:LEU:HA	1.82	0.40
1:lA:228:A:H2'	1:lA:229:A:H8	1.86	0.40
1:lA:410:G:O6	38:ll:56:ARG:HD3	2.21	0.40
1:lA:579:A:C4	1:lA:580:A:C8	3.10	0.40
1:lA:709:U:HO2'	1:lA:710:A:P	2.43	0.40
1:lA:1390:G:H2'	1:lA:1391:U:H6	1.85	0.40
1:lA:2394:U:H3'	1:lA:2395:C:H5"	2.04	0.40
1:lA:2647:U:H2'	1:lA:2648:U:C6	2.56	0.40
1:lA:3268:A:OP1	11:lK:83:SER:OG	2.33	0.40
1:lA:3307:U:O2'	1:lA:3308:G:H5'	2.20	0.40
1:lA:3432:A:N6	1:lA:3440:U:H3	2.19	0.40
3:lC:85:G:N2	3:lC:90:G:H1	2.15	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:lD:57:PRO:HB3	39:lm:54:ILE:HG12	2.03	0.40
8:lH:71:LYS:HD3	8:lH:72:TYR:CE1	2.57	0.40
20:lT:172:LEU:HD23	20:lT:172:LEU:HA	1.69	0.40
23:lW:54:ILE:HD11	23:lW:77:ILE:HD11	2.02	0.40
27:la:2:LYS:HE3	27:la:2:LYS:HB3	1.61	0.40
30:ld:23:LYS:HB2	30:ld:23:LYS:HE3	1.81	0.40
37:lk:6:ALA:C	37:lk:11:ARG:HG3	2.45	0.40
45:sH:4:C:H2'	45:sH:5:U:H6	1.84	0.40
1:lA:233:A:N3	1:lA:254:C:O2'	2.51	0.40
1:lA:2297:G:N2	1:lA:2300:A:OP2	2.44	0.40
1:lA:2759:A:H2'	1:lA:2759:A:N3	2.36	0.40
1:lA:2887:G:H2'	1:lA:2888:U:O4'	2.22	0.40
1:lA:3004:U:H2'	1:lA:3005:U:O4'	2.22	0.40
1:lA:3026:U:H2'	1:lA:3027:C:C6	2.56	0.40
1:lA:3291:G:C5	1:lA:3292:U:C5	3.09	0.40
1:lA:3300:A:H2'	1:lA:3301:A:C8	2.56	0.40
6:lF:423:LYS:HE3	6:lF:423:LYS:HB2	1.70	0.40
22:lV:124:LYS:HD3	22:lV:124:LYS:HA	1.63	0.40
23:lW:93:MET:HE1	23:lW:118:LEU:HD21	2.03	0.40
25:lY:108:ASP:OD1	25:lY:109:VAL:N	2.55	0.40
27:la:31:SER:HA	27:la:48:PRO:HA	2.02	0.40
28:lb:55:ARG:HA	28:lb:55:ARG:HD3	1.91	0.40
31:le:13:GLY:O	31:le:17:LYS:N	2.37	0.40
1:lA:280:U:C2	1:lA:281:A:C8	3.10	0.40
1:lA:301:A:O2'	1:lA:302:U:O5'	2.30	0.40
1:lA:1220:A:H2'	1:lA:1220:A:OP2	2.21	0.40
1:lA:1310:A:N3	20:lT:108:SER:OG	2.50	0.40
1:lA:2251:A:N3	4:lD:25:GLY:HA2	2.36	0.40
1:lA:2438:C:H2'	1:lA:2439:A:O4'	2.22	0.40
1:lA:2599:A:C4	10:lJ:36:LEU:HD22	2.57	0.40
1:lA:3092:U:O2'	1:lA:3093:G:H5'	2.22	0.40
1:lA:3207:G:H2'	1:lA:3208:A:H8	1.87	0.40
4:lD:14:SER:OG	4:lD:15:ILE:N	2.54	0.40
6:lF:134:PRO:HD3	6:lF:150:ILE:HG21	2.02	0.40
6:lF:287:ALA:N	19:lS:121:ASP:OD2	2.53	0.40
6:lF:403:ARG:HB2	6:lF:407:GLN:OE1	2.20	0.40
14:lN:108:ASN:O	14:lN:112:GLN:HG3	2.21	0.40
24:lX:38:THR:HG21	24:lX:66:LYS:HD2	2.04	0.40
25:lY:85:LYS:HA	25:lY:85:LYS:HD2	1.86	0.40
26:lZ:47:ASN:ND2	26:lZ:49:ARG:HB2	2.36	0.40
27:la:173:LYS:HE2	27:la:173:LYS:HB2	1.89	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:le:9:LYS:HA	31:le:9:LYS:HD3	1.91	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	
4	lD	244/257 (95%)	228 (93%)	16 (7%)	0	100	100
5	lE	386/402 (96%)	372 (96%)	13 (3%)	1 (0%)	37	70
6	lF	420/431 (97%)	401 (96%)	19 (4%)	0	100	100
7	lG	274/286 (96%)	258 (94%)	15 (6%)	1 (0%)	30	66
8	lH	164/204 (80%)	145 (88%)	17 (10%)	2 (1%)	11	41
9	lI	208/230 (90%)	199 (96%)	8 (4%)	1 (0%)	25	61
10	lJ	172/246 (70%)	166 (96%)	6 (4%)	0	100	100
11	lK	191/197 (97%)	183 (96%)	7 (4%)	1 (0%)	25	61
12	lL	196/210 (93%)	184 (94%)	12 (6%)	0	100	100
13	lM	166/174 (95%)	159 (96%)	7 (4%)	0	100	100
14	lN	222/291 (76%)	213 (96%)	9 (4%)	0	100	100
15	lO	202/205 (98%)	197 (98%)	5 (2%)	0	100	100
16	lP	128/135 (95%)	124 (97%)	4 (3%)	0	100	100
17	lQ	202/205 (98%)	194 (96%)	8 (4%)	0	100	100
18	lR	153/179 (86%)	150 (98%)	3 (2%)	0	100	100
19	lS	165/168 (98%)	154 (93%)	11 (7%)	0	100	100
20	lT	171/173 (99%)	163 (95%)	8 (5%)	0	100	100
21	lU	148/198 (75%)	147 (99%)	1 (1%)	0	100	100
22	lV	163/166 (98%)	160 (98%)	3 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
23	lW	83/137 (61%)	79 (95%)	4 (5%)	0	100	100
24	lX	131/140 (94%)	126 (96%)	5 (4%)	0	100	100
25	lY	114/121 (94%)	111 (97%)	3 (3%)	0	100	100
26	lZ	55/163 (34%)	54 (98%)	1 (2%)	0	100	100
27	la	208/213 (98%)	199 (96%)	9 (4%)	0	100	100
28	lb	135/139 (97%)	132 (98%)	3 (2%)	0	100	100
29	lc	146/149 (98%)	138 (94%)	8 (6%)	0	100	100
30	ld	58/64 (91%)	57 (98%)	1 (2%)	0	100	100
31	le	98/109 (90%)	90 (92%)	8 (8%)	0	100	100
32	lf	125/150 (83%)	124 (99%)	1 (1%)	0	100	100
33	lg	127/134 (95%)	120 (94%)	7 (6%)	0	100	100
34	lh	103/137 (75%)	99 (96%)	4 (4%)	0	100	100
35	li	120/122 (98%)	117 (98%)	2 (2%)	1 (1%)	16	51
36	lj	104/106 (98%)	102 (98%)	2 (2%)	0	100	100
37	lk	83/104 (80%)	83 (100%)	0	0	100	100
38	ll	70/77 (91%)	63 (90%)	5 (7%)	2 (3%)	3	20
39	lm	88/93 (95%)	79 (90%)	9 (10%)	0	100	100
40	ln	71/84 (84%)	68 (96%)	3 (4%)	0	100	100
41	lo	48/51 (94%)	47 (98%)	1 (2%)	0	100	100
42	lp	51/56 (91%)	50 (98%)	1 (2%)	0	100	100
43	lq	90/98 (92%)	86 (96%)	4 (4%)	0	100	100
44	ls	1/14 (7%)	0	1 (100%)	0	100	100
All	All	6084/6818 (89%)	5821 (96%)	254 (4%)	9 (0%)	50	81

All (9) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
38	ll	40	PRO
5	lE	387	ASP
38	ll	39	TYR
35	li	-6	LYS
8	lH	119	VAL
11	lK	134	ILE
7	lG	264	LYS

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Mol	Chain	Res	Type
9	lI	179	VAL
8	lH	127	VAL

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
4	lD	195/201 (97%)	192 (98%)	3 (2%)	60 83
5	lE	331/343 (96%)	327 (99%)	4 (1%)	67 86
6	lF	332/345 (96%)	325 (98%)	7 (2%)	48 77
7	lG	226/231 (98%)	222 (98%)	4 (2%)	54 80
8	lH	141/173 (82%)	140 (99%)	1 (1%)	81 91
9	lI	178/195 (91%)	175 (98%)	3 (2%)	56 81
10	lJ	157/212 (74%)	154 (98%)	3 (2%)	52 79
11	lK	171/174 (98%)	169 (99%)	2 (1%)	67 86
12	lL	169/176 (96%)	169 (100%)	0	100 100
13	lM	144/147 (98%)	139 (96%)	5 (4%)	31 65
14	lN	193/243 (79%)	187 (97%)	6 (3%)	35 68
15	lO	167/168 (99%)	167 (100%)	0	100 100
16	lP	113/118 (96%)	112 (99%)	1 (1%)	75 89
17	lQ	171/172 (99%)	170 (99%)	1 (1%)	84 93
18	lR	127/147 (86%)	127 (100%)	0	100 100
19	lS	141/143 (99%)	141 (100%)	0	100 100
20	lT	156/156 (100%)	152 (97%)	4 (3%)	41 72
21	lU	132/174 (76%)	128 (97%)	4 (3%)	36 69
22	lV	144/145 (99%)	141 (98%)	3 (2%)	48 77
23	lW	81/125 (65%)	76 (94%)	5 (6%)	15 45
24	lX	109/113 (96%)	109 (100%)	0	100 100
25	lY	99/102 (97%)	96 (97%)	3 (3%)	36 69

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
26	lZ	52/137 (38%)	47 (90%)	5 (10%)	7 27
27	la	177/179 (99%)	176 (99%)	1 (1%)	84 93
28	lb	121/123 (98%)	120 (99%)	1 (1%)	79 90
29	lc	120/121 (99%)	116 (97%)	4 (3%)	33 67
30	ld	50/54 (93%)	48 (96%)	2 (4%)	27 61
31	le	84/92 (91%)	84 (100%)	0	100 100
32	lf	111/128 (87%)	110 (99%)	1 (1%)	75 89
33	lg	112/116 (97%)	112 (100%)	0	100 100
34	lh	86/116 (74%)	85 (99%)	1 (1%)	67 86
35	li	103/103 (100%)	103 (100%)	0	100 100
36	lj	89/89 (100%)	87 (98%)	2 (2%)	47 76
37	lk	71/82 (87%)	70 (99%)	1 (1%)	62 83
38	ll	60/64 (94%)	59 (98%)	1 (2%)	56 81
39	lm	72/74 (97%)	71 (99%)	1 (1%)	62 83
40	ln	63/73 (86%)	63 (100%)	0	100 100
41	lo	44/45 (98%)	43 (98%)	1 (2%)	45 75
42	lp	45/48 (94%)	44 (98%)	1 (2%)	47 76
43	lq	85/91 (93%)	84 (99%)	1 (1%)	67 86
44	ls	1/1 (100%)	1 (100%)	0	100 100
All	All	5223/5739 (91%)	5141 (98%)	82 (2%)	58 82

All (82) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	lD	122	ASP
4	lD	204	MET
4	lD	243	THR
5	lE	74	GLU
5	lE	140	VAL
5	lE	258	HIS
5	lE	279	GLU
6	lF	3	LEU
6	lF	94	ASN
6	lF	150	ILE
6	lF	161	VAL

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Mol	Chain	Res	Type
6	lF	180	ASP
6	lF	239	VAL
6	lF	370	ASN
7	lG	6	VAL
7	lG	37	ILE
7	lG	51	VAL
7	lG	187	ASN
8	lH	28	GLN
9	lI	26	GLN
9	lI	119	ASP
9	lI	207	ILE
10	lJ	25	PHE
10	lJ	65	VAL
10	lJ	148	VAL
11	lK	77	VAL
11	lK	142	VAL
13	lM	14	ILE
13	lM	43	GLN
13	lM	86	VAL
13	lM	110	ILE
13	lM	158	ASP
14	lN	61	GLN
14	lN	99	ARG
14	lN	214	THR
14	lN	224	GLN
14	lN	246	GLU
14	lN	247	THR
16	lP	94	THR
17	lQ	39	VAL
20	lT	75	LEU
20	lT	84	HIS
20	lT	106	LEU
20	lT	172	LEU
21	lU	34	LEU
21	lU	89	THR
21	lU	133	LYS
21	lU	140	GLU
22	lV	26	ASN
22	lV	90	HIS
22	lV	129	LEU
23	lW	34	LEU
23	lW	41	ILE

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Mol	Chain	Res	Type
23	lW	46	LEU
23	lW	92	LEU
23	lW	108	VAL
25	lY	55	ILE
25	lY	109	VAL
25	lY	114	VAL
26	lZ	17	VAL
26	lZ	25	ARG
26	lZ	60	LEU
26	lZ	61	ASN
26	lZ	62	LYS
27	la	184	LEU
28	lb	28	VAL
29	lc	58	MET
29	lc	94	LYS
29	lc	121	GLN
29	lc	141	VAL
30	ld	3	LYS
30	ld	35	MET
32	lf	50	MET
34	lh	42	VAL
36	lj	36	THR
36	lj	38	GLU
37	lk	7	VAL
38	ll	72	LYS
39	lm	16	THR
41	lo	2	THR
42	lp	23	ARG
43	lq	18	HIS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (34) such sidechains are listed below:

Mol	Chain	Res	Type
5	lE	294	ASN
7	lG	176	HIS
9	lI	81	ASN
9	lI	182	HIS
10	lJ	49	GLN
10	lJ	152	HIS
10	lJ	238	HIS
10	lJ	239	ASN
13	lM	43	GLN

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Mol	Chain	Res	Type
14	lN	160	ASN
14	lN	234	ASN
17	lQ	32	HIS
17	lQ	67	HIS
18	lR	72	GLN
18	lR	97	ASN
18	lR	116	HIS
19	lS	9	HIS
20	lT	72	GLN
22	lV	50	HIS
24	lX	12	ASN
25	lY	90	ASN
27	la	10	ASN
27	la	61	HIS
27	la	62	GLN
29	lc	66	ASN
29	lc	87	GLN
31	le	11	GLN
33	lg	122	ASN
34	lh	40	ASN
41	lo	18	HIS
41	lo	19	GLN
41	lo	25	GLN
41	lo	36	ASN
43	lq	21	HIS

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	lA	3141/3503 (89%)	588 (18%)	0
2	lB	143/155 (92%)	35 (24%)	0
3	lC	116/117 (99%)	19 (16%)	0
45	sH	15/76 (19%)	4 (26%)	0
All	All	3415/3851 (88%)	646 (18%)	0

All (646) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	lA	18	G
1	lA	22	A
1	lA	29	U

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Mol	Chain	Res	Type
1	lA	30	A
1	lA	36	A
1	lA	39	A
1	lA	45	A
1	lA	54	G
1	lA	55	G
1	lA	56	A
1	lA	62	A
1	lA	65	U
1	lA	70	A
1	lA	73	A
1	lA	88	G
1	lA	105	A
1	lA	106	G
1	lA	115	G
1	lA	116	A
1	lA	117	U
1	lA	185	G
1	lA	186	A
1	lA	188	U
1	lA	189	G
1	lA	198	A
1	lA	199	G
1	lA	200	A
1	lA	206	U
1	lA	213	A
1	lA	214	A
1	lA	221	U
1	lA	233	A
1	lA	237	C
1	lA	246	U
1	lA	256	G
1	lA	264	G
1	lA	266	A
1	lA	267	A
1	lA	270	C
1	lA	285	A
1	lA	286	U
1	lA	287	A
1	lA	288	U
1	lA	289	C
1	lA	293	A

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Mol	Chain	Res	Type
1	lA	294	A
1	lA	302	U
1	lA	303	G
1	lA	311	A
1	lA	316	G
1	lA	332	G
1	lA	342	A
1	lA	344	A
1	lA	345	A
1	lA	346	G
1	lA	350	A
1	lA	369	A
1	lA	381	A
1	lA	385	C
1	lA	396	G
1	lA	416	U
1	lA	422	G
1	lA	423	A
1	lA	424	A
1	lA	444	A
1	lA	446	A
1	lA	447	G
1	lA	448	C
1	lA	457	G
1	lA	464	G
1	lA	467	A
1	lA	474	A
1	lA	483	G
1	lA	493	G
1	lA	494	G
1	lA	495	A
1	lA	496	A
1	lA	501	U
1	lA	510	A
1	lA	512	G
1	lA	522	G
1	lA	535	A
1	lA	536	G
1	lA	538	A
1	lA	539	G
1	lA	540	U
1	lA	547	A

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Mol	Chain	Res	Type
1	lA	550	A
1	lA	561	G
1	lA	562	A
1	lA	564	A
1	lA	565	U
1	lA	575	A
1	lA	577	G
1	lA	586	A
1	lA	587	A
1	lA	588	G
1	lA	589	A
1	lA	596	G
1	lA	600	U
1	lA	612	A
1	lA	613	G
1	lA	614	U
1	lA	615	G
1	lA	619	A
1	lA	620	U
1	lA	621	U
1	lA	625	A
1	lA	626	A
1	lA	627	A
1	lA	629	G
1	lA	631	G
1	lA	632	G
1	lA	633	A
1	lA	644	A
1	lA	645	A
1	lA	646	U
1	lA	647	C
1	lA	649	U
1	lA	651	G
1	lA	652	U
1	lA	663	G
1	lA	675	A
1	lA	685	A
1	lA	686	A
1	lA	687	U
1	lA	696	G
1	lA	699	A
1	lA	700	A

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Mol	Chain	Res	Type
1	lA	701	A
1	lA	703	G
1	lA	704	C
1	lA	710	A
1	lA	711	A
1	lA	714	U
1	lA	715	A
1	lA	720	U
1	lA	721	A
1	lA	722	A
1	lA	724	A
1	lA	727	U
1	lA	728	U
1	lA	730	A
1	lA	732	U
1	lA	733	C
1	lA	734	C
1	lA	736	G
1	lA	740	A
1	lA	744	A
1	lA	745	A
1	lA	746	A
1	lA	747	C
1	lA	755	G
1	lA	770	C
1	lA	771	C
1	lA	783	A
1	lA	794	A
1	lA	811	A
1	lA	816	G
1	lA	817	A
1	lA	818	A
1	lA	825	G
1	lA	833	U
1	lA	834	A
1	lA	835	A
1	lA	841	A
1	lA	843	A
1	lA	849	C
1	lA	851	A
1	lA	852	A
1	lA	853	A

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Mol	Chain	Res	Type
1	lA	855	A
1	lA	864	G
1	lA	865	U
1	lA	872	A
1	lA	873	U
1	lA	874	A
1	lA	881	G
1	lA	889	A
1	lA	898	U
1	lA	904	A
1	lA	905	A
1	lA	911	U
1	lA	918	G
1	lA	925	A
1	lA	934	G
1	lA	936	A
1	lA	968	C
1	lA	980	A
1	lA	993	U
1	lA	998	U
1	lA	999	G
1	lA	1026	G
1	lA	1027	G
1	lA	1028	G
1	lA	1033	A
1	lA	1035	G
1	lA	1036	A
1	lA	1043	G
1	lA	1056	G
1	lA	1063	C
1	lA	1073	A
1	lA	1078	C
1	lA	1079	U
1	lA	1092	A
1	lA	1093	G
1	lA	1096	U
1	lA	1097	U
1	lA	1098	A
1	lA	1099	A
1	lA	1112	G
1	lA	1119	U
1	lA	1120	A

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Mol	Chain	Res	Type
1	lA	1123	G
1	lA	1127	A
1	lA	1154	A
1	lA	1155	A
1	lA	1166	A
1	lA	1168	C
1	lA	1183	G
1	lA	1184	A
1	lA	1210	C
1	lA	1211	A
1	lA	1215	A
1	lA	1219	A
1	lA	1220	A
1	lA	1221	A
1	lA	1222	U
1	lA	1242	G
1	lA	1248	U
1	lA	1256	G
1	lA	1284	A
1	lA	1291	G
1	lA	1292	A
1	lA	1293	U
1	lA	1306	A
1	lA	1312	A
1	lA	1314	A
1	lA	1315	A
1	lA	1316	C
1	lA	1325	C
1	lA	1343	A
1	lA	1344	U
1	lA	1345	U
1	lA	1360	G
1	lA	1361	G
1	lA	1386	G
1	lA	1387	A
1	lA	1388	A
1	lA	1389	U
1	lA	1410	A
1	lA	1411	A
1	lA	1417	G
1	lA	1431	G
1	lA	1433	U

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Mol	Chain	Res	Type
1	lA	1437	A
1	lA	1440	A
1	lA	1441	U
1	lA	1447	C
1	lA	1450	A
1	lA	1455	A
1	lA	1474	A
1	lA	1475	A
1	lA	1476	G
1	lA	1477	A
1	lA	1478	C
1	lA	1480	U
1	lA	1495	A
1	lA	1499	G
1	lA	1500	A
1	lA	1502	A
1	lA	1503	U
1	lA	1505	G
1	lA	1516	A
1	lA	1517	C
1	lA	1521	A
1	lA	1534	U
1	lA	1553	A
1	lA	1568	G
1	lA	1570	U
1	lA	1571	C
1	lA	1580	A
1	lA	1584	G
1	lA	1603	A
1	lA	1604	A
1	lA	1605	A
1	lA	1606	A
1	lA	1622	A
1	lA	1624	G
1	lA	1649	U
1	lA	1652	U
1	lA	1674	U
1	lA	1677	A
1	lA	1690	A
1	lA	1698	G
1	lA	1729	G
1	lA	1735	A

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Mol	Chain	Res	Type
1	lA	1737	A
1	lA	1738	G
1	lA	1741	A
1	lA	1751	A
1	lA	1753	A
1	lA	1754	G
1	lA	1810	A
1	lA	1818	C
1	lA	1821	A
1	lA	1822	U
1	lA	1823	C
1	lA	1864	C
1	lA	1865	U
1	lA	1883	A
1	lA	1897	A
1	lA	1907	A
1	lA	1913	G
1	lA	1914	A
1	lA	1925	A
1	lA	1926	U
1	lA	1928	G
1	lA	1936	A
1	lA	1937	A
1	lA	1938	G
1	lA	1958	A
1	lA	1959	U
1	lA	1961	G
1	lA	1975	G
1	lA	1983	A
1	lA	1984	A
1	lA	2040	A
1	lA	2043	A
1	lA	2044	C
1	lA	2050	C
1	lA	2051	A
1	lA	2067	A
1	lA	2079	A
1	lA	2080	A
1	lA	2081	A
1	lA	2083	A
1	lA	2095	G
1	lA	2098	A

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Mol	Chain	Res	Type
1	lA	2108	G
1	lA	2109	C
1	lA	2132	A
1	lA	2153	U
1	lA	2178	A
1	lA	2179	U
1	lA	2184	A
1	lA	2190	A
1	lA	2193	G
1	lA	2197	G
1	lA	2198	G
1	lA	2207	A
1	lA	2210	G
1	lA	2216	U
1	lA	2218	A
1	lA	2234	A
1	lA	2235	U
1	lA	2245	A
1	lA	2246	G
1	lA	2250	C
1	lA	2252	U
1	lA	2274	A
1	lA	2281	U
1	lA	2284	A
1	lA	2285	U
1	lA	2286	G
1	lA	2299	A
1	lA	2308	A
1	lA	2325	G
1	lA	2326	G
1	lA	2329	G
1	lA	2330	U
1	lA	2335	A
1	lA	2336	U
1	lA	2344	U
1	lA	2345	U
1	lA	2346	A
1	lA	2348	G
1	lA	2349	G
1	lA	2355	A
1	lA	2356	A
1	lA	2360	C

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Mol	Chain	Res	Type
1	lA	2374	U
1	lA	2383	G
1	lA	2384	C
1	lA	2386	U
1	lA	2389	A
1	lA	2390	U
1	lA	2391	G
1	lA	2395	C
1	lA	2397	C
1	lA	2410	U
1	lA	2411	G
1	lA	2412	U
1	lA	2439	A
1	lA	2440	G
1	lA	2441	U
1	lA	2449	A
1	lA	2450	C
1	lA	2451	G
1	lA	2461	G
1	lA	2462	G
1	lA	2464	A
1	lA	2469	G
1	lA	2470	G
1	lA	2473	A
1	lA	2478	A
1	lA	2479	G
1	lA	2480	A
1	lA	2487	U
1	lA	2494	G
1	lA	2509	U
1	lA	2512	G
1	lA	2514	A
1	lA	2515	A
1	lA	2516	U
1	lA	2589	C
1	lA	2590	A
1	lA	2594	C
1	lA	2595	G
1	lA	2598	A
1	lA	2629	A
1	lA	2637	A
1	lA	2651	A

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Mol	Chain	Res	Type
1	lA	2655	G
1	lA	2656	G
1	lA	2663	A
1	lA	2666	G
1	lA	2676	G
1	lA	2677	G
1	lA	2684	G
1	lA	2689	G
1	lA	2696	A
1	lA	2715	G
1	lA	2722	U
1	lA	2726	A
1	lA	2727	A
1	lA	2744	A
1	lA	2747	G
1	lA	2759	A
1	lA	2761	A
1	lA	2764	A
1	lA	2766	A
1	lA	2774	A
1	lA	2784	G
1	lA	2797	A
1	lA	2798	G
1	lA	2799	U
1	lA	2822	U
1	lA	2823	G
1	lA	2825	C
1	lA	2832	A
1	lA	2842	U
1	lA	2843	U
1	lA	2855	A
1	lA	2857	A
1	lA	2858	A
1	lA	2859	U
1	lA	2860	U
1	lA	2861	U
1	lA	2862	A
1	lA	2864	A
1	lA	2865	A
1	lA	2866	C
1	lA	2867	A
1	lA	2868	U

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Mol	Chain	Res	Type
1	lA	2870	U
1	lA	2876	U
1	lA	2887	G
1	lA	2889	G
1	lA	2890	A
1	lA	2891	G
1	lA	2904	U
1	lA	2905	U
1	lA	2907	C
1	lA	2911	U
1	lA	2916	C
1	lA	2920	U
1	lA	2921	A
1	lA	2925	A
1	lA	2926	U
1	lA	2931	C
1	lA	2939	G
1	lA	2943	G
1	lA	2944	A
1	lA	2945	A
1	lA	2946	A
1	lA	2951	A
1	lA	2953	C
1	lA	2957	G
1	lA	2959	G
1	lA	2960	A
1	lA	2977	G
1	lA	2985	C
1	lA	2987	C
1	lA	2988	A
1	lA	3009	C
1	lA	3015	A
1	lA	3019	C
1	lA	3030	A
1	lA	3032	C
1	lA	3041	G
1	lA	3047	U
1	lA	3066	U
1	lA	3078	U
1	lA	3079	A
1	lA	3084	A
1	lA	3085	C

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Mol	Chain	Res	Type
1	lA	3090	G
1	lA	3114	A
1	lA	3126	C
1	lA	3133	G
1	lA	3141	A
1	lA	3142	G
1	lA	3143	A
1	lA	3144	U
1	lA	3145	U
1	lA	3146	U
1	lA	3147	U
1	lA	3148	C
1	lA	3151	A
1	lA	3159	G
1	lA	3166	G
1	lA	3175	A
1	lA	3200	G
1	lA	3210	U
1	lA	3212	U
1	lA	3213	U
1	lA	3223	G
1	lA	3232	G
1	lA	3240	A
1	lA	3246	A
1	lA	3247	C
1	lA	3254	U
1	lA	3256	A
1	lA	3259	U
1	lA	3277	C
1	lA	3278	A
1	lA	3285	A
1	lA	3286	A
1	lA	3287	U
1	lA	3299	G
1	lA	3327	A
1	lA	3332	A
1	lA	3334	U
1	lA	3335	U
1	lA	3336	G
1	lA	3337	A
1	lA	3338	A
1	lA	3344	U

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Mol	Chain	Res	Type
1	lA	3345	A
1	lA	3351	U
1	lA	3353	U
1	lA	3359	U
1	lA	3360	U
1	lA	3361	A
1	lA	3383	A
1	lA	3384	A
1	lA	3385	G
1	lA	3398	U
1	lA	3399	G
1	lA	3401	G
1	lA	3405	A
1	lA	3406	C
1	lA	3409	A
1	lA	3413	U
1	lA	3415	A
1	lA	3416	A
1	lA	3423	C
1	lA	3430	U
1	lA	3431	U
1	lA	3433	U
1	lA	3447	A
1	lA	3451	A
1	lA	3466	U
1	lA	3467	U
1	lA	3468	U
1	lA	3469	A
1	lA	3470	G
1	lA	3472	G
1	lA	3476	C
1	lA	3477	U
1	lA	3478	U
1	lA	3479	A
1	lA	3491	C
1	lA	3492	G
1	lA	3498	U
1	lA	3499	G
1	lA	3500	A
2	lB	4	A
2	lB	5	A
2	lB	34	G

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Mol	Chain	Res	Type
2	lB	36	G
2	lB	50	A
2	lB	51	A
2	lB	53	G
2	lB	54	A
2	lB	61	A
2	lB	62	U
2	lB	64	A
2	lB	65	G
2	lB	72	G
2	lB	73	A
2	lB	74	A
2	lB	79	A
2	lB	80	A
2	lB	81	A
2	lB	82	A
2	lB	85	U
2	lB	86	G
2	lB	92	C
2	lB	95	A
2	lB	102	A
2	lB	103	A
2	lB	104	U
2	lB	106	C
2	lB	109	G
2	lB	110	A
2	lB	113	G
2	lB	131	A
2	lB	137	A
2	lB	147	C
2	lB	150	U
2	lB	151	A
3	lC	6	G
3	lC	17	G
3	lC	18	U
3	lC	19	U
3	lC	22	C
3	lC	32	A
3	lC	37	A
3	lC	40	G
3	lC	49	C
3	lC	52	G

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Mol	Chain	Res	Type
3	lC	53	C
3	lC	63	C
3	lC	68	C
3	lC	72	C
3	lC	73	G
3	lC	90	G
3	lC	96	U
3	lC	99	U
3	lC	109	G
45	sH	2	A
45	sH	3	C
45	sH	69	G
45	sH	76	A

There are no RNA pucker outliers to report.

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)

There are no chain breaks in this entry.

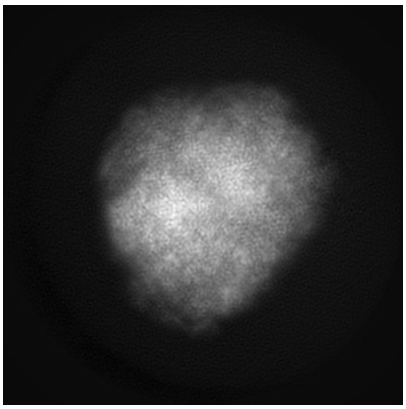
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-64697. These allow visual inspection of the internal detail of the map and identification of artifacts.

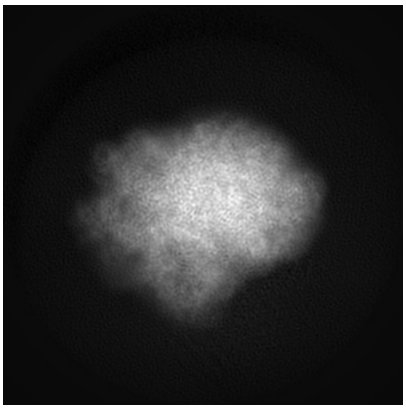
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

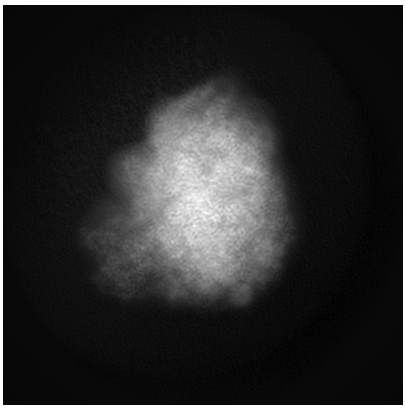
6.1.1 Primary map



X

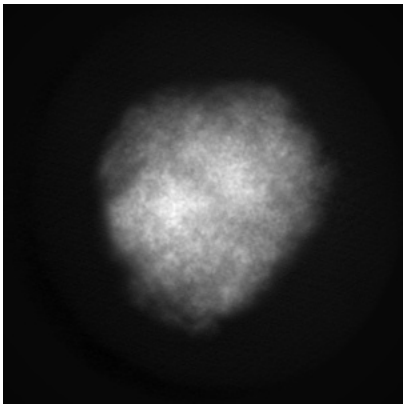


Y

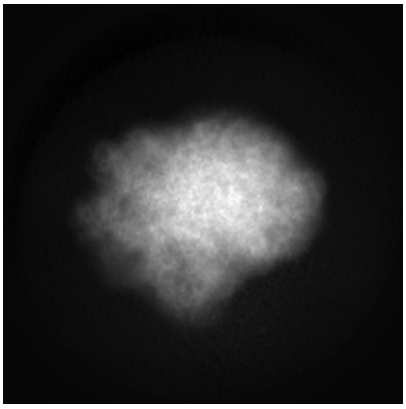


Z

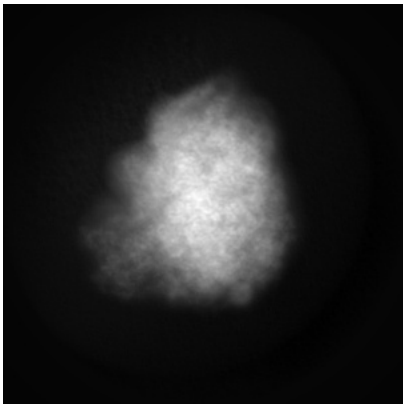
6.1.2 Raw map



X



Y

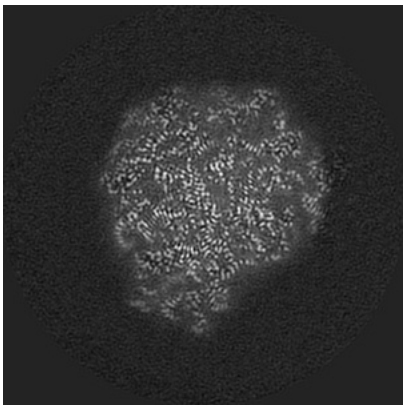


Z

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

6.2 Central slices (i)

6.2.1 Primary map



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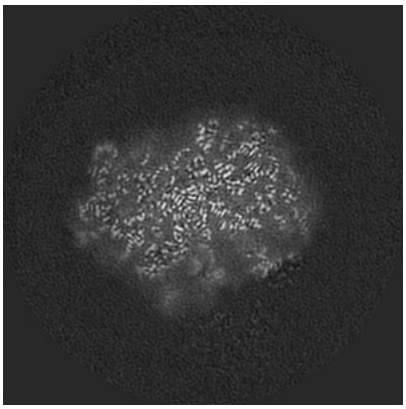
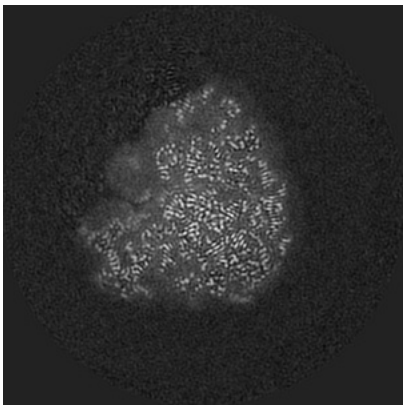
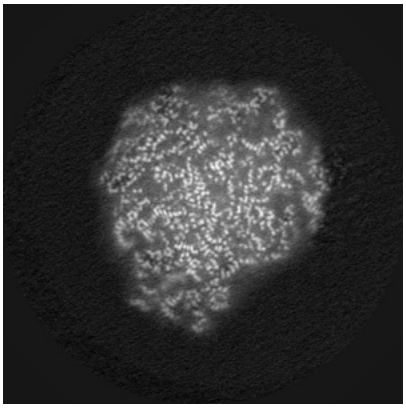


Y Index: 175

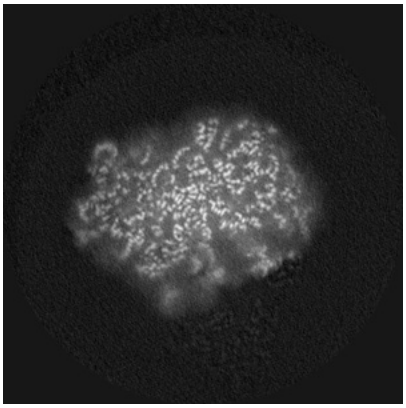


Z Index: 175

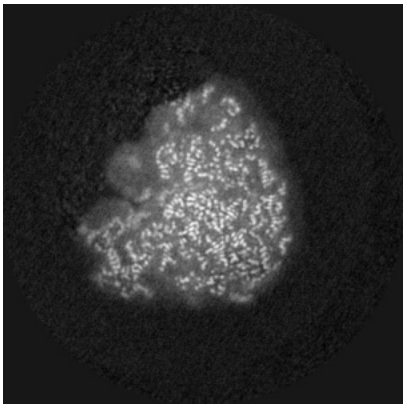
6.2.2 Raw map



X Index: 175



Y Index: 175

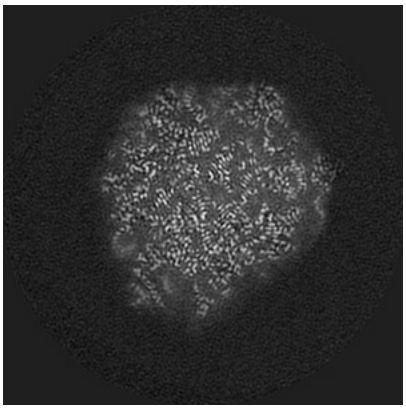


Z Index: 175

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

6.3 Largest variance slices (i)

6.3.1 Primary map



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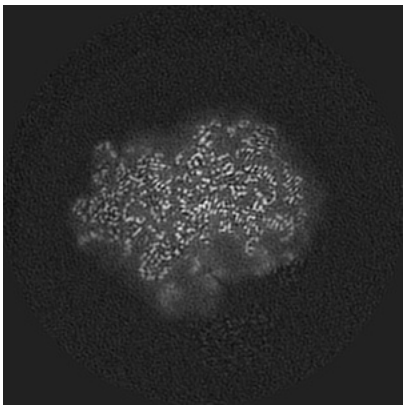
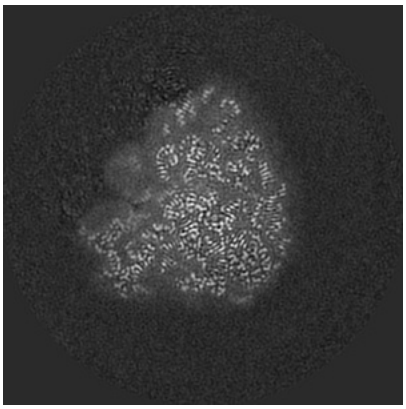


Y Index: 171



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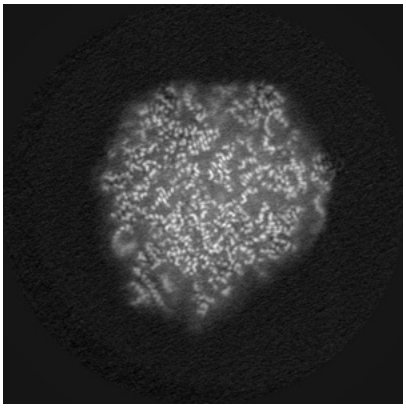
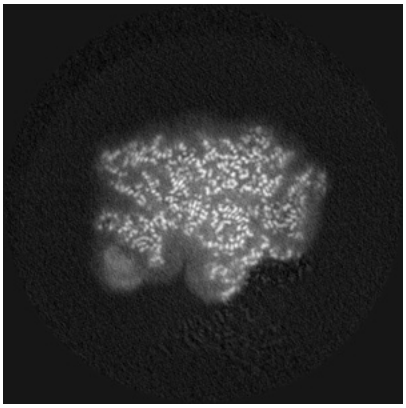
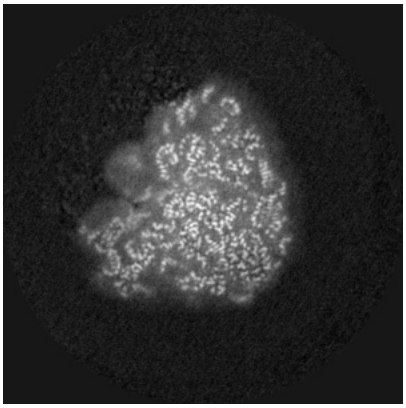
6.3.2 Raw map



X Index: 181



Y Index: 205

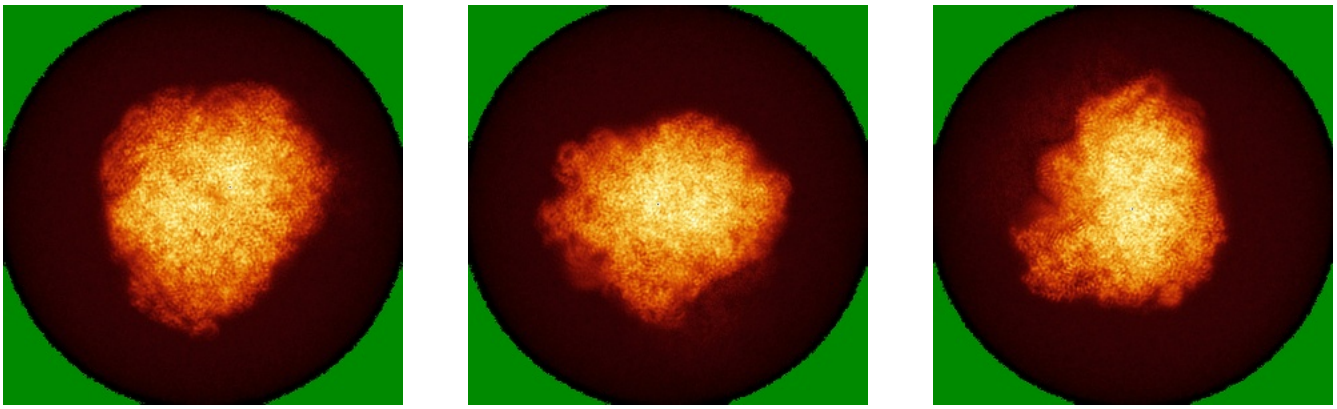


Z Index: 176

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

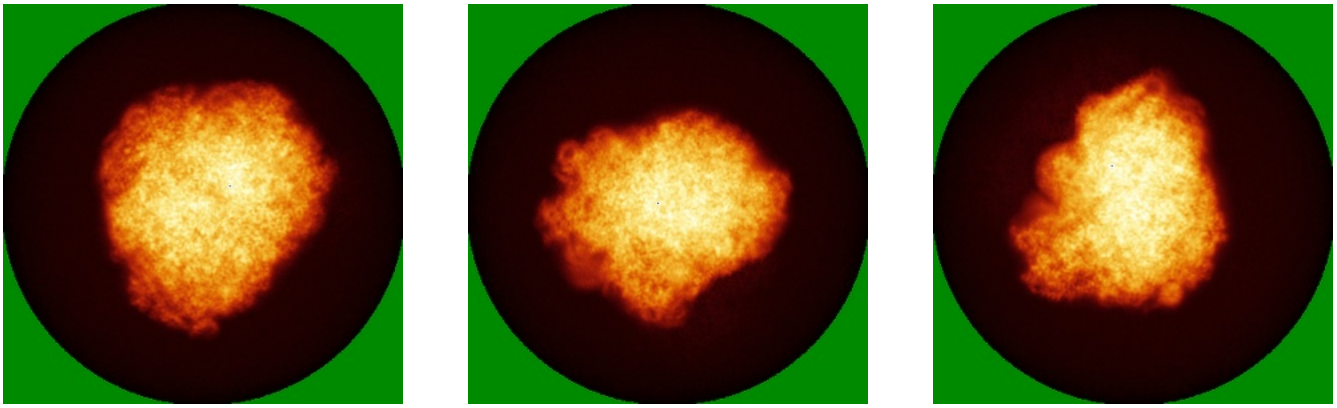
6.4 Orthogonal standard-deviation projections (False-color) (i)

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.

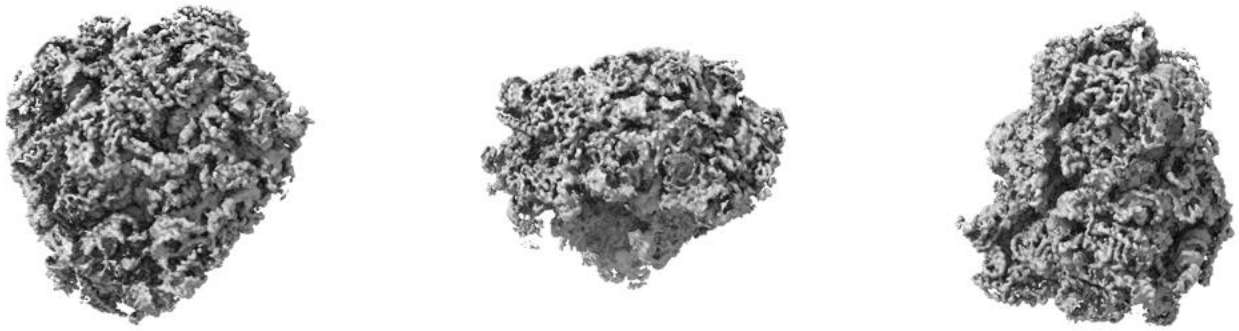
6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 2.5. 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.

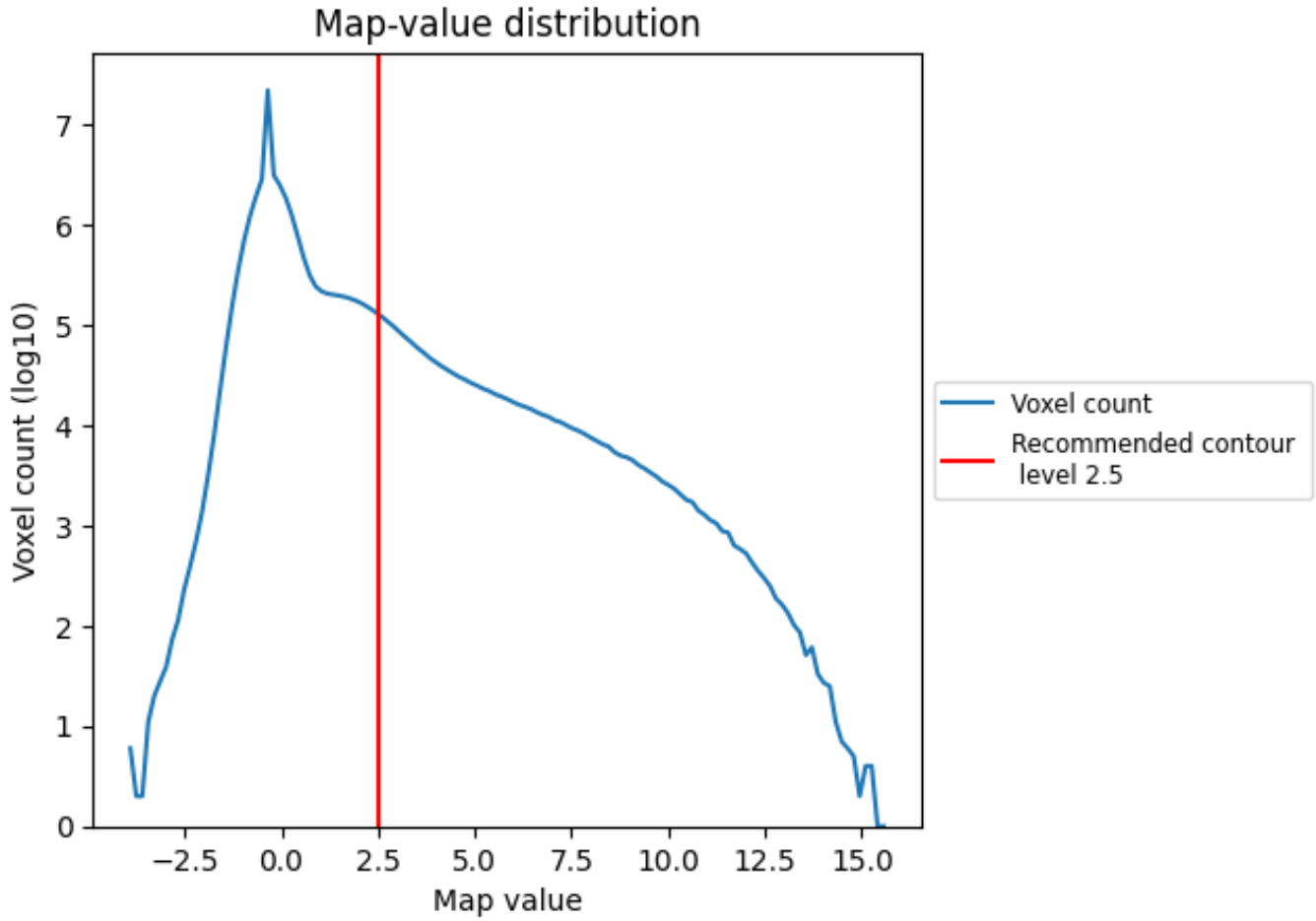
6.6 Mask visualisation (i)

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

7 Map analysis

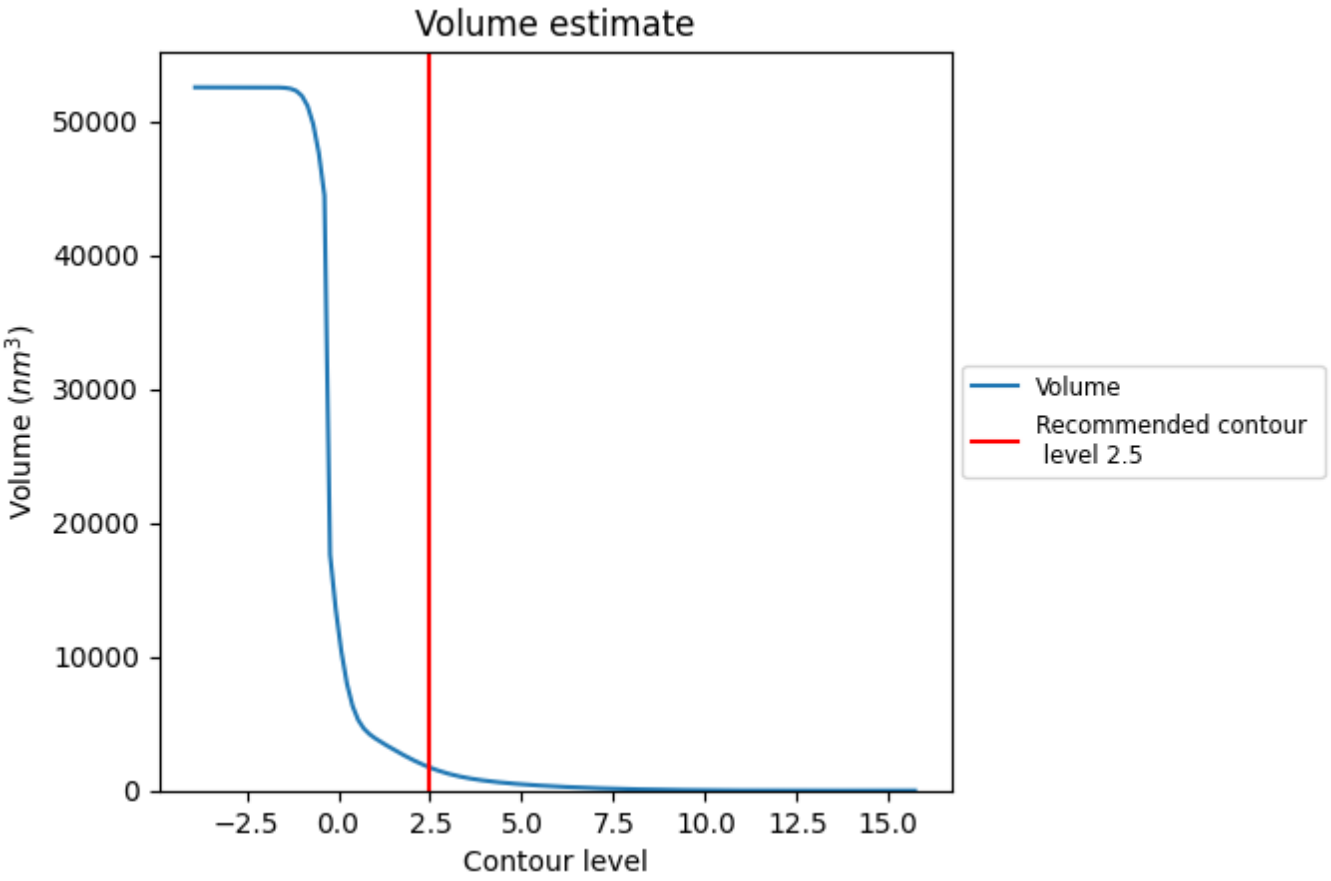
This section contains the results of statistical analysis of the map.

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.

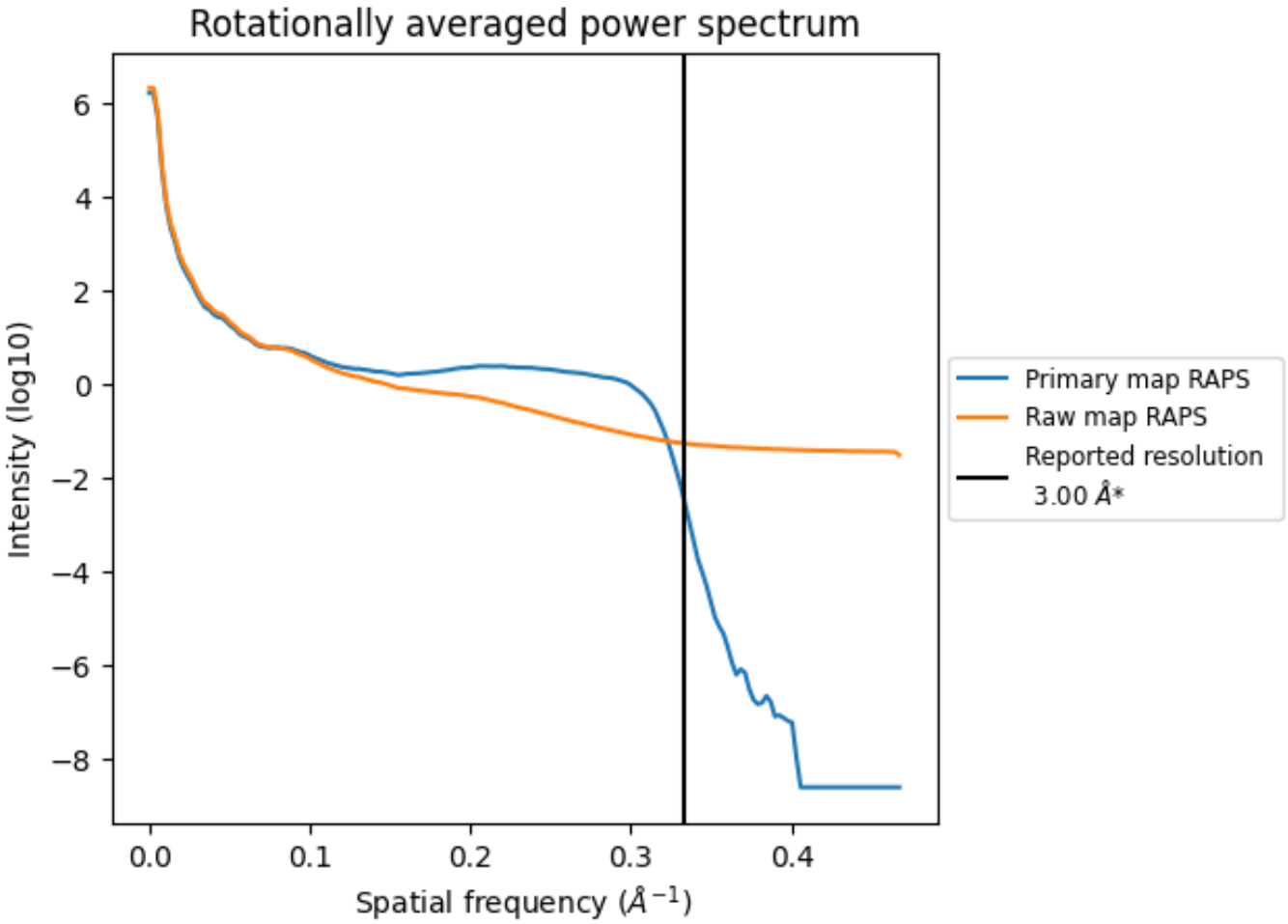
7.2 Volume estimate



The volume at the recommended contour level is 1716 nm^3; this corresponds to an approximate mass of 1550 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)

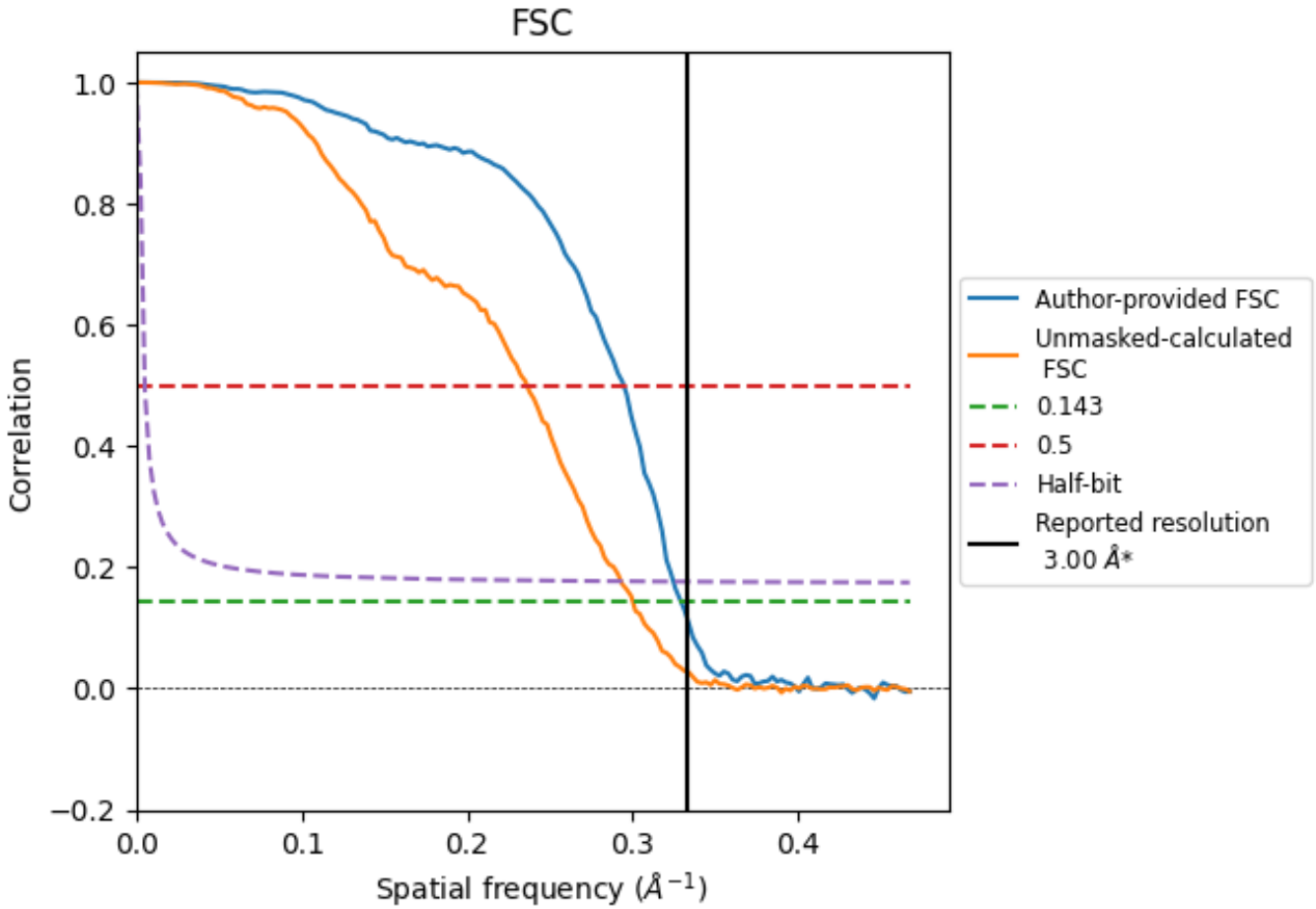


*Reported resolution corresponds to spatial frequency of 0.333 Å^{-1}

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 0.333 Å^{-1}

8.2 Resolution estimates (i)

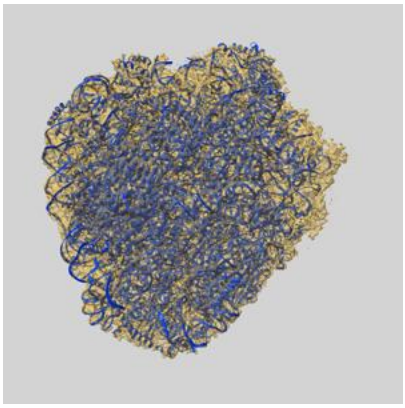
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.00	-	-
Author-provided FSC curve	3.04	3.39	3.08
Unmasked-calculated*	3.33	4.24	3.41

*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 3.33 differs from the reported value 3.0 by more than 10 %

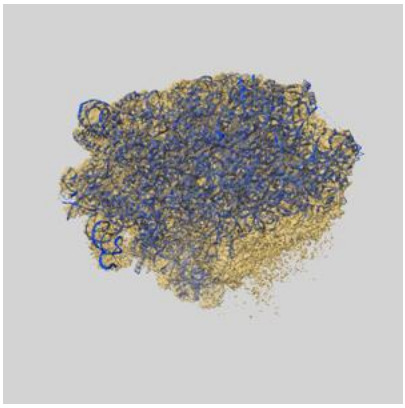
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-64697 and PDB model 9V1L. Per-residue inclusion information can be found in section 3 on page 12.

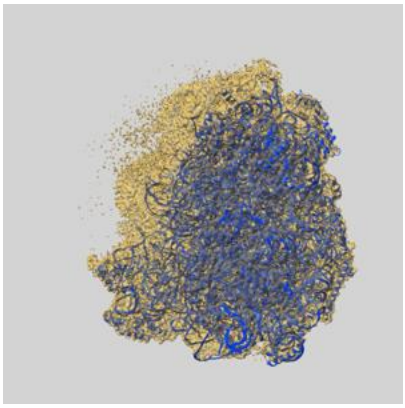
9.1 Map-model overlay



X



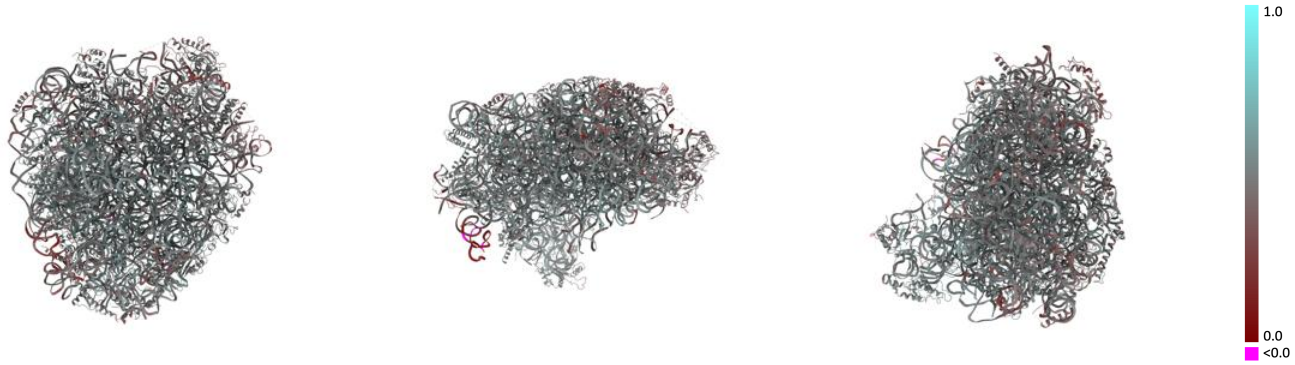
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 2.5 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.

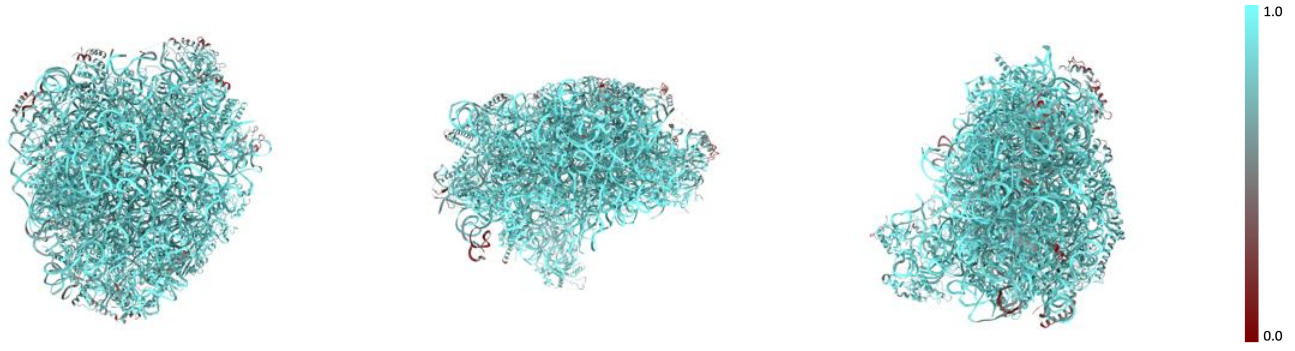
9.2 Q-score mapped to coordinate model (i)



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.

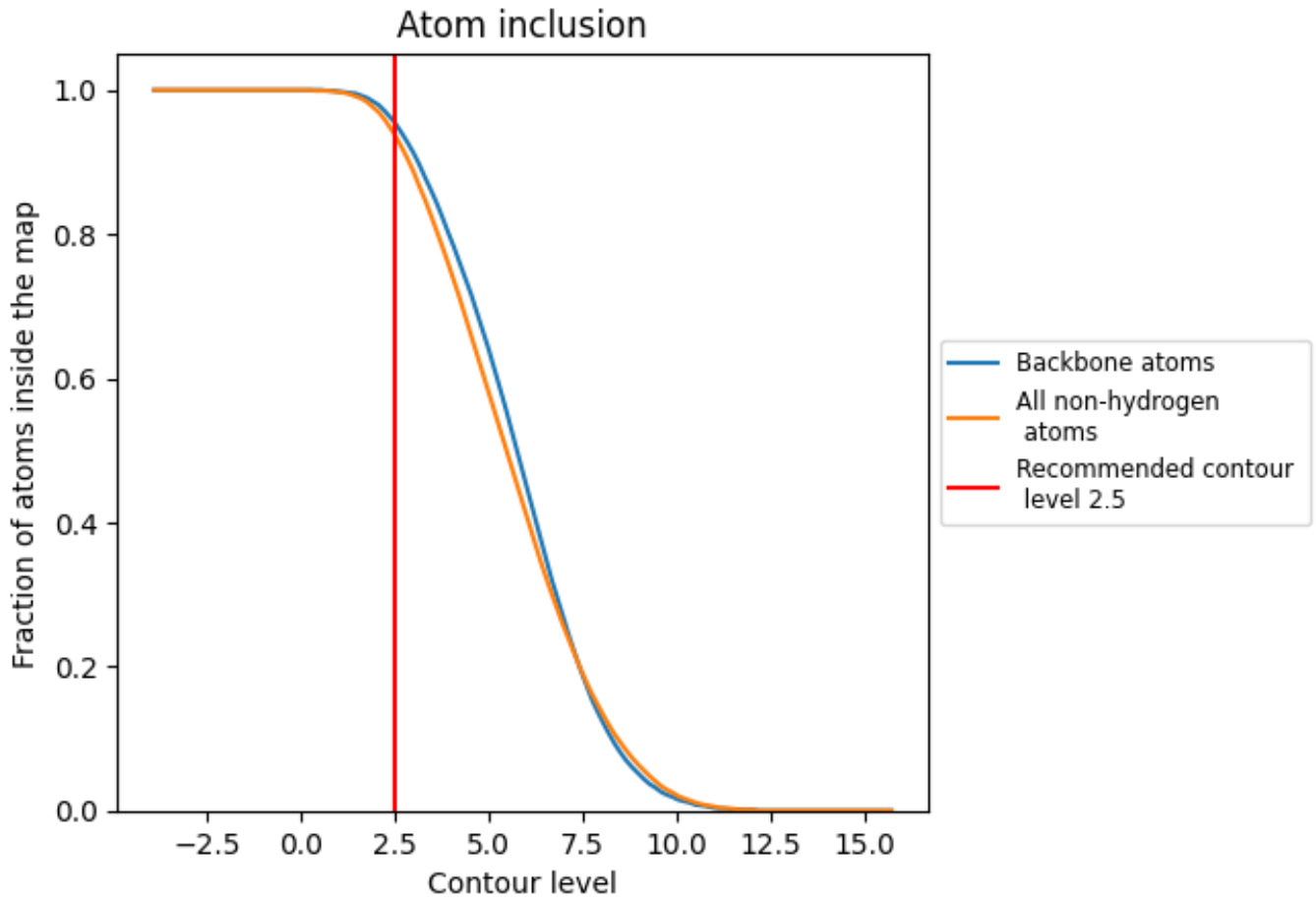
9.3 Atom inclusion mapped to coordinate model (i)



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 (2.5).

9.4 Atom inclusion (i)



At the recommended contour level, 96% of all backbone atoms, 94% 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 (2.5) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9380	0.4920
lA	0.9590	0.4890
lB	0.9780	0.4930
lC	0.9830	0.5010
lD	0.9840	0.5000
lE	0.9370	0.5030
lF	0.8990	0.5110
lG	0.8770	0.5210
lH	0.7640	0.4840
lI	0.9510	0.5280
lJ	0.7680	0.4580
lK	0.8630	0.4920
lL	0.9760	0.5150
lM	0.8820	0.4780
lN	0.8330	0.4800
lO	0.9260	0.5150
lP	0.9140	0.5170
lQ	0.9760	0.5140
lR	0.9540	0.4970
lS	0.9710	0.5280
lT	0.9680	0.5330
lU	0.9350	0.4650
lV	0.9470	0.5320
lW	0.5710	0.3520
lX	0.9790	0.4990
lY	0.8780	0.4570
lZ	0.9680	0.4910
la	0.8670	0.4790
lb	0.6920	0.4270
lc	0.9580	0.5330
ld	0.9700	0.5280
le	0.8600	0.4520
lf	0.8670	0.4710
lg	0.9180	0.4980
lh	0.9360	0.4720

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Chain	Atom inclusion	Q-score
li	0.8600	0.4650
lj	0.9670	0.5280
lk	0.9100	0.4930
ll	0.9960	0.5130
lm	0.9710	0.4830
ln	0.6540	0.4030
lo	0.9880	0.4980
lp	0.9360	0.4960
lq	0.9720	0.5270
ls	1.0000	0.4720
sH	0.9970	0.4560